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FOREWORD

Jessica Brodsky,[†] Cassy Havens^{††} & Jon Tanaka^{†††}

The Annual Review is a yearly publication of the *Berkeley Technology Law Journal* that provides a summary of many of the year's major developments at the intersection of law and technology. Our aim is to provide a valuable resource for judges, policymakers, practitioners, students, and scholars. Each Note provides a primer on a particular area of law, a development in that area of law, and commentary on that development.

The twelve Notes in this issue continue a tradition of covering a wide range of topics. The Notes address developments in patent, copyright, trade secrets, and privacy, as well as technology-focused regulations and legislature.

I. PATENT LAW

Our first Note¹ in this Section examines the inconsistent manner in which district courts across the country treat Patent Trial and Appeal Board (PTAB) claim construction decisions during patent litigation. For greater consistency, this Note proposes a framework for district court analysis of PTAB findings of fact and ultimate claim constructions based on principles of administrative law and standards of appellate review, taking into account the different claim construction standards used in each forum.

The second Note² examines recent Federal Circuit cases concerning the patent subject matter eligibility of software. The Note asserts that the Federal Circuit is applying the “technological arts” test within the *Alice* two-step framework.

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1. Niky R. Bagley, Note, *Treatment of PTAB Claim Construction Decisions: Aspiring to Consistency and Predictability*, 32 *BERKELEY TECH. L.J.* 315 (2017).

2. Joseph Allen Craig, Note, *Deconstructing Wonderland: Making Sense of Software Patents in a Post-Alice World*, 32 *BERKELEY TECH. L.J.* 359 (2017).

TREATMENT OF PTAB CLAIM CONSTRUCTION DECISIONS: ASPIRING TO CONSISTENCY AND PREDICTABILITY

Niky R. Bagley[†]

The Patent Trial and Appeal Board (“PTAB” or “Board”) construes claims under two different standards, depending on whether the patent-at-issue is expired or will expire during reexamination or review.¹ For expired or soon-to-expire patents, the PTAB uses the ordinary and customary meaning or *Phillips* standard, the same standard used in district court.² For all other patents, the PTAB uses the broadest reasonable interpretation (“BRI”) standard.³ Regardless of which standard the PTAB uses, there is little guidance from the Supreme Court or the Federal Circuit on exactly how district courts should treat PTAB claim construction decisions when construing claims during litigation.⁴ The Supreme Court has acknowledged

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1. *In re CSB-System Int’l, Inc.*, 832 F.3d 1335, 1341 (Fed. Cir. 2016) (holding that the *Phillips* claim construction standard applies to all expired patents and those that will expire during ex parte reexamination); The applicable provisions of the Code of Federal Regulations provide:

A claim in an unexpired patent that will not expire before a final written decision is issued shall be given its broadest reasonable construction in light of the specification of the patent in which it appears. A party may request a district court-type claim construction approach to be applied if a party certifies that the involved patent will expire within 18 months from the entry of the Notice of Filing Date Accorded to Petition.

37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

2. *CSB-System Int’l*, 832 F.3d at 1341; 37 C.F.R §§ 42.100(b), 42.200(b), 42.300(b) (2016).

3. *CSB-System Int’l*, 832 F.3d at 1341; 37 C.F.R §§ 42.100(b), 42.200(b), 42.300(b) (2016).

4. *See* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (affirming the Patent Office’s rulemaking authority to construe claims using the broadest reasonable interpretation standard); *SkyHawke Techs., LLC v. Deca Int’l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016) (holding that neither the PTAB nor the district court is bound by the other’s claim construction decision when a different claim construction standard is used in each forum); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (setting guidelines for construction of claims in district court).

that inconsistent claim construction outcomes are possible,⁵ and the Federal Circuit has asserted that issue preclusion is unlikely to apply in district court litigation to PTAB claim construction decisions made using the BRI standard.⁶ However, neither Court has affirmatively stated how district courts should handle PTAB claim construction decisions and how they should take into account the different claim construction standards.

A survey of district court claim construction decisions across the country reveals the inconsistent manner in which district courts treat PTAB claim construction rulings, ultimately leading to unpredictable findings of infringement and invalidity.⁷ For greater consistency in district court treatment of PTAB decisions and between these two forums, district courts should analyze PTAB claim constructions using a framework based on principles of administrative law and standards for appellate review.

In providing its claim construction decision, a district court may examine both the PTAB's factual findings regarding the extrinsic record as well as the PTAB's ultimate claim construction.⁸ Based on the Supreme

5. *Cuozzo*, 136 S. Ct. at 2144–46 (“These different evidentiary burdens mean that the possibility of inconsistent results is inherent to Congress’ regulatory design”).

6. *SkyHawke*, 828 F.3d at 1376, stated:

Because the Board applies the broadest reasonable construction of the claims while the district courts apply a different standard of claim construction as explored in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), the issue of claim construction under *Phillips* to be determined by the district court has not been actually litigated.

7. See, e.g., *Personalized Media Commc’ns, LLC v. Apple, Inc.*, No. 215CV01206JRGRSP, 2016 WL 6247054, at *7–9, *12–13, *16–17, *29–30, *41–42 (E.D. Tex. Oct. 25, 2016); *Blitzsafe Tex., LLC v. Honda Motor Co.*, No. 2:15-CV-1274-JRG-RSP, 2016 WL 4762083, at *12–17 (E.D. Tex. Sept. 13, 2016); *GoDaddy.com, LLC v. RPost Commc’ns Ltd.*, No. CV-14-00126-PHX-JAT, 2016 WL 212676, at *30–31 (D. Ariz. Jan. 19, 2016); *Depuy Orthopaedics, Inc. v. Orthopaedic Hosp.*, No. 3:12-CV-299-CAN, 2016 WL 96164, at *5 (N.D. Ind. Jan. 8, 2016); *Anglefix, LLC v. Wright Med. Tech., Inc.*, No. 2013-CV-02407-JPM-TMP, 2015 WL 9581865, at *1, *4 (W.D. Tenn. Dec. 30, 2015); *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 8073722, at *11 (E.D. Tex. Dec. 4, 2015); *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 598 (E.D. Tex. 2015); *Kroy IP Holdings, LLC v. Autozone, Inc.*, No. 2:13-CV-888-WCB, 2015 WL 557123, at *4 (E.D. Tex. Feb. 10, 2015); *Pragmatus AV, LLC v. Yahoo! Inc.*, No. C-13-1176 EMC, 2014 WL 1922081, at *4 (N.D. Cal. May 13, 2014). See also *Ilife Techs., Inc. v. Nintendo of Am., Inc.*, No. 3:13-CV-04987-M, 2017 WL 525708, at *4–5 (N.D. Tex. Feb. 9, 2017) (surveying the different district court treatments of PTAB claim constructions).

8. See, e.g., *THX, Ltd. v. Apple, Inc.*, No. 13-CV-01161-HSG, 2016 WL 6563340, at *5 (N.D. Cal. Nov. 4, 2016); *Research Frontiers, Inc. v. E Ink Corp.*, No. CV 13-1231-LPS, 2016 WL 1169580, at *7 (D. Del. Mar. 24, 2016); *Depuy*, 2016 WL 96164, at *5; *Malibu Boats, LLC v. Nautique Boat Co.*, 122 F. Supp. 3d 722, 728 (E.D. Tenn. Jan. 28, 2015); *Anglefix*, 2015 WL 9581865, at *1, *4; *Pragmatus*, 2014 WL 1922081, at *4.

Court's decisions in *Teva Pharm. USA, Inc. v. Sandoz, Inc.*⁹ and *Dickinson v. Zurko*,¹⁰ district courts should defer to the PTAB's factual findings and should replace the PTAB's factual findings with their own only when those findings are unsupported by substantial evidence pursuant to the Administrative Procedures Act ("APA").¹¹

For well-reasoned PTAB ultimate claim construction decisions made under the ordinary and customary meaning or *Phillips* standard, district courts should give *Skidmore* deference.¹² The Patent and Trademark Office's ("PTO" or "Patent Office") expertise with interpreting technically complex subject matter justifies this intermediate level of judicial

9. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

10. *Dickinson v. Zurko*, 527 U.S. 150 (1999).

11. *See* Administrative Procedure Act, 5 U.S.C. § 706(2) (2012); *Zurko*, 527 U.S. at 164.

12. *See generally* United States v. Mead Corp., 533 U.S. 218 (2001) (determining the bounds of strong judicial deference to administrative rulings); *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984) (clarifying the standard courts must use to review an agency's construction of the statute the agency administers); *Skidmore v. Swift & Co.*, 323 U.S. 134 (1944) (holding that agency rulings, interpretations, and opinions are deserving of "great respect" if accompanied by sound reasoning and a thorough analysis); Kristin Hickman, *The Three Phases of Mead*, 83 *FORDHAM L. REV.* 527 (2014) (discussing the relationship between *Mead*, *Chevron*, and *Skidmore*). Commentators have argued that courts should give differing levels of deference to different types of PTO decisions. *See generally* Stuart Minor Benjamin & Arti K. Rai, *Administrative Power in the Era of Patent Stare Decisis*, 65 *DUKE L.J.* 1563 (2016) [hereinafter Benjamin & Rai, *Administrative Power*] (discussing situations where the PTO has asserted administrative power before the Federal Circuit); Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 *GEO. L.J.* 269 (2007) [hereinafter Benjamin & Rai, *Who's Afraid?*] (discussing the intersection of administrative law and patent law); William J. Blonjgan, *Road Under Construction: Administrative Claim Interpretations and the Path of Greater Deference from the Federal Circuit to the Patent Office*, 35 *AIPLA Q.J.* 415, 437–72 (2007) (advocating Federal Circuit deference to PTO claim construction decisions); Thomas Chen, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 *VA. L. REV.* 1165, 1182–85 (2008) (advocating for *Chevron* type deference to district court claim construction decisions); John Golden, *Working Without Chevron: The PTO as Prime Mover*, 65 *DUKE L.J.* 1655 (2016) (arguing that the high-level *Chevron* deference does not generally apply to the PTO); Clarisa Long, *The PTO and the Market for Influence in Patent Law*, 157 *U. PA. L. REV.* 1965, 1975–83 (2009) (reviewing judicial deference to PTO decisions); Arti Rai, *Addressing the Patent Gold Rush: The Role of Deference to PTO Patent Denials*, 2 *WASH. U. J.L. & POL'Y* 199, 221–226 (2000) (calling for reform and greater deference to PTO decisions); Sarah Tran, *Administrative Law, Patents, and Distorted Rules*, 80 *GEO. WASH. L. REV.* 831, 854–78 (2012) (arguing that the Patent Act gives the PTO substantive rule making authority). This Note does not provide an opinion regarding the proper type of deference owed to the Patent Office generally. Rather, the focus here is on the narrow question of the type of deference district courts should give PTAB claim construction decisions.

deference.¹³ Based on the Supreme Court's decisions in *Skidmore v. Swift & Co.*,¹⁴ *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*,¹⁵ and *United States v. Mead Corp.*,¹⁶ PTAB case specific claim construction decisions merit "respect proportional to [the PTAB's] power to persuade," as provided under *Skidmore*.¹⁷

In cases where the PTAB uses the BRI standard, however, a district court should conduct an independent analysis of the proper meaning and scope of the claim at issue.¹⁸ Otherwise, district courts face the danger of improperly broadening claim scope.¹⁹ Instead of giving deference, district

13. See, e.g., *Kappos v. Hyatt*, 132 S. Ct. 1690, 1700 (2012) (recognizing that the "PTO has special expertise in evaluating patent applications"); *Zurko*, 527 U.S. at 164 (finding that "courts and commentators have long invoked" reasons such as: "the PTO is an expert body," "the PTO can better deal with the technically complex subject matter," or "two (and sometimes more) PTO tribunals had reviewed the matter and agreed about the factual finding" to justify deference to agency fact finding.); *Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 721 F.3d 1330, 1350 (Fed. Cir. 2013) (Newman, J., dissenting) ("Reexamination would allow patent holders and challengers to avoid the present costs and delays of patent litigation . . . Patent reexamination will also reduce the burden on our overworked courts by drawing on the expertise of the Patent and Trademark Office." (quoting 126 CONG. REC. 30, 364 (1980) (statement of Sen. Bayh))); cf. *Clearlamp, LLC v. LKQ Corp.*, No. 12 C 2533, 2016 WL 4734389, at *6 (N.D. Ill. Mar. 18, 2016) ("The PTAB's decision is persuasive because it affords this court an opportunity to consider the PTAB's expert reasoning based on the evidence presented to it.").

14. *Skidmore*, 323 U.S. 134.

15. *Chevron*, 467 U.S. 837.

16. *Mead*, 533 U.S. 218.

17. *Skidmore*, 323 U.S. at 140.

18. See *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 734, 740 (Fed. Cir. 2016) (finding a difference in the actual construction of the term at issue based on the differing claim construction standards at the PTAB and at district court and asserting that "district courts seek out . . . the construction that most accurately delineates the scope of the claimed invention"); cf. *M-I LLC v. Fpusa, LLC*, No. SA:15-CV-406-DAE, 2016 WL 6088344, at *5-6 (W.D. Tex. Oct. 17, 2016) (finding that because the PTAB and district courts use different standards for claim construction and validity, the PTAB's decision to institute an IPR, while instructive, is not dispositive (citing *Procter & Gamble Co. v. Kraft Foods Global, Inc.*, 549 F.3d 842, 847 (Fed. Cir. 2008))).

19. See, e.g., *Am. Tech. Ceramics Corp. v. Presidio Components, Inc.*, No. 214CV6544KAMGRB, 2016 WL 6583637, at *9 (E.D.N.Y. Nov. 7, 2016) (adopting PTAB's conclusion that no construction is necessary for the disputed phrase); *Karl Storz Endoscopy-Am., Inc. v. Stryker Corp.*, No. 14-CV-00876-RS, 2016 WL 3597426, at *3 (N.D. Cal. July 5, 2016) (construing the phrase at issue identical to the PTAB's construction); *Card-Monroe Corp. v. Tuftco Corp.*, No. 1:14-CV-292, 2016 WL 3212085, at *8 (E.D. Tenn. June 9, 2016) (rejecting defendant's proposed construction based in part on PTAB's rejection of the same); *Centrak, Inc. v. Sonitor Techs., Inc.*, No. CV 14-183-RGA, 2015 WL 9595999, at *4 (D. Del. Dec. 30, 2015) (acknowledging the different claim construction standards but adopting the PTAB's construction nevertheless); *Star Envirotech, Inc. v. Redline Detection, LLC*, No. SACV1201861JGBDFMX, 2015 WL 12743875, at *6 (C.D. Cal. Apr. 30, 2015) (adopting the PTAB's construction wholesale);

courts should treat PTAB ultimate claim constructions made under BRI as extrinsic evidence provided by an expert body, keeping in mind the different standards at issue.²⁰

The approach advocated in this Note provides for more consistent treatment of PTAB claim construction decisions and greater consistency in determining the scope of a patent that has been adjudicated in competing forums, leading to greater predictability in district court rulings. The approach also serves to ameliorate concerns regarding the different claim construction standards used in post-issuance review proceedings and in litigation.²¹ Part I of this Note provides background information on claim construction and issue preclusion. Part II gives a summary of the types of deference conferred on agency findings of fact and the evolution of the spectrum of judicial deference given to agency legal determinations in the context of the APA. Part II also specifically reviews the deference conferred on PTAB legal determinations. Part III surveys exemplary district court decisions and illustrates the inconsistent treatment of PTAB claim construction decisions made during post-issuance proceedings within each district and across districts. Part IV details the proposal for treatment of PTAB claim constructions outlined above. The Note concludes with a call for greater consistency and predictability of treatment of PTAB claim constructions.

I. A PRIMER ON CLAIM CONSTRUCTION

Claim construction in litigation is a legal determination with “evidentiary underpinnings,” which are findings of fact regarding the

Fairfield Indus., Inc. v. Wireless Seismic, Inc., No. 4:14-CV-2972, 2015 WL 1034275, at *5 (S.D. Tex. Mar. 10, 2015) (treating the PTAB’s construction as intrinsic evidence and adopting the same).

20. See cases cited *supra* note 13.

21. See, e.g., *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2148 (2016) (“*Cuozzo* says that the use of the broadest reasonable construction standard in inter partes review, together with use of an ordinary meaning standard in district court, may produce inconsistent results and cause added confusion. A district court may find a patent claim to be valid, and the agency may later cancel that claim in its own review. We recognize that that is so.”); Brief for Pharm. Research and Mfrs. of Am. as Amicus Curiae Supporting Petitioner at 12, *Cuozzo*, 136 S. Ct. 2131 (No. 15-446) (“IPR can serve as a ‘complete substitute’ to litigation only if the district court and the PTAB consider the question of validity for the same patent claims in a consistent manner.”); Brief for Interdigital, Inc., Tessera Techs., Inc. and Fallbrook Techs. Inc. as Amici Curiae Supporting Petitioner at 3, *Cuozzo*, 136 S. Ct. 2131 (No. 15-446) (“The PTO’s rule is incompatible with the adjudicative nature of the PTAB’s proceedings and creates between the PTAB and the courts a double standard that whipsaws patentees, destabilizes the patent system, and weakens patent rights.”).

extrinsic record.²² A district court construes disputed claim terms in litigation according to “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention,” or what is often referred to as the “ordinary and customary meaning” or “*Phillips*” standard.²³ The PTAB construes disputed claim terms during reexamination and in post-issuance proceedings, which include *inter partes*, covered business method, and post-grant reviews.²⁴ Like the district court, the PTAB’s claim construction is a legal determination with evidentiary underpinnings.²⁵

Unlike the district court, however, the PTAB construes claims under two different standards.²⁶ The first, and the more controversial, is used for unexpired patents that will not expire prior to a final PTAB written decision.²⁷ For these patents, the PTAB gives the claim at issue its “broadest reasonable construction in light of the specification of the patent in which it appears,” or what is often referred to as the “broadest reasonable interpretation” or “BRI” standard.²⁸ The second standard is used in cases where the patent at issue has already expired or will expire within eighteen months from entry of the post-issuance petition.²⁹ For such patents, the PTAB may apply the ordinary and customary meaning standard—the standard used in district court.³⁰

The PTAB uses two different standards in post-issuance proceedings because a patentee may seek permission to amend claims in an unexpired patent.³¹ For over 100 years, the Patent Office has used the BRI standard to

22. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 378, 388 (1996)).

23. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

24. *See* 35 U.S.C. § 6(a)–(b) (2012); 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016); *In re CSB-System Int’l, Inc.*, 832 F.3d 1335, 1341 (Fed. Cir. 2016).

25. *See, e.g.*, *Microsoft Corp. v. Proxycorr, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015); *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1332 (Fed. Cir. 2016).

26. 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

27. *Id.*

28. *Id.*; *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2146–47 (2016) (upholding the PTO’s regulatory provision mandating the broadest reasonable construction standard); *Facebook, Inc. v. Pragmatus AV, LLC*, 582 F. App’x 864, 869 (Fed. Cir. 2014), *reh’g denied* (Oct. 30, 2014) (“The broadest reasonable interpretation of a claim term may be the same as or broader than the construction of a term under the *Phillips* standard. But it cannot be narrower.”).

29. 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

30. *Id.*

31. Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 80 Fed. Reg. 50720, 50721 (Aug. 20, 2015) (codified in 37 C.F.R. § 42) (justifying the PTO’s continued use of the BRI standard); *see also* *Idle Free Systems, Inc. v. Bergstrom, Inc.*, No. IPR2012–00027, 2013 WL 5947697, at *4 (P.T.A.B. June 11, 2013)

examine the validity of proposed claims during prosecution and has applied the same standard to reexamination proceedings of unexpired patents, where a patentee may amend claims as a matter of right.³² The Federal Circuit has justified this approach, asserting that it “serves the public interest” to interpret claims broadly during examination so that issuance of those claims are not “given broader scope than is justified.”³³ Any seeming unfairness is remedied during these proceedings as an applicant has the opportunity to amend claims to “correct errors in claim language and adjust the scope of claim protection as needed.”³⁴

The PTO has used this justification to apply the BRI standard to post-issuance proceedings.³⁵ In response, patentees have criticized the PTO’s position because in post-issuance proceedings the ability to amend claims is not a matter of right and is rarely granted.³⁶ For expired patents, however, the PTO acknowledges that the same justification does not apply as the patentee loses the ability to amend claims.³⁷ As such, the PTAB applies the

(requiring proof for amendment of claims “sufficient to persuade the Board that the proposed substitute claim is patentable over the prior art of record, and over prior art not of record but known to the patent owner”).

32. *Cuozzo*, 136 S. Ct. at 2145 (finding that the PTO’s past practice of using BRI in various proceedings justifies its continued use of the standard in post-issuance proceedings); *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984) (“The PTO broadly interprets claims during examination of a patent application since the applicant may ‘amend his claims to obtain protection commensurate with his actual contribution to the art.’” (quoting *In re Prater*, 415 F.2d 1393, 1404–05 (C.C.P.A. 1969))).

33. *Id.*; see also *In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989) (“An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”).

34. *In re CSB-System Int’l, Inc.*, 832 F.3d 1335, 1341 (Fed. Cir. 2016); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citing *Yamamoto*, 740 F.2d at 1571–72).

35. Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 80 Fed. Reg. at 50721.

36. See, e.g., *Cuozzo*, 136 S. Ct. at 2145 (acknowledging *Cuozzo*’s argument that, as of June 30, 2015, only 5 out of 86 motions to amend had been granted); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1304 (Fed. Cir. 2015) (holding that the PTAB has reasonably interpreted the provision of the Patent Act regarding amendment of claims by requiring the patentee to “show patentable distinction [of the substitute claims] over the prior art of record” (quoting *Idle Free*, 2013 WL 5947697, at *4)).

37. *In re CSB-System*, 832 F.3d at 1341 (“When a patent expires during a reexamination proceeding, the PTO should thereafter apply the *Phillips* standard for claim construction. We hold as much regardless of whether this means that the Board applies a different standard than the examiner.”); see also *Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F.3d 1337, 1343 (Fed. Cir. 2013) (holding that under § 1.530(j) the PTO may not issue an amended claim if the patent has expired during appeal); 37 C.F.R. § 1.530(j) (2015) (“No amendment may be proposed for entry in an

ordinary and customary meaning standard to expired or expiring patents in post-issuance proceedings.³⁸ The Federal Circuit has applied the same justification for use of the ordinary and customary meaning standard in *ex parte* reexaminations of expired or expiring patents.³⁹

Regardless of which standard the PTAB uses, litigants present the PTAB's construction to the district court during claim construction proceedings, often arguing for or against the PTAB's construction.⁴⁰ The district court must then determine how to analyze and what weight to afford the PTAB's claim construction.⁴¹ As shown below, district courts are not consistent in their approach.⁴²

District courts may also grapple with whether issue preclusion, also known as collateral estoppel, applies to PTAB claim construction decisions.⁴³ Agency determinations have preclusive effect in district court litigation when the ordinary elements of issue preclusion are met.⁴⁴ This includes decisions made by the Patent and Trademark Office.⁴⁵ Accordingly, issue preclusion is applicable to an agency decision only when: (1) the issue in litigation is identical to the one decided in the agency action; (2) the issue was actually litigated in the agency action; (3) resolution of the issue was essential to a final judgment in the agency action; and (4) the party against whom estoppel is invoked had a full and fair

expired patent.”); Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 80 Fed. Reg. 50720, 50721 (Aug. 20, 2015) (codified at 37 C.F.R. § 42) (adopting the ordinary and customary meaning standard to post-issuance proceedings for expired or expiring patents).

38. Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 80 Fed. Reg. at 50722; 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

39. *In re CSB-System*, 832 F.3d at 1341.

40. *See, e.g.*, cases cited *supra* note 7.

41. *See, e.g.*, cases cited *supra* note 7.

42. *See, e.g.*, cases cited *supra* note 7.

43. *See, e.g.*, *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 5996363, at *1 (E.D. Tex. Oct. 14, 2015) (determining whether issue preclusion applies to the PTAB's claim construction decision made under the BRI standard).

44. *B & B Hardware, Inc. v. Hargis Indus., Inc.*, 135 S. Ct. 1293, 1310 (2015) (“So long as the other ordinary elements of issue preclusion are met, when the usages adjudicated by the TTAB are materially the same as those before the district court, issue preclusion should apply.”).

45. *Id.* (holding that issue preclusion applies to decisions made by the Trademark Trial and Appeal Board); *see also SkyHawke Techs., LLC v. Deca Int'l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016) (discussing the applicability of issue preclusion to decisions made by the PTAB); *see also Blonder-Tongue Labs. Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 349–50 (1971) (holding that a patentee is collaterally estopped from relitigating the validity of the patent where a patent has been declared invalid in a proceeding in which the “patentee has had a full and fair chance to litigate the validity of his patent”).

opportunity to litigate the issue in the agency action.⁴⁶

The Federal Circuit has stated that for PTAB claim construction decisions made under the BRI standard issue preclusion is unlikely to apply, because the differing claim construction standards mean the PTAB did not litigate the same issue before the district court.⁴⁷ To date, neither the Supreme Court nor the Federal Circuit has made any determinations as to whether issue preclusion applies to PTAB claim construction decisions made under the plain and ordinary meaning standard.⁴⁸ However, as discussed in detail below, it is likely that in rare circumstances these PTAB claim construction decisions would have preclusive effect.⁴⁹

These rare circumstances aside, district courts should determine how to treat PTAB claim construction decisions more consistently. Accordingly, this Note presents a framework that applies to PTAB claim construction decisions more generally and focuses on the level of respect that district courts should give to PTAB findings of fact and ultimate claim constructions.

II. JUDICIAL DEFERENCE TO PTAB DETERMINATIONS IN THE CONTEXT OF THE ADMINISTRATIVE PROCEDURE ACT

Judicial deference to agency factual and legal decisions is a result of an evolutionary process that began before the passage of the APA and has yielded a spectrum of deference.⁵⁰ The spectrum of deference ranges from

46. See *B & B Hardware*, 135 S. Ct. at 1303 (2015); *In re Trans Tex. Holdings Corp.*, 498 F.3d 1290, 1297 (Fed. Cir. 2007); *Innovad Inc. v. Microsoft Corp.*, 260 F.3d 1326, 1334 (Fed. Cir. 2001).

47. *SkyHawke*, 828 F.3d at 1376 (granting plaintiff's motion to dismiss, which requested affirmance of PTAB's decision of validity but correction of its claim construction). Although the issue of preclusion was not squarely before the court in *SkyHawke*, the court analyzed whether issue preclusion would likely apply to the PTAB's claim construction decision made under the BRI standard. *Id.*

48. However, *SkyHawke* and *B & B Hardware* lend themselves to the argument that issue preclusion applies at least when the same claim construction standards are used. See cases cited *infra* notes 228–229, 231.

49. See discussion *infra* Section IV.B.1.

50. See generally *Mead*, 533 U.S. at 228; *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 488 (1951) (giving deference to agency fact findings under a substantial evidence standard); William N. Eskridge, Jr. & Lauren E. Baer, *The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations from Chevron to Hamdan*, 96 GEO. L.J. 1083 (2008) (conducting an empirical study of 1014 Supreme Court decisions since *Chevron* and determining that “the Court’s deference practice functions along a continuum, ranging from an anti-deference regime reflected in the rule of lenity to the super-strong deference the Court sometimes announces in cases related to foreign affairs”);

“great respect at one end . . . to near indifference at the other.”⁵¹ The discussion below provides a summary of the current status of the law, looking at deference to agency findings of fact and agency legal determinations.

A. REVIEW OF DEFERENCE TO AGENCY FINDINGS OF FACT GENERALLY AND TO THE PTAB SPECIFICALLY

The APA codifies the scope of review of agency determinations in Section 706: “The reviewing court shall . . . (2) hold unlawful and set aside agency action, findings, and conclusions found to be (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . (E) unsupported by substantial evidence”⁵² Although Section 706 governs judicial review of agency action generally, courts more often invoke the APA when reviewing agency findings of fact.⁵³ Court’s review an agency’s findings of fact for “substantial evidence” under Section 706(E), which is generally thought to be the same as the “arbitrary or capricious standard” under Section 706(A).⁵⁴

Typically, judicial review of an agency’s factual findings is limited to

Walter Gellhorn, *The Administrative Procedure Act: The Beginnings*, 72 VA. L. REV. 219 (1986) (providing a historical overview of the enactment of the APA); Thomas W. Merrill, *Judicial Deference to Executive Precedent*, 101 YALE L. J. 969 (1992) (conducting an empirical study of Supreme Court’s application of *Chevron* and finding that the Court is inconsistent in its application of *Chevron*); Martin Shapiro, *A Golden Anniversary: The Administrative Procedure Act of 1946*, 19 REG. 40 (1996) (discussing the evolution of administrative procedure law and characterizing the APA’s passage as “America’s fatal ascension to bureaucratic complexity”); see also *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2148 (2016) (Thomas, J., concurring) (questioning the constitutionality of *Chevron* and its progeny); *Dickinson v. Zurko*, 527 U.S. 150, 155 (1999) (“The APA was meant to bring uniformity to a field full of variation and diversity.”); S. DOC. NO. 77-8, at 91 (1st Sess. 1941) (“[T]he administrative interpretation is to be given weight—not merely as the opinion of some men or even of a lower tribunal, but as the opinion of the body especially familiar with the problems dealt with by the statute and burdened with the duty of enforcing it. This may be particularly significant when the legislation deals with complex matters calling for expert knowledge and judgment.”).

51. *Mead*, 533 U.S. at 228; see also Eskridge & Baer, *supra* note 50, at 1098–1120.

52. Administrative Procedure Act, 5 U.S.C. § 706 (2012).

53. See, e.g., *Zurko*, 527 U.S. at 152; *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 487 (1951).

54. *Ass’n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of the Fed. Reserve Sys.*, 745 F.2d 677, 683–84 (D.C. Cir. 1984) (Scalia, J.) (finding that “[t]he ‘scope of review’ provisions of the APA, 5 U.S.C. § 706(2), are cumulative” and that there is no difference between the APA’s “arbitrary, capricious” standard and its “substantial evidence” standard as applied to court review of agency fact finding) (footnote omitted).

the administrative record.⁵⁵ Meaningful judicial review within the APA requires the agency to clearly articulate its basis and reasoning for a particular finding.⁵⁶ Accordingly, a court may set aside agency findings that fail to provide sufficient basis for the agency's decision.⁵⁷ In other words, an agency's opinion "must explicate its factual conclusions, enabling [the reviewing court] to verify readily whether those conclusions are indeed supported by 'substantial evidence' contained within the record."⁵⁸

The APA standards apply to the Patent Office's factual findings.⁵⁹ In *Dickinson v. Zurko*, the Supreme Court confirmed that the Patent Office is an "agency" as defined under the APA.⁶⁰ As such, the "substantial evidence" review standard applies to the Patent Office's findings of fact.⁶¹ The Court addressed the issue of whether judicial review of the Patent Office's factual findings is confined to the framework of the APA or whether the standard used to review district court findings of fact could apply.⁶² After a historical review of cases decided before and after the APA and an analysis of the purpose of the APA, the Court concluded that it could not justify any exceptions to the APA standard of review.⁶³ The Court found that greater deference should be given to Patent Office factual findings under the "substantial evidence" review standard than district court decisions under the stricter "clearly erroneous" review standard.⁶⁴

55. *Kappos v. Hyatt*, 132 S. Ct. 1690, 1696 (2012) ("The PTO, no matter how great its authority or expertise, cannot account for evidence that it has never seen." (citing 5 U.S.C. § 706 (2012))).

56. *In re Sang Su Lee*, 277 F.3d 1338, 1342 (Fed. Cir. 2002) (quoting *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 374 (1998)).

57. *SEC v. Chenery Corp.*, 318 U.S. 80, 95 (1943) ("We merely hold that an administrative order cannot be upheld unless the grounds upon which the agency acted in exercising its powers were those upon which its action can be sustained.").

58. *In re Gartside*, 203 F.3d 1305, 1314 (Fed. Cir. 2000) ("[W]e hold that the Board is required to set forth in its opinions specific findings of fact and conclusions of law adequate to form a basis for our review." (quoting *Gechter v. Davidson*, 116 F.3d 1454, 1460 (Fed. Cir. 1997))).

59. *See, e.g., Dickinson v. Zurko*, 527 U.S. 150, 162 (1999) (holding that the "substantial evidence" standard of review applies to Patent Office findings of fact); *In re Sang Su Lee*, 277 F.3d at 1342 (applying standards of review under the APA to Patent Office determinations); *see also In re Gartside*, 203 F.3d at 1316 ("Although we have previously reviewed the Board's factual determinations in an obviousness analysis for clear error, . . . we now review them for substantial evidence.") (citations omitted).

60. *Zurko*, 527 U.S. at 154.

61. *Id.*; *see also In re Sang Su Lee*, 277 F.3d at 1342 ("Tribunals of the PTO are governed by the Administrative Procedure Act, and their rulings receive the same judicial deference as do tribunals of other administrative agencies.").

62. *Zurko*, 527 U.S. at 154.

63. *Id.* at 165.

64. *Id.* at 153, 164.

Additionally, the explication requirement, mandating that an agency provide a detailed basis for its findings, applies with equal force to Patent Office determinations.⁶⁵ “Judicial review of a Board decision,” the Federal Circuit has held, is “founded on the obligation of the agency to make the necessary findings and to provide an administrative record showing the evidence on which the findings are based, accompanied by the agency’s reasoning in reaching its conclusions.”⁶⁶ The Patent Office cannot depend on deferential judicial review under the APA to relieve it of the obligation to fully develop the basis for its findings.⁶⁷ Accordingly, when the PTAB provides sufficient evidentiary basis for its factual findings in claim construction, those findings should be upheld.⁶⁸

B. REVIEW OF DEFERENCE AFFORDED TO AGENCY LEGAL DETERMINATIONS GENERALLY AND TO THE PATENT OFFICE SPECIFICALLY

Judicial deference to agency interpretations of law manifests in two separate doctrines: *Skidmore* and *Chevron*.⁶⁹ Although other doctrines have announced what may be considered stronger and weaker types of deference,⁷⁰ with respect to PTAB ultimate claim constructions, *Skidmore* and *Chevron* provide the relevant framework in light of the Court’s subsequent holding in *Mead*.⁷¹

1. *Deference to Agency Legal Determinations*

The Supreme Court held in *Skidmore* that agency rulings, interpretations, and opinions while not controlling constitute “a body of experience and informed judgment to which courts and litigants may properly resort for guidance.”⁷² Under *Skidmore*, the weight that should be given to an agency judgment “depend[s] upon the thoroughness evident in

65. See *In re Sang Su Lee*, 277 F.3d at 1342.

66. *Id.*

67. *Id.* at 1344.

68. See, e.g., *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1346 (Fed. Cir. 2016) (“We review the Board’s ultimate claim construction de novo and any underlying factual determinations involving extrinsic evidence for substantial evidence.”); *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (same); *Microsoft*, 789 F.3d at 1297 (same).

69. See *United States v. Mead Corp.*, 533 U.S. 218 (2001); *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984); *Skidmore v. Swift & Co.*, 323 U.S. 134 (1944).

70. See *Eskridge & Baer*, *supra* note 50; *Merrill*, *supra* note 50.

71. See generally *Mead Corp.*, 533 U.S. 218; *Chevron*, 467 U.S. 837; *Skidmore*, 323 U.S. 134.

72. *Skidmore*, 323 U.S. at 140.

its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade, if lacking power to control.”⁷³ In other words, a court should give an agency’s decision “great respect” if it provides sound reasoning for its decision but “near indifference” if it fails to do so.⁷⁴

In *Chevron v. Natural Resources Defense Council*, the Court clarified the standard that courts must use to review an agency’s construction of the statute the agency administers.⁷⁵ The Court announced a two-step inquiry.⁷⁶ In the first step, the reviewing court must ask “whether Congress has directly spoken to the precise question at issue.”⁷⁷ This inquiry requires a finding of Congressional intent.⁷⁸ If Congress’s intent is clear, both court and agency “must give effect to the unambiguously expressed intent of Congress.”⁷⁹ If Congressional intent is not clear or the statute is silent on the issue, however, the court moves to the second inquiry.⁸⁰ In that case, the reviewing court must determine “whether the agency’s answer is based on a permissible construction of the statute,” that is, if it is “reasonable.”⁸¹

The *Chevron* two-step inquiry⁸² requires courts to defer to the judgment

73. *Id.*

74. *Mead*, 533 U.S. at 228; see also Benjamin & Rai, *Who’s Afraid?*, *supra* note 12, at 293 (discussing the sliding scale of deference provided under the *Skidmore* framework). Some argue that *Skidmore* in essence provides no deference to the agency as the reviewing court must use its independent judgment to evaluate the agency’s legal interpretation. See, e.g., Colin Diver, *Statutory Interpretation in the Administrative States*, 133 U. PA. L. REV. 549, 565 (1985). Others characterize *Skidmore* as prescribing deference along a continuum with the varying degrees of deference depending on factors enumerated in *Skidmore* as well as others in subsequent cases. See, e.g., Kristin E. Hickman & Matthew D. Krueger, *In Search of the Modern Skidmore Standard*, 107 COLUM. L. REV. 1235, 1255 (2007); see also *Alaska Department of Environmental Conservation v. EPA*, 540 U.S. 461, 487–88 (2004).

75. *Chevron*, 467 U.S. at 842–43 (“The power of an administrative agency to administer a congressionally created . . . program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.”).

76. *Chevron*, 467 U.S. at 843–44; see also Eskridge & Baer, *supra* note 50; STEPHEN G. BREYER ET AL., *ADMINISTRATIVE LAW AND REGULATORY POLICY: PROBLEMS, TEXT, AND CASES* 282–305, 350–61 (7th ed. 2011).

77. *Chevron*, 467 U.S. at 842.

78. *Id.* at 842–43.

79. *Id.* at 843–45.

80. *Id.*

81. *Id.*; see also *Am. Bar Ass’n v. FTC*, 430 F.3d 457, 468 (D.C. Cir. 2005).

82. The inquiry as to whether *Chevron* applies at all is often referred to as “Step Zero.” See, e.g., Evan J. Criddle, *Chevron’s Consensus*, 88 B.U. L. REV. 1271, 1299, 1306–07 (2008) (describing “Step Zero” as a determination of “what forms of agency action does *Chevron* apply”); Cass R. Sunstein, *Chevron Step Zero*, 92 VA. L. REV. 187, 191 (2006) (asserting that although *Chevron* created a twostep framework for analysis, its application

of the administrative agency, even when “reconciling conflicting policies,” because agencies, not courts, are more “directly accountable to the people.”⁸³ As such, *Chevron* is highly deferential to the agency in question.⁸⁴

After nearly two decades of determining the bounds of *Chevron*,⁸⁵ the Supreme Court’s articulation of *Chevron*’s standard and applicability culminated in *United States v. Mead*.⁸⁶ The Court limited the strong deference of *Chevron* step two to situations where “it appears that Congress delegated authority to the agency generally to make rules *carrying the force of law*, and that the agency interpretation claiming deference was promulgated in the exercise of that authority.”⁸⁷ In other words, a finding of Congressional intent to defer is required.⁸⁸

has led to “the initial inquiry into whether the *Chevron* framework applies at all”). Because this Note focuses on *Skidmore*, a detailed analysis of *Chevron* is not provided here.

83. *Chevron*, 467 U.S. at 865–66; see also Eskridge & Baer, *supra* note 50.

84. *United States v. Mead Corp.*, 533 U.S. 218, 229 (2001) (holding that when *Chevron* deference applies, “a reviewing court has no business rejecting an agency’s exercise of its generally conferred authority to resolve a particular statutory ambiguity simply because the agency’s chosen resolution seems unwise”); *Cathedral Candle Co. v. U.S. Int’l Trade Comm’n*, 400 F.3d 1352, 1363–64 (Fed. Cir. 2005) (interpreting the strength of *Chevron* deference); see also Eskridge & Baer, *supra* note 50, at 1086–87, 1092, 1099; Antonin Scalia, *Judicial Deference to Administrative Interpretations of Law*, 1989 DUKE L.J. 511, 521 (1989); Kenneth W. Starr, *Judicial Review in the Post-Chevron Era*, 3 YALE J. ON REG. 283, 284, 312 (1986).

85. See generally Cass R. Sunstein, *Law and Administration After Chevron*, 90 COLUM. L. REV. 2071, 2078–2091 (1990) (providing historical overview of the context in which the Supreme Court decided *Chevron* and its effects on cases that followed); Thomas W. Merrill & Kristin E. Hickman, *Chevron’s Domain*, 89 GEO. L.J. 833, 852–863 (2001) (discussing the implications of *Chevron* as it relates to *Skidmore*).

86. See *Mead*, 533 U.S. at 227–231; *Christensen v. Harris County*, 529 U.S. 576, 587 (2000) (“Interpretations such as those in opinion letters—like interpretations contained in policy statements, agency manuals, and enforcement guidelines, all of which lack the force of law—do not warrant *Chevron*-style deference. . . . Instead, interpretations contained in formats such as opinion letters are ‘entitled to respect’ under our decision in *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944), but only to the extent that those interpretations have the ‘power to persuade[.]’”).

87. *Mead*, 533 U.S. at 226–27 (emphasis added).

88. *Id.* at 229–31. See also *Christensen*, 529 U.S. at 596–97 (Breyer, J., dissenting) (discussing the applicability of *Skidmore* where it is doubtful that Congress actually intended to delegate interpretive authority to an agency such that *Chevron* would apply). The Court also made clear that the simple fact that a ruling “may be precedential in later transactions” is not enough as “precedential value alone does not add up to *Chevron* entitlement; interpretive rules may sometimes function as precedents . . . and they enjoy no *Chevron* status as a class.” *Mead*, 533 U.S. at 232 (citing Strauss, *The Rulemaking Continuum*, 41 DUKE L.J. 1463, 1472–73 (1992)). But see *SEC v. Chenery Corp.*, 332 U.S. 194, 202 (1947) (“In performing its important functions . . . an administrative agency must

In *Mead*, the Court considered whether the U.S. Customs Service deserved judicial deference for its tariff classification rulings specific to a particular article of import.⁸⁹ Letters outlining the U.S. Custom Service rulings were binding only on the specific importer to whom it was issued—other parties could not rely on them.⁹⁰ Classifications were made by forty-seven different customs offices, issuing between 10,000 to 15,000 rulings per year.⁹¹ Finding no Congressional intent to delegate authority to the U.S. Custom Service to issue classification ruling letters with the force of law, the Court held that the ruling letters failed to qualify for strong *Chevron* deference.⁹² The Court declared classification rulings to be “beyond the *Chevron* pale.”⁹³

The Court, however, did not end the inquiry there: “*Chevron* did nothing to eliminate *Skidmore*’s holding that an agency’s interpretation may merit some deference whatever its form, given the “specialized experience and broader investigations and information” available to the agency”⁹⁴ Accordingly, a reviewing court could defer to U.S. Custom Service ruling letters under a *Skidmore* framework due to the specialized experience that the U.S. Custom Service brings to bear on subtle questions involving appropriate classification of imports.⁹⁵ “Judicial responses to administrative action,” the Court was adamant, “must continue to differentiate between *Chevron* and *Skidmore*”⁹⁶ Thus, according to the guideline provided under *Mead*, a reviewing court applies the *Chevron* framework when it finds Congressional intent to delegate authority to the agency to “make rules carrying the force of law.”⁹⁷ Otherwise, the reviewing court applies the *Skidmore* framework to agency legal determinations.⁹⁸

2. Deference to the Patent Office’s Legal Determinations

Challenges to the Patent Office’s statutory interpretations of the Patent

be equipped to act either by general rule or by individual order. To insist upon one form of action to the exclusion of the other is to exalt form over necessity.”).

89. *Mead*, 533 U.S. at 221–23, 233.

90. *Id.* at 223.

91. *Id.* at 233 (citations omitted).

92. *Id.* at 231–32.

93. *Id.* at 234.

94. *Id.*

95. *Id.* at 235.

96. *Id.* at 238.

97. *Id.* at 226–27 (emphasis added). For a discussion of *Chevron* “Step Zero”, see generally Criddle, *supra* note 82; Sunstein, *supra* note 82.

98. *United States v. Mead Corp.*, 533 U.S. 218, 234 (2001); see also Thomas W. Merrill & Kristin E. Hickman, *Chevron’s Domain*, 89 GEO. L.J. 833, 855 (2001) (discussing the difference between *Chevron* and *Skidmore*).

Act, including issuance of regulations, are analyzed under the *Chevron* framework.⁹⁹ The Supreme Court recently applied this rule in *Cuozzo v. Lee*.¹⁰⁰ In that case, the Court applied *Chevron* to determine whether the Patent Office had the authority to issue its regulation mandating the broadest reasonable interpretation standard.¹⁰¹ The Court determined that the Leahy-Smith America Invents Act, 35 U.S.C. § 100, contained a “gap” with respect to the claim construction standard the Patent Office should use in post-issuance proceedings.¹⁰² Pursuant to *Mead*, the Court found the statute “express[ly] . . . authoriz[es] [the Patent Office] to engage in the process of rulemaking to address that gap.”¹⁰³ Under the *Chevron* step two analysis, the Court held that the Patent Office’s regulation was reasonable.¹⁰⁴

Patent Office decisions that do not carry the force of law because they are not substantive in nature, however, should be given *Skidmore* deference.¹⁰⁵ These decisions include the PTO’s rulemaking authority related to procedural rules that govern how proceedings before the office are to be conducted.¹⁰⁶ For example, the PTO’s determination as to whether

99. See, e.g., *Cooper Techs. Co. v. Dudas*, 536 F.3d 1330, 1335 (Fed. Cir. 2008) (reaffirming that the Patent Office is “entitled to *Chevron* deference when interpreting statutory provisions relating to the conduct of proceedings in the Patent Office”); *Lacavera v. Dudas*, 441 F.3d 1380, 1383 (Fed. Cir. 2006) (“Because the PTO is specifically charged with administering this statute, we analyze a challenge to the statutory authority of its regulations under the *Chevron* framework.”); *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1425 (Fed. Cir. 1988) (finding PTO’s interpretation of the reexamination statute to allow the PTO to stay reexaminations pending district court outcomes to be improper under *Chevron*); *Genetics & IVF Inst. v. Kappos*, 801 F. Supp. 2d 497, 510 (E.D. Va. 2011) (finding the PTO’s interpretation of the statute for patent term extension to be entitled to deference under *Chevron*).

100. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2136 (2016).

101. *Id.*

102. *Id.* at 2142.

103. *Id.* (citing *United States v. Mead Corp.*, 533 U.S. 218, 229 (2001)).

104. *Id.* at 2144 (citing *Mead*, 533 U.S. at 229).

105. See, e.g., *Cathedral Candle Co. v. U.S. Int’l Trade Comm’n*, 400 F.3d 1352, 1366 (Fed. Cir. 2005) (“We are confident that the Court did not mean for [the *Skidmore*] standard to reduce to the proposition that ‘we defer if we agree.’ If that were the guiding principle, *Skidmore* deference would entail no deference at all.”); *Merck & Co. v. Kessler*, 80 F.3d 1543, 1549 (Fed. Cir. 1996) (holding that the PTO’s power to promulgate regulations directed only to “the conduct of proceedings in the [PTO]” are not substantive and are entitled only to *Skidmore* deference); *Abraxis Bioscience, LLC v. Kappos*, 10 F. Supp. 3d 53, 68 (D.D.C. 2014), *vacated in part sub nom. Abraxis Bioscience, LLC v. Lee*, 563 F. App’x 786 (Fed. Cir. 2014) (applying *Skidmore* to challenged PTO regulation).

106. See, e.g., *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–43 (2016) (distinguishing between PTO’s authority to make procedural rules and its power to issue regulations); *Cooper Techs. Co. v. Dudas*, 536 F.3d 1330, 1341 (Fed. Cir. 2008) (affording *Skidmore*-type deference to the PTO’s interpretation of the phrase “original application” as used in the AIPA); *BlackLight Power, Inc. v. Rogan*, 295 F.3d 1269, 1274 (Fed. Cir.

extensions apply to the term of a patent and what “original application” means under the Patent Act are procedural in nature.¹⁰⁷ The Federal Circuit has articulated three criteria for evaluating when *Skidmore* deference is appropriate to an agency involved in making procedural rules: (1) whether “the agency has conducted a careful analysis of the statutory issue”; (2) whether “the agency’s position has been consistent and reflects agency-wide policy”; and (3) whether “the agency’s position constitutes a reasonable conclusion as to the proper construction of the statute, even if [the court] might not have adopted that construction without the benefit of the agency’s analysis.”¹⁰⁸ These criteria reflect *Skidmore*’s flexibility in allowing a reviewing court to decide whether or not to defer to an agency’s legal determinations based on the thoroughness and consistency of the agency’s ruling.¹⁰⁹ As applied to the PTO, the more well-reasoned its opinion, the greater the deference it should receive.¹¹⁰

2002) (finding the PTO’s decision to reexamine the patent application in question to be “reasonably within the scope of the agency’s authority and was not an arbitrary or capricious action” under *Skidmore*); *Bayer AG v. Carlsbad Tech., Inc.*, 298 F.3d 1377, 1381 (Fed. Cir. 2002) (finding that the “district court properly accorded deference to the to the [sic] PTO’s implementing regulations . . . under *Skidmore* . . .”); *Merck*, 80 F.3d at 1549 (holding that the PTO’s regulatory powers are entitled only to *Skidmore* deference); *Abraxis Bioscience*, 10 F. Supp. 3d at 68 (applying *Skidmore* to challenged PTO regulation); *Mohsenzadeh v. Lee*, 5 F. Supp. 3d 791, 801 (E.D. Va. 2014), *aff’d*, 790 F.3d 1377 (Fed. Cir. 2014) (“USPTO regulations, however, may still qualify for some deference under *Skidmore*, where a court looks to an agency’s basic ‘power to persuade.’”). *But see* *PhotoCure ASA v. Kappos*, 603 F.3d 1372, 1376 (Fed. Cir. 2010) (finding that “*Skidmore* deference is not warranted because the PTO’s interpretation is neither persuasive nor consistent”).

107. *Merck*, 80 F.3d at 1549 (rejecting the PTO’s determination as to when restoration extensions apply to pre-June 8, 1995 patents); *Cooper Techs.*, 536 F.3d at 1341 (affirming the PTO’s interpretation of the phrase “original application”).

108. *Cathedral Candle*, 400 F.3d at 1366; *see also* *Zenith Radio Corp. v. United States*, 437 U.S. 443, 450 (1978) (“[L]ongstanding and consistent administrative interpretation is entitled to considerable weight.”).

109. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944).

110. *See id.*; *see also* *Neurovision Med. Prods., Inc. v. Medtronic Pub. Ltd. Co.*, No. 2:16-CV-127-JRG-RSP, 2016 WL 6277241, at *22 (E.D. Tex. Oct. 27, 2016) (“The Court notes that while it is not bound by the construction of ‘trachea’ by the Patent Trial and Appeal Board (‘PTAB’) in IPR2015-00502, it finds the PTAB’s construction persuasive.”); *Magna Elecs., Inc. v. TRW Auto. Holdings Corp.*, No. 1:12-CV-654, 2015 WL 11401855, at *12, *14 (W.D. Mich. Apr. 28, 2015) (“Because the Court is persuaded by the PTAB’s reasoning, it will adopt the interpretation advanced by the PTAB rather than either suggestion submitted by the parties.”), *reconsideration denied*, No. 1:12-CV-654, 2016 WL 4239184 (W.D. Mich. Jan. 6, 2016); *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 8073722, at *10 (E.D. Tex. Dec. 4, 2015) (giving the PTAB’s claim construction “reasoned deference”); *Abraxis Bioscience*, 10 F. Supp. 3d at 68 (applying *Skidmore* to challenged PTO regulation).

III. SURVEY OF DISTRICT COURT TREATMENT OF PTAB CLAIM CONSTRUCTION DECISIONS

District courts across the country treat PTAB claim constructions inconsistently—both across and within districts, depending on which judge makes the determination.¹¹¹ At one end of the spectrum, district courts adopt a deferential attitude and give great weight to PTAB findings of fact and ultimate claim constructions, while at the other end they mostly ignore or outright reject the PTAB’s analysis and construction.¹¹² Even where courts adopt a deferential stance, courts rarely use the term “deference” or allude to administrative law principles in considering PTAB claim constructions.¹¹³ The following sections review decisions that exemplify this inconsistency, first with respect to PTAB findings of fact and second with respect to PTAB ultimate claim constructions.

A. DEFERENCE TO PTAB FINDINGS OF FACT RELATED TO CLAIM CONSTRUCTION

Evidentiary underpinnings or findings of fact related to extrinsic evidence, such as dictionary definitions and expert opinions, are uncommon at both the PTAB and the district court because the intrinsic record usually provides the context that enables a court to properly interpret the scope of a claim.¹¹⁴ Even where a court makes factual findings regarding the extrinsic evidence, it must do so in light of the intrinsic record, such as the specification and claims.¹¹⁵ Nevertheless, district courts in a few cases have had an opportunity to consider the evidentiary underpinnings of the PTAB’s claim construction.¹¹⁶ A few of those cases are presented below according to the level of deference given.

111. *See, e.g.*, cases cited *supra* note 7.

112. *See, e.g.*, cases cited *supra* note 7.

113. *See, e.g.*, cases cited *supra* note 7.

114. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 840–41 (2015) (“[A]s we said in *Markman*, subsidiary factfinding is unlikely to loom large in the universe of litigated claim construction . . . We recognize that a district court’s construction of a patent claim, like a district court’s interpretation of a written instrument, often requires the judge only to examine and to construe the document’s words without requiring the judge to resolve any underlying factual disputes.”); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

115. *Phillips*, 415 F.3d at 1313 (“[E]xtrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.”).

116. *Anglefix, LLC v. Wright Med. Tech., Inc.*, No. 2013-CV-02407-JPM-TMP, 2015 WL 9581865, at *1, *4 (W.D. Tenn. Dec. 30, 2015); *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 598 (E.D. Tex. 2015); *Kroy IP Holdings, LLC v. Autozone, Inc.*, No. 2:13-CV-888-WCB, 2015 WL 557123, at *4 (E.D. Tex. Feb. 10, 2015).

1. *Deference to and Wholesale Adoption of PTAB's Findings of Fact*

In *Anglefix, LLC v. Wright Medical Technology, Inc.*, the district court gave deference to and adopted wholesale the PTAB's findings of fact.¹¹⁷ There, defendants in two separate litigations involving the same patent successfully petitioned the PTAB to institute *inter partes* review proceedings.¹¹⁸ After the PTAB's final decision in both proceedings, the district court undertook construction of the asserted claims.¹¹⁹

One of the disputed phrases was “tappable contact region” for which the parties proposed differing constructions.¹²⁰ The PTAB had relied on a dictionary definition of “tap” in constructing the disputed phrase.¹²¹ In its analysis, the court noted the PTAB's construction and its reliance on the dictionary definition of “tap.”¹²² Without further discussion or comment on the different claim construction standards, the court found that the “constructions by [the] PTAB support Defendant's construction” and construed the phrase “tappable contact region” consistent with the PTAB's factual findings.¹²³

2. *Deference to and Limited Adoption of PTAB Findings of Fact*

In *Blue Calypso, Inc. v. Groupon, Inc.*, the court in the Eastern District of Texas applied a deferential stance towards the PTAB's findings of fact and adopted the PTO's findings for one term but rejected its findings for another.¹²⁴ In that case, the plaintiff proposed a broad construction for the term “subsidy,” based on the PTAB's construction in a covered business method review, to include not just monetary currency but other forms of currency such as “reward points.”¹²⁵ The PTAB had construed “subsidy” to mean “financial assistance given by one to another.”¹²⁶ Its construction was based in part on a dictionary definition of “subsidy,” defining the term as “1. Monetary assistance granted by a government to a person or group in support of an enterprise regarded as being in the public interest. 2. Financial

117. *Anglefix*, 2015 WL 9581865, at *1, *4 (adopting the PTAB's findings of fact where the PTAB's ultimate claim construction was made using the BRI standard).

118. *Id.*

119. *Id.*

120. *Id.* at *9.

121. *Id.* at *10.

122. *Id.*

123. *Id.*

124. *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 598 (E.D. Tex. 2015).

125. *Id.* at 595–96; *see also* *Groupon, Inc. v. Blue Calypso, Inc.*, No. CBM2013-00035, 2014 WL 7273562, at *4–5 (P.T.A.B. Dec. 17, 2014) (applying the BRI standard).

126. *Blue Calypso*, 93 F. Supp. 3d at 595–96.

assistance given by one person or government to another.”¹²⁷ Citing the PTAB’s findings, the court adopted a modified version of the PTAB’s construction defining the term to mean “[providing] value or savings to another.”¹²⁸ The court modified the PTAB’s construction to make clear that “financial” is not limited to monetary currency.¹²⁹

The court then turned its attention to construction of the phrase “subsidy program.”¹³⁰ Defendants argued for a construction that mirrored the PTAB’s ultimate claim construction.¹³¹ The PTAB had relied on a dictionary definition of “program,” defining the term as “[a] system of services, opportunities, or projects, usually designed to meet a social need,” in construing the phrase “subsidy program” to mean “a system of opportunities designed to give financial assistance to another.”¹³² The court, however, rejected the PTAB’s dictionary definition because the court did not believe that the specification supported the PTAB’s factual determination.¹³³ On those grounds, the court also rejected the PTAB’s ultimate claim construction as well.¹³⁴

3. *No Deference Given to and Rejection of PTAB’s Findings of Fact*

In *Kroy IP Holdings, LLC v. Autozone, Inc.*, the court in the Eastern District of Texas did not adopt a deferential stance towards the PTAB’s factual findings and refused to give any weight to the PTAB’s analysis.¹³⁵ In that case, the PTAB had relied on a dictionary definition of the term “inventory” in construing the phrase “inventory management system.”¹³⁶ In its initial claim construction order, the district court did not mention or consider the PTAB’s analysis.¹³⁷

In its order denying reconsideration, the district court expressly rejected the PTAB’s findings of fact primarily because it believed the PTAB did not

127. *Id.*

128. *Id.*

129. *Id.* at 596.

130. *Id.* at 597.

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*

135. *Kroy IP Holdings, LLC v. Autozone, Inc.*, No. 2:13-CV-888-WCB, 2015 WL 557123, at *4 (E.D. Tex. Feb. 10, 2015) (rejecting the PTAB’s construction made using the BRI standard).

136. *Safeway Inc. v. Kroy IP Holdings, LLP*, IPR2014-00685, 2014 WL 4616513, at *4-5 (P.T.A.B. Sept. 11, 2014).

137. *See Kroy IP Holdings, L.L.C. v. Autozone, Inc.*, No. 2:13-CV-888-WCB, 2014 WL 7336234, at *2 (E.D. Tex. Dec. 23, 2014).

fully engage in a detailed analysis of the term “inventory” in the context of the asserted patent.¹³⁸ The PTAB, however, had provided an explanation for its construction based on the intrinsic record and used the dictionary definition of “inventory” to confirm that its construction was in accordance with the plain meaning of the term.¹³⁹ Nevertheless, the district court rejected the PTAB’s finding because it did not believe that the PTAB sufficiently accounted for all of the teachings in the intrinsic record.¹⁴⁰

B. DEFERENCE TO PTAB ULTIMATE CLAIM CONSTRUCTIONS

In considering the PTAB’s ultimate claim constructions, district courts must determine whether to adopt a deferential stance towards the PTAB and whether (1) to adopt the PTAB’s ultimate claim construction, as it is usually in line with one of the parties’ proposed constructions, (2) to reject the PTAB’s analysis and ultimate claim construction, or (3) to adopt a hybrid construction informed by the PTAB’s construction. The cases that follow demonstrate district courts’ varied approaches to these questions. It should be kept in mind that the PTO’s use of the ordinary and customary meaning standard for expired patents is relatively recent,¹⁴¹ and, therefore, the majority of the cases below involve those where the PTAB used the BRI standard.

1. *Deference to and Wholesale Adoption of the PTAB’s Ultimate Claim Construction*

In a number of cases, district courts have taken a strong deferential stance towards the PTAB and have adopted the PTAB’s ultimate claim constructions, even in cases where the PTAB used the BRI standard. For example, in *GoDaddy.com LLC v. RPost Communications Ltd.*, the court in the District of Arizona had a choice between adopting the construction of a disputed phrase according to a prior construction from litigation in the Eastern District of Texas or adopting the PTAB’s construction from an *inter partes* review of a related patent.¹⁴² Using the BRI standard, the PTAB had

138. *Kroy IP*, 2015 WL 557123, at *4.

139. *Safeway*, 2014 WL 4616513, at *4.

140. *Kroy*, 2015 WL 557123, at *4; *see also* *Papst Licensing GmbH & Co. KG v. Xilinx Inc.*, No. 16-CV-00925-LHK, 2016 WL 3196657, at *15 (N.D. Cal. June 9, 2016) (taking judicial notice of the dictionary definition used by the PTAB but holding that such evidence would not alter the court’s construction).

141. The PTO did not amend its rules to adopt the ordinary and customary standard for expired or expiring patents until August 2015. *See* Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 80 Fed. Reg. 50720, 50721 (Aug. 20, 2015) (codified at 37 C.F.R. § 42).

142. *GoDaddy.com, LLC v. RPost Commc’ns Ltd.*, No. CV-14-00126-PHX-JAT, 2016 WL 212676, at *30–31 (D. Ariz. Jan. 19, 2016).

reviewed but rejected the court's construction in the Eastern District of Texas because it used the conjunction "and" to require that "at least one command *and* one response is needed," instead of one or the other being sufficient.¹⁴³ Based on the PTAB's analysis, the court in the District of Arizona also rejected the construction of the Eastern District of Texas in favor of the substance of the PTAB's construction.¹⁴⁴

In a different case before the District of Arizona, *Cayenne Medical, Inc. v. Medshape, Inc.*, the court was asked to determine whether a disputed term was indefinite based on the PTAB's analysis during claim construction in an *inter partes* review using the BRI standard.¹⁴⁵ The court concluded that "although the PTAB's finding on indefiniteness is not binding . . . [d]ecisions of the [PTAB] . . . are to be given great weight."¹⁴⁶ The court went on to state that "the PTAB's finding is compelling evidence that the [disputed term] is indefinite."¹⁴⁷ Based on the PTAB's claim construction the court thus found that claims using the disputed term were indefinite.¹⁴⁸

In *SunPower Corp. v. PanelClaw, Inc.*, the defendant asked the court in the District of Delaware to find for noninfringement based on the PTAB's construction of a disputed term during an *inter partes* review using the ordinary and customary meaning standard.¹⁴⁹ The plaintiff insisted that the PTAB's construction is not binding.¹⁵⁰ The court, however, noted that the PTAB used the ordinary and customary standard of construction as the asserted patent had expired at the time of the *inter partes* review.¹⁵¹ For this reason, the court found that "it is not improper for the court to take the PTAB's claim construction into consideration, particularly where that construction was 'similar to that of a district court's review.'" ¹⁵² The court adopted the PTAB's construction, finding it to be "well-reasoned and

143. *Id.*; see also *Symantec Corp. v. RPost Commc'ns Ltd.*, IPR2014-00355, 2014 WL 3542162, at *1 (P.T.A.B. July 15, 2014).

144. *GoDaddy.com*, 2016 WL 212676, at *30–31.

145. *Cayenne Med., Inc. v. Medshape, Inc.*, No. 2:14-CV-0451-HRH, 2016 WL 2606983, at *2 (D. Ariz. May 6, 2016); see also *Medshape, Inc. v. Cayenne Med., Inc.*, No. IPR2015-00848, 2015 WL 5453171, at *4 (P.T.A.B. Sept. 14, 2014).

146. *Cayenne Med.*, 2016 WL 2606983, at *3. The court's reasoning was based on the Ninth Circuit's holding in a trademark case regarding the Trademark Trial and Appeal Board. *Id.* (citing *Lahoti v. Vericheck, Inc.*, 636 F.3d 501, 506 n.1 (9th Cir. 2011)).

147. *Id.*

148. *Id.* at *6.

149. *SunPower Corp. v. PanelClaw, Inc.*, No. CV 12-1633-MPT, 2016 WL 1293479, at *6 (D. Del. Apr. 1, 2016).

150. *Id.*

151. *Id.* at *5.

152. *Id.* at *6.

persuasive.”¹⁵³

Other courts have similarly deferred to and adopted the PTAB’s claim constructions or its reasoning in both cases where the PTAB used the ordinary and customary meaning standard as well as where it used the BRI standard.¹⁵⁴

153. *Id.*

154. *See, e.g.*, *Cequent Performance Prod., Inc. v. Hopkins Mfg. Corp.*, No. 13-CV-15293, 2017 WL 371230, at *14 (E.D. Mich. Jan. 26, 2017) (“Although the Court acknowledges that the USPTO construes claim limitations under a ‘broadest reasonable construction’ standard, while district courts apply a plain and ordinary meaning standard, the Court does not feel that the different standards lead to a different result for this particular claim limitation . . . Accordingly, the Court adopts the construction set forth by the USPTO in the IPR Final Written Decision.”); *Am. Tech. Ceramics Corp. v. Presidio Components, Inc.*, No. 214CV6544KAMGRB, 2016 WL 6583637, at *9 (E.D.N.Y. Nov. 7, 2016) (adopting PTAB’s conclusion that no construction is necessary for disputed phrase where PTAB used the BRI standard); *Neurovision Med. Prods., Inc. v. Medtronic Pub. Ltd. Co.*, No. 2:16-CV-127-JRG-RSP, 2016 WL 6277241, at *22 (E.D. Tex. Oct. 27, 2016) (noting in a case where the PTAB used the BRI standard that “while [the court] is not bound by the construction of ‘trachea’ by the Patent Trial and Appeal Board (‘PTAB’) in IPR2015-00502, it finds the PTAB’s construction persuasive.” (citing *Nuvasive Inc. v. Neurovision Medical Products, Inc.*, No. IPR2015-00502, 2015 WL 4381727, at *4–5 (P.T.A.B. July 16, 2015))); *Karl Storz Endoscopy-Am., Inc. v. Stryker Corp.*, No. 14-CV-00876-RS, 2016 WL 3597426, at *3 (N.D. Cal. July 5, 2016) (construing the phrase at issue identical to the PTAB’s construction where the PTAB used the BRI standard (citing *Stryker Corp. v. Karl Storz Endoscopy-Am., Inc.*, No. IPR2015-00672, 2015 WL 5190755, at *6 (P.T.A.B. Sept. 1, 2015))); *Card-Monroe Corp. v. Tuftco Corp.*, No. 1:14-CV-292, 2016 WL 3212085, at *8 (E.D. Tenn. June 9, 2016) (rejecting defendant’s proposed construction based in part on PTAB’s rejection of the same where the PTAB used the BRI standard (citing *Tuftco Corp. v. Card-Monroe Corp.*, No. IPR2015-00505, Paper 6 at 5 (P.T.A.B. July 22, 2015))); *Centrak, Inc. v. Sonitor Techs., Inc.*, No. CV 14-183-RGA, 2015 WL 9595999, at *4 (D. Del. Dec. 30, 2015) (“I find the PTAB’s construction of this term . . . to be well-reasoned and persuasive . . . While the PTAB assigns claim terms their ‘broadest reasonable construction in light of the specification,’ 37 C.F.R. § 42.100(b), it is difficult to conceive of how Plaintiff’s proposed construction is any broader than Defendant’s; the two constructions are merely different.”); *Star Envirotech, Inc. v. Redline Detection, LLC*, No. SACV1201861JGBDFMX, 2015 WL 12743875, at *6 (C.D. Cal. Apr. 30, 2015) (finding, where the PTAB used the BRI standard, that “the PTAB’s reasoning is persuasive, the Court adopts it as well”); *Magna Elecs., Inc. v. TRW Auto. Holdings Corp.*, No. 1:12-CV-654, 2015 WL 11401855, at *12, *14 (W.D. Mich. Apr. 28, 2015) (holding, where the PTAB used the ordinary and customary meaning standard, for one disputed term that “the Court agrees that the PTAB’s construction is consistent with the specification, and adopts TRW’s proposed construction because it is identical to the PTAB’s construction” and for another term that “[b]ecause the Court is persuaded by the PTAB’s reasoning, it will adopt the interpretation advanced by the PTAB rather than either suggestion submitted by the parties” (citing *TRW Auto. Holdings Corp. v. Magna Elecs., Inc.*, IPR2014-00259, Paper 19 at 5 (P.T.A.B. July 26, 2014))); *Fairfield Indus., Inc. v. Wireless Seismic, Inc.*, No. 4:14-CV-2972, 2015 WL 1034275, at *5 (S.D. Tex. Mar. 10, 2015) (“Although PTAB applies a different construction standard than the district courts

2. *Deference to and Adoption of PTAB's Ultimate Claim Construction Depending on the PTAB's Reasoning*

In some cases where district courts have taken a deferential stance towards the PTAB, they have carefully scrutinized the PTAB's analysis and only adopted the PTAB's ultimate claim constructions when those constructions were well reasoned. For example, in *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, the court in the Eastern District of Texas adopted the PTAB's ultimate claim construction for some terms but not others based on the PTAB's analysis.¹⁵⁵ Specifically, the court was tasked with construing disputed terms of nine asserted patents.¹⁵⁶ The court placed the asserted patents into three groups.¹⁵⁷ In the first group, four of the six patents had undergone *inter partes* review.¹⁵⁸ With respect to eight of the disputed terms in the first group, the parties proposed constructions that were in line with the PTAB's claim construction performed under the broadest reasonable interpretation standard.¹⁵⁹ Depending on the term at issue, the court adopted or rejected the PTAB's construction, finding such prior constructions to be "entitled to reasoned deference" under the principle of *stare decisis*, a principle unrelated to deference given under administrative law principles, although similar in application.¹⁶⁰

do, its claim construction analysis serves as further intrinsic evidence that [patentee's] proposed construction is appropriate."); *Evolutionary Intelligence, LLC v. Sprint Nextel Corp.*, No. C-13-03587, 2014 WL 4802426, at *4 (N.D. Cal. Sept. 26, 2014) (granting motion to stay and recognizing that "[w]hile the PTAB's constructions will not be binding on this court, the IPR will inform this court's ultimate reasoning").

155. *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 8073722, at *11 (E.D. Tex. Dec. 4, 2015).

156. *Id.*

157. *Id.* at *2.

158. *Id.* at *5.

159. *Id.*

160. *Id.* at *4 ("In general, prior claim construction proceedings involving the same patents-in-suit are 'entitled to reasoned deference under the broad principals [sic] of stare decisis and the goals articulated by the Supreme Court in *Markman*, even though stare decisis may not be applicable per se.'" (quoting *Maurice Mitchell Innovations, LP v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006) (Davis, J.)); *TQP Development, LLC v. Inuit Inc.*, No. 2:12-CV-180, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) ("[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so.")); *see also Texas Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 589 (E.D. Tex. 2002) (finding that the doctrines of stare decisis and collateral estoppel do not apply to claim construction decisions of other districts, although such decisions can be informative); *cf. Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391(1996) (emphasizing the importance of uniformity in claim construction through the application of stare decisis).

For example, for the term “physical integrity,” the court noted the PTAB’s findings regarding the intrinsic evidence and adopted the PTAB’s construction based on support in the specification.¹⁶¹ With respect to the term “behavioral integrity,” the court found that “[o]n balance, Plaintiff failed to justify departing from the PTAB’s construction, which is entitled to ‘reasoned deference.’”¹⁶² The court provided a similar justification for adopting a construction that was in line with the PTAB’s for the phrase “means for communication with a master repository . . .”¹⁶³ For another means-plus-function claim, the court rejected the opinion of the plaintiff’s expert because it “failed to persuasively demonstrate that the additional steps identified by the PTAB are not part of the algorithm disclosed”¹⁶⁴ The court also adopted the PTAB’s findings regarding the intrinsic evidence and the PTAB’s ultimate construction of the term “means for receiving the authorization ob[j]ect”¹⁶⁵

However, for the term “repository” and “trusted,” the court found that the patentee acted as his own lexicographer and rejected the PTAB’s similar but distinguishable construction.¹⁶⁶ The court also rejected the PTAB’s construction for the means-plus-function claim limitation of “processing a request from the means for requesting.”¹⁶⁷ The PTAB had found that for performing the recited function the specification discloses a corresponding structure in the form of an algorithm.¹⁶⁸ The court, however, rejected the PTAB’s analysis and instead held that the corresponding structure did not require anything beyond “a special purpose computer.”¹⁶⁹ The court stated that although the PTAB is entitled to “reasoned deference,” the court “conducts an independent review of claim construction disputes.”¹⁷⁰

Other courts have similarly deferred to the PTAB’s constructions, adopting the PTAB’s constructions for some but not all terms at issue.¹⁷¹

161. *Contentguard*, 2015 WL 8073722, at *9.

162. *Id.* at *11.

163. *Id.* at *44.

164. *Id.* at *48.

165. *Id.* at *50–51 (alteration in original).

166. *Id.* at *7.

167. *Id.* at *46–47.

168. *Id.*

169. *Id.*

170. *Id.*

171. *See, e.g.,* *Godo Kaisha IP Bridge 1 v. Broadcom Ltd.*, No. 2:16-CV-134-JRG-RSP, 2016 WL 6611490, at *23 (E.D. Tex. Nov. 9, 2016) (Payne, J.) (rejecting defendants’ proposed construction based in part on the PTAB’s rejection of a similar argument and its claim construction); *Intellectual Ventures I LLC v. AT&T Mobility LLC*, No. CV 13-1668-LPS, 2016 WL 4363485, at *4 (D. Del. Aug. 12, 2016) (“Consistent with the Court’s conclusion is the PTAB’s determination that, even under a broadest reasonable

These cases primarily consist of those where the PTAB used the BRI standard.¹⁷²

3. *No Deference to and Rejection of PTAB Ultimate Claim Constructions*

In some cases, district courts have not given any deference to the PTAB and refused to fully consider the PTAB's claim constructions, primarily because of the differing standards used in each forum. For example, in *Pragmatus AV, LLC v. Yahoo! Inc.*, the court in the Northern District of California treated a PTAB *inter partes* reexamination decision as an *inter*

interpretation claim construction standard, 'packet blocks' mean 'a block of data including a discrete number of packets.'"); *Memory Integrity, LLC v. Intel Corp.*, No. 3:15-CV-00262-SI, 2016 WL 1122718, at *16 n. 9 (D. Or. Mar. 22, 2016) ("The Court agrees with [plaintiff] that PTAB's decision has little weight for purposes of construing terms in a district court [where the PTAB used the BRI standard], but the Court nonetheless notes that PTAB reached the same conclusion about the construction of 'states associated with selected ones of the cache memories' that the Court now reaches. Courts have held that PTAB decisions may at least provide a district court with guidance . . . This Court uses the PTAB decision on this issue not for guidance, but for comfort."); *Polaris Indus., Inc. v. CFMOTO Powersports, Inc.*, No. CV 10-4362 (JNE/HB), 2016 WL 727109, at *3, *5 (D. Minn. Feb. 23, 2016) (noting further support for the court's construction that "the Patent Trial and Appeal Board ("PTAB") adopted a similar construction" but finding the PTAB's construction of a different term unpersuasive because of the different claim construction standards); *Anglefix, LLC v. Wright Med. Tech., Inc.*, No. 213CV02407JPMTMP, 2015 WL 9581865, at *8 (W.D. Tenn. Dec. 30, 2015) (giving the PTAB's claim construction under the BRI standard due weight but further modifying the construction of the term at issue under the plain and ordinary standard); *Not Dead Yet Mfg., Inc. v. Pride Sols., LLC*, No. 13 C 3418, 2015 WL 5829761, at *8-10, *14 (N.D. Ill. Oct. 5, 2015) (agreeing with the PTAB's ultimate conclusions made under the BRI standard in some respects but not in others and stating that "[a]lthough the court's conclusion differs from the findings of the PTAB, because review of patent language and other intrinsic evidence for purposes of claim construction is solely a determination of law, the PTAB's claim construction findings are subject to *de novo* review by this court") (applying the appellate review standard in *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015)); *Motio, Inc. v. BSP Software LLC*, No. 4:12-CV-647, 2015 WL 5004914, at *10 (E.D. Tex. Aug. 21, 2015) (construing some terms "[c]onsistent with the PTAB's analysis" where the PTAB applied the BRI standard); *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 594 (E.D. Tex. 2015) (finding that the preamble of the asserted claims was limiting based on the PTAB's findings and conclusions); *SurfCast, Inc. v. Microsoft Corp.*, 6 F. Supp. 3d 136, 148, 155 n.13, 156 n.14, 158 n.15, 159 nn.16-17, 163 n.21 (D. Me. 2014) (rejecting the PTAB construction made under the BRI standard for most but not all disputed claim terms); *Virginia Innovation Scis., Inc. v. Samsung Elecs. Co.*, 983 F. Supp. 2d 713, 764 (E.D. Va. 2014), *vacated*, 614 F. App'x 503 (Fed. Cir. 2015) (recognizing the court "generally gives deference to final PTO decisions, based in part on the PTO's specialized knowledge and expertise" but refusing to reconsider the decision because of the parties' failure to timely inform the court of an *inter partes* review).

172. See cases cited *supra* note 154.

partes review decision and declined to give any deference to the PTAB's ultimate claim construction made under the BRI standard.¹⁷³ Defendant Yahoo proposed a construction based on the PTAB's construction in an *inter partes* reexamination, which provided that "addressing information" means "a physical location."¹⁷⁴ "The problem for Yahoo," the court was adamant, "is that this Court owes no deference to the PTAB's claim construction done as part of an *inter partes* review."¹⁷⁵ The court made this determination because the PTAB's construction was based on the BRI standard, not the ordinary and customary standard the district court uses.¹⁷⁶ Although the court acknowledged the parties' statements during the *inter partes* review and the PTAB's analysis, it sided with the plaintiff and rejected Yahoo's proposed construction.¹⁷⁷

Courts in other districts have similarly refused to defer to the PTAB's ultimate claim constructions in cases where the PTAB used the BRI standard.¹⁷⁸

173. *Pragmatius AV, LLC v. Yahoo! Inc.*, No. C-13-1176 EMC, 2014 WL 1922081, at *4 (N.D. Cal. May 13, 2014); *Yahoo! Inc.'s Response to Pragmatius' Opening Claim Construction Brief* at 3, *Pragmatius AV, LLC v. Yahoo! Inc.*, Case No. 3-13-cv-01176-EMC, 2014 WL 2859963 (N.D. Cal. Mar. 10, 2014) (No. 43).

174. *Pragmatius*, 2014 WL 1922081, at *4.

175. *Id.*

176. *Id.* ("[B]ecause the PTAB concluded that the broadest definition of the term 'addressing information' is physical location, network location information (such as an IP address)—which is broader in meaning than physical location—is necessarily an inappropriate construction.").

177. *Id.* at *4–7.

178. *THX, Ltd. v. Apple, Inc.*, No. 13-CV-01161-HSG, 2016 WL 6563340, at *5 (N.D. Cal. Nov. 4, 2016) ("[T]he Court is unpersuaded by the argument that it should adopt Apple's proposed construction because it is consistent with PTAB's broadest reasonable construction."); *Microwave Vision, S.A. v. ETS-Lindgren Inc.*, No. 1:14-CV-1153-SCJ, 2016 WL 5092462, at *9 (N.D. Ga. Sept. 20, 2016) (refusing to reconsider its means-plus-function construction based on the PTAB's reasoning and construction made under the BRI standard); *Research Frontiers, Inc. v. E Ink Corp.*, No. CV 13-1231-LPS, 2016 WL 1169580, at *7 (D. Del. Mar. 24, 2016) (rejecting the PTAB's basis for its construction); *Depuy Orthopaedics, Inc. v. Orthopaedic Hosp.*, No. 3:12-CV-299-CAN, 2016 WL 96164, at *5 (N.D. Ind. Jan. 8, 2016) (finding, where the PTAB used the BRI standard, that "[e]xtrinsic evidence may include a PTAB decision regarding IPR, but the court 'owes no deference to the PTAB's claim construction done as part of an *inter partes* review' " (quoting *Pragmatius*, 2014 WL 1922081, at *4)); *Malibu Boats, LLC v. Nautique Boat Co.*, 122 F. Supp. 3d 722, 728 (E.D. Tenn. Jan. 28, 2015) (denying stay pending *inter partes* review and asserting that the court would not owe any deference to the PTAB's claim construction (citing *Pragmatius*, 2014 WL 1922081, at *4)); *Smartflash LLC v. Apple, Inc.*, No. 6:13-CV-447, 2014 WL 3366661, at *4 (E.D. Tex. July 8, 2014) ("It is also unlikely that the claim construction aspect of the CBM review would significantly simplify the issues before the Court because The [sic] PTAB and district courts construe claims under different standards.").

4. *No Deference to and Apparent Disregard for PTAB Ultimate Claim Constructions*

In other cases, courts have not analyzed nor opined on the PTAB's claim construction. For example, in *Custom Media Technologies LLC v. Comcast Cable Communication, Inc.*, the parties in the District of Delaware disputed whether a phrase at issue was indefinite.¹⁷⁹ The plaintiff proposed a construction based on the PTAB's construction in an *inter partes* review where the PTAB used the BRI standard.¹⁸⁰ The plaintiff also presented expert testimony to support its position.¹⁸¹ The district court did not perform an analysis of the PTAB's decision.¹⁸² Instead, based on the expert testimony, the court found that the disputed phrase was not indefinite and adopted plaintiff's proposed construction.¹⁸³

In *Personalized Media Communications, LLC v. Apple, Inc.*, the court in the Eastern District of Texas determined the meaning of five disputed phrases where the PTAB provided an analysis of the same or similar phrases.¹⁸⁴ While the court noted the parties' positions regarding the PTAB's constructions, which used the BRI standard, it did not consider the PTAB's findings or decisions because of the different standards used in each forum.¹⁸⁵ Instead, the court made an independent determination of the meaning of each disputed phrase with little to no mention of the PTAB's analysis.¹⁸⁶

Other decisions similarly do not analyze PTAB's ultimate claim constructions made under the BRI standard.¹⁸⁷

179. *Custom Media Techs. LLC v. Comcast Cable Commc'ns, LLC*, No. CV 13-1421-LPS, 2015 WL 4743671, at *5 (D. Del. Aug. 11, 2015).

180. *Id.*

181. *Id.*

182. *Id.*

183. *Id.*

184. *Personalized Media Commc'ns, LLC v. Apple, Inc.*, No. 2015-CV-01206-JRG-RSP, 2016 WL 6247054, at *7-9, *12-13, *16-17, *29-30, *41-42 (E.D. Tex. Oct. 25, 2016) (Payne, J.).

185. *Id.*

186. *Id.*

187. *Blitzsafe Texas, LLC v. Honda Motor Co.*, No. 2:15-CV-1274-JRG-RSP, 2016 WL 4762083, at *12-17 (E.D. Tex. Sept. 13, 2016) (Payne, J.) (acknowledging the parties' positions with respect to the PTAB's analysis but not considering the PTAB's findings or conclusions in performing its own analysis of the meaning of the two disputed phrases); *Better Mouse Co., LLC v. Steelseries Aps*, No. 2:14-CV-198-RSP, 2015 WL 5210667, at *11 (E.D. Tex. Sept. 3, 2015) (Payne, J.) (same).

IV. THE PROPER DEFERENCE THAT SHOULD BE GIVEN TO PTAB FINDINGS OF FACT AND ULTIMATE CLAIM CONSTRUCTIONS

The discussion below provides a proposal for treatment of PTAB finds of fact and ultimate claim constructions using a framework based on principles of administrative law and standards for appellate review. The approach advocated below provides for more consistent treatment of PTAB claim construction decisions and greater consistency in determining the scope of patents that have been adjudicated in competing forums.

A. THE PROPER DEFERENCE THAT SHOULD BE GIVEN TO PTAB FINDINGS OF FACT UNDER *TEVA* AND *ZURKO*

The PTAB's task of determining the scope of a patent is a complex technical determination with factual underpinnings that deserve deference.¹⁸⁸ The extent to which district courts should defer to the PTAB's factual findings should be determined using guidance from *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*¹⁸⁹ and *Dickinson v. Zurko*.¹⁹⁰

In *Teva*, the Supreme Court clarified that when the Federal Circuit reviews a district court's claim construction decision it should review a district court judge's factual determinations based on subsidiary or extrinsic evidence for clear error and review the district court's "ultimate

188. See, e.g., *Old Reliable Wholesale, Inc. v. Cornell Corp.*, 635 F.3d 539, 548 (Fed. Cir. 2011) ("The fact that the PTO, after assessing the relevant prior art, confirmed the patentability of all claims of the '950 patent undercuts Cornell's contention that Old Reliable had no reasonable basis for its assertion that its patent was not anticipated."); *Hyatt v. Kappos*, 625 F.3d 1320, 1334 (Fed. Cir. 2010) (en banc) (recognizing the deference owed the PTO as "the knowledgeable agency charged with assessing patentability"); *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1331 (Fed. Cir. 2008) ("This is not to say that the determinations made by the corps of examiners are not important, or should not be worthy of appropriate deference to their expertise in . . . technical matters, especially when we have the benefit of well-reasoned explications."); *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1304 (Fed. Cir. 2008) ("When no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job . . ."); *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1569 (Fed. Cir. 1996) ("The presumption of validity is based on the presumption of administrative correctness of actions of the agency charged with examination of patentability."); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1139 (Fed. Cir. 1985) (holding that the presumption of validity is due "in part from recognition of the technological expertise of the patent examiners").

189. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

190. *Dickinson v. Zurko*, 527 U.S. 150 (1999).

construction” *de novo*.¹⁹¹ There, the Supreme Court considered a case where the district court’s ultimate claim construction depended on evidentiary underpinnings, which include evidence needed to understand the background science of a disputed term at the time of the invention.¹⁹² Because the district court makes credibility determinations about witnesses, the Court held that a reviewing court must not set aside the district court’s findings of fact unless they are clearly erroneous under Rule 52(a)(6).¹⁹³ Thus, pursuant to *Teva* the Federal Circuit must defer to district court factual findings based on the extrinsic record.¹⁹⁴

The Supreme Court’s decision in *Teva* parallels its holding in *Zurko*.¹⁹⁵ As discussed above, the Court found that the Patent Office’s factual findings must be reviewed under the “substantial evidence” standard, which is more deferential than the “clearly erroneous” standard used for review of district court decisions.¹⁹⁶ The Court based its decision in *Zurko* on Section 706 of the APA and its decision in *Teva* on Rule 52(a)(6), both of which give due regard to the respective trier of fact.¹⁹⁷ The Federal Circuit has used the

191. *Teva*, 135 S. Ct. at 841 (abrogating *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc)). The Court’s determinations of intrinsic evidence are reviewed *de novo*. *Id.* (“[W]hen the district court reviews only evidence intrinsic to the patent (the patent claims and specifications, along with the patent’s prosecution history), the judge’s determination will amount solely to a determination of law, and the Court of Appeals will review that construction *de novo*.”); see also *Microsoft Corp. v. Proxycorn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015) (holding that review of PTAB claim construction decisions follow a similar standard as that established in *Teva* for review of district court decisions, asserting that “[as] a general matter, we review the Board’s conclusions of law *de novo* and its findings of fact for substantial evidence”).

192. *Teva*, 135 S. Ct. at 841.

193. *Id.* at 836, 840; see also FED. R. CIV. P. 52(a)(6) (“Findings of fact, whether based on oral or other evidence, must not be set aside unless clearly erroneous, and the reviewing court must give due regard to the trial court’s opportunity to judge the witnesses’ credibility.”).

194. *Teva*, 135 S. Ct. at 842 (“An appellate court will review the trial judge’s factual determination about the alleged intimidation deferentially (though, after reviewing the factual findings, it will review a judge’s ultimate determination of voluntariness *de novo*.”) (citing FED. R. CIV. P. 52(a)(6)); see also *Microsoft*, 789 F.3d at 1297; *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1332 (Fed. Cir. 2016).

195. See *Dickinson v. Zurko*, 527 U.S. 150, 164 (1999).

196. *Id.*

197. Compare *Teva*, 135 S. Ct. at 833 (“Federal Rule of Civil Procedure 52(a)(6) states that a court of appeals ‘must not . . . set aside’ a district court’s ‘[f]indings of fact’ unless they are clearly erroneous.’ It sets out a ‘clear command’, and ‘does not make exceptions or . . . exclude certain categories of factual findings’ from the court of appeals’ obligation.”) (citations omitted), with *Zurko*, 527 U.S. at 162 (“This Court has described the APA court/agency ‘substantial evidence’ standard as requiring a court to ask whether a ‘reasonable mind might accept’ a particular evidentiary record as ‘adequate to support a conclusion.’”).

Teva/Zurko framework as a guide post in holding that its review of PTAB’s underlying factual determinations involving extrinsic evidence is reviewed for “substantial evidence.”¹⁹⁸

Following the Federal Circuit’s lead, district courts should also defer to PTAB findings of fact underlying claim construction decisions involving the same patent and should replace the PTAB’s factual findings with their own only when those findings are unsupported by substantial evidence.¹⁹⁹ Although a district court is competent to receive evidence as a factfinder and is not formally reviewing the PTAB’s findings,²⁰⁰ deferring to the PTAB’s technical expertise with respect to evidence that the PTAB has already reviewed and adjudged will bring a measure of predictability to district courts’ factual findings and uniformity in treatment of the PTAB’s factual findings.²⁰¹ Of course, if the extrinsic evidence before a district court is new, there is no basis to defer.²⁰² In that instance, the district court must assess the credibility of newly presented evidence, determine how that evidence should be viewed in light of the entire record, and assign the evidence an appropriate weight.²⁰³ Accordingly, with respect to previously presented evidence district courts should defer to the PTAB’s factual findings.²⁰⁴

This Note’s exhortation to defer is tempered by the explication requirement of Section 706 of the APA that underlies the “substantial evidence” standard.²⁰⁵ The PTAB cannot simply rely on deferential review to relieve it of its obligation to provide a detailed and well-reasoned administrative record for its factual findings.²⁰⁶ Only when its record is

198. *See, e.g., Nike*, 812 F.3d at 1346 (“We review the Board’s ultimate claim construction *de novo* and any underlying factual determinations involving extrinsic evidence for substantial evidence.”); *Microsoft*, 789 F.3d at 1297 (same); *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (same).

199. *See* Administrative Procedure Act, 5 U.S.C. § 706(2) (2012); *Zurko*, 527 U.S. at 164.

200. *Kappos v. Hyatt*, 132 S. Ct. 1690, 1697 (2012) (holding that district courts are competent to receive and review *de novo* new evidence presented under 35 U.S.C. § 145 proceedings).

201. *See Zurko*, 527 U.S. at 160 (finding, to justify deference to agency factfinding, courts and commentators have long invoked the fact that the PTO is an “expert body” that “can better deal with the technically complex subject matter”).

202. *See Kappos*, 132 S. Ct. at 1700 (“Though the PTO has special expertise in evaluating patent applications, the district court cannot meaningfully defer to the PTO’s factual findings if the PTO considered a different set of facts.”).

203. *Id.*

204. *See id.*

205. *See In re Sang Su Lee*, 277 F.3d 1338, 1342 (Fed. Cir. 2002).

206. *Id.* at 1344.

sufficiently thorough and clear does the PTAB deserve deference.²⁰⁷

As shown in the exemplary cases discussed above, to some extent, district courts intuitively analyze PTAB's findings of fact under the explication requirement.²⁰⁸ For example, in *Blue Calypso*, the district court took a deferential stance towards the PTAB's findings of fact based on a dictionary definition for the term "subsidy."²⁰⁹ The PTAB had provided a detailed analysis of its findings using the patent specification.²¹⁰ The district court adopted the PTAB's findings and only modified the PTAB's construction for clarity.²¹¹ However, the district court rejected the PTAB's reliance on a dictionary definition of "program" because it was not sufficiently supported by the intrinsic record.²¹² In *Kroy IP*, the district court did not take a deferential stance towards the PTAB but evaluated the PTAB's reliance on a dictionary definition to determine whether the PTAB had sufficiently analyzed the term "inventory" in the context of the patent specification.²¹³ Pointing to the PTAB's failure to adequately support its position, the court rejected the PTAB's findings.²¹⁴

The district courts' treatment of the PTAB's findings of fact in *Blue Calypso* and *Kroy IP* demonstrate a willingness to analyze the PTAB's findings for sufficient support and adopt or reject those findings based on the thoroughness of the PTAB's analysis.²¹⁵ However, district courts have not explicitly and uniformly adopted a standard for deferral nor have they articulated a clear basis for doing so.²¹⁶ Formalizing an approach under the "substantial evidence" standard of Section 706 of the APA will provide greater uniformity and a clearer guideline for treatment of PTAB findings

207. See, e.g., *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1346 (Fed. Cir. 2016) ("We review the Board's ultimate claim construction de novo and any underlying factual determinations involving extrinsic evidence for substantial evidence."); *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (same); *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015) (same).

208. *Anglefix, LLC v. Wright Med. Tech., Inc.*, No. 2013-CV-02407-JPM-TMP, 2015 WL 9581865, at *1, *4 (W.D. Tenn. Dec. 30, 2015); *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 598 (E.D. Tex. 2015) (Gilstrap, J.); *Kroy IP Holdings, LLC v. Autozone, Inc.*, No. 2:13-CV-888-WCB, 2015 WL 557123, at *4 (E.D. Tex. Feb. 10, 2015).

209. *Blue Calypso*, 93 F. Supp. 3d at 595–96.

210. *Id.* at 596.

211. *Id.*

212. *Id.* at 597.

213. *Kroy*, 2015 WL 557123, at *4.

214. *Id.*

215. See *Blue Calypso*, 93 F. Supp. 3d at 597; *Kroy*, 2015 WL 557123, at *4.

216. See *Blue Calypso*, 93 F. Supp. 3d at 597; *Kroy*, 2015 WL 557123, at *4.

of fact.²¹⁷

B. THE PROPER DEFERENCE THAT SHOULD BE GIVEN TO PTAB
ULTIMATE CLAIM CONSTRUCTIONS

As explained in detail below, PTAB claim constructions do not carry the force of law and cannot receive strong deferential treatment under *Chevron*.²¹⁸ However, PTAB claim constructions made using the ordinary and customary standard are deserving of deference under the *Skidmore* framework.²¹⁹ PTAB claim constructions made using the BRI standard, however, should not receive deferential treatment.²²⁰ In these cases, district courts should treat and analyze PTAB ultimate claim constructions as extrinsic evidence provided by an expert body.²²¹

1. *PTAB Claim Constructions Do Not Carry the Force of Law*

Under the doctrines of *Chevron* and *Mead*, issue preclusion, and estoppel, PTAB claim construction determinations generally do not have the force of law. First, PTAB claim constructions are individual determinations that do not bear on the Patent Office’s construction of the patent statute or any other Patent Office proceeding.²²² Like the classification letter rulings at issue in *Mead*, PTAB claim construction rulings apply only to a specific claim of a particular patent, may not be relied on for a determination of claim scope involving non-related patents, and are generally issued by different panels of the PTAB during each post issuance proceeding.²²³ Put another way, there is no evidence of congressional intent that would elevate the status of individual PTAB claim construction

217. See Administrative Procedure Act, 5 U.S.C. § 706(2) (2012); *Dickinson v. Zurko*, 527 U.S. 150, 164 (1999).

218. See *United States v. Mead Corp.*, 533 U.S. 218, 234 (2001).

219. See *id.* at 228 (“There is room at least to raise a *Skidmore* claim here, where the regulatory scheme is highly detailed, and Customs can bring the benefit of specialized experience to bear on the subtle questions in this case”); *Microwave Vision, S.A. v. ETS-Lindgren Inc.*, No. 1:14-CV-1153-SCJ, 2016 WL 5092462, at *6 (N.D. Ga. Sept. 20, 2016) (“[I]gnoring the PTAB decision entirely smacks of folly”).

220. See cases cited *supra* notes 18–19.

221. See cases cited *supra* note 13.

222. See 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016) (each provision requiring construction of each claim in a patent at issue without regard to other patents).

223. *Id.*; see also Benjamin & Rai, *Administrative Power*, *supra* note 12, at 1586 (“*Mead*’s reasoning that *Chevron* deference is not warranted for the actions of many different units not supervised by the agency head supports the proposition that *Chevron* deference is inapplicable to routine PTAB decisions that are not specifically supervised by the PTO Director.”); cf. *Kahrs Int’l, Inc. v. United States*, 713 F.3d 640, 648 (Fed. Cir. 2013) (“Customs’ ruling, which was published as required by statute . . . is entitled to *Skidmore* deference.”).

decisions to “the *Chevron* pale.”²²⁴ This is evident by the fact that the Federal Circuit reviews PTAB ultimate claim construction decisions *de novo* and may overturn the PTAB’s construction without an obligation to defer.²²⁵

Second, as discussed above, issue preclusion applies only to PTAB ultimate claim construction determinations under limited circumstances.²²⁶ Specifically, PTAB claim constructions made using the BRI standard have no preclusive effect on the district court nor do they preclude a party from asserting a different construction in litigation.²²⁷ Administrative decisions can ground issue preclusion in district court “when ordinary elements of issue preclusion are met.”²²⁸ However, the majority of PTAB claim construction decisions likely “cannot . . . satisfy those ordinary elements” given that the PTAB and district court use different claim construction standards, and the same issues are not litigated.²²⁹

224. *United States v. Mead Corp.*, 533 U.S. 218, 234 (2001).

225. *See* cases cited *supra* note 191.

226. *SkyHawke Techs., LLC v. Deca Int’l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016); *cf.* *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985) (“The Examiner’s decision, on an original or reissue application, is never binding on a court. It is, however, evidence the court must consider in determining whether the party asserting invalidity has met its statutory burden by clear and convincing evidence.”).

227. *See SkyHawke*, 828 F.3d at 1376; *Fromson*, 755 F.2 at 1555.

228. *SkyHawke*, 828 F.3d at 1376; *B & B Hardware, Inc. v. Hargis Indus., Inc.*, 135 S. Ct. 1293, 1303 (2015) (“When an administrative agency is acting in a judicial capacity and resolves disputed issues of fact properly before it which the parties have had an adequate opportunity to litigate, the courts have not hesitated to apply *res judicata* to enforce repose.”); *see also In re Trans Tex. Holdings Corp.*, 498 F.3d 1290, 1297 (Fed. Cir. 2007) (identifying four factors to determining whether issue preclusion applies: “(1) identity of the issues in a prior proceeding; (2) the issues were actually litigated; (3) the determination of the issues was necessary to the resulting judgment; and, (4) the party defending against preclusion had a full and fair opportunity to litigate the issues”); Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 291 (2016) (discussing the applicability of issue preclusion of district court claim constructions to PTAB claim construction determinations).

229. *SkyHawke*, 828 F.3d at 1376 (providing that issue preclusion likely does not apply when issues are not identical and “issues are not identical if the second action involves application of a different legal standard, even though the factual setting of both suits may be the same” (citing *B & B Hardware*, 135 S. Ct. at 1303)); *see also In re Trans Tex. Holdings*, 498 F.3d at 1297 (identifying four factors to determining whether issue preclusion applies: “(1) identity of the issues in a prior proceeding; (2) the issues were actually litigated; (3) the determination of the issues was necessary to the resulting judgment; and, (4) the party defending against preclusion had a full and fair opportunity to litigate the issues”). *But see* Timothy R. Holbrook, *The Patent Trial and Appeal Board’s Evolving Impact on Claim Construction*, 24 TEX. INTELL. PROP. L.J. 301, 329–32 (2016) (discussing the possibility of PTAB claim construction decisions made under the BRI standard having preclusive effect).

Although litigants may assert issue preclusion when the PTAB applies the ordinary and customary meaning standard,²³⁰ the opportunity to do so is rare. Issue preclusion applies only to final, appealable PTAB decisions.²³¹ PTAB claim construction decisions made at the decision to institute stage²³² are not appealable and do not have preclusive effect.²³³ A decision invalidating any claims of a patent will either be appealed or result in termination of any current or future litigation involving those invalidated claims.²³⁴ Any PTAB final decision that is appealed will result in a binding decision from the Federal Circuit, including a determination of the proper construction of the claims at issue.²³⁵ Accordingly, litigants will only have the opportunity to assert issue preclusion in district court when the PTAB confirms validity of the patent, the parties to the post-issuance proceeding and litigation are the same, and the decision is not appealed.²³⁶ In this rare

230. To date, the author is not aware of any cases brought before the district court arguing issue preclusion in the limited circumstances described. However, *SkyHawke* and *B & B Hardware* provide a basis for an argument that issue preclusion applies when the same claim construction standards are used. See *supra* notes 228–229; see also *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015) (“prior cases [construing the same claim] will sometimes be binding because of issue preclusion, and sometimes will serve as persuasive authority”) (citation omitted) (alteration in original); *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 5996363, at *1 (E.D. Tex. Oct. 14, 2015) (finding that issue preclusion is unlikely to apply primarily because the PTAB used the BRI standard) (citing *B & B Hardware*, 135 S. Ct. at 1303); cf. *Ilife Techs., Inc. v. Nintendo of Am., Inc.*, No. 3:13-CV-04987-M, 2017 WL 525708, at *18 (N.D. Tex. Feb. 9, 2017) (“A prior construction involving the same patents-in-suit is entitled to ‘reasoned deference under the broad principles of stare decisis and the goals articulated in *Markman*.’”).

231. See *SkyHawke*, 828 F.3d at 1376 (“no preclusion based on [a] judgment that is not subject to appeal” (citing *Kircher v. Putnam Funds Tr.*, 547 U.S. 633, 647 (2006))).

232. The PTAB may provide its claim construction determination in both its decision to institute and in its the final written decision, although it may not substantively change constructions in its final written decision without affording the parties an opportunity to respond to its new claim construction position. *SAS Inst., Inc. v. ComplementSoft, LLC.*, 825 F.3d 1341, 1351 (Fed. Cir. 2016) (holding that although the PTAB is free to adopt a construction in its final written decision, it cannot “chang[e] theories in midstream”).

233. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (holding that PTO’s decision to institute is generally non-appealable).

234. See 35 U.S.C. § 319 (2012); 37 C.F.R. § 42.73(a) (2012).

235. See 28 U.S.C. § 1295 (2011); 35 U.S.C. § 319 (2012).

236. See *SkyHawke*, 828 F.3d at 1376; see also *In re Trans Tex. Holdings Corp.*, 498 F.3d 1290, 1297 (Fed. Cir. 2007) (“Issue preclusion is not warranted in this case because the PTO was not a party to the earlier litigation.”); cf. *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985) (holding that the PTO’s decision to grant or deny a patent is never binding on a court, although it is evidence the court must consider in making its validity determination).

circumstance, issue preclusion should apply.²³⁷

Where the PTAB has construed claims using the customary and ordinary meaning standard and issue preclusion is unlikely to apply, the district court should defer to the PTAB's claim construction under *Skidmore* as discussed below.²³⁸ These circumstances include (1) where the PTAB has construed claims at the decision to institute stage and the post-issuance proceeding is terminated prior to a final, appealable decision, (2) where the PTAB has construed claims at the decision to institute stage and claim construction in parallel litigation occurs prior to the PTAB's final, appealable decision, and (3) where the parties to the post-issuance proceeding are different from those in litigation.²³⁹

Finally, and relatedly, estoppel usually does not apply to PTAB claim construction decisions, because “judicial estoppel only binds a party to a position that it advocated and successfully achieved[.]”²⁴⁰ A party to a post-issuance proceeding cannot be prevented from advancing a claim construction position in parallel or later litigation that it did not endorse in the post-issuance proceeding.²⁴¹ For the same reason, the PTAB's claim construction determinations do not create any prosecution history estoppel for a patentee that does not advocate for the PTAB's constructions.²⁴²

Accordingly, complete judicial deferral under *Chevron* to the PTAB's claim construction would run afoul of the principles articulated in *Mead* as well as principles of preclusion and estoppel.²⁴³ Thus, while PTAB claim construction decisions present a strong argument for deference, they fail to carry the force of law as required under *Mead*.²⁴⁴

2. *PTAB Ultimate Claim Construction Made Under Ordinary and Customary Standard Should be Evaluated Under Skidmore*

Although PTAB claim constructions made under the ordinary and customary meaning standard are undeserving of *Chevron* deference and may not always have preclusive effect, they are still worthy of deference

237. See *SkyHawke*, 828 F.3d at 1376; *Fromson*, 755 F.2d at 1555.

238. See cases cited *supra* note 219.

239. See, e.g., *SunPower Corp. v. PanelClaw, Inc.*, No. CV 12-1633-MPT, 2016 WL 1293479, at *6 (D. Del. Apr. 1, 2016) (deferring to PTAB construction made under the ordinary and customary meaning standard because it was “well-reasoned and persuasive”).

240. *SkyHawke*, 828 F.3d at 1376.

241. *Id.*

242. *Id.*

243. See *United States v. Mead Corp.*, 533 U.S. 218, 226–27 (2001); *SkyHawke*, 828 F.3d at 1376.

244. *Mead*, 533 U.S. at 226–27.

under a *Skidmore* framework and should not be unduly minimized.²⁴⁵ As the Court prescribed in *Mead*, “the well-reasoned views of the agencies implementing a statute ‘constitute a body of experience and informed judgment to which courts and litigants may properly resort for guidance.’”²⁴⁶ PTAB ultimate claim construction determinations provide precisely such guidance.²⁴⁷ As discussed above, parties to post-issuance proceedings present evidence, both intrinsic and extrinsic, from which the PTAB must construe the disputed claim “in light of the specification of the patent in which it appears.”²⁴⁸ This determination is usually complex in nature and requires technical expertise, which gives the PTAB power to persuade, even if lacking power to control.²⁴⁹

Therefore, as required by *Skidmore*, district courts should defer to the PTAB’s ultimate claim construction based on the “thoroughness evident in its consideration, the validity of its reasoning, [and] its consistency with earlier and later pronouncements.”²⁵⁰ In practice, district courts should fully consider and evaluate the PTAB’s claim construction determinations—that is, they should adopt a deferential stance towards the PTAB.²⁵¹ When such determinations are accompanied by detailed analysis of the intrinsic and extrinsic record, district courts should adopt the PTAB’s ultimate claim

245. See *id.* at 228 (2001); *Microwave Vision, S.A. v. ETS-Lindgren Inc.*, No. 1:14-CV-1153-SCJ, 2016 WL 5092462, at *6 (N.D. Ga. Sept. 20, 2016).

246. See *Mead*, 533 U.S. at 227.

247. See, e.g., *DSS Tech. Mgmt., Inc. v. Apple, Inc.*, No. 14-CV-05330-HSG, 2015 WL 1967878, at *4 (N.D. Cal. May 1, 2015) (“And even if the PTAB does not invalidate some or all of the claims, the PTAB’s claim construction and invalidity analyses ‘would likely prove helpful to this Court,’ whether or not the standard applied is identical to the one this Court must apply in the litigation.” (quoting *Black Hills Media, LLC v. Pioneer Elecs. (USA) Inc.*, No. CV 14-00471 SJO PJWX, 2014 WL 4638170, at *6 (C.D. Cal. May 8, 2014))); *Black Hills Media*, 2014 WL 4638170, at *6 (“While the PTAB interprets claim terms using the ‘broadest reasonable construction,’ 37 C.F.R. § 42.100(b), its analysis would likely prove helpful to this Court, no matter its final determination.”).

248. 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

249. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944); see also *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 488 (1951) (finding that judicial review of agency adjudication does not “negative the function of the Labor Board as one of those agencies presumably equipped or informed by experience to deal with a specialized field of knowledge, whose findings within that field carry the authority of an expertness which courts do not possess and therefore must respect”).

250. *Skidmore*, 323 U.S. at 140.

251. See, e.g., *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 8073722, at *11 (E.D. Tex. Dec. 4, 2015) (thoroughly evaluating the PTAB’s basis for its claim construction determination).

construction.²⁵²

As shown in the exemplary cases above, some courts are willing to thoroughly assess the PTAB's ultimate claim construction decision and analysis in making their own claim construction determinations.²⁵³ For example, in *Contentguard*, the court took a deferential stance towards the PTAB's ultimate claim construction, asserting that the PTAB is "entitled to reasoned deference."²⁵⁴ Depending on the term at issue, the court adopted or rejected the PTAB's construction based on the thoroughness of the PTAB's analysis of the intrinsic record.²⁵⁵ Although the court in *Contentguard* did not consider the differing claim construction standards at issue and adopted the PTAB's construction under a BRI standard, its willingness to defer to the PTAB and to evaluate its analysis are a step in the right direction.²⁵⁶ However, district courts have not expressly and uniformly adopted a standard for deference and have not articulated a clear basis for their treatment of PTAB claim construction decisions.²⁵⁷ Formalizing an approach under administrative law principles will provide greater uniformity and a clearer guideline for treatment of PTAB ultimate claim construction decisions.²⁵⁸

In post-issuance proceedings where the PTAB applies the district court-type claim construction standard,²⁵⁹ deferral to well-reasoned PTAB ultimate claim construction decisions is paramount to consistent interpretation of the scope of the claims at issue.²⁶⁰ A consistent

252. See, e.g., *SunPower Corp. v. PanelClaw, Inc.*, No. CV 12-1633-MPT, 2016 WL 1293479, at *6 (D. Del. Apr. 1, 2016) (deferring to PTAB construction made under the ordinary and customary meaning standard because it was "well-reasoned and persuasive").

253. See, e.g., cases cited *supra* note 171.

254. *Contentguard Holdings*, 2015 WL 8073722, at *11.

255. See, e.g., *id.* at *2-11, *44-51.

256. See *id.*

257. See, e.g., cases cited *supra* note 171.

258. See *United States v. Mead Corp.*, 533 U.S. 218 (2001); *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984); *Skidmore v. Swift & Co.*, 323 U.S. 134 (1944).

259. 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2016).

260. Cf. *TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) (holding that, although other district court claim construction decisions are not binding on the court, "previous claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so"); *Maurice Mitchell Innovations, L.P. v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006), *aff'd*, 249 F. App'x 184 (Fed. Cir. 2007) ("[T]he Court accepts the premise that a uniform treatment of claim construction is desirable, but rejects Intel's suggestion that this Court is bound in any way to accept the claim construction by [another district court judge].").

interpretation furthers the purpose of the definiteness requirement of Section 112(b), mandating claims to “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention,” thereby, “appris[ing] the public of what is still open to them.”²⁶¹ At the same time, it provides a defined set of exclusive rights to the patentee.²⁶² Additionally, a consistent interpretation has the same benefits as issue preclusion: it prevents unnecessary waste of litigants’ resources and adjudicators’ time, and it discourages forum shopping.²⁶³

3. *PTAB Ultimate Claim Constructions Made Under BRI Should Be Treated As Extrinsic Evidence Provided by an Expert Body*

Deference to PTAB ultimate claim constructions made under BRI is not justified.²⁶⁴ In these cases, the standard used in district court to interpret claims differs significantly enough from that used by the PTAB that the district court should evaluate the proper meaning and scope of the claims.²⁶⁵ Although in some cases the district court and the PTAB reach the same conclusion after independent evaluations,²⁶⁶ deference to the PTAB’s

261. 35 U.S.C. § 112(b) (2012); *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2125 (2014) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996)).

262. *See* U.S. Const. art. I, § 8, cl. 8.

263. *See* *B & B Hardware, Inc. v. Hargis Indus., Inc.*, 135 S. Ct. 1293, 1298–99 (2015).

264. *See* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2146 (2016); *SkyHawke Techs., LLC v. Deca Int’l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016).

265. *See* *PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, 815 F.3d 734, 740 (Fed. Cir. 2016) (finding a difference in the actual construction of the term at issue based on the differing claim construction standards at the PTAB); *SkyHawke*, 828 F.3d at 1376 (“Because the Board applies the broadest reasonable construction of the claims while the district courts apply a different standard of claim construction as explored in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), the issue of claim construction under *Phillips* to be determined by the district court has not been actually litigated.”); *Wonderland Nurserygoods Co. v. Thorley Indus., LLC*, No. CIV.A. 12-196, 2014 WL 5325353, at *3 (W.D. Pa. Oct. 20, 2014) (pointing to the difference in claim construction standards and finding that “it is not surprising that constructions from IPRs and other PTO proceedings may differ from or, indeed, be diametrically opposed to those of district courts, as is the case here, where, for example, this Court found the preambles limiting, but the PTO did not so find”); *cf.* *Maurice Mitchell Innovations, L.P. v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006), *aff’d*, 249 F. App’x 184 (Fed. Cir. 2007) (holding that a prior district court’s claim construction is not binding but “entitled to reasoned deference under the broad principles of stare decisis”).

266. *See, e.g.*, *Memory Integrity, LLC v. Intel Corp.*, No. 3:15-CV-00262-SI, 2016 WL 1122718, at *16 n.9 (D. Or. Mar. 22, 2016) (“The Court agrees with [plaintiff] that PTAB’s decision has little weight for purposes of construing terms in a district court, but the Court nonetheless notes that PTAB reached the same conclusion about the construction of ‘states associated with selected ones of the cache memories’ that the Court now reaches. Courts

ultimate claim construction under the broadest reasonable interpretation standard is unwarranted because deference could lead to improper broadening of the scope of the claims at issue and produce unsound litigation outcomes.²⁶⁷ To resolve the resulting inconsistency between district court and PTAB claim constructions when different standards are used, congressional action or a change of heart at the PTO is required.²⁶⁸

However, PTAB opinions may be properly treated as extrinsic evidence from an expert body,²⁶⁹ keeping in mind the differing claim construction standards, much like opinions from experts that courts consider during claim construction.²⁷⁰ As the Federal Circuit has stated, expert opinion can be useful to a court for a variety of purposes, such as to provide background

have held that PTAB decisions may at least provide a district court with guidance . . . This Court uses the PTAB decision on this issue not for guidance, but for comfort.”).

267. *Id.*

268. *See Cuozzo*, 136 S. Ct. 2146.

269. *See, e.g., Kappos v. Hyatt*, 132 S. Ct. 1690, 1700 (2012) (recognizing that the “PTO has special expertise in evaluating patent applications”); *Dickinson v. Zurko*, 527 U.S. 150, 164 (1999) (finding that reasons such as “the PTO is an expert body, or that the PTO can better deal with the technically complex subject matter . . . [or] two (and sometimes more) PTO tribunals had reviewed the matter and agreed about the factual finding . . . are reasons that courts and commentators have long invoked to justify deference to agency factfinding [sic]”); *Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 721 F.3d 1330, 1350 (Fed. Cir. 2013) (Newman, J., dissenting) (“Reexamination would allow patent holders and challengers to avoid the present costs and delays of patent litigation . . . Patent reexamination will also reduce the burden on our overworked courts by drawing on the expertise of the Patent and Trademark Office.” (quoting 126 CONG. REC. 30, 364 (1980) (statement of Sen. Bayh))); *Microwave Vision, S.A. v. ETS-Lindgren Inc.*, No. 1:14-CV-1153-SCJ, 2016 WL 5092462, at *6 (N.D. Ga. Sept. 20, 2016) (evaluating the PTAB’s claim construction decision and holding that “[t]he opinion of an expert body like the PTAB can carry significant persuasive weight when courts deal with technically complex issues, like patents”); *Clearlamp, LLC v. LKQ Corp.*, No. 12 C 2533, 2016 WL 4734389, at *6 (N.D. Ill. Mar. 18, 2016) (“The PTAB’s decision is persuasive because it affords this court an opportunity to consider the PTAB’s expert reasoning based on the evidence presented to it.”); *Virginia Innovation Scis., Inc. v. Samsung Elecs. Co.*, 983 F. Supp. 2d 713, 764 (E.D. Va. 2014), *vacated*, 614 F. App’x 503 (Fed. Cir. 2015) (recognizing the court “generally gives deference to final PTO decisions, based in part on the PTO’s specialized knowledge and expertise”).

270. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc); *cf. In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985) (“The innate function of the reexamination process is to increase the reliability of the PTO’s action in issuing a patent by reexamination of patents thought ‘doubtful.’ When the patent is concurrently involved in litigation, an auxiliary function is to free the court from any need to consider prior art without the benefit of the PTO’s initial consideration.”) (citation omitted); *Gould v. Control Laser Corp.*, 705 F.2d 1340, 1342 (Fed. Cir. 1983) (“One purpose of the reexamination procedure is to eliminate trial of that issue (when the claim is canceled) or to facilitate trial of that issue by providing the district court with the expert view of the PTO (when a claim survives the reexamination proceeding).”).

on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.²⁷¹

Given the PTAB's expertise in dealing with technically complex subject matter, district courts should consider the PTAB's claim construction analysis conducted under the BRI standard in order to glean insight from the PTAB's understanding of the invention of the patent-at-issue.²⁷² Treating PTAB opinions as extrinsic evidence ensures that PTAB opinions are not outright rejected without consideration nor completely disregarded, like the decisions discussed above in *Custom Media*²⁷³ and *Personalized Media*.²⁷⁴ Such an approach would provide a measure of consistency and predictability.²⁷⁵

V. CONCLUSION

Inconsistent approaches to the PTAB's claim construction determinations encourage losing parties to retry their luck and failed arguments in district court, wasting the parties' and judicial resources alike.²⁷⁶ Inconsistent claim constructions for the same claim terms fail to apprise the public of what is still open to them and how they can avoid infringement.²⁷⁷ They also fail to grant a defined set of exclusive rights to the patentee.²⁷⁸ The approach advocated in this Note will ameliorate these concerns as much as possible while respecting the inherent inconsistency in Congress's statutory design.²⁷⁹

Using principles of administrative law and guidance on how appellate courts must review district court and PTAB claim construction decisions, this Note devises a framework for district courts to analyze PTAB findings

271. *Phillips*, 415 F.3d at 1317.

272. *See* cases cited *supra* note 269.

273. *Custom Media Techs. LLC v. Comcast Cable Commc'ns, LLC*, No. CV 13-1421-LPS, 2015 WL 4743671, at *5 (D. Del. Aug. 11, 2015).

274. *Personalized Media Commc'ns, LLC v. Apple, Inc.*, No. 2015-CV-01206-JRG-RSP, 2016 WL 6247054, at *7-9, *12-13, *16-17, *29-30, *41-42 (E.D. Tex. Oct. 25, 2016); *see also* cases cited *supra* note 187.

275. *See supra* Section III.B.3-III.B.4.

276. *See B & B Hardware, Inc. v. Hargis Indus., Inc.*, 135 S. Ct. 1293, 1298-99 (2015).

277. 35 U.S.C. § 112(b) (2012); *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2125 (2014) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996)).

278. *See* U.S. Const. art. I, § 8, cl. 8.

279. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2146 (2016).

of fact and ultimate claim constructions. First, with respect to PTAB findings of fact, the “evidentiary underpinnings” of the PTAB’s claim construction determination, the Supreme Court’s decisions in *Teva* and *Zurko* provide the proper guidance on how district courts should treat PTAB findings based on Section 706 of the APA.²⁸⁰ Based on this guidance, district courts should defer to the PTAB and adopt its findings of fact if they are supported by “substantial evidence.”²⁸¹

Second, with respect to PTAB ultimate claim construction decisions made under the ordinary and customary standard, the standard used in district court, district courts should defer to the PTAB’s expertise under *Skidmore* and adopt the PTAB’s ultimate claim constructions that are well reasoned and supported by the extrinsic and intrinsic record.²⁸² However, with respect to PTAB ultimate claim constructions made under the broadest reasonable interpretation standard, the more commonly applied standard by the PTAB, district courts should perform an independent analysis of the proper scope and meaning of a claim at issue. In these circumstances, district courts may properly treat these PTAB determinations as extrinsic evidence from an expert body.²⁸³

Using the approach outlined above would provide a more unified and consistent approach to treatment of PTAB claim construction rulings in parallel or later litigation involving the same patent.²⁸⁴ District court

280. See Administrative Procedure Act, 5 U.S.C. § 706 (2012) (“The reviewing court shall . . . (2) hold unlawful and set aside agency action, findings, and conclusions found to be (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . (E) unsupported by substantial evidence”); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015); *Dickinson v. Zurko*, 527 U.S. 150 (1999).

281. See Administrative Procedure Act, 5 U.S.C. § 706(2) (2012); *Zurko*, 527 U.S. at 164.

282. See *United States v. Mead Corp.*, 533 U.S. 218, 227 (2001).

283. See cases cited *supra* notes 13, 270.

284. See *supra* discussion of differing treatment of PTAB ultimate claim constructions in Section II.B; see, e.g., *THX, Ltd. v. Apple, Inc.*, No. 13-CV-01161-HSG, 2016 WL 6563340, at *5 (N.D. Cal. Nov. 4, 2016); *Research Frontiers, Inc. v. E Ink Corp.*, No. CV 13-1231-LPS, 2016 WL 1169580, at *7 (D. Del. Mar. 24, 2016); *GoDaddy.com, LLC v. RPost Commc’ns Ltd.*, No. CV-14-00126-PHX-JAT, 2016 WL 212676, at *30–31 (D. Ariz. Jan. 19, 2016); *Depuy Orthopaedics, Inc. v. Orthopaedic Hosp.*, No. 3:12-CV-299-CAN, 2016 WL 96164, at *5 (N.D. Ind. Jan. 8, 2016); *Contentguard Holdings, Inc. v. Amazon.com, Inc.*, No. 2:13-CV-1112-JRG, 2015 WL 8073722, at *11 (E.D. Tex. Dec. 4, 2015); *Malibu Boats, LLC v. Nautique Boat Co.*, 122 F. Supp. 3d 722, 728 (E.D. Tenn. Jan. 28, 2015); *Pragmatus AV, LLC v. Yahoo! Inc.*, No. C-13-1176 EMC, 2014 WL 1922081, at *4 (N.D. Cal. May 13, 2014); cf. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996) (finding that the treatment of claim construction as a purely legal question should promote intrajurisdictional certainty through the application of *stare decisis*).

ultimate claim constructions performed under this framework would alleviate, at least to an extent, concerns that different claim construction standards at the PTAB and in district court undermine the purpose of post-issuance proceedings under the America Invents Act.²⁸⁵ Yet, because district courts are not bound by the PTAB's claim constructions,²⁸⁶ this approach still allows courts to provide the proper check on executive decisions.²⁸⁷

The PTAB often faces the difficult task of deciphering technically complex claims and crafting exact meaning for disputed terms. At a minimum, district courts should not ignore the PTAB's analysis and examination.²⁸⁸ As shown above, some district courts are apt to do exactly that.²⁸⁹

285. See cases cited *supra* note 21.

286. See cases cited *supra* note 226.

287. See also Scalia, *supra* note 84, at 521; Starr, *supra* note 84, at 284, 312.

288. See, e.g., *Blitzsafe Texas, LLC v. Honda Motor Co.*, No. 2:15-CV-1274-JRG-RSP, 2016 WL 4762083, at *12–17 (E.D. Tex. Sept. 13, 2016); *Better Mouse Co., LLC v. Steelseries Aps*, No. 2:14-CV-198-RSP, 2015 WL 5210667, at *11 (E.D. Tex. Sept. 3, 2015); *Custom Media Techs. LLC v. Comcast Cable Commc'ns, LLC*, No. CV 13-1421-LPS, 2015 WL 4743671, at *5 (D. Del. Aug. 11, 2015).

289. See discussion *supra* Section III.B.4.

DECONSTRUCTING WONDERLAND: MAKING SENSE OF SOFTWARE PATENTS IN A POST-ALICE WORLD

Joseph Allen Craig[†]

Software has long been problematic for the world of intellectual property as it partially fits into copyright, trade secret, and patent law, creating confusion about the best means of protection.¹ Computer code imperfectly fits into the copyright realm: although it receives copyright protection as a literary work, software is inherently functional, limiting the copyright protection.² Because there is an increasing transition from copies of software on an individual computer to cloud-based computing, where the underlying code is hidden from end users, trade secret law is also an attractive form of protection.³ However, software also possesses the ability to be a useful, novel, and nonobvious invention, thereby fitting into the world of patent law.⁴

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1. See Gregory J. Maier, *Software Protection—Integrating Patent, Copyright and Trade Secret Law*, 69 J. PAT. & TRADEMARK OFF. SOC'Y 151, 151 (1987) (“It is the hybrid nature of software that causes its failure to fit neatly into any one existing category of intellectual property, resulting in seemingly endless confusion as to how it may best be protected.”); see also Peter S. Menell, *The Challenges of Reforming Intellectual Property Protection for Computer Software*, 94 COLUM. L. REV. 2644, 2652–53 (1994).

2. 17 U.S.C. § 102 (2012) (Copyright protects “original works of authorship fixed in any tangible medium of expression.”); see also Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2316 (1994) (“While conceiving of programs as texts is not incorrect, it is seriously incomplete. A crucially important characteristic of programs is that they behave; programs exist to make computers perform tasks.”).

3. See Peter S. Menell, *Envisioning Copyright Law’s Digital Future*, 46 N.Y.L. Sch. L. Rev. 63, 73 (2002). Prior to the 1980s, trade secret was the primary means of protecting computer software. *Id.* However, as software began to enter larger markets, companies began to worry that trade secret protection would not sufficiently protect their software products. *Id.*; see also Robert C. Scheinfeld & Gary M. Butter, *Using Trade Secret Law to Protect Computer Software*, 17 RUTGERS COMPUTER & TECH. L.J. 381, 418 (1991).

4. 35 U.S.C. § 101 (2012) (“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”).

Courts have struggled when applying traditional patent law tests for eligibility to computer software due to the lack of bright-line rules.⁵ Historically, the patent protection afforded to software has ebbed and flowed, from disallowing patents for any mathematical algorithms to allowing patents for any software that creates “a useful, concrete and tangible result.”⁶ The 2014 Supreme Court decision in *Alice Corp. Pty. Ltd. v. CLS Bank International*⁷ once again reignited the debate over the degree to which software should be patent eligible.⁸ Although *Alice* did not announce a per se rule against software patents, it created a patent-eligibility test that made it difficult for software to be patented, and it called many software patents into question, prompting many decisions invalidating software patents.⁹ Now, the Federal Circuit appears to be augmenting *Alice*’s two-part test by using what amounts to a “technological arts” test,¹⁰ which asks whether or not the claims are directed to a technological solution to a technological problem.

This Note begins by discussing software technology, how that technology has changed, and how the patent system has historically handled software patents. Part II summarizes the first five cases after *Alice* in which the Federal Circuit found software to be patent eligible. Finally, Part III synthesizes the previously discussed cases and addresses problems with the application of the patent-eligibility test.

5. Andrew Beckerman-Rodau, *What Should Be Patentable?—A Proposal for Determining the Existence of Statutory Subject Matter Under 35 U.S.C. Section 101*, 13 WAKE FOREST J. BUS. & INTELL. PROP. L. 145, 147–48 (2013) (arguing that the Supreme Court has rejected bright-line tests in favor of a “more open-ended philosophical approach”).

6. See Brianna Dolmage, *The Evolution of Patentable Subject Matter in the United States*, 27 WHITTER L. REV. 1023, 1034 (2006).

7. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014).

8. See e.g., Peter D. Junger, *You Can’t Patent Software: Patenting Software Is Wrong*, 58 CASE W. RES. L. REV. 333 (2008); Robert P. Merges, *Software and Patent Scope: A Report from the Middle Innings*, 85 TEX. L. REV. 1627 (2007).

9. See *OIP Techs., Inc. v. Amazon.com*, 788 F.3d 1359, 1364 (Fed. Cir. 2015); *Internet Patents Corp. v. Active Network Inc.*, 790 F.3d 1343, 1348–49 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1349, 1351 (Fed. Cir. 2014); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 717 (Fed. Cir. 2014).

10. Austin Steelman, Note, *Curiouser and Curiouser! Why the Federal Circuit Can’t Make Sense of Alice*, 98 J. PAT. & TRADEMARK OFF. SOC’Y 374, 384 (2016) (“[T]he technological arts test seeks to provide patent-eligibility for scientific innovation but not for social/commercial/economic innovation.”).

I. BACKGROUND AND HISTORY OF SOFTWARE PATENTS

This Part discusses the technological aspects of software, and how software has evolved into what it is today. Additionally, it explains how patent law has attempted to keep up with the evolving software landscape.

A. SOFTWARE TECHNOLOGY

Software is a program used to direct the operation of a computer.¹¹ Software can take different forms, from system software¹² that runs basic computer functionality, such as the Windows operating system, to specialized application software, such as Microsoft Excel.¹³ In recent years, some software applications have also been moving into the cloud, such as Google's spreadsheet program, Google Sheets.¹⁴ Customers can access applications run on the cloud remotely over the Internet, a concept referred to as software as a service, or SaaS.¹⁵

In addition to different types of software, there are multiple levels of abstraction in any piece of software.¹⁶ At its most basic concrete level, software is a set of instructions, called binary code, readable only by the computer itself.¹⁷ However, software is typically written in a higher level language, such as Java or C++,¹⁸ which allows programmers to write code in an English-like syntax, rather than in binary code.¹⁹ An intermediary

11. *Software*, DICTIONARY.COM, <http://www.dictionary.com/browse/software?s=t> (last visited Feb. 7, 2017) [<https://perma.cc/C7MM-MRXB>].

12. See DAVID A. PATTERSON & JOHN L. HENNESSY, *COMPUTER ORGANIZATION AND DESIGN: THE HARDWARE/SOFTWARE INTERFACE 10* (4th ed. 2009) (System software is “[s]oftware that provides services that are commonly useful, including operating systems, compilers, loaders, and assemblers.”).

13. See *Windows*, MICROSOFT, <https://www.microsoft.com/en-us/windows> (last visited Feb. 7, 2017) [<https://perma.cc/ZRM9-W34A>]; *Excel*, MICROSOFT, <https://products.office.com/en-us/excel> (last visited Feb. 7, 2017) [<https://perma.cc/HRS5-6WZH>].

14. *Google Sheets*, GOOGLE, <https://www.google.com/sheets/about/> (last visited Feb. 7, 2017) [<https://perma.cc/2MHX-6E7U>].

15. *SaaS: Software as a Service*, SALESFORCE.COM, <https://www.salesforce.com/saas/> (last visited Mar. 20, 2017) [<https://perma.cc/F4PS-EC8U>].

16. See PATTERSON, *supra* note 12, at 20 (“[D]elving into the depths of hardware or software reveals more information or, conversely, lower-level details are hidden to offer a simpler model at higher levels. The use of such layers, or abstractions, is a principal technique for designing very sophisticated computer systems.”).

17. See *id.* at 11.

18. See *id.* at 12.

19. See *id.* at 13 (“High-level programming languages offer several important benefits. First, they allow the programmer to think in a more natural language, using English words and algebraic notation, resulting in programs that look much more like text than like tables of cryptic symbols.”).

language, assembly language, falls between the binary and high-level language.²⁰

B. EVOLUTION OF SOFTWARE

The world of software is rapidly changing.²¹ Modern software can have several billion lines of code, creating new and unique challenges and requiring large teams of developers.²² Software has revolutionized entire industries, such as transportation and lodging, allowing anyone with a smartphone to turn one's car into a taxi with Uber, or one's home into a hotel with AirBnB.²³ Advances in software are incredibly important to the U.S. economy and will continue to change the country.²⁴ Therefore, the ways in which the United States incentivizes software innovations are important not only to technology companies, but to everyone.

C. THE PURPOSE OF PATENT LAW

The Constitution established patent law to promote the advancement of science and the useful arts.²⁵ Patent law gives inventors limited monopolies for their publicly disclosed inventions.²⁶ These limited monopolies allow patent owners to exclude others from making, using, offering for sale, or selling their invention for a limited time, after which the inventions enter

20. *See id.* at 11.

21. *See id.* at 4 (explaining that applications that were once “economically infeasible” or “computer science fiction,” such as cell phones, the human genome project, and search engines, now affect “almost every aspect of our society”).

22. *See id.* at 10 (“A typical application, such as a word processor or a large database system, may consist of millions of lines of code and rely on sophisticated software libraries that implement complex functions in support of the application.”); Cade Metz, *Google Is 2 Billion Lines of Code—and It’s All in One Place*, WIRED (Sept. 16, 2015, 10:00 AM), <https://www.wired.com/2015/09/google-2-billion-lines-codeand-one-place/> [<https://perma.cc/JF54-Q62F>] (noting that Google has 25,000 developers).

23. *See* Alamea Deedee Bitran, *The Uber Innovations that Lyfted Our Standards Out of Thin Air[Bnb], Because Now, “There’s an App for That,”* 8 ELON L. REV. 503, 509, 513 (2016).

24. *See Overview: The Economic Impact of Software*, BSA | THE SOFTWARE ALLIANCE, http://softwareimpact.bsa.org/pdf/Economic_Impact_of_Software_Overview.pdf (finding that the impact of software on the U.S. economy alone was over \$1 trillion in 2014) [<https://perma.cc/BVL3-85BG>].

25. U.S. CONST. art. I, § 8, cl. 8.

26. *Id.*

the public domain.²⁷ These exclusive rights incentivize inventors to innovate and disclose their inventions.²⁸

The Supreme Court has used § 101 as a tool to prevent patents from preempting entire fields, believing that tying up the key building blocks of invention will “impede innovation more than it would tend to promote it.”²⁹ Accordingly, granting patents for the basic building blocks of computer code could prevent innovation, impeding the advancement of computer science.

D. HISTORY OF SOFTWARE PATENT ELIGIBILITY

Software patent eligibility has fluctuated over the years, from software being virtually patent ineligible to all software being patent eligible.³⁰ This Section examines the software patent-eligibility jurisprudence.

In *Gottschalk v. Benson*, the Court held that computer algorithms were not patent eligible.³¹ The claims at issue were for an algorithm that converted binary coded decimals into true binary numbers using a mathematical formula.³² The Court found that the algorithm was merely an abstract idea and that allowing a patent on the algorithm would preempt the underlying mathematical formula.³³ The Court also introduced the

27. 35 U.S.C. § 271(a) (2012) (“Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”).

28. See *Bowman v. Monsanto Co.*, 133 S. Ct. 1761, 1768 (2013) (explaining that if an “undiluted patent monopoly” extended only for one transaction, and not for 20 years as promised by the Patent Act, a patent would plummet in value after the first sale of the first item containing the invention, resulting in “less incentive for innovation than Congress wanted”). For discussion on whether patents are properly satisfying their goal of incentivizing inventions, see Paul Belleflamme, *Patents and Incentives to Innovate: Some Theoretical and Empirical Economic Evidence*, 13 ETHICAL PERSPS.: J. OF THE EUR. ETHICS NETWORK 267, 274–78 (2006).

29. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); see also *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972).

30. See Dolmage, *supra* note 6, at 1026 (“Although software is patentable today, it was not always so. Both the USPTO and the courts have spent decades laboring over the determination of whether software is patentable subject matter.”).

31. *Gottschalk*, 409 U.S. at 68, 71–72.

32. *Id.* at 64. Binary coded decimals have each individual digit coded in binary, whereas true binary numbers represent the number as a whole. *Id.*

33. *Id.* at 68. Patenting this algorithm would have had a large preemptive effect as the algorithm could be used in software for everything from “the operation of a train . . . to researching the law books for precedents . . .” *Id.* Allowing a patent would have prevented the algorithm from being used in any other conceivable program without a license. *Id.*

“machine-or-transformation test,”³⁴ holding that the “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.”³⁵

Next, in *Parker v. Flook* the Court held that novel algorithms added to existing processes were not patent eligible, expanding *Gottschalk*’s holding.³⁶ The claims at issue dealt with a method for updating an alarm limit in a catalytic conversion process.³⁷ The Court held that the only difference between the claims and the prior art was the specific algorithm used to update the alarm limit.³⁸ The Court determined that the claims were no more than a new method for calculating the alarm limit and were therefore not patent eligible.³⁹ Although the Court mentioned that its decision did not imply that all software would be patent ineligible, the combination of *Gottschalk* and *Flook* arguably eliminated all software patents.⁴⁰ *Gottschalk* held that algorithms were patent ineligible, and *Flook* said that novel algorithms added to existing processes were patent ineligible.⁴¹

In *Diamond v. Diehr*, the Court departed from its previous jurisprudence and for the first time found software patentable.⁴² The claims at issue were for a process for curing synthetic rubber, which ensured that the molded articles were properly cured.⁴³ This process involved software containing an algorithm to dynamically update the curing time for rubber based on the rubber’s temperature, which was measured periodically.⁴⁴ Importantly, the claims included steps for heating and removing the rubber in addition to the

34. The Federal Circuit may be applying once again the machine-or-transformation test, although specifically for biological patents. See Joyce Li, Note, *Preemption and Diagnostics: The Federal Circuit’s Misguided Return to the Machine-or-Transformation Test*, 32 BERKELEY TECH. L.J. 24–26 (2017).

35. *Gottschalk*, 409 U.S. at 70.

36. *Parker v. Flook*, 437 U.S. 584, 594–95 (1978).

37. *Id.* at 585.

38. *Id.* at 594.

39. *Id.* at 594–95.

40. Ognjen Zivojnovic, Note, *Patentable Subject Matter After Alice—Distinguishing Narrow Software Patents from Overly Broad Business Method Patents*, 30 BERKELEY TECH. L.J. 807, 813 (2015) (“The combination of *Benson* and *Flook* virtually eliminated patent protection for software—*Benson* labeled algorithms, and thus by extension all software, as patent-ineligible abstract ideas, and *Flook* by indicating that, as long as an invention’s sole point-of-novelty lay in the software, no additional limitation could be “enough” to confer patent eligibility.”).

41. *Gottschalk v. Benson*, 409 U.S. 63, 68, 71–72 (1972); *Flook*, 437 U.S. at 594–95.

42. *Diamond v. Diehr*, 450 U.S. 175, 192–93 (1981).

43. *Id.* at 177.

44. *Id.*

algorithm.⁴⁵ Here, the Court found that the claims as a whole were directed to the entire process of curing the rubber, not just the algorithm involved in the software.⁴⁶ Although this case did not expressly overrule *Flook*, it can be difficult to distinguish these two cases.⁴⁷

Software patents became easier to obtain after the Federal Circuit decision *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, where the court held that an abstract idea that produces a useful and tangible result was patent eligible.⁴⁸ The claims were for a hub and spoke mutual fund investment system run on a computer,⁴⁹ which enabled individual mutual funds to pool their assets together into one investment vehicle.⁵⁰ The Federal Circuit held that the claims were patent eligible because they transformed data by using a “machine through a series of mathematical calculations.”⁵¹ This interpretation allowed people to evade the subject matter requirement by reciting traditional business methods and adding computer language to the claims.⁵²

But the subject matter requirement returned in *Bilski v. Kappos*, where the Supreme Court held that a patent reciting a hedging method was ineligible because it preempted an abstract idea.⁵³ The Court rejected the “machine-or-transformation test” as the only test for patent eligibility, holding that it was merely one test to be considered.⁵⁴ The Court also confirmed that any “useful, concrete, and tangible result” is not automatically patentable.⁵⁵

In *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, the Court distilled a two-part test from the 2012 product-of-nature case *Mayo Collaborative Services v. Prometheus Labs., Inc.*⁵⁶ and applied it to software.⁵⁷ The claims in *Alice*

45. *Id.* at 177–78.

46. *Id.* at 192.

47. See Bernard Chao, *Finding the Point of Novelty in Software Patents*, 28 BERKELEY TECH. L.J. 1217, 1235 (2013).

48. *State St. Bank & Tr. Co. v. Signature Fin. Grp.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

49. *Id.* at 1370.

50. *Id.* at 1371.

51. *Id.* at 1373.

52. See Robert A. Hulse, *Patentability of Computer Software After State Street Bank & Trust Co. v. Signature Financial Group, Inc.: Evisceration of the Subject Matter Requirement*, 33 U.C. DAVIS L. REV. 491, 519 (2000).

53. *Bilski v. Kappos*, 561 U.S. 593, 611–12 (2010).

54. *Id.* at 604.

55. *Id.*

56. See *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

57. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355–60 (2014).

were directed to a form of escrow in which two parties could enter into a contract and agree to exchange money at a later time.⁵⁸ The *Alice* test has two parts.⁵⁹ First, the court must decide whether or not the claims are directed to an abstract idea.⁶⁰ Second, if the claims are directed to an abstract idea then the court must ask whether or not there is an “inventive concept” that is sufficient to make the claims patent eligible.⁶¹ The Court found the claims were directed to the abstract idea of escrow between two parties.⁶² And there was no inventive concept because the claims were nothing more than a generic computer implementation of an abstract idea.⁶³ Therefore the claims were patent ineligible.⁶⁴

In the aftermath of *Alice*, many software patents were declared invalid as it was no longer possible to draft valid claims for generic processes by adding the words “on a computer.”⁶⁵

II. POST-ALICE FRAMEWORK FOR PATENT ELIGIBILITY

This Part discusses the first five cases since *Alice* in which the Federal Circuit held software patents to be valid. It then distills a framework for inventors hoping to draft patent-eligible claims for software-based inventions. Mainly, software claims should offer a technical solution to a technical problem.

A. CLAIMED SOLUTIONS ROOTED IN TECHNOLOGY MIGHT BE PATENT ELIGIBLE: *DDR HOLDINGS, LLC v. HOTELS.COM, L.P.*

DDR Holdings, LLC v. Hotels.com, L.P. introduced the idea that claimed solutions necessarily rooted in technology that solve problems arising in the realm of computer networks might be patent eligible.⁶⁶

The claims in *DDR* were directed to the idea of generating a webpage on a host site with the same look and feel of the host site, but containing

58. *Id.* at 2352.

59. *Id.* at 2355.

60. *Id.*

61. *Id.*

62. *Id.* at 2357.

63. *Id.* at 2359–60.

64. *Id.*

65. See *Internet Patents Corp. v. Active Network Inc.*, 790 F.3d 1343, 1348–49 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com*, 788 F.3d 1359, 1363–64 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014).

66. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

content from a third-party merchant.⁶⁷ This new system allowed users to purchase items from a third-party merchant without those users navigating to a third-party website.⁶⁸ Keeping a user on a host website improved e-commerce for the host site, as it increased the chance of a user making a purchase.⁶⁹ The USPTO and the district court both found that the patents were valid.⁷⁰

On appeal, the Federal Circuit agreed that the patents were patent eligible⁷¹ but did not explicitly state whether the claims passed the abstract idea first step of the *Alice* test.⁷² Instead, the Federal Circuit held that regardless of whether or not the claims were directed to an abstract idea, they satisfied step two because they contained an inventive concept.⁷³

The court stressed that the claims were necessarily rooted in computer technology.⁷⁴ The problem that the claims addressed, keeping a user from navigating to a third-party website, was an internet-specific problem.⁷⁵ And the claims solved an internet problem by changing the way the traditional internet routine operates.⁷⁶

The court also noted that the claims did not deal with any mathematical algorithm or fundamental business practice.⁷⁷ Further, the court emphasized that the solution did not preempt every possible solution and was therefore not overly preemptive.⁷⁸ The specificity of the solution supported the finding that it was more than the monopolization of an abstract idea.⁷⁹

67. *Id.* at 1248.

68. *Id.* The prior art allowed third-party merchants to lure visitors away from the host site when the user clicked on a third-party advertisement. *Id.*

69. *Id.* at 1257.

70. *Id.* at 1250–51.

71. *Id.* at 1259.

72. *Id.* at 1257.

73. *Id.*

74. *Id.* (“[T]he claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.”).

75. *Id.* (“Although the claims address a business challenge (retaining website visitors), it is a challenge particular to the Internet.”).

76. *Id.* Traditional internet hyperlinks would transport a visitor instantly away from a host’s website after clicking on an advertisement. *Id.*

77. *Id.* at 1257. The dissent attempted to analogize the “store within a store” concept to kiosks in a brick-and-mortar store, arguing that the idea of a store within a store has been in widespread use and is therefore neither an inventive concept nor inherently rooted in computer technology. *See id.*

78. *Id.* at 1259.

79. *Id.*

B. NOT ALL SOFTWARE IS ABSTRACT: *ENFISH, LLC V. MICROSOFT CORP.*

Enfish, LLC v. Microsoft Corp. held that not all software claims were inherently directed to an abstract idea.⁸⁰ The claims in Enfish’s patent attempted to improve the traditional relational model database,⁸¹ a database that uses several different tables to organize data. For example, a traditional database may use separate tables for people and companies.⁸² The people table would contain the person’s name, along with a link to the company table.⁸³ That link would refer to an entirely separate table where the company information was stored.⁸⁴

In contrast, the claims in *Enfish* were directed to a self-referential database.⁸⁵ A self-referential database is different in that it allows for all of the database information to be incorporated into a single table.⁸⁶ A self-referential database has many advantages over a traditional relational database, including more effective storage of differing data types, ease of setup, and faster search time.⁸⁷

At trial, the district court found that all claims were invalid as ineligible under § 101⁸⁸ because they were directed to the abstract idea of “storing, organizing, and retrieving memory in a logical table.”⁸⁹ The Federal Circuit, however, pointed out that the district court oversimplified the inventive components and downplayed the benefits.⁹⁰ Significantly, the Federal Circuit determined that the patents at issue were not directed to an abstract idea under step one of the *Alice* test.⁹¹ This showed that the first step was actually a meaningful one and that some software claims were not directed

80. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016).

81. *Id.* at 1330 (contrasting the patented logical model to the standard relational model).

82. *Id.*

83. *Id.* at 1330–31.

84. *Id.*

85. *Id.* at 1330, 1332.

86. *Id.*

87. *Id.* at 1333.

88. *Id.*

89. *Id.* at 1337.

90. *Id.* at 1337–38. The district court may in fact have misunderstood the invention because the district court claimed that the inventive concept could be satisfied by adding a header row to a table, which is inaccurate. *See id.* at 1338 (“The court determined that the patents’ self-referential concept could be satisfied by creating a table with a simple header row. But that is simply not the case.”).

91. *Id.* at 1339.

to an abstract idea.⁹² The court also stipulated that the test was whether the character of the claims as a whole is directed to an abstract idea.⁹³

The Federal Circuit reiterated that in *Alice*, the Court said that claims improving either the computer itself or a technological process might not be considered an abstract idea.⁹⁴ Here, the claims as a whole were directed to a technological improvement (a self-referential database) over a technological process (database technology).⁹⁵ The Federal Circuit held that the district court described the claims at too high a level of abstraction.⁹⁶ Any invention can to some degree be thought of as directed to an abstract idea at some level.⁹⁷ Therefore, the court must set the level of abstraction in an appropriate manner.⁹⁸

Importantly, the Federal Circuit reiterated that the software's ability to run on a general-purpose computer does not doom the claims.⁹⁹ This is significant because ability to run on a variety of systems is often an important goal of software development.¹⁰⁰ The court also specified that a lack of physical components does not doom the claims either, noting that many software advancements do not require any specific hardware components.¹⁰¹

C. ABSTRACT SOFTWARE MAY CONTAIN INVENTIVE CONCEPT:
BASCOM GLOBAL INTERNET SERVICES V. AT&T MOBILITY LLC

In *BASCOM Global Internet Services v. AT&T Mobility LLC*, the Federal Circuit found that claims that were clearly abstract were nonetheless patent eligible.¹⁰² Here, the patents at issue were directed to filtering content on the Internet.¹⁰³

92. *Id.*

93. *Id.* at 1335.

94. *Id.*

95. *Id.* at 1337.

96. *Id.*

97. *See id.* (citing *Diamond v. Diehr*, 450 U.S. 175, 189 n.12 (1981) (holding that if overgeneralizing claims were taken to an extreme, "all inventions [would be] unpatentable because all inventions can be reduced to underlying principles of nature, once known, make their implementation obvious.")).

98. *See id.*

99. *Id.* at 1338.

100. *See id.* at 1339.

101. *Id.*

102. *BASCOM Glob. Internet Servs. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016).

103. *Id.* at 1344.

In the prior art, internet filtering was done with software installed on a user's computer, on the local server, or at the internet service provider (ISP) level.¹⁰⁴ Filtering at each of these three levels presented various benefits and drawbacks. First, software on the user's computer allowed for better individual customization for the end user but the system was susceptible to modification and updating the website blocking list was difficult.¹⁰⁵ Second, software at the local-server level allowed companies or organizations to easily block sites from all of their users; however, this required a one-size-fits-all approach that was time consuming to maintain.¹⁰⁶ And third, ISPs could filter websites for all of their subscribers, but this suffered from the same problems of the one-size-fits-all approach.¹⁰⁷

The claims at issue in BASCOM's patent combined the benefits of the three different methods, while mitigating their individual drawbacks.¹⁰⁸ The patent teaches individually customized filtering at the remote ISP server level by using the subscriber network transmission information to distinguish between requests from different users, while also allowing for a master-inclusive list along with individually customizable inclusive and exclusive lists.¹⁰⁹

At trial, the district court held that BASCOM's patent was invalid as a matter of law, because it was directed to the abstract idea of filtering content under step one of *Alice*¹¹⁰ and there was no inventive concept under step two of *Alice* because each individual claim limitation, taken in isolation, was a generic computer component.¹¹¹

The Federal Circuit agreed with the district court that the claim was directed to the abstract idea of filtering content.¹¹² The Federal Circuit noted that the claims were, at best, ambiguously directed to an improvement in computer capabilities, although the court admitted it was a close call.¹¹³

Turning to step two of the *Alice* test, the Federal Circuit reversed the district court and found that there was an inventive concept.¹¹⁴ It held that

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. *Id.* at 1344–45.

110. *Id.* at 1346–47. The claims were compared to a librarian or parent who forbids children from reading certain books at the library. *Id.* at 1346.

111. *Id.* at 1347.

112. *Id.* at 1348.

113. *Id.* at 1349.

114. *Id.* at 1350–51.

the district court erred by looking only at the claim elements individually, instead of looking at the claim elements as an ordered combination.¹¹⁵ The inventive concept was the installation of a filtering tool at a remote location with customizable filtering options for each end user.¹¹⁶ The court found that BASCOM's use of network technology to associate individual accounts with the proper filtering scheme cannot be said to have been conventional or generic.¹¹⁷ In other words, the patent is specifically claiming a technology-based solution to filtering internet content that overcomes some of the downsides to traditional internet filtering systems.¹¹⁸

D. FOCUSING ON PREEMPTION: *McRO, INC. v. BANDAI NAMCO GAMES AMERICA INC.*

The decision in *McRO, Inc. v. Bandai Namco Games America Inc.* is important because of its focus on preemption.¹¹⁹ The patents at issue in *McRO* were directed at methods for automating the lip synching and facial expressions for animated characters.¹²⁰ The two patents at issue both dealt with automating the animation process of setting keyframes, which are important visual frames in the animation.¹²¹ This invention helped animators achieve better and faster results than was previously possible.¹²²

At trial, the district court held that the claims were ineligible because they were too preemptive to satisfy § 101.¹²³ In the court's view, the claims attempted to patent the abstract idea of using rules to automatically set keyframes, not just one specific method for setting keyframes.¹²⁴

The Federal Circuit determined that, similar to *Enfish*, the claims were not directed to an abstract idea under step one of the *Alice* test.¹²⁵ The Federal Circuit admonished the district court for oversimplifying the claims and overlooking the specific claim limitations.¹²⁶ Instead, the court looked at the claim limitations, as well as information from the specification, and

115. *Id.* at 1349–50.

116. *Id.* at 1350.

117. *Id.*

118. *Id.*

119. *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–16 (Fed. Cir. 2016).

120. *Id.* at 1303.

121. *Id.* at 1305–07.

122. *Id.* at 1306–07.

123. *Id.* at 1309.

124. *Id.*

125. *Id.* at 1316.

126. *Id.* at 1313.

determined that the rules for automating the animation were limited to rules with certain common characteristics.¹²⁷

Significantly, this decision focused on preemption¹²⁸ because the claims were claiming a “genus” of an invention, which created a greater risk of preemption.¹²⁹ However, because there were already known alternative methods of achieving the same end result, it was not overly preemptive.¹³⁰ As the Federal Circuit made clear, the claims do not preempt “all techniques for automating 3-D animation that rely on rules.”¹³¹

This case is also significant because the claims were not directed to a specific improvement in general computing or internet technology, but rather, the claims were “limited to a specific process.”¹³² As the court discussed, the patents focus on a specific means of improving the relevant technology and not merely on the end result of an abstract idea.¹³³

E. ARTICULATING THE TECHNOLOGICAL ARTS TEST: *AMDOCS (ISR.) LTD. V. OPENET TELECOM, INC.*

In *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, the Federal Circuit found that network accounting patents were patentable using the technological arts test.¹³⁴ The four patents at issue in *Amdocs*¹³⁵ related to a system “designed to solve an accounting and billing problem faced by network service providers.”¹³⁶ The patents related to improving network accounting data collection by using a distributed architecture.¹³⁷ This architecture minimized the impact on network and system resources by allowing the data to reside close to the information sources, thereby reducing network congestion while still allowing data to be centrally accessible.¹³⁸

127. *Id.*

128. *Id.* at 1314–16.

129. *Id.* at 1314.

130. *Id.* at 1315.

131. *Id.*

132. *Id.* at 1316 (finding that “claim 1 is directed to a patentable, technological improvement over the existing, [sic] manual 3-D animation techniques”).

133. *Id.*

134. *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1302–03 (Fed. Cir. 2016).

135. U.S. Patent Nos. 7,631,065, 7,412,510, 6,947,984, and 6,836,797; *Amdocs*, 841 F.3d at 1290.

136. *Amdocs*, 841 F.3d at 1291.

137. *Id.*

138. *Id.* at 1291–92.

The district court held that all four patents were ineligible under § 101.¹³⁹ The court determined under step one of the *Alice* test that the claims were directed to the “abstract idea of correlating two network accounting records to enhance the first record.”¹⁴⁰ And under step two, the court did not find any sufficient inventive concept to confer eligibility.¹⁴¹

The Federal Circuit reversed, finding that the claims were patent eligible.¹⁴² The court compared the claims to those in other cases, finding that they were closest to the claims in *BASCOM* and *DDR Holdings*.¹⁴³ Here, Amdocs’s claims solved the problems caused by the massive data flow associated with large databases, like the claims in *DDR Holdings*, which solved the problem of the conventional internet hyperlink protocol “preventing websites from retaining visitors.”¹⁴⁴ Moreover, the claims, when considered as an ordered combination, recited an invention that was “not merely the ‘routine or conventional use’ of technology.”¹⁴⁵

The Federal Circuit also concluded that, similar to *Enfish*, the claims posed an “unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases).”¹⁴⁶ Although the claims used generic computing components, the claim limitations required the generic components to operate “in an unconventional manner to achieve an improvement in computer functionality.”¹⁴⁷ *Amdocs* therefore affirmed the requirement that claims provide a technological solution to a technical problem.¹⁴⁸

III. DISCUSSION

Although there has been uncertainty since the Supreme Court went down the rabbit hole in *Alice*, the Federal Circuit has actually provided some guiding stars to go by. This Part begins by summarizing the current framework for deciding software patent eligibility established by the Federal Circuit post-*Alice*, and how the Federal Circuit is applying a “technological arts” test to the *Alice* two-step test. This Part concludes by

139. *Id.* at 1290.

140. *Id.* at 1299.

141. *Id.*

142. *Id.* at 1302.

143. *Id.* at 1301–02.

144. *Id.* at 1302.

145. *Id.* at 1301–02 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 (Fed. Cir. 2014)).

146. *Id.* at 1300.

147. *Id.* at 1300–01.

148. *See id.*

discussing the problems arising from the Federal Circuit's use of the technological arts test.

A. SOFTWARE PATENT-ELIGIBILITY FRAMEWORK ESTABLISHED BY THE FEDERAL CIRCUIT

This Section discusses how the Federal Circuit has applied the *Alice* test, how the application of the *Alice* test appears to be the technological arts test, and how similar tests have been applied internationally.

DDR, *Enfish*, and *McRO* highlight the Federal Circuit's evolving definition of an abstract idea. Step one of the *Alice* test asks whether or not the claims are directed to an abstract idea.¹⁴⁹ First, in *DDR Holdings, LLC v. Hotels.com, L.P.*, the court characterized the claims as “making two web pages look the same” and “making two e-commerce web pages look alike by using licensed trademarks, logos, color schemes, and layouts.”¹⁵⁰ But it did not determine whether the claims were directed to an abstract idea.¹⁵¹ Second, in *Enfish, LLC v. Microsoft Corp.*, the court held that the claims were not directed to an abstract idea because they dealt with a technical solution (a self-referential database) to a technical problem (the difficulty of having multiple data types in one table).¹⁵² And third, in *McRO, Inc. v. Bandai Namco Games Am. Inc.* the court determined that the claims were directed to “a patentable, technological improvement over the existing, manual 3-D animation techniques.”¹⁵³

The Federal Circuit clearly held the claims to be directed to an abstract idea but still conferred patent eligibility in only one case: *BASCOM Global Internet Services v. AT&T Mobility LLC*.¹⁵⁴ There, the court found that the claims were directed to “a content filtering system for filtering content retrieved from an internet computer network.”¹⁵⁵ However, under step two of the *Alice* test, the court found that the claims contained an inventive concept in that they claimed a “technology-based solution” to filtering content on the Internet that “overcomes existing problems with other Internet filtering systems.”¹⁵⁶ Similar logic can be seen in *DDR*, where there

149. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014).

150. *See DDR Holdings, LLC*, 773 F.3d at 1257.

151. *See id.*

152. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337–39 (Fed. Cir. 2016).

153. *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016).

154. *BASCOM Glob. Internet Servs. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016).

155. *Id.* at 1348.

156. *Id.* at 1351.

was an inventive concept because the claims “specif[ied] how interactions with the Internet are manipulated to yield a desired result.”¹⁵⁷

In contrast, *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.* eschews the traditional two-part test, noting that “there is considerable overlap between step one and step two, and in some situations this analysis could be accomplished without going beyond step one.”¹⁵⁸ The court then held that the claims were patent eligible because they were a technological solution to a technical problem.¹⁵⁹

A common theme between all five cases in which the Federal Circuit found software to be patent eligible is that the invention was a technical solution to what could be considered a technical problem, which has been characterized as the “technological arts test.”¹⁶⁰ The technological arts test attempts to provide patent eligibility for technological and scientific innovation, but not for “social/commercial/economic” innovation.¹⁶¹ Although the test was previously rejected by the Board of Patent Appeals and Interferences,¹⁶² it arguably was reincarnated by *Alice* and the Federal Circuit’s interpretation of the *Alice* test.¹⁶³

The technological arts test as applied by the Federal Circuit is similar to the software patent-eligibility scheme currently in place in Europe.¹⁶⁴ Europe allows for software patents that exhibit a technical solution to a technical problem.¹⁶⁵ Specifically, Europe allows for patents “[w]here said further effects have a technical character or where they cause the software to solve a technical problem.”¹⁶⁶ Further, applying Europe’s test to the search for an inventive concept seems to offer the same results as the Federal Circuit’s use of the technological arts test.¹⁶⁷ Europe requires that the inventive concept or “something more” must be “identified in the results of running a computer program, as opposed to in the notion of the computer

157. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1258 (Fed. Cir. 2014).

158. *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016).

159. *Id.* at 1303–04.

160. *See* Steelman, *supra* note 10, at 384.

161. *Id.*

162. *See Ex parte Lundgren*, No. 2003-2088, at 7–9 (B.P.A.I. Apr. 20, 2004).

163. *See Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2351 (2014) (“[The claims] do not, for example, purport to improve the functioning of the computer itself or effect an improvement in any other technology or technical field.”); *see also* Steelman, *supra* note 10, at 387.

164. Rupert A. Knights & Craig A. Redinger, *Patent-Eligibility of Software Patents in the U.S. and Europe: A Post-Alice Consideration*, 8 LANDSLIDE 1, 7 (2015).

165. *Id.* at 5

166. *Id.*

167. *Id.* at 7–8.

program itself. Those results must not be abstract in themselves and must go beyond the normal physical interactions between the software and the computer.”¹⁶⁸

B. PROBLEMS AND UNCERTAINTIES WITH THE TECHNOLOGICAL ARTS TEST

Although the technological arts test appears to be gaining prominence in Federal Circuit decisions, there is still uncertainty in its application. This Section discusses how the technological arts test currently may be misapplied, how preemption may play an additional factor, and how the Supreme Court has previously handled rules created by the Federal Circuit.

The Federal Circuit arguably misapplied the technological arts test in *Intellectual Ventures v. Symantec*, by holding that the claims were not patent eligible despite featuring a technical solution to a technical problem.¹⁶⁹ The claims were directed to an improvement in virus detection technology in cell phones, specifically, detecting viruses at the network level instead of at the individual device level.¹⁷⁰ This method prevents potentially damaging files from infecting mobile devices and does not require individual users to periodically update their phone’s software.¹⁷¹ However, the court determined that this invention was akin to throwing away traditional junk mail and, therefore, it was not patent eligible because it contained no inventive concepts.¹⁷² At the very least, this case shows that there may be some difficulties in applying the technological arts test in some instances, especially in determining what is the technological solution and technological problem.

Although the technological arts test focuses on identifying a technical solution to a technical problem, preemption may still be an additional consideration, requiring claims to be sufficiently specific to confer patent eligibility.¹⁷³ In *Internet Patents Corp. v. Active Network, Inc.*, for example, the Federal Circuit held that a solution to the technical problem of data loss

168. *Id.*

169. *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1321–22 (Fed. Cir. 2016).

170. *Id.* at 1319.

171. *Id.* at 1321.

172. *Id.* at 1314. The dissent argued that the claims were similar to those at issue in *BASCOM Glob. Internet Servs. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016), and should therefore be patent eligible as they are a solution to a technological problem that was sufficiently concrete. *Id.* at 1321.

173. *See McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016).

occurring when users return to a previous internet form was patent ineligible.¹⁷⁴ This invention changed the way that normal internet traffic works and therefore appears to be the type of invention that would pass the technological arts test. However, the Federal Circuit characterized the claims as being directed to the abstract idea of retaining information in the navigation of online forms.¹⁷⁵ And because the claim limitations were merely generic data collection steps for maintaining the form's state, there was no inventive concept.¹⁷⁶ This appears to be an example of a patent failing to claim a technical solution in sufficiently concrete terms to limit its preemptive effect. As the court noted, the claim contained no restrictions on how the functionality was accomplished and failed to describe the mechanism for maintaining the form state, despite that being the major innovation.¹⁷⁷ The invention was therefore too broadly preemptive and not patent eligible because it claimed all the possible ways of implementing the solution to the form navigation problem.¹⁷⁸ This suggests that the court might be using the technological arts test with a preemption factor requiring a certain level of claim specificity to determine whether or not the claims are directed to an abstract idea.

IV. CONCLUSION

Despite the Federal Circuit's recent attempts to make sense of *Alice*, there is still uncertainty when it comes to what types of software can and cannot be patented. The Federal Circuit currently appears to be applying the "technological arts" test to the *Alice* two-step test. The "technological arts" test properly filters out generic business methods implemented with software, while allowing for inventions that are actually improvements to software, computers, and the internet itself. Software is extremely important to our society as a whole, and therefore the way in which software innovations are promoted is important. The Federal Circuit appears to have formulated a workable test that complies with the intent of *Alice*, but because of uncertainty associated with this approach, the Supreme Court should officially affirm the Federal Circuit's use of the technological arts test.

174. *Internet Patents Corp. v. Active Network Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015).

175. *Id.* at 1348.

176. *Id.* at 1349.

177. *Id.* ("As the district court observed, claim 1 contains no restriction on how the result is accomplished. The mechanism for maintaining the state is not described, although this is stated to be the essential innovation.")

178. *Id.*

PREEMPTION, DIAGNOSTICS, AND THE MACHINE-OR-TRANSFORMATION TEST: FEDERAL CIRCUIT REFINEMENT OF BIOTECH METHOD ELIGIBILITY

Joyce C. Li[†]

Patentable subject matter has been in disarray since the Supreme Court overhauled the doctrine with a string of decisions invalidating claims for ineligible subject matter.¹ The largely judge-made doctrine stems from section 101 of the Patent Act, which states that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter” is eligible for patent.² The Supreme Court has extrapolated from these patent-eligible categories to identify several patent-ineligible subject matters: laws of nature, natural phenomena, and abstract ideas.³ The Court made clear that preemption concerns, or fears of undue impact on downstream innovation, drive this exclusionary principle.⁴ Describing these ineligible concepts as “the basic tools of scientific and technological work,” the Court worried “monopolization of those tools through the grant of patent might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws.”⁵ But the Court has also warned of the principle’s limitations, “lest it swallow all of patent law,” because “at some level, all inventions. . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.”⁶ Thus, Supreme Court patentable subject matter

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1. See *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014); *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Bilski v. Kappos*, 561 U.S. 593 (2010).

2. 35 U.S.C. § 101 (2012).

3. *Alice*, 134 S. Ct. at 2354 (citing *Myriad*, 133 S. Ct. at 2116; *Bilski*, 561 U.S. at 601–02; *O’Reilly v. Morse*, 56 U.S. 62, 112–20 (1854); *Le Roy v. Tatham*, 55 U.S. 156, 174–75 (1853)).

4. *Alice*, 134 S. Ct. at 2354 (“We have described the concern that drives this exclusionary principle as one of pre-emption.”) (citing *Bilski*, 561 U.S. at 611–12).

5. *Id.* (internal quotation marks and brackets omitted).

6. *Id.* (internal quotation marks and brackets omitted).

jurisprudence aims to optimize innovation through the patent system by balancing exclusive rights and preemption.⁷

The current standard for assessing section 101 eligibility is a two-step test attributed to *Mayo v. Prometheus* and solidified in *Alice v. CLS Bank*.⁸ While *Alice* plainly stated two required steps, it provided little guidance for their application.⁹ As a result, courts have struggled to find a clear standard for patentable subject matter, especially in the fields of biotechnology and computer science.¹⁰ Notably, the Supreme Court did previously consider a different approach, which the Federal Circuit named the machine-or-transformation test.¹¹ However, the Court later rejected that test, and opted instead for a more nuanced standard, in order to better reflect its policy goals of balancing exclusive rights and preemption.¹²

For the last several years, the Supreme Court has dominated section 101 jurisprudence by the sheer number of cases it has decided. But the Court recently denied certiorari to a controversial subject matter case, *Ariosa v. Sequenom*,¹³ which the Court then followed with denial of four additional petitions incorporating over 400 patents in software, internet, and medical diagnostics.¹⁴ Thus, it seems the Supreme Court has returned the torch to the Federal Circuit to lead lower courts in refining the *Mayo/Alice* test.

This Note analyzes Federal Circuit treatment of biotechnology method claims since *Mayo*, specifically relating to section 101 policy drivers. Part I lays the foundation with an overview of Supreme Court policy and doctrine. Part II provides a summary of significant Federal Circuit cases, post-*Mayo*,

7. See Mark A. Lemley et al., *Life After Bilski*, 63 STAN. L. REV. 1315, 1329 (2011) (arguing subject matter eligibility “is about encouraging cumulative innovation and furthering societal norms regarding access to knowledge by preventing patentees from claiming broad ownership over fields of exploration rather than specific applications of those fields”).

8. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 132 S. Ct. at 1294).

9. See *id.*

10. See Joe Craig, Note, *Deconstructing Wonderland: Making Sense of Software Patents in a Post-Alice World*, 32 BERKELEY TECH. L.J. (forthcoming 2017) (discussing issues of patent eligibility in software).

11. See *Diamond v. Diehr*, 450 U.S. 175, 182–84 (1981); *In re Bilski*, 545 F.3d 943, 959 (Fed. Cir. 2008).

12. *Bilski v. Kappos*, 561 U.S. 593, 604–06 (2010); see also *Alice*, 134 S. Ct. at 2354–55.

13. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 2511 (2016). *Ariosa* was widely hailed as the Court’s opportunity to clarify section 101. E.g., Jason Rantanen, *Section 101 - Pivotal Moment for Clarity on Patent Subject Matter Eligibility*, PATENTLYO (Apr. 21, 2016), <http://patentlyo.com/patent/2016/04/section-subject-eligibility.html> [<https://perma.cc/5UXW-PE7K>].

14. Tony Dutra, *High Court Denies Petitions, Content with Alice Aftermath*, BLOOMBERG LAW (Oct. 03, 2016), <https://www.bloomberglaw.com/document/XFV084EC000000?campaign=bnaemailink&jcsearch=bna%2520A0K2A1X7N6#jcite>.

involving biotech method claims. Part III analyzes those decisions to address (1) whether they are consistent with Supreme Court policy, (2) how they suggest a return to the machine-or-transformation test, (3) the risk of future policy failure with respect to diagnostic methods, and (4) potential refinements of the *Mayo/Alice* test. Part IV concludes that the Federal Circuit could both improve administrability and better promote underlying policies by approaching *Mayo/Alice* step two in the context of a claim's breadth and capacity to generate downstream technologies.

I. THE SUPREME COURT STORY

Though subject matter eligibility is rooted in the broad language of section 101, the doctrine is essentially a judicial construct. Thus, the Supreme Court has played a vital role in identifying both the scope of the doctrine as well as underlying policy drivers.

A. UNDERLYING POLICY: PREEMPTION AND IMPACT ON DOWNSTREAM INNOVATION

The Supreme Court has identified excessive “preemption” as the primary rationale behind patentable subject matter doctrine.¹⁵ In patent law, preemption refers to a patentee's exclusive right to make, use, or sell a claimed invention during the life of the patent.¹⁶ The incentive scheme of patent law relies on exclusive rights as a motivator for innovation, so preemption is an inherent quality of every patent.¹⁷ But not all claims preempt equally; a historical analysis reveals that the Court's main concern with overly preemptive claims is undue impact on downstream innovation.

1. *Sowing the Seed*: *O'Reilly v. Morse* and *Neilson v. Harford*

Supreme Court patentable subject matter jurisprudence dates back to the nineteenth century in the landmark case *O'Reilly v. Morse*.¹⁸ In *Morse*, the Court addressed the validity of a claim in Morse's patent for the electromagnetic telegraph.¹⁹ The contested claim covered the use of electric or galvanic current “however developed for marking or printing intelligible characters, signs, or letters, at any distances.”²⁰ The Court rejected the claim as “too broad, and not warranted by law,” as the claim allowed Morse to

15. *Alice*, 134 S. Ct. at 2354.

16. *See* 35 U.S.C. § 271 (2012).

17. *See id.*

18. *See* *O'Reilly v. Morse*, 56 U.S. 62 (1854).

19. *Id.* at 106.

20. *Id.* at 112.

combine his current invention with new scientific discoveries, providing rights to additional inventions not recorded with the patent office.²¹ The Court feared Morse could then monopolize his undisclosed invention indefinitely because “the public must apply to him to learn what it is.”²²

Though *Morse* is widely considered a patentable subject matter case,²³ the Court did not actually address whether Morse claimed ineligible subject matter. Instead, the Court rejected his claim for lack of written description or enablement,²⁴ finding that Morse had claimed a “manner and process which he ha[d] not described and indeed had not invented, and therefore could not describe when he obtained his patent.”²⁵

The Court did, however, spend considerable time discussing *Neilson v. Harford*, a case from the English Court of Exchequer, which addressed both enablement and subject matter eligibility.²⁶ In *Neilson*, the patent claimed an improved method for heating furnaces that involved producing a current of air, first passed into a heated vessel, then into the furnace.²⁷ In essence, the invention was a mechanism to apply hot air to blast furnaces, which proved more effective than using cold air.²⁸ The Court in *Morse* identified two separate issues in *Neilson*: the question of written description and enablement decided by the jury²⁹ and the division between principle and

21. *Id.* at 113.

22. *Id.*

23. *See* Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1293 (2012) (citing *Morse* to support the statement that “[t]he Court has long held that [section 101] contains an important implicit exception[;] ‘[l]aws of nature, natural phenomena, and abstract ideas’ are not patentable”); Parker v. Flook, 437 U.S. 584, 592 (1978) (referring to *Morse* as a “landmark decision” in patentable subject matter).

24. Rochelle C. Dreyfuss & James P. Evans, *From Bilski Back to Benson: Preemption, Inventing Around, and the Case of Genetic Diagnostics*, 63 STAN. L. REV. 1349, 1356–57 (2011); Lemley et al., *supra* note 7, at 1332 (noting that *Morse* is discussed as part of the “enablement” section in CRAIG ALLEN NARD, THE LAW OF PATENTS 51 (2008)).

25. *Morse*, 56 U.S. at 113.

26. *Id.* at 114–17 (citing *Neilson v. Harford*, 151 Eng. Rep. 1266 (1841)).

27. *Neilson*, 151 Eng. Rep. at 1266.

28. *See id.*

29. *See id.* at 1274. In addressing written description or enablement in *Neilson*, the court held that a valid patent must have a specification that “if fairly followed out by a competent workman, without invention or addition, would produce the machine for which the patent is taken out.” In contrast to the court’s discussion of principles versus applications of principles, this language parallels modern section 112, requiring written description and enablement of what is claimed. *See* 35 U.S.C. § 112 (2012). Thus, enablement or written description issues are best addressed under section 112, rather than section 101.

application of principle determined by the court.³⁰ In the latter, the *Neilson* opinion grappled with whether the patent claimed the relationship between air blast temperature and furnace fire temperature—a patent-ineligible principle—or an eligible application of that relationship.³¹ The court concluded that even considering the principle as well known, Neilson invented a “mode of applying it by mechanical apparatus to furnaces” and thus claimed an eligible “machine embodying a principle.”³²

Neither *Neilson* nor *Morse*’s characterization of *Neilson* elaborated on the rationale for finding principles unpatentable. But by conducting separate analyses of whether a claim (1) embodied a principle, and (2) was properly described and enabled, the courts implied that the distinct inquiries may also have distinct policy drivers.³³ *Morse* can be read as suggesting that the goal of written description and enablement is to promote public access to knowledge; adequate disclosure allows subsequent inventors to manipulate and improve upon patented technologies.³⁴ More recent Supreme Court cases make clear that patentable subject matter doctrine instead focuses on preventing undue impact on downstream innovation (*i.e.*, excessive preemption), regardless of whether the claimed invention is disclosed to the public.

2. *Modern Policy: Funk Brothers and Beyond*

The Supreme Court broached the issue of undue preemption in *Funk Brothers v. Kalo*, which dealt with claims over a novel mixture of bacteria.³⁵ The Court found the claims to be invalid, in part because “[t]he qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the storehouse of knowledge of all men.”³⁶ While not explicitly addressing preemption, the Court implied that laws of nature, such as the listed examples, cannot be monopolized because they are fundamental to so many different applications.

Following *Funk Brothers*, the Court held in *Gottschalk v. Benson* that a computer-based method of binary conversion was patent ineligible.³⁷ The

30. *Morse*, 56 U.S. at 115.

31. *Neilson*, 151 Eng. Rep. at 1273 (“It is very difficult to distinguish [Neilson’s specification] from the specification of a patent for a principle, and this at first created in the minds of some of the Court much difficulty.”).

32. *Id.* at 1273.

33. *See Morse*, 56 U.S. at 114–15 (discussing *Neilson*, 151 Eng. Rep. at 1266).

34. *See id.* at 113.

35. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127 (1948).

36. *Id.* at 130.

37. *See Gottschalk v. Benson*, 409 U.S. 63, 73 (1972).

Court prefaced its discussion by stating, “Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”³⁸ The Court then went on to hold that Benson’s claim was “so abstract and sweeping” that the end use could be performed through any machinery³⁹ and might “vary from the operation of a train to verification of drivers’ licenses to researching the law books for precedents.”⁴⁰ *Gottschalk* can thus be understood as identifying two distinct factors underlying a claim’s preemptive effect: (1) breadth, and (2) capacity to generate dependent technologies.⁴¹ The first factor may be viewed as the specificity of a claim, including limitations to particular materials, techniques, or applications.⁴² The Court found Benson’s claim “abstract and sweeping” as it had no limitations beyond those inherent to the algorithm for binary conversion.⁴³ The second factor can be considered a claim’s estimated number of applications, or potential uses for a claim’s end goal.⁴⁴ Here, the Court’s laundry list of applications employing binary conversion suggested that the claim had high potential to generate dependent technologies.⁴⁵

Nearly ten years after *Gottschalk*, the Supreme Court held in *Diamond v. Diehr* that a method of curing synthetic rubber was patentable subject matter despite incorporating a well-known mathematical formula.⁴⁶ The Court found that, unlike the “abstract and sweeping” claim in *Gottschalk*, *Diehr*’s claims “describe in detail a step-by-step method for accomplishing

38. *Id.* at 67.

39. The issue of not being tied to specific machinery rings a bell for lack of enablement, but the Court’s main focus was on the potential to tie up “basic tools of science.” *See id.* at 67–68.

40. *Id.* at 68.

41. *Cf.* Lemley et al., *supra* note 7, at 1337, 1341 (suggesting that claim scope be the sole inquiry under section 101, but including as a factor of claim scope whether the claimed invention is “potentially generative of many kinds of new inventions”).

42. *See id.* at 1343 (characterizing a method of diagnosing vitamin deficiency in *Metabolite* as sufficiently narrow under section 101 because it “diagnoses a particular vitamin deficiency” and “uses one particular blood test,” meaning “[o]thers are free to develop new blood measurements and new ways to test for this particular deficiency, even if they cannot use the particular method disclosed in the patent,” *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006)).

43. *See Gottschalk*, 409 U.S. at 68.

44. *See* Katherine J. Strandburg, *Much Ado About Preemption*, 50 HOUS. L. REV. 563, 576 (2012) (“The result in *Benson* is a relatively straightforward application of a subject matter exclusion based on overbroad downstream impact due to the wide range of potential uses of the claimed technology.”).

45. *See Gottschalk*, 409 U.S. at 68.

46. *Diamond v. Diehr*, 450 U.S. 175, 175 (1981) (noting that the method at issue incorporated the Arrhenius equation).

[the end goal of curing synthetic rubber],” such that they sought “only to foreclose from others the use of [the] equation in conjunction with all of the other steps in their claimed process.”⁴⁷ Thus, it may be reasoned that the claims were not unduly preemptive because detailed “other steps” tied them to specific techniques and applications.⁴⁸ Further, the end goal of “curing synthetic rubber” can be understood as narrow and unlikely to generate many dependent technologies⁴⁹—a reading consistent with the fact that the Court did not raise the same laundry list of potential uses as it did in *Gottschalk*.⁵⁰

To date, the Court has given its clearest explanation of the risks associated with overly preemptive claims in the landmark case *Mayo v. Prometheus*.⁵¹ Prometheus claimed a method of optimizing drug dosage, comprising “administering” a drug and “determining” the blood level of a specific metabolite, “wherein” the user applied an algorithm linking metabolite level to optimal drug dosage.⁵² Like the claims in *Gottschalk*, the Court found Prometheus’s claims to be “overly broad” and analogous to “just sa[ying] ‘apply the algorithm.’”⁵³ However, like the claims in *Diehr*, Prometheus’s claims can also be understood as unlikely to generate many dependent technologies; the Court described the incorporated laws of nature

47. *Id.* at 184, 187.

48. See Lemley et al., *supra* note 7, at 1335 (reading *Diehr* as a straightforward application of their theory that section 101 is primarily an issue of claim breadth, as the patented process “was tied to a specific practical application of the formula that did not unduly foreclose future innovation relying on the formula”).

49. See Strandburg, *supra* note 44, at 605 (arguing that even if *Diehr*’s claims are considered to wholly preempt the particular algorithm for programming a computer to calculate rubber curing time, there was really no other application for that method and thus “it cannot seriously be maintained that this preemption indicates that *Diehr*’s claims would have broad downstream effects on innovation”).

50. See *Diehr*, 450 U.S. at 187; *cf. Gottschalk*, 409 U.S. at 68.

51. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1301–02 (2012) (“[T]here is a danger that the grant of patents that tie up [the use of basic tools of scientific and technological work] will inhibit future innovation premised upon them, a danger that becomes acute when a patented process amounts to no more than an instruction to ‘apply the natural law,’ or otherwise forecloses more future invention than the underlying discovery could reasonably justify.”). Though most clearly stated in *Mayo*, *Alice* also affirmed impact on downstream innovation as the Court’s main policy driver. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2358 (2014) (holding that a computer-based method for mitigating settlement risk was patent ineligible because given the “ubiquity of computers” it would risk monopolizing the abstract idea itself, and thus the holding “accord[ed] with the pre-emption concern that undergirds [Supreme Court] § 101 jurisprudence”) (internal brackets omitted).

52. *Mayo*, 132 S. Ct. at 1295.

53. *Id.* at 1301.

as “narrow laws that may have limited applications,” and only identified the claim’s potential use in “more refined treatment recommendations.”⁵⁴ Yet the Court ultimately found the claims invalid because “even a narrow law of nature (such as the one [in *Mayo*]) can inhibit future research.”⁵⁵ Thus, *Mayo* can be read as finding undue preemption, despite little opportunity for dependent technologies, where a claim is so broad as to encompass most practical uses of the incorporated law of nature.⁵⁶

In summary, Supreme Court patentable subject matter policy can be understood as targeting overly preemptive patents, or those likely to cause undue impact on downstream innovation. A claim’s preemptive effect may then depend on two factors: (1) breadth and (2) capacity to generate dependent technologies. The next section discusses how the Court has applied this policy to determine subject matter eligibility, specifically in method patents.

B. DEVELOPMENT OF DOCTRINE

The Supreme Court has taken two conflicting approaches to patentable subject matter. The *Mayo/Alice* test focuses on an inventive concept, while the machine-or-transformation test is centered on physical change. The Court ultimately established the former as the definitive test for section 101 eligibility, but continued to regard the latter as an important and useful clue.

1. *The Path of Unfortunate Word Choice: Confusion of Novelty, Nonobviousness, and Patentable Subject Matter*

The Supreme Court has a long history of addressing section 101 in the language of novelty and nonobviousness. Both are requirements for patentability, but they are explicitly defined under sections 102 and 103 of the Patent Act.⁵⁷ The compounded effect of numerous Supreme Court cases confusing the three doctrines culminated in *Alice v. CLS Bank*, which

54. *See id.* at 1302; Arti K. Rai, *Diagnostic Patents at the Supreme Court*, 18 MARQ. INTEL. PROP. L. REV. 1, 6 (2014) (“In the context of conceding that the law of nature in question was narrow, the *Mayo* Court did emphasize the relatively trivial contribution made by the patentee.”).

55. *See Mayo*, 132 S. Ct. at 1303. As all patents preempt in some capacity, the Court likely meant even a narrow law of nature may *unduly* inhibit future research. The Court also stated that the judiciary is not well suited to distinguish between different laws of nature, so it endorsed “a bright-line prohibition against patenting laws of nature, mathematical formulas and the like, which serves as a somewhat more easily administered proxy for the underlying ‘building-block’ concern.” *Id.*

56. *See id.* at 1295.

57. 35 U.S.C. §§ 102–103 (2012) (laying out requirements for novelty and nonobviousness).

described the second step of the two-step test for patent-eligible subject matter as a “search for an ‘inventive concept.’”⁵⁸

The problems began in *Morse*, and specifically *Morse*’s discussion of *Neilson*.⁵⁹ The Court noted that Neilson’s claim was a patentable application of a principle,⁶⁰ rather than an unpatentable claim on the principle itself, because the “interposition of a heated receptacle, in any form, was the *novelty* he invented.”⁶¹ The Court appears to have used “novelty” as a synonym for “application,”⁶² but by using a term of art, the Court invited confusion of the novelty and patentable subject matter doctrines.

Following *Morse*, the Court in *Parker v. Flook* further read novelty and nonobviousness into section 101. In *Flook*, the Court held that a computer-based method of updating alarm limits was invalid.⁶³ The Court explicitly limited its holding to section 101, rather than sections 102 or 103, arguing that patentability must precede determination of whether an invention is “new or obvious.”⁶⁴ However, the Court then concluded that conventional or obvious “post-solution activity,” or steps that occur after the principle is applied, cannot make a patent-ineligible claim eligible.⁶⁵ Rather, it held that “the discovery of [a phenomenon of nature or mathematical formula] cannot support a patent unless there is some other inventive concept in its application.”⁶⁶ Whereas *Neilson* merely required the application of a principle, *Flook* confused sections 101, 102, and 103 by requiring the *inventive* application of a principle.⁶⁷

The modern test for patentable subject matter follows *Flook* and reads both novelty and non-obviousness into section 101 with the “inventive

58. *Alice*, 134 S. Ct. at 2355.

59. *O’Reilly v. Morse*, 56 U.S. 62, 112–13 (1854).

60. The principle being that the application of hot air creates a hotter fire.

61. *Morse*, 56 U.S. at 116 (emphasis added).

62. *Id.* (“Undoubtedly, the principle that hot air will promote the ignition of fuel better than cold, was embodied in this machine. But the patent was not supported because this principle was embodied in it. . . . But *his patent was supported, because he had invented a mechanical apparatus*, by which a current of hot air, instead of cold, could be thrown in. And this new method was protected by his patent. *The interposition of a heated receptacle, in any form, was the novelty he invented.*”) (emphasis added).

63. *Parker v. Flook*, 437 U.S. 584 (1978).

64. *Id.* at 588, 593.

65. *Id.* at 590 (“The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance.”).

66. *Id.* at 594.

67. *See O’Reilly v. Morse*, 56 U.S. 62, 115 (1854); *Neilson v. Harford*, 151 Eng. Rep. 1266, 1266 (1841).

concept” requirement. Introduced in *Mayo v. Prometheus*, and solidified in *Alice v. CLS Bank*, the modern two-step test requires determining (1) whether the claims are “directed to” a patent-ineligible concept, then if so, (2) whether they include an “inventive concept . . . sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.”⁶⁸ The Court further described claims that lack an “inventive concept” as “simply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas.”⁶⁹ Thus, the “inventive concept” requirement stems from the Court’s concern with undue preemption. Because ineligible concepts such as laws of nature “considered generally, are the basic tools of scientific and technological work,”⁷⁰ a claim that merely instructs one to “apply the natural law . . . forecloses more future invention than the underlying discovery could reasonably justify.”⁷¹ Or rephrased, a claim that lacks an “inventive concept” amounts to a patent upon the natural law itself, which is then unduly preemptive and patent ineligible.

The *Mayo/Alice* test focuses on method claim eligibility and leaves many questions unanswered. In contrast, the Court has taken a simpler approach to composition claims; between *Mayo* and *Alice*, the Court decided *Association for Molecular Pathology v. Myriad*, which held that naturally occurring compositions are ineligible subject matter.⁷² Returning to the language of section 101, the Court found *Myriad*’s cancer gene composition claim ineligible because it failed to claim a “new and useful . . . composition of matter,” as the “location and order of the nucleotides existed in nature before *Myriad* found them” and “separating that gene from its surrounding genetic material [was] not an act of invention.”⁷³ However, the Court also held that merely removing the noncoding regions of the gene using common laboratory techniques was sufficient to differentiate the new sequence from an ineligible “product of nature.”⁷⁴ Thus, *Myriad* made clear that subject matter eligibility of composition claims hinges on whether that composition exists in nature, and any alterations aside from mere isolation

68. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)).

69. *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App’x 65, 69 (Fed. Cir. 2012) (quoting *Mayo*, 132 S. Ct. at 1300).

70. *Mayo*, 132 S. Ct. at 1301 (internal quotation marks omitted).

71. *Id.* (internal quotation marks omitted).

72. *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116–17 (2013).

73. *Id.* at 2116–17.

74. *Id.* at 2119.

are sufficient to make the claim patent eligible.⁷⁵ This Note focuses on section 101 as applied to method claims, which remains a gray area despite the Court’s attempts to clarify the doctrine in *Mayo* and *Alice*.

2. *An Alternative Approach: The Machine-or-Transformation Test*

In parallel to *Flook*, the Supreme Court took an alternative view to method claim eligibility, which the Federal Circuit dubbed the “machine-or-transformation test.”⁷⁶ The test holds that patentable method claims must either be tied to a particular machine, or transform or reduce an article to a “different state or thing.”⁷⁷ Though the Federal Circuit shaped much of the jurisprudence in this area, the test originated from Supreme Court cases *Gottschalk v. Benson* and *Diamond v. Diehr*.⁷⁸ And like the *Alice* inventive concept test, it too was adopted to address undue preemption; a claim’s tangible limitations to a particular machine or transformation act as a proxy for acceptable levels of preemption.⁷⁹

In *Gottschalk*, the Court strongly encouraged the machine-or-transformation test via discussion of its own precedent. Specifically, the Court highlighted methods for manufacturing flour (reducing grain to powder) and glycerine (chemical transformation) as examples of patentable transformations or reductions “to a different state or thing.”⁸⁰ Likewise, the Court referenced a patent-eligible process for expanding metal (physical transformation) that produced a “new and useful result.”⁸¹ Ultimately, the Court declined to find the machine-or-transformation test definitive of

75. *Id.* at 2116–19.

76. *In re Bilski*, 545 F.3d 943, 958–62 (Fed. Cir. 2008).

77. *Id.*; see also *Diamond v. Diehr*, 450 U.S. 175, 192 (1981); *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972).

78. Notably, the Supreme Court decided *Diehr* in 1981 and the Federal Circuit was created in 1982, making *Diehr* the gold standard for patentable subject matter doctrine at the time.

79. *In re Bilski*, 545 F.3d at 954 (“A claimed process involving a fundamental principle that uses a particular machine or apparatus would not pre-empt uses of the principle that do not also use the specified machine or apparatus in the manner claimed. And a claimed process that transforms a particular article to a specified different state or thing by applying a fundamental principle would not pre-empt the use of the principle to transform any other article, to transform the same article but in a manner not covered by the claim, or to do anything other than transform the specified article.”); see also *Gottschalk*, 409 U.S. at 69–70 (citing *Corning v. Burden*, 56 U.S. 252 (1854) (finding a process for tanning, dyeing, etc. not tied to particular machinery, but incorporating changes in “articles or materials” sufficient to confine the patent monopoly “within rather definite bounds”)).

80. *Gottschalk*, 409 U.S. at 69–70 (citing *Cochrane v. Deener*, 94 U.S. 780 (1877); *Tilghman v. Proctor*, 102 U.S. 707 (1881)).

81. *Id.* (citing *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 385–86 (1909)).

subject matter eligibility, but it also failed to define the test's limitations or suggest an alternative approach.⁸²

The Court again endorsed the machine-or-transformation test in *Diamond v. Diehr*. The Court held that a claim was patentable if it applied an ineligible concept “in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing).”⁸³ Remarkably, between deciding *Gottschalk* and *Diehr*, the Court decided *Flook*, in which it made no mention of the machine-or-transformation test.⁸⁴ The Court in *Diehr* also emphasized, notably counter to *Flook*, that “the ‘novelty’ of any element or steps in the process, or even of the process itself” does not factor into section 101 eligibility.⁸⁵

Thus, despite being temporally close, *Flook* and *Diehr* applied vastly different doctrines. *Flook* focused on whether the application of an ineligible concept was *inventive*, whereas *Diehr* asked whether the application *reduced or transformed* matter to a different state or thing.⁸⁶ Hence, a period of uncertainty followed *Diehr*, as lower courts grappled with the conflicting doctrines.⁸⁷ *Mayo* and *Alice* provided a definitive

82. *Id.* at 71–73 (acknowledging that there might be method claims that fail the test, but are still eligible for patent). The Court struggled to find a suitable method for limiting the scope of patents dealing with algorithms and seemed to land on the machine-or-transformation test as the best, but imperfect, approach. The Court ended with a plea to Congress to address issues of patentable subject matter in computer science, indicating that it believed the problem to be beyond the scope of judicial power. *Id.*

83. *Diamond v. Diehr*, 450 U.S. 175, 192 (1981) (“[W]hen a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of §101.”).

84. *See Parker v. Flook*, 437 U.S. 584, 588–96 (1978).

85. *Compare Diehr*, 450 U.S. at 188–89, *with Flook*, 437 U.S. at 594 (holding that “the discovery of [] a phenomenon [of nature] cannot support a patent unless there is some other *inventive* concept in its application”) (emphasis added).

86. *See Flook*, 437 U.S. at 588; *Diehr*, 450 U.S. at 188–89.

87. *See, e.g., Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, No. 04-CV-1200, 2008 U.S. Dist. LEXIS 25062 (S.D. Cal. Mar. 28, 2008) (holding that patentee need not pass the machine-or-transformation test, but instead asked whether the claim “wholly pre-empt[s] all practical use of the unpatentable subject matter”); *cf. In re Bilski*, 545 F.3d 943, 956 (Fed. Cir. 2008) (reaffirming that “the machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101”). On appeal, the Supreme Court then held the machine-or-transformation test was not definitive. *Bilski*, 561 U.S. at 604. However, the Court did not provide a clear alternative approach and thus failed to ease tensions between the *Flook* and *Diehr* frameworks. *Id.*

answer by implementing *Flook*'s inventive concept requirement,⁸⁸ while reducing the machine-or-transformation test to an “important and useful,” but non-conclusive, factor.⁸⁹

II. BIOTECH METHODS POST-MAYO

Mayo and *Alice* offer little practical guidance for applying section 101, which has had substantial impact in the biotechnology industry. Thus, this Note evaluates the biotechnology method patent cases decided by the Federal Circuit post-*Mayo*. While these decisions may appear consistent with Supreme Court policy drivers, they can also be understood as a return to the machine-or-transformation test.

A. ASSOCIATION FOR MOLECULAR PATHOLOGY V. USPTO

Association for Molecular Pathology dealt with several Myriad Genetics patents relating to breast and ovarian cancer genes.⁹⁰ The Supreme Court later granted certiorari for the composition claims, but left the Federal Circuit's finding of patent eligibility for Myriad's method of screening potential cancer therapeutics.⁹¹ The method comprised of (1) growing a “transformed host cell” with an altered BRCA1 gene, (2) in the presence or absence of a therapeutic, and (3) comparing growth rates of different host cells.⁹²

The Federal Circuit distinguished the case from *Mayo* by focusing on the “‘transformed’ host cell.”⁹³ “Transformed” here refers to cells with an increased growth rate that divide indefinitely,⁹⁴ not “transformed” as a term of art in the machine-or-transformation test. Though cell transformation can occur spontaneously, the court emphasized that these transformed host cells

88. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012).

89. *Mayo*, 132 S. Ct. at 1296 (citing *Bilski*, 561 U.S. at 603).

90. *Ass'n for Molecular Pathology v. USPTO*, 689 F.3d 1303 (Fed. Cir. 2012).

91. *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116–19 (2013) (holding that claims over naturally occurring genes are invalid, but claims over man-made complementary DNA (cDNA) are valid); *Ass'n for Molecular Pathology*, 689 F.3d at 1336–37.

92. *Ass'n for Molecular Pathology*, 689 F.3d at 1336.

93. *Id.*

94. *Selecting the Appropriate Cell Line*, THERMO FISHER SCI., <https://www.thermofisher.com/us/en/home/references/gibco-cell-culture-basics/cell-lines.html> (last visited Nov. 11, 2017) [<https://perma.cc/2RKP-8YZA>]; *What Is Cell Culture*, THERMO FISHER SCI., <https://www.thermofisher.com/us/en/home/references/gibco-cell-culture-basics/introduction-to-cell-culture.html> (last visited Nov. 11, 2017) [<https://perma.cc/5UT2-MC4G>].

were a product of man, not nature.⁹⁵ Invoking the language of the machine-or-transformation test, the court held that “performing operations, even known types of steps, on, or to create, novel, *i.e.*, transformed⁹⁶ subject matter is the stuff of which most process or method invention consists.”⁹⁷ Thus, the court found that when a composition of matter, such as the “transformed host cell,” is patent eligible, “applying various known types of procedures to it is not merely applying conventional steps to a law of nature,” because the underlying man-made subject matter makes the claim patent eligible.⁹⁸

The Federal Circuit emphasized that the claim was also narrow, since it was “tied to specific host cells *transformed* with specific genes and grown in the presence or absence of a specific type of therapeutic.”⁹⁹ Therefore, the claimed method would not preempt similar work with all cells or therapeutics, or other methods of determining a drug’s therapeutic effect.¹⁰⁰ Arguably, the method also had low potential to generate dependent technologies because the end goal of using transformed host cells to test cancer therapeutics would likely be limited to similar applications in cancer drug development.

B. *PERKINELMER V. INTEMA*

In *PerkinElmer*, the Federal Circuit held that a method for estimating risk of fetal Down’s syndrome was not patent eligible.¹⁰¹ The claimed method comprised (1) measuring an unidentified screening marker in the first trimester of pregnancy, (2) measuring an unidentified screening marker in the second trimester, (3) comparing both to statistics for the same markers in unaffected and Down’s syndrome pregnancies, and (4) combining the markers into a single Down’s syndrome risk calculation.¹⁰²

In step one of the *Mayo/Alice* test, the Federal Circuit found that Intema’s claims recited a law of nature—“an eternal truth that exists in

95. *Ass’n for Molecular Pathology*, 689 F.3d at 1335 (“The parties agree that the transformed cells arose from human effort; *i.e.*, they are not natural products.”).

96. Here, the Court used “transformed” as a term of art referring to the machine-or-transformation test, which happens to be fulfilled by the “transformed host cell,” as defined in the biotechnology industry.

97. *Ass’n for Molecular Pathology*, 689 F.3d at 1336.

98. *Id.*

99. *Id.* at 1336–37. However, by specific type of therapeutic, the court is referring to any “compound suspected of being a cancer therapeutic,” which is still quite broad. *Id.* at 1310.

100. *See id.* at 1336–37.

101. *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App’x 65, 71 (Fed. Cir. 2012).

102. *Id.* at 66–68.

principle apart from any human action”—via the relationship between screening marker levels and the risk of fetal Down’s syndrome.¹⁰³ In step two, the court found additional steps of “measuring” marker levels and “determining” risk insufficient to make the claim patent eligible.¹⁰⁴ The court noted that the steps were “specified at a high level of generality,” suggesting that it rejected the claims in part because they were fairly broad.¹⁰⁵ The court emphasized that the “measuring” step was not limited to a specific method, but merely told the user to apply “whatever known method they wish[ed],” and likewise, the “determining” step used “unspecified and unclaimed statistical calculation.”¹⁰⁶ However, similar to the claims in *Association for Molecular Pathology*, Intema’s claims also likely had low potential to generate dependent technologies.¹⁰⁷ The court characterized the end goal of Intema’s method as “non-invasive screening to determine the risk that a fetus has Down’s syndrome,” used to inform a doctor when to proceed with invasive diagnostic testing.¹⁰⁸ The claim was thus unlikely to apply to many dependent technologies as it was only useful in the narrow field of fetal Down’s syndrome diagnostics.¹⁰⁹

After applying the *Mayo/Alice* test, the Federal Circuit bolstered its analysis with the machine-or-transformation test.¹¹⁰ Intema purported transformations through “assaying a sample” and “measuring” an ultrasound scan.¹¹¹ The court held that “assaying,” a broad industry term for “testing,” was insufficient transformation because it could be done without inducing change in the sample.¹¹² “Measuring” likewise failed the test because transforming ultrasound data to Down’s syndrome risk data merely converted one type of data to another, creating no “tangible output.”¹¹³ The court further distinguished the case from *Association for Molecular Pathology* because Intema’s claim did not have a patent-eligible

103. *Id.* at 70–71 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297 (2012)) (internal quotation marks omitted).

104. *Id.* at 71.

105. *See id.* at 72.

106. *Id.* at 71.

107. *See Ass’n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1335–37 (Fed. Cir. 2012); *PerkinElmer*, 496 F. App’x at 66.

108. *PerkinElmer*, 496 F. App’x at 66.

109. *See id.*

110. *Id.* at 72–73.

111. *Id.*

112. *Id.*

113. *Id.*

composition of matter equivalent to Myriad's "transformed host cell."¹¹⁴ Having already found the claim unpatentable under *Alice*, the court's superfluous application of the machine-or-transformation test reflects its strong reliance on the test as, at minimum, an "important and useful clue" to subject matter eligibility.¹¹⁵

C. *ARIOSIA DIAGNOSTICS V. SEQUENOM*

In *Ariosa*, the Federal Circuit held that a method of detecting fetal DNA in maternal blood was patent ineligible.¹¹⁶ The existence of such DNA, dubbed cell-free fetal DNA ("cffDNA"), was previously unknown and opened the door to safer, inexpensive methods of prenatal diagnostics.¹¹⁷ The claimed method comprised (1) amplifying DNA from a maternal blood sample, and (2) detecting the presence of cffDNA.¹¹⁸

In step one, the court found the claims "directed to matter that is naturally occurring."¹¹⁹ The court reasoned that because cffDNA is a natural phenomenon, and the cffDNA was not altered by the detection process, the "method therefore beg[an] and end[ed] with a natural phenomenon."¹²⁰ The court then found in step two that the preparation and amplification of DNA from blood samples, done through standard lab techniques, were "well-understood, routine, conventional activities" insufficient to make the claim patent eligible.¹²¹

Though the court did not explicitly address breadth, the claim was clearly very broad. Sequenom claimed general steps of amplifying and detecting DNA, only limited by application to cffDNA.¹²² As compared to a single gene or class of genes, which make up a fraction of the genome, Sequenom's claim extended over an entire genome.¹²³ Further, as the court highlighted, the discovery of cffDNA "reflect[ed] a significant human

114. *PerkinElmer*, 496 F. App'x at 72–73 (citing Ass'n for Molecular Pathology v. USPTO, 689 F.3d 1303, 1336–37 (Fed. Cir. 2012)).

115. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1296 (2012) (citing *Bilski v. Kappos*, 561 U.S. 593, 603 (2010)).

116. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 2511 (2016).

117. *Id.* at 1373.

118. *Id.* at 1373–74.

119. *Id.* at 1376.

120. *Id.*

121. *Id.* at 1377–78 (noting that the patent specification itself refers to the methods for preparing and amplifying as "standard").

122. *See id.* at 1373–74.

123. *See id.*

contribution . . . that revolutionized prenatal care.”¹²⁴ Thus, the method’s end goal of detecting and accessing cffDNA likely had high potential to generate dependent technologies.

D. *RAPID LITIGATION V. CELLZDIRECT*

CellzDirect is one of two Federal Circuit opinions post-*Mayo* in which the court found a biotech method claim to be patent eligible.¹²⁵ The claims in *CellzDirect* covered a method for producing hepatocytes (liver cells) capable of surviving multiple freeze-thaw cycles, comprising (1) thawing frozen hepatocytes and separating the viable and nonviable cells, (2) recovering the viable cells, and (3) refreezing the viable cells, which will remain viable after re-thawing.¹²⁶

In an unprecedented move for biotech method claims, the court held that the claims were not “directed to” a patent-ineligible concept under *Mayo/Alice* step one, rendering step two unnecessary.¹²⁷ The court reasoned that instead of being directed to the ability of hepatocytes to survive multiple freeze-thaw cycles—a patent-ineligible law of nature—the claims were directed to “a new and useful laboratory technique for preserving hepatocytes.”¹²⁸ The court focused on the claims’ physical product of twice-frozen hepatocytes, or the “*tangible* and useful result,” which made the method “precisely the type of claim that is eligible for patenting.”¹²⁹ Applying the same language quoted in *Gottschalk*, and previously used to hold a claim eligible under the machine-or-transformation test, the court emphasized that the method at issue achieved a “new and useful end.”¹³⁰ The court further analogized the claims to “thousands of others that recite processes to achieve a desired outcome,” such as producing a new compound, treating cancer with chemotherapy, and treating headaches with aspirin.¹³¹ All of the listed examples would pass the machine-or-

124. *Id.* at 1379–80.

125. *Rapid Litig. Mgmt. v. CellzDirect, Inc.*, 827 F.3d 1042, 1043 (Fed. Cir. 2016). It was also the first life sciences case to be decided following the Supreme Court’s denial of certiorari for *Ariosa*. See *Ariosa Diagnostics*, 788 F.3d 1371.

126. *CellzDirect*, 827 F.3d at 1046.

127. *Id.* at 1048.

128. *Id.*

129. *Id.* at 1048–50 (highlighting with emphasis that “the claims recite a *method of producing* a desired preparation of multi-cryopreserved hepatocytes”) (citing *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014)).

130. *Id.* at 1048; see also *Gottschalk v. Benson*, 409 U.S. 63, 69–70 (1972) (discussing *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 385–86 (1909) (holding a method for expanding metal patent eligible because it generated a “new and useful result”)).

131. *CellzDirect*, 827 F.3d at 1048–49.

transformation test.¹³² In contrast, the court characterized prior claims that failed step one as “amount[ing] to nothing more than observing or identifying the ineligible concept itself.”¹³³

While passing step one should end the inquiry, the court went on to show that had the claim failed step one it was still patent eligible under step two.¹³⁴ The court held that the claims sufficiently “transform[ed] the process into an inventive application of the patent-ineligible concept” because they “applie[d] the discovery that hepatocytes can be twice frozen to achieve a new and useful preservation process.”¹³⁵ Unfortunately, by justifying step two with the same rationale as used in step one, the court neither clarified step two nor made a meaningful distinction between the steps.¹³⁶

Notably, the Federal Circuit ended its opinion by addressing preemption. The court found that the claims did not “lock up the natural law in its entirety,” and in fact, the defendant had already managed to engineer around the patent, indicating that the claims were narrow.¹³⁷ However, the court’s emphasis on the introduction of a new laboratory technique showed that it did find moderate potential for dependent technologies; the claims’ end goal of producing twice-frozen hepatocytes was a “new and useful” result that could potentially be applied to any invention requiring hepatocytes.¹³⁸

III. DISCUSSION

An analysis of post-*Mayo* Federal Circuit cases reveals that while the decisions appear consistent with Supreme Court preemption policy, they also indicate a return to the machine-or-transformation test. If so, the

132. The creation of a new compound clearly passes the machine-or-transformation test as transforming individual elements through chemical binding. The court’s explanation that treating cancer with chemotherapy is not directed to the cancer cell’s inability to survive chemotherapy also highlights a clear transformation—the change from live cancer cells to dead cancer cells. Likewise, by holding that treating headaches with aspirin is not directed to the human body’s natural response to aspirin, the court emphasized the body’s transformation from headache to non-headache state.

133. *CellzDirect*, 827 F.3d at 1048 (citing *Genetic Techs. Ltd. v. Merial LLC*, 818 F.3d 1369, 1373–74 (Fed. Cir. 2016)); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1373–74 (Fed. Cir. 2015); *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litig. v. Ambray Genetics Corp.*, 774 F.3d 755, 761–62 (Fed. Cir. 2014)).

134. *Id.* at 1050–51.

135. *Id.*

136. *See id.*

137. *Id.* at 1052.

138. *See id.* at 1048–52.

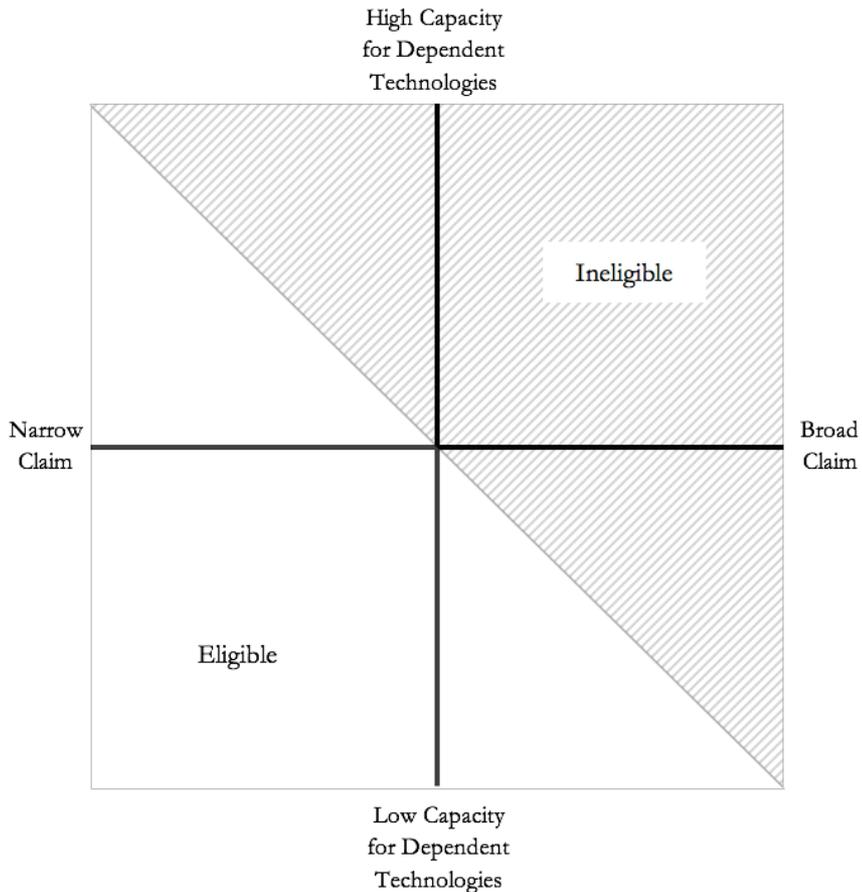
Federal Circuit has rung a death knell for diagnostic method claims, divorced from their actual preemptive effect. Thus, this Note suggests that courts should instead consider preemption directly in their *Mayo/Alice* step two analyses, improving both the test's administrability and consistency with section 101 policy drivers.

A. POST-*MAYO* DECISIONS APPEAR CONSISTENT WITH SUPREME COURT PREEMPTION POLICY

Supreme Court jurisprudence places heavy emphasis on the role of preemption in determining patentable subject matter.¹³⁹ As discussed in Part II, preemption policy translates into curbing undue impact on downstream innovation, which may be estimated by weighing a claim's breadth and capacity to generate dependent technologies. Figure 1 provides a visualization of the relationship between those factors and patent eligibility.

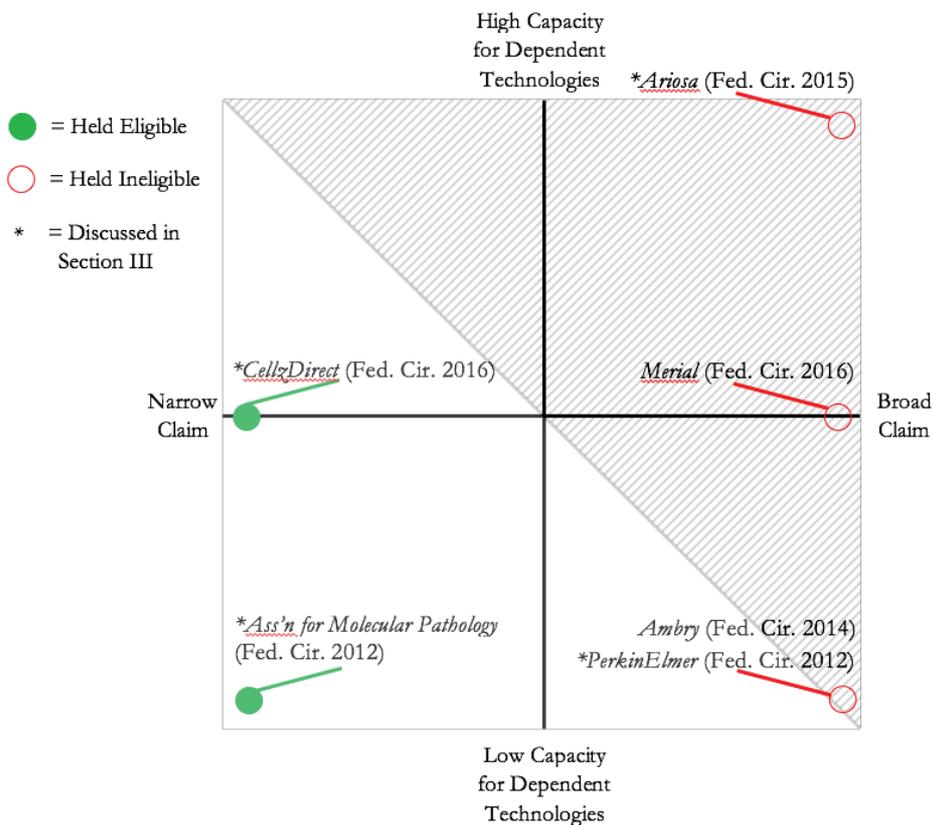
139. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) ("We have described the concern that drives this exclusionary principle as one of pre-emption.").

Figure 1: Patent eligibility as a function of preemption. Pursuant to Part II, a claim's preemptive effect is broken down into (1) breadth and (2) capacity to generate dependent technologies.



Regarding biotech method claims in particular, Figure 2 reveals that post-*Mayo* Federal Circuit decisions have been roughly in line with Supreme Court preemption policy.

Figure 2: Post-*Mayo* Federal Circuit decisions charted by preemptive effect of the claims at issue. The decisions appear to be consistent with Supreme Court preemption policy as visualized in Figure 1.



1. Factor 1: Claim Breadth

The Federal Circuit likely found the claims to be narrow in both *Association for Molecular Pathology* and *CellzDirect* because the methods at issue were tied to limitations so specific that comparable functions could be achieved with noninfringing designs.¹⁴⁰ The court noted that in *Association for Molecular Pathology*, a competitor need only use different host cells, genes, or therapeutics to be noninfringing.¹⁴¹ Even more

140. See *CellzDirect*, 827 F.3d at 1052; *Ass'n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1336–37 (Fed. Cir. 2012).

141. *Ass'n for Molecular Pathology*, 689 F.3d at 1336–37.

persuasive, in *CellzDirect*, the competing party had already engineered around the claims.¹⁴²

In contrast, the court characterized the claims as considerably broader in *Ariosa* and *PerkinElmer*.¹⁴³ These claims employed general terms like “measuring” and “determining” that allowed the user to apply “whatever known method they wish[ed].”¹⁴⁴ Thus, the claims left no room for competing methods aimed at similar functionalities; the claims in *Ariosa* and *PerkinElmer* could be understood to cover all processes for detecting cfDNA via maternal blood and determining risk of fetal Down’s syndrome via screening markers, respectively.¹⁴⁵

Some may argue that broad claims are necessary to incentivize innovation through the patent system, as easily designed-around claims provide negligible competitive advantage.¹⁴⁶ That argument goes to the

142. See *CellzDirect*, 827 F.3d at 1052; *Ass’n for Molecular Pathology*, 689 F.3d at 1336–37. Indeed, some have argued that “a better way to grapple with preemption may be to ask whether the claim can be practiced in other ways—or as patent lawyers say, ‘invented around.’” Dreyfuss & Evans, *supra* note 24, at 1360–61 (finding claims in *Laboratory Corp. of America Holdings v. Metabolite Laboratories, Inc.*, 548 U.S. 124 (2006) more preemptive than those in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289, 1296 (2012) because doctors cannot practice around the claims in *Metabolite*, but “there are arguably other ways to achieve the goals of the patent” in *Mayo*).

143. The same applies to *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litigation v. Ambry Genetics Corp.*, 774 F.3d 755, 756 (Fed. Cir. 2014), and *Genetic Technologies Ltd. v. Merial LLC*, 818 F.3d 1369, 1369 (Fed. Cir. 2016), both of which found method claims patent ineligible. *Ambry* dealt with a method for detecting variations of BRCA cancer genes, while *Merial* addressed a method for detecting genetic protein-coding regions via their relationship with noncoding regions. In *Ambry*, the claims broadly described comparing BRCA sequences and determining the existence of alterations, which the court noted was not limited by number of covered comparisons, purpose of the comparison, alteration being detected, or type of cancer associated with. *Ambry*, 774 F.3d at 763–64. Likewise, in *Merial*, the court found the claim at issue “broad in scope” because it “encompass[ed] methods of detecting a coding region allele by amplifying and analyzing any linked non-coding region, which could be found within the same gene as the coding region, within a different gene, or within an intergenic region.” *Merial*, 818 F.3d at 1372–73.

144. *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App’x 65, 70–72 (Fed. Cir. 2012); see also *Merial*, 818 F.3d at 1377 (method comprising general DNA “amplifying” and “detecting” steps); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1373–74 (Fed. Cir. 2015) (same); *Ambry*, 774 F.3d at 763–64 (finding the claim broad because the “comparing” step was “not restricted by the purpose or the alteration being detected,” and the additional steps of “hybridizing,” “detecting,” “amplification,” and “sequencing” were merely general descriptions of the steps any scientist would take to compare two genes).

145. See *Ariosa*, 788 F.3d at 1373–74; *PerkinElmer*, 496 F. App’x at 70–72.

146. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 276–77 (1977) (formulating the “prospect theory” of patent rights, which

heart of the section 101 inquiry—when does the preemptive effect of a claim outweigh its role in promoting development of new inventions?¹⁴⁷ Claim breadth is only one factor of preemption—the next section considers the second factor, capacity to generate dependent technologies.

2. *Factor 2: Capacity to Generate Dependent Technologies*

A claim's capacity to generate dependent technologies relates to the number of inventions in which that claim's end goal can be applied. Thus, the claims in *Association for Molecular Pathology* and *PerkinElmer* likely had low capacity for generating dependent technologies, as they covered methods aimed at very specific end goals.¹⁴⁸ *Association for Molecular Pathology* dealt with a method for cancer drug testing via transformed host cells, which was likely limited to developing similar cancer drug research techniques.¹⁴⁹ Likewise, the claims in *PerkinElmer* aimed to identify the risk of fetal Down's syndrome, which only applied to other inventions in fetal Down's syndrome diagnostics.¹⁵⁰

In comparison, *CellzDirect* involved a method with greater potential for dependent technologies because it produced an outcome with numerous likely applications; the method for producing more resilient hepatocytes could apply to any invention requiring hepatocytes.¹⁵¹ Nonetheless, the

argues that broad patent coverage is economically efficient because, among other benefits, it allows coordination with potential competitors to reduce inefficient duplication of R&D, and provides incentive to maximize the patent's value without fear that fruits of investment will be unpatentable information appropriable by competitors); Yusing Ko, *An Economic Analysis of Biotechnology Patent Protection*, 102 YALE L.J. 777, 791–92 (1992) (describing the “incentive-to-invent” theory for patent scope—“an inventor demands compensation for his investment in research and development . . . [thus] if competition prevents the inventor from recouping his investment, his incentive to invent vanishes . . . [which] may significantly delay socially beneficial inventions, or prevent them entirely”).

147. Merges and Nelson were some of the first to address this question in the context of claim scope, concentrating on “how changing patent coverage affects the balance between incentives to the inventor and underuse of the invention due to patent monopolies.” Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 868 (1990).

148. The same reasoning applies to *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litigation v. Ambray Genetics Corp.*—while the court worried that the broad claim would “impede a great swath of research relating to BRCA genes,” the end-goal of screening for BRCA genes constrains any dependent technologies to the relatively narrow field of BRCA-related diagnostics. 774 F.3d 755, 761–62, 764 (Fed. Cir. 2014).

149. See *Ass'n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1310 (Fed. Cir. 2012).

150. See *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App'x 65, 66–68 (Fed. Cir. 2012).

151. See *Rapid Litig. Mgmt. v. CellzDirect, Inc.*, 827 F.3d 1042, 1046 (Fed. Cir. 2016). *Genetic Technologies Ltd. v. Merial LLC* also falls in the same category because the

potential applications in *CellzDirect* are dwarfed by those derived from the method of detecting cffDNA in *Ariosa*.¹⁵² While prior cases dealt with the potential to locate fractions of genes,¹⁵³ which are themselves fractions of the genome, Sequenom's claims extended over the entire fetal genome.¹⁵⁴ Thus, the end goal of detecting cffDNA would likely apply to any invention relating to the broad field of fetal diagnostics.

The chart analysis ultimately suggests that Federal Circuit treatment of biotech method patents might be consistent with Supreme Court policy. The next question is *how* the Federal Circuit has been making these decisions. A close read of the court's post-*Mayo* opinions indicates that while reaching for refinements of the *Mayo/Alice* test, the Federal Circuit has de facto re-adopted the machine-or-transformation test.

B. CONTINUED RELIANCE ON THE MACHINE-OR-TRANSFORMATION TEST

An analysis of the Federal Circuit cases discussed in Part III reveals a clear divide between claims that pass the machine-or-transformation test and are found valid and those that fail and are rejected.

In *Association for Molecular Pathology*, the transformed, man-made nature of the underlying subject matter—a “transformed host cell”—made the claim patent-eligible despite applying conventional growing and comparison steps.¹⁵⁵ The court did not apply a formal two-step test, perhaps because the case was decided so soon after *Mayo*,¹⁵⁶ but it seemed to find the claim eligible under step one by being directed to a “transformed, man-made” product.¹⁵⁷ Consistent with that analysis, the court held that merely appending conventional steps, which would fail step two, was irrelevant when those steps were applied to a patent-eligible composition.¹⁵⁸

In contrast, *CellzDirect* was decided after the *Mayo/Alice* framework became standard. In both steps, the court found the claims patent-eligible because they applied the discovery that hepatocytes can be twice-frozen to

method for discovering new protein-coding regions could apply to any technique relying on the location of coding DNA. 818 F.3d 1369, 1372–73 (Fed. Cir. 2016).

152. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1373–74 (Fed. Cir. 2015).

153. *See Merial*, 818 F.3d at 1372.

154. *See Merial*, 818 F.3d at 1372–73; *Ariosa*, 788 F.3d at 1373–74.

155. *Ass'n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1336 (Fed. Cir. 2012).

156. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Ass'n for Molecular Pathology*, 689 F.3d at 1336–37.

157. *See Ass'n for Molecular Pathology*, 689 F.3d at 1336–37.

158. *Id.* at 1336.

achieve a new and useful preservation process.¹⁵⁹ Because the same language could be applied to any new and useful method, it is unclear whether this reasoning can distinguish *CellzDirect* from patent-ineligible cases.¹⁶⁰ Instead, a closer read of *CellzDirect* indicates that the Federal Circuit looked to the claimed method's production of a physical product, or "transformation" from once-frozen to twice-frozen hepatocytes. In step one, the court emphasized with italics that the claims recite a "*method of producing* a desired preparation of multi-cryopreserved hepatocytes,"¹⁶¹ further noting that the method had a "*tangible and useful result.*"¹⁶² The court also analogized the claims to several patent-eligible examples of "processes to achieve a desired outcome," discussed in Part III, all of which would pass the machine-or-transformation test.¹⁶³

In contrast, the diagnostic method claims that the Federal Circuit rejected gathered information without provoking change. In *PerkinElmer*, the court held that the claims failed the machine-or-transformation test because "assaying" the sample could be performed "without transforming the sample," and "measuring" the ultrasound scan produced no "tangible output."¹⁶⁴ In *Ariosa*, the Federal Circuit struggled to apply the machine-or-transformation test within the *Alice/Mayo* framework. To address step one, the court found that because the method "starts with cffDNA taken from a sample of maternal plasma or serum," and "ends with paternally inherited cffDNA," the claims were directed to cffDNA.¹⁶⁵ Despite the court's language, there is no difference between "cffDNA taken from a sample of maternal plasma or serum," and "paternally inherited cffDNA."¹⁶⁶ Thus, the court held that the claims were "directed to" cffDNA because they started and ended with steps involving cffDNA—*i.e.*, the claims were "directed to" ineligible subject matter because they involved ineligible subject matter.

Such a rule contrasts with the court's later holding in *CellzDirect* where the claimed method was not "directed to" an ineligible concept despite involving the law of nature that some hepatocytes survive multiple freeze-

159. Rapid Litig. Mgmt. v. CellzDirect, Inc., 827 F.3d 1042, 1048, 1050–51 (Fed. Cir. 2016).

160. For example, the ineligible method of detecting cffDNA in *Ariosa* could easily be described as an application of the discovery that cffDNA exists in maternal blood to achieve a new and useful detection process. See *Ariosa*, 788 F.3d at 1373–74.

161. *CellzDirect*, 827 F.3d at 1048.

162. *Id.* at 1050 (emphasis added).

163. See *id.* at 1049; *supra* note 132.

164. *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App'x 65, 72 (Fed. Cir. 2012) (internal brackets omitted).

165. *Ariosa*, 788 F.3d at 1376.

166. See *id.* at 1373–76.

thaw cycles.¹⁶⁷ However, if the Federal Circuit's rationale in *Ariosa* is viewed in light of the machine-or-transformation test, it becomes clear that the court found the process patent-ineligible because it employed the same cffDNA from start to finish without alteration, meaning the method lacked transformation.¹⁶⁸ But tied to the *Mayo/Alice* framework, the court necessarily muddled its logic in order to find the claim "directed to" an ineligible concept.

C. NO PLACE FOR DIAGNOSTICS

The machine-or-transformation test presents an incomplete picture for patentable subject matter doctrine because it is not designed to consider preemption.¹⁶⁹ Being bound to a particular machine or inducing physical transformation are adequate proxies for a claim's preemptive effect in some industries, but fall short in others such as medical diagnostics.¹⁷⁰ Diagnostic method claims are unlikely to pass the machine-or-transformation test because they aim to identify a condition *as it exists*, without prompting a "transformation."¹⁷¹ Consistent with the test, the Federal Circuit has only found biotech method claims patentable when they involved a physical change—creating the "transformed host cell" in *Association for Molecular*

167. See *CellzDirect*, 827 F.3d at 1048.

168. See *Ariosa*, 788 F.3d at 1376.

169. Courts have used the machine-or-transformation test to limit patent scope since before it was even formalized in *Gottschalk and Diehr*, but the test is an incomplete proxy for excessive preemption as it does not directly consider either factor of impact on downstream innovation. See *Gottschalk v. Benson*, 409 U.S. 63, 73 (1972) (characterizing *Corning v. Burden*, 56 U.S. 252, 270–71 (1854), as having held a process for tanning, dyeing, etc., not tied to particular machinery, but still patent eligible due to changes in "articles or materials" sufficient to confine the patent monopoly "within rather definite bounds").

170. See Anna B. Laakmann, *An Explicit Policy Lever for Patent Scope*, 19 MICH. TELECOMM. & TECH. L. REV. 43, 65–72 (2012) (discussing how the machine-or-transformation test is ill suited for medical methods).

171. See Allen K. Yu, *Within Subject Matter Eligibility—A Disease and a Cure*, 84 S. CAL. L. REV. 387, 401 ("The thrust of much diagnostics research lies in looking to nature for better understandings about how different diseases and conditions manifest themselves and then making direct use of that knowledge to better track and diagnose those diseases and conditions, not inventing wholesale processes and products for use with the human body."). *But cf.* Laakmann, *supra* note 170, at 71 (arguing that on the other hand applying the machine-or-transformation test would allow all broad diagnostic claims so long as they are carefully crafted to include transformative steps, which also fails to address policy considerations).

Pathology and the shift from once-frozen to twice-frozen hepatocytes in *CellzDirect*.¹⁷²

As discussed in Section IV.A, Federal Circuit decisions thus far have been consistent with preemption policy. The diagnostic cases—*PerkinElmer* and *Ariosa*—both involved claims so broad that they risked preempting all use of the underlying law of nature.¹⁷³ But under the machine-or-transformation test, even less preemptive claims would be ineligible. Thus, if the Federal Circuit continues on its current path, it will likely diverge from Supreme Court policy by creating a per se bar on diagnostic methods, regardless of their preemptive effect.

To illustrate, consider the USPTO’s most recent exemplars for life sciences subject matter eligibility that appear consistent with a preemption-based approach.¹⁷⁴ The exemplars laid out several claim variations for a method of diagnosing a hypothetical disease.¹⁷⁵ The broadest claim—comprising obtaining a blood sample from a patient, detecting for the disease marker, and diagnosing the patient—was found patent ineligible.¹⁷⁶ However, the USPTO advised that the same claim would be eligible if limited by an unconventional reagent for detecting the disease marker.¹⁷⁷ Comparing the two claim variations, both seem to have low capacity to generate dependent technologies. Analogous to the claims in *PerkinElmer* and *Ambry*, the end goal is specific to diagnosing a particular disease and thus is only applicable to that narrow field of inventions.¹⁷⁸ However, the first claim is also broad enough that it likely preempts all use of the natural law relating the disease and disease marker.¹⁷⁹ In contrast, because the second claim is limited by use of a particular technique, namely an unconventional reagent¹⁸⁰ to detect the disease marker, it is unlikely to be

172. See *Ass’n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1336 (Fed. Cir. 2012); *CellzDirect*, 827 F.3d at 1048.

173. The same applies to *Ambry*, which was also a diagnostic case. *BRCA1- & BRCA2-Based Hereditary Cancer Test Patent Litig. v. Ambry Genetics Corp.*, 774 F.3d 755, 756 (Fed. Cir. 2014); see also *supra* note 143.

174. USPTO, SUBJECT MATTER ELIGIBILITY EXAMPLES: LIFE SCIENCES 9–16 (May 2016), <https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-ex.pdf> [<https://perma.cc/6PXS-7EQW>].

175. *Id.* at 11–14.

176. *Id.* at 11–12 (claim 2).

177. *Id.* at 13–14 (claims 3 or 4, using porcine antibodies for detection of human proteins, or using another specific antibody not routinely or conventionally used).

178. See *Ambry*, 774 F.3d at 761–62; *PerkinElmer, Inc. v. Intema Ltd.*, 496 F. App’x 65, 66–68 (Fed. Cir. 2012).

179. See *Ambry*, 774 F.3d at 763–64; *PerkinElmer*, 496 F. App’x at 70–72.

180. An industry term for “a substance used (as in detecting or measuring a component or preparing a product) because of its chemical or biological activity.” *Reagent*, MERRIAM-

similarly preemptive.¹⁸¹ But because both variations are diagnostic methods, meaning neither induce a “transformation,” there is no way to differentiate between them under the machine-or-transformation test.¹⁸² As a result, both claims would be patent ineligible despite significant differences in their preemptive effects.

Thus, the machine-or-transformation test is ill-suited for methods of producing information or other nonphysical products.¹⁸³ The test applies well to biotechnology dealing with therapeutics, but diagnostic medicine is a newer field that relies on gene sequencing and detection.¹⁸⁴ The rise of diagnostics reflects the development of more efficient DNA sequencing methods, and unlike the concept of treating disease, gene-based diagnostics could not have been anticipated when section 101 was drafted.¹⁸⁵ Thus, diagnostic method claims exemplify the “unexpected” progression of technology, or the very reason why the Supreme Court rejected the machine-or-transformation test as definitive.¹⁸⁶

WEBSTER, <https://www.merriam-webster.com/dictionary/reagent> (last visited Nov. 6, 2017) [<https://perma.cc/Y9XX-U97H>].

181. See USPTO, *supra* note 174, at 9, 13–14.

182. While one could argue that being tied to a specific marker is analogous to being tied to a particular “machine,” thus satisfying the machine-or-transformation test, courts have traditionally treated machines as purely mechanical, rather than chemical. See *In re Bilski*, 545 F.3d 943, 955 (Fed. Cir. 2008) (describing a claim as not limited to any particular “chemical (or other) transformation” or “tied to any specific machine or apparatus for any of its process steps,” implying that chemical interactions are different from use of machines). Thus, a biological marker is unlikely to be characterized as a “machine.” Conversely, one could argue that the chemical interaction between the reagent and its target is itself a “transformation” satisfying the test. However, no court has yet taken that approach, perhaps because such a low standard for “transformation” would abrogate the test’s utility. See *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1376 (Fed. Cir. 2015) (finding no transformation in the detection of cffDNA, which requires chemical transformation through the use of polymerase chain reaction to amplify the DNA to detectable levels, concluding that the method “begins and ends” with cffDNA).

183. *Bilski v. Kappos*, 561 U.S. 593, 605 (2010).

184. Eisenberg discusses the Court’s deference to therapeutics over diagnostics. Rebecca S. Eisenberg, *Diagnostics Need Not Apply*, 21 B.U. J. SCI. & TECH. L. 256, 269–70 (2015). She also explains that the Human Genome Project provided a wealth of information, spurring new innovations in diagnostics. *Id.* at 260.

185. See *In re Bilski*, 545 F.3d at 966–76 (Dyk, J., concurring) (voicing dissent that the majority’s opinion is not grounded in the statute and providing a historical review of section 101).

186. See *Bilski*, 561 U.S. at 605 (“It is true that patents for inventions that did not satisfy the machine-or-transformation test were rarely granted in earlier eras, especially in the Industrial Age But times change. Technology and other innovations progress in unexpected ways. For example, it was once forcefully argued that until recent times, ‘well-established principles of patent law probably would have prevented the issuance of a valid patent on almost any conceivable computer program.’”).

A per se bar on diagnostic method claims is inconsistent with section 101 policy as there is no reason to believe that all diagnostic methods unduly stifle downstream innovation. Furthermore, diagnostics play a key role in the future of “personalized medicine,”¹⁸⁷ which can improve both efficacy and efficiency of treatments by moving away from a “one-size-fits-all” approach.¹⁸⁸ Thus, there is ample reason to promote innovation of new diagnostic techniques. But under current Federal Circuit jurisprudence, motivation to develop diagnostic methods must come from outside the patent system.

Some have argued that diagnostics are less deserving of patent protection because they may be developed as a byproduct of therapeutics and face comparatively minimal FDA regulation.¹⁸⁹ The first argument is weak in light of personalized medicine; the innovation may lie in finding a particular marker to know when to apply an existing therapeutic, rather than finding a particular marker to develop a new therapeutic. The latter argument holds more weight; a significant portion of R&D costs for pharmaceuticals come from FDA-mandated clinical trials.¹⁹⁰ In contrast, the FDA regulates diagnostic tests¹⁹¹ under the same framework it uses for medical devices, a much lower standard.¹⁹² However, both diagnostic and

187. A field tailoring medical treatment to individual patient needs. *See Paving the Way for Personalized Medicine: FDA’s Role in a New Era of Medical Product Development*, U.S. FOOD & DRUG ADMIN. (Oct. 2013), <http://www.fda.gov/downloads/ScienceResearch/SpecialTopics/PersonalizedMedicine/UCM372421.pdf> [<http://perma.cc/34F9-3AFX>]; *Personalized Medicine and Companion Diagnostics Go Hand-in-Hand*, U.S. FOOD & DRUG ADMIN. (July 31, 2014), <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm407328.htm> [<https://perma.cc/W9D6-JHV6>].

188. *See FACT SHEET: President Obama’s Precision Medicine Initiative*, THE WHITE HOUSE, OFFICE OF THE PRESS SEC’Y (Jan. 30, 2015), <http://www.whitehouse.gov/the-press-office/2015/01/30/fact-sheet-president-obama-s-precision-medicine-initiative> [<http://perma.cc/5HJN-3KMU>].

189. Eisenberg, *supra* note 184, at 284–86.

190. PHARMACEUTICAL RES. & MFRS. AM., 2015 PROFILE BIOPHARMACEUTICAL RESEARCH INDUSTRY 26 (Apr. 2015), http://phrma-docs.phrma.org/sites/default/files/pdf/2015_phrma_profile.pdf [<https://perma.cc/C2W9-M77Q>]. Pharmaceuticals have been the poster child for high-cost, high-risk innovation, requiring valuable exclusive patent rights to balance out the enormous costs of failed ventures and FDA approval. DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 143 (2009).

191. Specifically, in vitro diagnostic tests, called “in vitro diagnostic devices” (IVDs). *Overview of IVD Regulation*, U.S. FOOD & DRUG ADMIN. (Mar. 19, 2015), <http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/IVDRegulatoryAssistance/ucm123682.htm> [<https://perma.cc/5D59-GRRG>].

192. *See* Jeffrey Shuren, *Examining the Regulation of Diagnostic Tests and Laboratory Operations*, U.S. FOOD & DRUG ADMIN. (Nov. 17, 2015), <http://www.fda.gov/NewsEvents/Testimony/ucm473922.htm> [<https://perma.cc/PT2B-D7PX>]; *What Is the Approval Process for a New Prescription Drug?*, U.S. FOOD & DRUG ADMIN. (last updated

drug development rely on discovering biological relations, which itself carries significant R&D costs.¹⁹³ Further, medical devices are still eligible for patent despite their lighter regulation; if all the Patent Act requirements are met, having lower barriers to innovation should not strip a patentee of their rights. Thus, having lower regulatory costs alone does not justify a per se bar on diagnostic method claims.

D. POTENTIAL SOLUTION: DIRECT PREEMPTION ANALYSIS IN THE *MAYO/ALICE* TEST

The *Mayo/Alice* two-step test leaves many questions unanswered, but the Federal Circuit has the opportunity to refine the test for both clarity and better fit with section 101 policy goals. Of the most pressing doctrinal issues, the Federal Circuit may be best-placed to address what is meant by an “inventive concept” in step two. Rather than reviving the machine-or-transformation test, which unjustifiably bars diagnostic methods, the Federal Circuit should overtly analyze claims for their preemptive effect.¹⁹⁴ Specifically, the court can use *Mayo/Alice* step two to consider both a claim’s breadth and capacity to generate dependent technologies.

The purpose of the “inventive concept” requirement is to “ensure that the patent in practice amounts to significantly more than a patent upon the

May 12, 2016), <http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194949.htm> [<https://perma.cc/LB79-B6NE>].

193. Dan L. Burk, *Biotechnology and Patent Law: Fitting Innovation to the Procrustean Bed*, 17 RUTGERS COMPUTER & TECH. L.J. 1, 16–17 (1991) (“Biotechnology products are exceptionally expensive to develop. The basic research necessary to isolate, characterize, and express genes of interest has in many instances proved to be more time-consuming than expected. Industrial scale-up for manufacture of biotechnology products has also posed formidable obstacles of bioprocess engineering.”); Christopher M. Holman, *The Critical Role of Patents in the Development, Commercialization and Utilization of Innovative Genetic Diagnostic Tests and Personalized Medicine*, 21 B.U. J. SCI. & TECH. L. 297, 301 (2015) (“For the vast majority of human diseases that have a genetic component, the correlation between biomarker and clinically relevant information is much less straightforward, and substantial investment is necessary to support the lengthy and labor-intensive research efforts required to discern and validate the clinical significant of novel biomarkers.”).

194. Many scholars have argued for a more policy-focused approach to section 101. See, e.g., Laakmann, *supra* note 170 (arguing for use of patentable subject matter as an explicit policy lever for calibrating patent scope); Amy L. Landers, *Patentable Subject Matter as a Policy Driver*, 53 HOUS. L. REV. 505, 505 (2015) (proposing section 101 be used to address four policy goals: fostering scientific creativity, encouraging creation of infrastructure, balancing patent rights with free competition, and social needs); Lemley et al., *supra* note 7, at 1339–41 (encouraging direct analysis of claim scope as a means of addressing the invention’s “real-world contribution” based on five policy based factors: potential to generate many kinds of new inventions, nature of the industry, nature of technological field, patentee disclosure, patentee contribution relative to prior art).

ineligible concept itself.”¹⁹⁵ Despite this misleading use of “inventive,” the Supreme Court has explicitly held that novelty is irrelevant to a section 101 analysis.¹⁹⁶ Thus, the question under step two is not whether the claim is novel, but rather whether it is “significantly more” than a claim on an ineligible concept itself. The trouble comes in applying this standard because the Court has not provided much guidance on how to determine whether a claim is on an ineligible concept. This Note suggests that a more structured approach can be developed by considering the driving purpose of section 101 as protecting against unduly preemptive patents.

The bar on laws of nature and the like can be understood as establishing a line across which claims are per se overly preemptive.¹⁹⁷ The Court justified this bright line rule as a “somewhat more easily administered proxy for the underlying ‘building block’ concern”—*i.e.*, undue preemption understood as excessive impact on downstream innovation—as the judiciary is not well suited for distinguishing between different laws of nature.¹⁹⁸ Thus, a claim that fails to be “significantly more than a patent upon the ineligible concept itself” would be per se overly preemptive.¹⁹⁹ Consistent with the Court’s preemption-based policy,²⁰⁰ this characterization reflects a direct relationship between a claim’s preemptive effect and whether it is patent ineligible. In other words, the more preemptive a claim, the greater the chance it is overly preemptive, and the greater the chance it fails to amount to “significantly more than a patent upon the ineligible concept itself.”²⁰¹

Per Part II, a claim’s preemptive effect can then be understood as determined by two factors: (1) breadth, and (2) capacity to generate dependent technologies, where breadth reflects a claim’s limitations such as application of specific materials, and capacity to generate dependent technologies considers potential uses for a claim’s end goal. While a preemption-based approach still requires substantial analysis from the court, these factors act as sign posts along the spectrum of eligibility, ranging from merely a patent on the ineligible concept itself to a patent on

195. *See* *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (internal brackets omitted); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012).

196. *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981).

197. *See Mayo*, 132 S. Ct. at 1303.

198. *See id.*

199. *See id.* at 1294, 1303.

200. *See Alice*, 134 S. Ct. at 2354 (“We have described the concern that drives this [subject matter eligibility] exclusionary principle as one of pre-emption.”).

201. *See id.* at 2355 (internal brackets omitted).

“significantly more.” As such, this approach improves upon the existing framework, which provides no guidance for distinguishing between claims within *Mayo/Alice* step two.

For example, consider the USPTO exemplar discussed in Section IV.C, which claimed a method of diagnosing a hypothetical disease relying on the natural relationship between the disease and its biological marker.²⁰² The patent-ineligible claim variation was broad because it comprised “obtaining,” “detecting,” and “diagnosing” steps only limited to use with the disease and its marker, or “conventional steps, specified at a high level of generality.”²⁰³ The patent-eligible claim variation was narrower because the “detecting” step required a specific detection technique via use of an unconventional reagent.²⁰⁴ It is important that the reagent is unconventional not because that makes it novel and thus “inventive,” but because the addition of a conventional reagent fails to narrow the claim.²⁰⁵ The general procedure of most diagnostics is highly standardized.²⁰⁶ Thus, while a claim may seem limited to specific techniques and materials, a claim only limited by conventional elements effectively preempts all use of the natural law, as a practitioner is unlikely to have options beyond those conventional approaches.

Now imagine, instead of requiring use of a single unconventional reagent, a claim was limited by a class of reagents. What about a claim limited to several classes of reagents? What if a claim covered almost all possible reagents? Where that line should be drawn is not an easy question to answer, but it may roughly depend on the claim’s capacity to generate dependent technologies. For the USPTO exemplar, which was determined to have low capacity for dependent technologies in Section IV.C, it is arguable that a claim may be quite broad and still patent eligible. However,

202. USPTO, *supra* note 174.

203. *Alice*, 134 S. Ct. at 2350; USPTO, *supra* note 174, at 11–12 (claim 2).

204. USPTO, *supra* note 174, at 13–14 (claim 3 or 4).

205. See Eric J. Rogers, *Patenting Medical Diagnostic Methods: The MorT Strikes Back*, 17 J. TECH. L. & POL’Y 111, 169–70 (2012) (arguing that in a diagnostic method exemplar comprising steps of (1) collecting body tissue from subject, (2) processing and analyzing tissue to quantitate factor X, and (3) making diagnosis of disease Y based on X, steps (1) and (2) should be excluded because they are “requisite steps” to apply the underlying law of nature).

206. See, e.g., Eisenberg, *supra* note 184, at 260 (“Diagnostic tests typically involve measuring one or more variables in a patient (e.g., body temperature, white blood cell count),” done via well-established standard techniques.); *Types of Blood Tests*, NAT’L HEART, LUNG, & BLOOD INST. (Jan. 6, 2012), <https://www.nhlbi.nih.gov/health/health-topics/topics/bdt/types> [<https://perma.cc/N5VZ-SL7U>] (examples of common blood tests, often done as part of “routine checkup”).

consider a different scenario, in which the claims cover a method for diagnosing a broad class of diseases, rather than a single disease, relying on a previously unknown relationship to a biological marker. Such a claim would have applications in significantly more dependent technologies as the end goal of diagnosis extends over a much broader range of diseases. Thus, weighing both breadth and capacity to generate dependent technologies in determining the claim's overall preemptive effect, a patent-eligible claim here should be narrower than in the previous hypothetical.

Since the Supreme Court denied certiorari to *Ariosa*, the Federal Circuit has been in a unique position to shape patentable subject matter doctrine.²⁰⁷ By encouraging analysis, via *Mayo/Alice* step two, of claim breadth and capacity to generate dependent technologies, the court can improve both the test's administrability and consistency with section 101 preemption policy. Further, by moving away from the machine-or-transformation test, the court would encourage innovations in personal medicine by maintaining patent incentives for diagnostic methods.

IV. CONCLUSION

The Supreme Court has identified preemption, specifically as it relates to downstream innovation, as the primary policy driver for patentable subject matter doctrine. To date²⁰⁸, Federal Circuit treatment of biotech method claims has been consistent with Supreme Court policy. However, the court's continued reliance on the machine-or-transformation test raises questions of future policy misalignment. Because the machine-or-transformation test does not directly consider preemption, it creates a *per se* bar on diagnostic methods. Thus, the Federal Circuit threatens to eliminate patent incentives for valuable innovations in personal medicine, without appropriate policy justifications. Instead, the Federal Circuit should seize this opportunity to provide much-needed clarification of the *Mayo/Alice* test. Working with *Mayo/Alice* step two, the court should consider claim breadth and capacity to generate downstream technologies as a measure of whether "the patent in practice amounts to significantly more than a patent upon the ineligible concept itself." Such an approach would not only help lower courts to apply the *Mayo/Alice* test but also better promote the purposes of patentable subject matter doctrine.

207. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 136 S. Ct. 2511 (2016) (denying certiorari); Rantanen, *supra* note 13.

208. As of early 2017.

BALANCING INTERESTS POST-*HALO*: A PROPOSAL FOR CONSTITUTIONALLY BOUNDED ENHANCED DAMAGES IN PATENT INFRINGEMENT

G. W. Moler[†]

Rejecting the “unduly rigid” *Seagate* standard for enhanced damages in willful infringement, the Supreme Court issued a unanimous decision in *Halo Electronics, Inc. v. Pulse Electronics, Inc.*, and the consolidated *Stryker Corp. v. Zimmer, Inc.*, that is widely considered an enhanced damages victory for patent owners.¹ The ruling, obviating *Seagate*’s “objective recklessness” prong of the two-part enhanced damages test and lowering the burden of proof for showing willfulness to a preponderance of the evidence, moves favorability of willfulness investigations away from alleged infringers and closer to the patentee-favorable standards of the pre-1986 affirmative duty of care rule.²

The Supreme Court, however, in striking down the *Seagate* test, has left a void for when exactly enhanced damages should be awarded. The only guidance provided includes punitive language that reprimands actions that are “willful, wanton, malicious . . . characteristic of a pirate,” leaving uncertainty in the new willfulness standard.³

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1. See, e.g., Greg Stohr, *U.S. Supreme Court Eases Way for Larger Patent Damage Awards*, BLOOMBERG (June 13, 2016), <http://www.bloomberg.com/politics/articles/2016-06-13/u-s-supreme-court-eases-way-for-larger-patent-damage-awards> [<https://perma.cc/F8MY-TN9P>]; Brent Kendall, *Top Court Eases Way for Patent Damages*, WALL ST. J., June 13, 2016, at B14.

2. The 1983 decision *Underwater Devices Inc. v. Morrison-Knudsen Co., Inc.*, 717 F.2d 1380, 1389 (Fed. Cir. 1983), placed an affirmative duty upon an alleged infringer to exercise due care to ensure the infringer was not infringing. This affirmative duty included “the duty to seek and obtain competent legal advice from counsel before the initiation of any possible infringing activity.”*Id.*

3. In a unanimous opinion by Chief Justice Roberts, *Halo* abrogated the 2007 *Seagate* two pronged willfulness standard, replacing it with a totality of the circumstances test and lowering the burden of proof from clear and convincing proof to a “preponderance of the evidence,” in line with other patent infringement standards. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1926 (2016).

With the independent objective recklessness element of the *Seagate* test officially struck down, the question of willful infringement no longer begins with the judge as a question of law.⁴ Despite the new abilities for patent owners to present cases of willfulness in front of juries, the new test for willfulness is not necessarily a hunting license for patent owners, nor does it guarantee multiplied damages. Justice Breyer, joined by Justices Kennedy and Alito, attempted to elucidate the limits of enhanced awards in his concurrence, highlighting the importance of promoting “uniformity in [the application of 35 U.S.C. § 284] and maintaining its consistency with the basic objectives of patent law.”⁵

Part I of this Note discusses the history of willful infringement and the role of enhanced damages in enforcing patent rights. Part II explores the implementation and consequences of the *Halo* decision as a result of Chief Justice Roberts’ retributivist language and emphasis of 35 U.S.C. § 284 as a punitive regime. Part III balances the *Halo* decision with traditional justifications for patent rights and enhanced damages, seeking to use Justice Breyer’s guidance on limitations as a reconciling construct. Part IV concludes with a recommendation for an enhanced damages framework moving forward.

I. A HISTORY OF PATENT RIGHTS AND WILLFUL INFRINGEMENT

This Part will detail the history of patent rights and patent enforcement leading up to *Halo*, as well as the policy concerns cited in the history of Federal Circuit and Supreme Court rulings.

A. THE CONSTITUTION AND EARLY INFRINGEMENT REMEDIES

Article I of the U.S. Constitution empowers Congress to create laws “to promote the Progress of Science and useful Arts.”⁶ Among the rights created are patent protection rights and associated damages, further enumerated in the United States Code.⁷ Out of this framework, Congress enacted the Patent Act of 1790, which first enumerated the damages a

4. Brian E. Ferguson, *So Long, Seagate: A New Test for Willful Patent Infringement*, LAW360 (June 14, 2016), <https://www.law360.com/articles/771835/so-long-seagate-a-new-test-for-willful-patent-infringement> [<https://perma.cc/4K7H-V2TG>].

5. *Halo Elecs.*, 136 S. Ct. at 1936; see U.S. CONST. art. I, § 8, cl. 8 (defining the basic objectives of patent law as “promot[ing] the Progress of Science and useful Arts”).

6. U.S. CONST. art. I, § 8, cl. 8.

7. See generally 35 U.S.C. §§ 101-390 (2012).

patentee could obtain upon a finding of infringement.⁸ Just three years later, the Act was revised in the Patent Act of 1793, which authorized treble damages awards for patent infringement.⁹ Such trebling was solidified in the Patent Act of 1800, though with an emphasis on actual damage to the patentee by narrowing the language from trebling the price of the infringed product to trebling the “actual damages” the patentee suffered.¹⁰

Until 1819, circuit court remedies were limited to monetary awards.¹¹ Granting power to the circuit courts to establish a remedy at equity, the Patent Act of 1819 detailed the first mention of an injunction available to patentees.¹² This additional remedy enabled courts to find a balance in appropriate damages, to intervene directly to halt infringement, and to limit

8. Patent Act of 1790, § 4, 1 Stat. 109–12 (1790) (repealed 1793). The Patent Act of 1790 specified that, upon a finding of infringement, the infringer must “forfeit and pay to the patentee such damages as should be assessed by a jury, and moreover, to forfeit to the person aggrieved the infringing machine.” *Id.*

9. Patent Act of 1793, ch. 11, § 5, 1 Stat. 318–23 (1793) (repealed 1836). The 1793 Act, straying from “damages,” provided that:

[I]f any person shall make, devise, and use or sell a thing so invented, the exclusive right of which has been secured to any person by patent, without the consent of the patentee . . . the person so offended shall forfeit and pay to the patentee a sum that shall be at least equal to three times the price for which the patentee had usually sold or licensed to other persons the use of said invention.

Id.

10. Patent Act of 1800, ch. 25, § 3, 2 Stat. 37, 38 (repealed 1836). The Patent Act of 1800 stipulated that an infringer must “forfeit and pay to the patentee a sum equal to three times the actual damages sustained by such patentee.” *Id.*

11. *See generally* Patent Act of 1790, 1 Stat. 109–12 (1790) (repealed 1793) (establishing remedies for patent infringement); Patent Act of 1793, 1 Stat. 318–23 (1793) (repealed 1836) (creating the first instance of treble damages for patent infringement); Patent Act of 1800, ch. 25, § 3, 2 Stat. 37, 38 (repealed 1836) (modifying the treble damages established in 1793).

12. Patent Act of 1819, ch. 19, § (c), 3 Stat. 481 (amending the 1800 Act). The Patent Act of 1819 stated:

[T]he Circuit Courts of the United States shall have original cognizance, as well in equity as at law, of all actions, suits, controversies, and cases arising under any law of the United States, granting or confirming to authors or inventors the exclusive right to their respective writings, inventions, and discoveries, and upon any bill in equity, filed by any party aggrieved in any such cases, shall have authority to grant injunctions, according to the course and principles of courts of equity, to prevent the violation of the rights of any authors or inventors secured to them by any law of the United States, on such terms and conditions as the said courts may deem fit and reasonable.

Id.

the instances in which enhanced damages were necessary.¹³ In 1836, Congress began detailing the discretion of the court to award enhanced damages, the evolution of which culminated in the Patent Act of 1952, which included 35 U.S.C. § 284—the foundation for damages law as it stands today, wherein the court “*may* increase damages up to 3 times the amount found or assessed.”¹⁴

B. A HISTORY OF PATENT ENFORCEMENT AND WILLFULNESS

Patent infringement damages are detailed within 35 U.S.C. § 284, which states that courts “*shall* award the claimant damages . . . [not] less than a reasonable royalty.”¹⁵ A ruling of patent infringement therefore creates a presumption of damages in favor of the plaintiff.¹⁶ Considered a type of strict liability offense, accidental patent infringement does not absolve an infringer of liability.¹⁷ As discussed above, courts “*may* increase damages up to three times the amount found or asserted” in cases of bad faith or willfulness.¹⁸ Since the Federal Circuit’s *Underwater Devices Inc. v. Morrison-Knudsen Co.* decision in 1983, willfulness has largely been seen as a prerequisite for enhanced damages.¹⁹

Enhanced damages have not always been equally easy to obtain, nor have remedies at law and equity always summed to an equal balance, wherein declines in remedies at equity correspond inversely with monetary

13. See Jon E. Wright, *Willful Patent Infringement and Enhanced Damages—Evolution and Analysis*, 10 GEO. MASON L. REV. 97, 99–100 (2001–2002); Mark Schankerman & Suzanne Scotchmer, *Damages and Injunctions in Protecting Intellectual Property*, 32 RAND J. ECON. 199, 199–202 (2001).

14. Patent Act of 1952, ch. 950, § 284, 66 Stat. 792 (1952) (repealed by Act No. 83 of 1990) (emphasis added); see generally Patent Act of 1836 § 14, ch. 357, 5 Stat. 117 (1836) (creating the PTO) (repealed 1952); Patent Act of 1870, ch. 230, 16 Stat. 198–217 (1870) (repealed 1952) (consolidating and revising existing patent statutes); Patent Act of 1922, ch. 58, 42 Stat. 389–92 (1922) (repealed 1952) (amending the Patent Act to include reasonable royalty estimates of damages); Patent Act of 1946, Pub. L. No. 79-587, 60 Stat. 778 (1946) (repealed in 1952) (abrogating the infringer’s profits remedy from patent damages).

15. 35 U.S.C. § 284 (2012) (emphasis added).

16. *Dow Chem. Co. v. Mee Indus., Inc.*, 341 F.3d 1370, 1381–82 (Fed. Cir. 2003).

17. See *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1523 (Fed. Cir. 1995) (applying tort principles to patent infringement to explore and fill the “gap” on tortious intent); Saurabh Vishnubhakat, *An Intentional Tort Theory of Patents*, 68 FLA. L. REV. 573, 598–607 (2016).

18. 35 U.S.C. § 284 (2012) (emphasis added).

19. *Graco, Inc. v. Bink’s Mfg. Co.*, 60 F.3d 785, 792 (Fed. Cir. 1995) (“Willfulness of the infringement is the sole basis for the court’s exercise of its discretion to enhance damages under 35 U.S.C. § 284 (1988).”); *Underwater Devices Inc. v. Morrison-Knudsen Co., Inc.*, 717 F.2d 1380, 1380 (Fed. Cir. 1983).

damages awarded, and vice versa. Courts awarding enhanced damages have therefore sought to achieve appropriate enhanced awards, with the “pendulum” of enhancement swinging back and forth between favoring patent holders and alleged infringers.²⁰

In light of this, the Federal Circuit has repeatedly attempted to identify an appropriate damages test to work in concert with remedies at equity. The Federal Circuit noted that, despite the availability of injunctions after 1819, remedies at equity were rarely granted for many classes of patent holders, leading to a general undermining of and “lowered respect” for the string of Patent Acts until the formation of the Federal Circuit in 1982.²¹

Combatting the disregard for patent rights and seeking an equilibrium between protecting patent rights via monetary and equitable remedies and encouraging innovation, the Federal Circuit issued its 1983 *Underwater Devices* opinion, imposing an affirmative duty of care on those who were put on notice of others’ patent rights.²² While the duty created the “advice of counsel” defense, it also produced an adverse inference under which any party that did not obtain a letter from “competent legal . . . counsel *before* the initiation of any possible infringing activity” presumably did so because such an opinion would have suggested infringement.²³ A defendant’s reliance on advice of counsel was evaluated on a reasonableness standard.²⁴ Adding to the analysis of willfulness, the Federal Circuit’s 1986 *Bott*

20. Nika F. Aldrich, *The Patent Pendulum May Be Poised to Swing Back*, SCHWABE, WILLIAMSON & WYATT (Mar. 4, 2016), <http://www.schwabe.com/newsroom-publications-14503> [<https://perma.cc/BB6G-MMRG>].

21. *Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1574 (Fed. Cir. 1988). The court stated:

[H]istorically, the [hypothetical negotiation/reasonable royalty] methodology has been problematic as a mechanism for doing justice to individual, non-manufacturing patentees. Because courts routinely denied injunctions to such patentees, infringers could perceive nothing to fear but the possibility of a compulsory license at a reasonable royalty, resulting in some quarters in a lowered respect for the rights of such patentees and a failure to recognize the innovation-encouraging social purpose of the patent system. Thus a cold, ‘bottom line’ logic would dictate to some a total disregard of the individual inventor’s patent

Id.; see *In re Seagate Tech. LLC*, 497 F.3d 1360, 1369 (Fed. Cir. 2007) (en banc) (Newman, J., concurring) (quoting *Knorr-Bremse Sys. Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1343 (Fed. Cir. 2004) (en banc)) (noting a “widespread disregard of patent rights [that] was undermining the national innovation incentive”).

22. *Underwater Devices*, 717 F.2d at 1389–90.

23. *Id.*; *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1579 (Fed. Cir. 1986) (quoting *Underwater Devices*, 717 F.2d at 1389–90).

24. *Seagate*, 497 F.3d at 1369.

decision, later augmented by *Read Corp. v. Portec, Inc.*, enumerated three, tort-based factors to consider in determining whether an infringer had acted willfully.²⁵

Though intended to eliminate wanton indifference towards patent rights, the adverse inference rule had several undesirable and unintended consequences.²⁶ First, it enabled patent holders to hamstring competitors by sending multitudes of infringement notices, despite having conducted little infringement analysis.²⁷ The alleged infringer, now “on notice” of the accused infringement, was forced to obtain advice of counsel on each asserted patent for fear of a presumption of willfulness at trial.²⁸ For a small company, the cost of obtaining advice of counsel on such a scale was almost surely devastating.²⁹ Second, companies became unwilling to research patents that existed within their own industry, knowing that unearthing such patents would require a corresponding opinion of counsel should litigation arise.³⁰ Finally, the move “effectively shift[ed] the burden of proof on the issue of willfulness from the patentee to the infringer.”³¹

Seeking to reverse the side effects of *Underwater Devices* and its progeny, the Federal Circuit issued a decision in *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.* that repealed the adverse inference rule.³² Later codified by Congress in 35 U.S.C. § 298, the decision noted that companies had a vested interest in not disclosing opinions of

25. *Bott v. Four Star Corp.*, 807 F.2d 1567, 1572 (Fed. Cir. 1986); *see also* *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 827–28 (Fed. Cir. 1992) (“Use of these [nine] factors in patent cases is in line with punitive damage considerations in other tort contexts.”). The nine factors relevant to the willfulness inquiry include: (1) whether the infringer deliberately copied the ideas or design of another; (2) whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; (3) the infringer’s behavior as a party to the litigation; (4) the defendant’s size and financial condition; (5) closeness of the case; (6) duration of the defendant’s misconduct; (7) remedial action by the defendant; (8) the defendant’s motivation for harm; and (9) whether the defendant attempted to conceal its misconduct. *Id.* The first three factors are original to *Bott*, and the remaining six were added in *Read Corp.*

26. *See Seagate*, 497 F.3d at 1385 (Newman, J., concurring).

27. *See id.*

28. *See id.*

29. *See* Charles Mokriski & Elizabeth A. Alquist, *Dead or Alive: Adverse Inference After Knorr-Bremse*, INTELL. PROP. TODAY, Nov. 2004, at 12–13.

30. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 29 (2003).

31. *Knorr-Bremse Sys. Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1349 (Fed. Cir. 2004).

32. *Id.* at 1341.

counsel in order to maintain attorney-client privilege.³³ These concerns about privilege were realized in the aftermath of the Federal Circuit's controversial opinion in *EchoStar*, which held that a defendant who relied upon advice of in-house counsel in a patent infringement suit had waived its privilege with respect to that same subject matter for all counsel, including outside counsel not involved in the initial advice.³⁴ Some courts saw *EchoStar* as a broad waiver once a company relied upon an opinion of counsel, in order to prevent companies from shopping opinions until a favorable one was acquired.³⁵ Other courts read *EchoStar* more narrowly, disfavoring such broad waiver implications.³⁶

This disparity was remedied in *In re Seagate Technologies LLC*, the Federal Circuit's 2007 decision that set a new standard for willfulness.³⁷ Restating, "there is no affirmative obligation to obtain advice of counsel," the Federal Circuit promulgated a two-part test that asked first if a company had been objectively reckless in its infringement, and second if the company had subjective knowledge of its infringement.³⁸ The court further declared that disclosure of opinions of counsel did not waive attorney-client privilege of trial counsel.³⁹

The *Seagate* decision, therefore, resolved the issue of waiver, but it created new problems in its wake. Since companies were held to an objective recklessness standard in the first prong of willful analysis, a company could, despite bad faith at the inception of infringement, assert an objectively reasonable defense at trial to escape a finding of willfulness.⁴⁰ Further exacerbating the issue was the Federal Circuit's 2012 decision, *Bard Peripheral Vascular, Inc. v. W.L. Gore Associates, Inc.*, ruling that the objectiveness prong was a question of law to be decided by a judge.⁴¹ The

33. *Id.* at 1344.

34. *In re EchoStar Commc'ns. Corp.*, 448 F.3d 1294, 1299 (Fed. Cir. 2006).

35. *See Informativa Corp. v. Bus. Objectives Data Integration, Inc.*, 454 F. Supp. 2d 957, 965 (N.D. Cal. 2006) ("Under the analysis in *EchoStar*, it is immaterial whether BODI's opinion counsel at trial are from the same firm, different firms or are even the same person.").

36. *See Ampex Corp. v. Eastman Kodak Co.*, No. CIV A. 04-1373-KAJ, 2006 WL 1995140, *3 (D. Del. July 17, 2006) ("[T]he *EchoStar* court's use of the word 'such' to modify the phrase 'communications regarding the same subject matter' indicates that the Court intended a far more limited meaning for its statement than Ampex wishes to give it.").

37. *In re Seagate Tech. LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc).

38. *Id.*

39. *Id.* at 1373.

40. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1932–33 (2016).

41. *Bard Peripheral Vascular, Inc. v. W.L. Gore Assocs., Inc.*, 682 F.3d 1003, 1006-07 (Fed. Cir. 2012).

result was that incriminating evidence of willfulness was hidden from the jury if the infringer could assert a reasonable defense before the judge. Thus, the most blameworthy actors were incentivized to use legal creativity to skirt enhanced damages at trial.⁴²

C. PREVIEWING *HALO*—TOTALITY OF THE CIRCUMSTANCES AND REASONABLE DEFENSES

Over time, *Seagate* became out-of-step with other changes to the patent infringement landscape, both in how it analyzed willfulness and in its standard of review.

In two 2014 cases, *Octane Fitness, LLC v. ICON Health & Fitness, Inc.* and *Highmark Inc. v. Allcare Health Management System, Inc.*, the Supreme Court abrogated the requirement that for attorney's fees a party prove by clear and convincing evidence that the litigation was both objectively baseless and conducted in bad faith.⁴³ They instead replaced the analysis with a "totality of the circumstances" test based on a preponderance of the evidence standard, giving district courts broader discretion.⁴⁴ Additionally, the Court declared that decisions based on the new test would be reviewed for abuse of discretion, further contrasting the former, overruled test, which permitted *de novo* review by the Federal Circuit.⁴⁵

In 2015, the Supreme Court issued another decision, *Commil USA, LLC v. Cisco Systems, Inc.*, that gave hints that *Seagate's* days were numbered, stating that induced liability infringement defenses no longer allow for a "reasonable defense" escape at trial.⁴⁶ Echoing concerns that the most culpable willful infringers were dodging liability through legal ingenuity alone, the *Commil* decision closed a loophole about which plaintiffs frequently complained.⁴⁷ However, the decision created immediate discord with the knowledge and intent requirements within the willful infringement

42. Dorothy Auth, *Supreme Court Reinvigorates Effectiveness of Obtaining an Opinion of Counsel to Defend Against Potential Enhanced Damages for Willful Infringement in Halo Elecs.*, CADWALADER (July 21, 2016), <http://www.cadwalader.com/resources/clients-friends-memos/supreme-court-reinvigorates-effectiveness-of-obtaining-an-opinion-of-counsel-to-defend-against-potential-enhanced-damages-for-willful-infringement-in-halo-electronics> [<https://perma.cc/55PX-4FK8>].

43. See *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1758 (2014); *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 134 S. Ct. 1744, 1746–47 (2014).

44. *Octane Fitness*, 134 S. Ct. at 1758; *Allcare Health Mgmt.*, 134 S. Ct. at 1746–47.

45. *Octane Fitness*, 134 S. Ct. at 1758; *Allcare Health Mgmt.*, 134 S. Ct. at 1746–47.

46. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1928 (2015).

47. See *id.* at 1929–30.

regime.⁴⁸ This was because the “willful blindness” standard for proving induced infringement became higher than the recklessness standard of the willfulness test, though intuitively, a finding of willfulness should demand more culpable conduct that induced infringement. A finding of induced infringement, therefore, could necessitate a finding of willfulness.⁴⁹

II. *HALO ELECTRONICS V. PULSE ELECTRONICS & AFTERMATH*

This Part will discuss the effects and ongoing implications of the *Halo* decision. First, this Part will discuss the policy concerns and related Supreme Court decisions leading up to *Halo*. Next, it will address the tension between utilitarian and retributivist themes penned by Justice Breyer and Chief Justice Roberts, respectively. Finally, it will address the implementation of *Halo* in district courts.

A. *HALO V. PULSE & STRYKER V. ZIMMER*

The first action in the consolidated cases on review, *Halo*, details Pulse’s alleged willful infringement of Halo’s patents for electronic packages with surface-mounted transformers on circuit boards.⁵⁰ Halo sent Pulse two letters in 2002 suggesting a license for the patents at issue.⁵¹ Pulse ignored the licensing requests after one of its engineers determined that Halo’s patents were invalid.⁵² In 2007, Halo brought suit against Pulse, and a jury ruled that Pulse had infringed the patents, likely willingly.⁵³ The district court declined to award enhanced damages after it determined that Halo’s defenses at trial were not “objectively baseless.”⁵⁴ The Federal Circuit affirmed the district court’s decision under *Seagate*’s framework.⁵⁵

In the second action in the consolidated cases on review, *Stryker*, the plaintiff brought suit against Zimmer for patent infringement pertaining to pulsed lavage device technology used in surgeries.⁵⁶ After a jury found that Zimmer “all-but instructed its design team to copy Stryker’s products,” and therefore willfully infringed, the district court trebled the total damages,

48. See Jonathan A. Choa, *Commil v. Cisco Systems: The End of Induced Infringement?*, 27 INTELL. PROP. LITIG. 35, 37 (2015).

49. *Id.*

50. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1930–31 (2016).

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.*

granting Stryker over \$228 million in total award.⁵⁷ The Federal Circuit, reviewing *de novo*, vacated the treble award on the grounds that Zimmer had asserted objectively reasonable defenses at trial.⁵⁸

Citing comparisons to *Octane Fitness* and *Highmark* and the need to punish the most culpable actors, Chief Justice Roberts issued a unanimous opinion striking down the *Seagate* standard for willfulness. The Court replaced *Seagate* with a totality of the circumstances test, under which a plaintiff may prove willfulness by a preponderance of the evidence, and post hoc defenses of invalidity are no longer a basis for eschewing liability.⁵⁹ Noting that *Seagate* “impermissibly encumber[ed] the statutory grant of discretion to district courts,” as provided by 35 U.S.C. § 284, Chief Justice Roberts stated that enhanced damages should only be meted out in “egregious” cases of conduct—that is, actions that are “willful, wanton, malicious, bad-faith, deliberate, consciously wrong, flagrant or—indeed—characteristic of a pirate.”⁶⁰ In this sense, the new test for imposing enhanced damages contains two parts, the first evaluating the totality of the circumstances to decide the issue of “willfulness” and the second examining the egregiousness of the infringer’s conduct to determine whether enhancing damages is appropriate.⁶¹ At its core, the test first asks, “Was the conduct willful?”; it then asks, “Was the willful conduct *egregious*?”

The Court also abrogated the tripartite review system, under which the objective recklessness prong of *Seagate* was reviewed *de novo*, the subjective prong for substantial evidence, and the decision to award enhanced damages for abuse of discretion.⁶² Under the new test, the district court’s assessment of the totality of the circumstances is reviewed exclusively for abuse of discretion.⁶³

1. Policy Considerations

Beyond the discord with other aspects of patent law, the Court considered independent policy concerns in its *Halo* decision that were highlighted in various amicus briefs.

57. *Id.*

58. *Id.*

59. *Id.* at 1925.

60. *Id.* at 1932.

61. *Id.* at 1927. Chief Justice Roberts wrote that a “totality of the circumstances” test to determine willfulness “allows district courts to punish the full range of culpable behavior,” but adds that the egregiousness of defendant’s conduct should govern who, in practice, receives such punishment. *Id.* at 1933–34.

62. *Id.* at 1930.

63. *Id.* at 1927.

Briefs in favor of respondents—perhaps more typically authored by “routine” defendants (e.g., Intel Corp., Hewlett Packard, etc.)—and briefs in favor of neither party generally supported the existing *Seagate* framework as an appropriate standard for willfulness.⁶⁴ These briefs argued that the predictability of the *Seagate* test, combined with the reality that willfulness is asserted in 80–90 percent of all patent cases, make the *Seagate* standard a satisfactorily high bar to prevent excessive damages.⁶⁵

Petitioners and their amici however, believed the *Seagate* bar was set too high, flatly ignoring the culpability of some of the most egregious willful infringers.⁶⁶ Noting that the *Seagate* standard of willfulness overlooks the infringer’s state of mind *at the time of infringement*, the United States on behalf of petitioners wrote, “when a person engages in unlawful conduct under circumstances that would otherwise support an inference of bad faith, his subsequent development of a reasonable but unsuccessful defense to liability does not negate that inference.”⁶⁷

The dueling amici reveal the tension between the desire to punish the worst offenders and the concern about opening the floodgates to unpredictable damages rulings.⁶⁸ Chief Justice Roberts, attempting to

64. See, e.g., Brief for Intel Corp. et al. as Amici Curiae Supporting Respondents at *3–6, *Halo Elecs., Inc. v. Stryker Elecs., Inc.*, 136 S. Ct. 1923 (2016) (Nos. 14-1513, 14-1520) (noting that Congress “implicitly endorsed” *Seagate* in the Leahy-Smith America Invents Act, and stating the need for predictability in patent litigation over an “unpredictable” totality of the circumstances approach); Brief for Intellectual Property Owners Ass’n. as Amicus Curiae Supporting Neither Party at *3, *Halo Elecs., Inc. v. Stryker Elecs., Inc.*, 136 S. Ct. 1923 (2016) (Nos. 14-1513, 14-1520) (“IPO believes [the *Seagate* standard] is the appropriate standard for determining willful infringement.”).

65. See Brief for Intel Corp. et al. as Amici Curiae Supporting Respondents at *18, *Halo Elecs., Inc. v. Stryker Elecs., Inc.*, 136 S. Ct. 1923 (2016) (Nos. 14-1513, 14-1520) (citing Kimberly A. Moore, *Empirical Statistics on Willful Patent Infringement*, 14 FED. CIR. B.J. 227, 232 (2004); Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1440–42 (2009)).

66. See, e.g., Reply Brief for the Petitioners at *8, *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016) (No. 14-1520) (“The court of appeals has adopted a test for willfulness that excludes intentional infringement, deems post hoc defenses sufficient to bar enhanced damages, and reserves for itself de novo review of reasonableness of the defenses. The net result is that the Federal Circuit currently allows most highly culpable infringers to evade enhanced damages.”); Brief for United States as Amicus Curiae Supporting Petitioners at 23–24, *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016) (Nos. 14-1513, 14-1520) (“The defendant’s assertion at trial of an objectively reasonable defense to liability should not categorically preclude an award of enhanced damages.”).

67. Brief for United States as Amicus Curiae Supporting Petitioners at *25, *Halo Elecs., Inc. v. Stryker Elecs., Inc.*, 136 S. Ct. 1923 (2016) (Nos. 14-1513, 14-1520).

68. Compare *id.*, with Brief for Intel Corp., *supra* note 65, at *3–13 (“routine” defendants Intel, Hewlett Packard, and Medtronic fearing greater exposure to enhanced

assuage the respondents' fears that the *Seagate* abrogation will lead to excessive frequency of willfulness claims and thereby "embolden [patent] trolls," noted that enhanced damages should not be awarded in "garden-variety cases."⁶⁹ Justice Breyer similarly stressed that district courts should award enhanced damages with "careful application."⁷⁰ Practically speaking, however, many argue that these limitations merely pay lip service to the respondents' fears.⁷¹

2. *Although Unanimous, the Halo Decision Reveals a Split Between Retributivism and Utilitarianism Justifications for Treble Damages*

The language of the *Halo* decision does not merely create a new rule for willfulness but also reflects the Supreme Court's interpretation of patent rights. Chief Justice Roberts, acknowledging the "careful balance between the need to promote innovation and patent protection," nonetheless rejects wholesale the need for "artificial construct[s] such as the *Seagate* test."⁷² He additionally rejects utilitarian arguments for enhanced damages, stating that such damages are "designed as a 'punitive' or 'vindictive' sanction for egregious infringement behavior."⁷³ This retributivist stance is not new, as the Supreme Court had previously described treble awards in an 1888 opinion as an ability for courts to "inflict vindictive or punitive damages" in cases where "the circumstances . . . appear to require it."⁷⁴

Conversely, Justice Breyer's concurrence, though incorporating some of Chief Justice Roberts' retributivist language, focuses on the "limits" of district court discretion in a much more utilitarian manner.⁷⁵ Positing that enhanced damages, if too readily awarded, may chill even lawful innovation, Justice Breyer suggests that treble damages should play only a

damages threats, and petitioners and those supporting petitioners seeking to lower the bar to introduction of willfulness evidence).

69. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1935 (2016).

70. *Id.* at 1938.

71. See, e.g., Bonnie Eslinger, *High Court's Ruling Aids Patent Trolls, Lobbyists Say*, LAW360 (June 16, 2016, 3:42 PM), <https://www.law360.com/articles/807297/high-court-s-ruling-aids-patent-trolls-lobbyists-say> [<https://perma.cc/W39N-VPSF>]. Lobbyists for Google, Amazon, and Cisco remain concerned regarding the increased ease with which patent trolls (non-practicing entities) can be awarded enhanced damages, and have urged Congress to undertake patent damages reform. *Id.*

72. *Halo Elecs.*, 136 S. Ct. at 1935.

73. *Id.* at 1932.

74. *Tilghman v. Proctor*, 125 U.S. 136, 143–44 (1888).

75. *Halo Elecs.*, 136 S. Ct. at 1936–38.

small role in deterring potentially infringing actions.⁷⁶ Justice Breyer’s concurrence does not label treble damages a punitive end in and of itself, but rather views deterring infringement as “a means to patent law’s ends,” the true goals of which—namely the distribution of knowledge and promotion of utility—are achieved “through a complex system of incentive-based laws.”⁷⁷ Justice Breyer’s concerns clearly lie with the small business owner and the incremental innovator.⁷⁸ To err on the side of more frequently awarding enhanced damages is to err on the side of “discourag[ing] lawful activity . . . rather than ‘promote[ing]’ the ‘Progress of Science and the useful Arts,’” as set out in the utilitarian foundation for intellectual property rights.⁷⁹ Though his language does not provide specific guidance on limitations, and therefore does little to mitigate concerns for emboldened trolls, the rationale represents a marked shift in enhanced damages limitations.

B. DISTRICT COURT INTERPRETATIONS ARE FAITHFUL TO THE NEW
HALO STANDARD

Since the *Halo* decision, two cases in particular have helped shed light on the new test, adding substance to Chief Justice Robert’s language of penalizing egregious behavior. Both cases preserve *Seagate*’s second, subjective prong as the heart of the new *Halo* willfulness analysis.

The first, *Innovention Toys, LLC v. MGA Entertainment, Inc.*, suggests that the second prong of the *Seagate* test—subjective bad faith—is sufficient to find willfulness under the first prong of the new *Halo* standard.⁸⁰ *Innovention* alleged that MGA willfully infringed its board game technologies, claiming that after an MGA developer attended a toy fair at which *Innovention* displayed its new game the company created an

76. *Id.* Justice Breyer stated:

Enhanced damages have a role to play . . . [but] that role is limited . . . The more that businesses, laboratories, hospitals, and individuals adopt [the approach of sending mass-assertion letters], the more often a patent will reach beyond its lawful scope to discourage lawful activity, and the more often patent-related demands will frustrate, rather than “promote,” the “Progress of Science and useful Arts.”

Id.

77. *Id.*

78. *Id.*

79. *Id.* (citing U.S. CONST. art. I, § 8, cl. 8).

80. *Innovention Toys, LLC v. MGA Entm’t, Inc.*, No. 2:07-cv-06510-SM-MBN, 2016 WL 4151240, at *2 (Fed. Cir. Aug. 5, 2016).

almost identical game.⁸¹ The district court found willful infringement,⁸² though this was vacated on appeal after the Federal Circuit found that the district court had failed to evaluate important prior art pertaining to MGA's obviousness defense.⁸³ Since the original jury found that the subjective prong of *Seagate* was satisfied by "clear-and-convincing-evidence," the lowered threshold of a preponderance of the evidence was necessarily satisfied.⁸⁴ Therefore, the Federal Circuit instructed the district court to "exercise its discretion in accordance with *Halo*, including the emphasis on egregiousness," given that willfulness had been established—consistent with the two-step approach.⁸⁵

The second case, *WesternGeco LLC v. ION Geophysical Corp.*, further expounds upon the new test, adding factors to consider when deciding *Halo*'s second prong: whether the willful conduct was so egregious as to warrant awarding enhanced damages. WesternGeco filed suit against ION Geophysical for patent infringement of its marine seismic streamer technology.⁸⁶ After a jury found infringement of the patented technology and no invalidity, as well as subjective recklessness under *Seagate*'s second prong, WesternGeco moved for enhanced damages, which were denied based on ION's reasonable defenses.⁸⁷ On appeal, the Federal Circuit noted that *Halo* "did not disturb the substantive standard for the second prong of *Seagate* . . . [and] subjective willfulness alone . . . can support an award of enhanced damages."⁸⁸ Importantly however, it also differentiated the finding of willfulness from the decision to award enhanced damages, noting "objective reasonableness of the accused infringer's positions can still be relevant for the district court to consider when exercising its discretion."⁸⁹ Under *WesternGeco*, the first part of the *Halo* test—determining whether willfulness exists—may still be *Seagate*'s subjective prong.⁹⁰ *Halo*'s second prong, the totality of the circumstances in deciding whether to award

81. *Innovention Toys, LLC v. MGA Entm't, Inc.*, 611 F. App'x 693, 695–96 (Fed. Cir. 2015).

82. *Id.* at 700–01.

83. *Innovention Toys, LLC v. MGA Entm't, Inc.*, 665 F. Supp. 2d 636, 652–55 (E.D. La. 2009) (ruling the claims nonobvious in light of plaintiff's prior art).

84. *Innovention Toys*, 611 Fed. Appx. at 695–96.

85. *Innovention Toys*, 2016 WL 4151240, at *2.

86. *WesternGeco LLC v. ION Geophysical Corp.*, 837 F.3d 1358, 1360 (Fed. Cir. 2016).

87. *Id.*

88. *Id.* at 1362.

89. *Id.* at 1363.

90. *Id.*

enhanced damages, may yet include considerations of *Seagate*'s first "objective recklessness" prong.⁹¹

Both *Innovention* and *WesternGeco* represent faithful implementations of Chief Justice Roberts' *Halo* standard for willful infringement. *Seagate*'s subjective prong captures those whose actions merit blame, as infringers who know and understand the degree of their impropriety are synonymous with the wanton disregard detailed in Chief Justice Roberts' opinion.⁹² Moreover, in deciding whether to award enhanced damages, "objective recklessness" is not barred from the totality of the circumstances, and indeed may help differentiate a more "egregious" offender from a less malignant one.⁹³

Given the loose guidelines of the lead opinion, it would appear that any inquiry into behavior is acceptable so long as it centers on penalizing truly "egregious" willful behavior.⁹⁴ The second prong of *Seagate*—subjective bad-faith—and the frequently cited *Read* factors are therefore still satisfactory under the new *Halo* instructions, as an infringer who has subjective knowledge of his own infringement and proceeds anyway is characteristically, "malicious."⁹⁵

III. BALANCING THE GOALS OF INTELLECTUAL PROPERTY RIGHTS AND PUNITIVE MEASURES

Justifications for intellectual property rights have often been the subject of debate among legal scholars, the most persistent of which has been Lockean utilitarianism and its derivatives.⁹⁶ Skeptical that intellectual property rights in their current form increase social utility, however, some scholars have turned their backs on utilitarian justifications amidst empirical evidence of benefit to the public showing mixed results.⁹⁷ These scholars have, in some cases, abandoned empirical justifications altogether

91. *Id.*

92. *See Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1932 (2016).

93. *See WesternGeco.*, 837 F.3d at 1362.

94. *See Halo Elecs.*, 136 S. Ct. at 1932.

95. *See supra* note 25; *see also In re Seagate Tech. LLC*, 497 F.3d 1360, 1384 (Fed. Cir. 2007) (en banc); *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 827 (Fed. Cir. 1992).

96. *See Adam D. Moore, A Lockean Theory of IP Revisited: A Review of Justifying Intellectual Property*, 49 SAN DIEGO L. REV. 1069, 1101 (2012).

97. *See Mark A. Lemley, Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1336–37 (2015). Professor Lemley discusses how prominent patent scholars, including Professor Robert Merges, have turned towards a faith-based, moral justification for an individual's entitlement to excluding others from practicing that which he invents.

in favor of “faith-based,” moral justifications for patent rights.⁹⁸ But perhaps baked into this unease is the concern over a rapidly changing legal landscape in intellectual property. Professor Mark Lemley notes that, in parallel with the increase in empirical studies on patent law in the last thirty years, the United States has adopted a “host of new IP laws.”⁹⁹ This body of law convolutes empirical patent utility analysis, and perhaps indicates an overregulation of patent law as a whole.¹⁰⁰ But the fact remains that the “principal philosophical theory” for patent rights has been utilitarian.¹⁰¹ Regardless of the debate, if utilitarian rationales are deemed the foundation of intellectual property rights, then so too should be the justifications for patent damages so as to minimize overprotection and maximize scientific progress. A question therefore remains: Does *Halo* reach the correct “balance” of interests in the conflict between the protection of patent rights and the need to incentivize innovation?¹⁰² Further, is Chief Justice Roberts’ punitive analysis the best means to get there?

A. THE *HALO* DECISION INCORRECTLY EMPHASIZES RETRIBUTIVIST GOALS OF ENHANCED DAMAGES OVER CONSTITUTIONAL INCENTIVES FOR INNOVATION

The notion of treble damages is, notably, not unique to patent law and indeed, not without critics.¹⁰³ Among the justifications for treble damages is the utilitarian argument for deterrence.¹⁰⁴ Operating under the assumption that not all violations are caught, Congress allows heightened damages in order to set an example of those who are caught and to make up for

98. *Id.* at 1337.

99. *Id.* at 1335–37.

100. *Id.* at 1332. Professor Lemley, citing JAMES BESSEN & MICHAEL MEURER, PATENT FAILURE: HOW JUDGES, LAWYERS, AND BUREAUCRATS PUT INNOVATION AT RISK (2009), notes that some scholars have suggested that patent rights can be justified in specific industries, like the biomedical industry, but not elsewhere. Since patents are a form of government regulation, the availability of patents in other fields is inherently overprotective.

101. Peter S. Menell, *Intellectual Property: General Theories*, in 2 ENCYC. OF L. & ECON. 129, 129–30 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000).

102. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1935 (2016).

103. See Leon B. Greenfield & David F. Olsky, *Treble Damages: To What Purpose and to What Effect?*, BRITISH INST. FOR INT’L AND COMP. L. 2 (Feb. 2, 2007), http://www.wilmerhale.com/uploadedFiles/WilmerHale_Shared_Content/Files/Editorial/Publication/Treble%20Damages%20Article_%20BIICL%20conference.pdf [<https://perma.cc/7EX8-3D3F>].

104. See *id.*; see also *Rite-Hite Corp. v. Kelley Co.*, 819 F.2d 1120, 1126 (Fed. Cir. 1987) (en banc).

infractions that have escaped capture.¹⁰⁵ A second argument for treble damages is that of retributivist punitive controls, where enhanced damages are awarded as punishment for the violation, beyond the compensation for the victim's damages alone.¹⁰⁶

While both explanations of treble damages could reasonably explain Congress's motives underlying the Patent Act, the Constitution, in its approach to intellectual property rights, is widely recognized as decidedly utilitarian in nature.¹⁰⁷ Thomas Jefferson's view of an incentive-based regime designed as "an encouragement to men to pursue ideas which may produce utility" became the backdrop on which American intellectual property rights were thus created.¹⁰⁸ Hence, viewed in light of history and the constitutional scheme, deterrence should drive enhancement analysis. Applying retributive principles may seem attractive where infringers act in bad faith, but in practice, doing so would ignore the constitutional foundation for intellectual property rights and the Lockean principles of utilitarianism behind them.¹⁰⁹

Innovention and *WesternGeco* are faithful implementations of Chief Justice Roberts' *Halo* opinion. But Roberts' focus on punishing "egregious" offenders loses sight of patent law's guiding balance between disclosure and protection. And while the cases go about the new "totality of the circumstances" test in slightly different ways—with *Innovention* essentially using only *Seagate*'s second, subjective prong to find willfulness and *WesternGeco* including the objective recklessness prong of *Seagate*'s test into the decision to implement damages—both cases accurately capture bad faith infringers and apportion damages appropriately.¹¹⁰

105. Greenfield & Olsky, *supra* note 103, at 5–6.

106. See generally John Calvin Jeffries, Jr., *A Comment on the Constitutionality of Punitive Damages*, 72 VA. L. REV. 139 (1986) (exploring the inadequacy of punitive measures justifying damages generally).

107. See generally Kenneth Einar Himma, *Toward a Lockean Moral Justification of Legal Protection of Intellectual Property*, 49 SAN DIEGO L. REV. 1105 (2012) (detailing the legitimacy of intellectual property rights through a content-creator, investment approach, the roots of which are attributed to Locke).

108. Chris Dixon, *Thomas Jefferson on Patents*, BUS. INSIDER (July 16, 2011), <http://www.businessinsider.com/thomas-jefferson-on-patents-2011-7> [<https://perma.cc/TWE6-TTG3>].

109. See *id.*

110. See *Innovention Toys, LLC v. MGA Entm't, Inc.*, 2016 WL 4151240, at *2 (Fed. Cir. Aug. 5, 2016); *WesternGeco LLC v. ION Geophysical Corp.*, 837 F.3d 1358, 1360 (Fed. Cir. 2016).

B. THE CURRENT DAMAGES REGIME CAN BE INTERPRETED TO BE CONSISTENT WITH THE CONSTITUTION

Perhaps the most favorable, and most simplistic, method for bounding enhanced damages in accordance with the Constitution is to maintain 35 U.S.C. § 284 as it stands and to emphasize the utilitarian goal of deterrence in the decision on whether or not to apply a multiplier to the award.¹¹¹

Instead of looking to Chief Justice Roberts' opinion for justification of imposing treble damages, we should instead look to Justice Breyer's concurrence to perform the legwork of the statute.¹¹² Justice Breyer's "limits" emphasize district court discretion, even where willfulness is established, to highlight the narrow scope of enhanced damages applicability in deterring only unlawful innovation.¹¹³ Such limits, crafted with an eye towards the delicate balance of disclosure and creative protection to encourage lawful innovation, align with the Constitution's dictate to promote the "progress of Science and the Useful Arts."¹¹⁴ This would allow section 284 to remain unaltered, and would bring enhanced damages in line with other aspects of patent and intellectual property law.¹¹⁵ Indeed, redefining *Halo's* second prong, we can summarize Justice Breyer's "limits" and say that it is the *impact on innovation within industry* that bounds enhanced damages, not "egregious" conduct.

C. EMPHASIZING UTILITARIAN PRINCIPLES OF INTELLECTUAL PROPERTY LAW WILL NOT EMBOLDEN PATENT TROLLS

Despite the Supreme Court's assurance otherwise, some scholars have expressed concern that the *Halo* opinion will embolden patent trolls who see a renewed ability to obtain higher damages.¹¹⁶ Not all agree that *Halo* is an outright victory for patent trolls, though the decision clearly leans in favor of patent owners over alleged infringers.¹¹⁷

111. See 35 U.S.C. § 284 (2012).

112. See *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1935–37 (2016).

113. *Id.*

114. U.S. CONST. art. 1, § 8, cl. 8.

115. See Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1032 (2005). Professor Lemley argues that a utilitarian view of intellectual property rights, as is traditional, is the best explanation of and justification for intellectual property as a whole because it strikes the correct balance between inventor/creator control and ability to compete in the marketplace. *Id.*

116. See Noah Feldman, *Supreme Court Asserts Itself and Patent Trolls Win*, BLOOMBERG (June 14, 2016, 12:24 PM), <https://www.bloomberg.com/view/articles/2016-06-14/supreme-court-asserts-itself-and-patent-trolls-win> [<https://perma.cc/TY2F-5WT6>].

117. See Daniel Nazer, *Supreme Court Gives More Leeway to Lower Courts on Patents and Copyright: Will Lower Courts Champion Innovation?*, ELEC. FRONTIER FOUND. (June

1. *The Patent Troll Demand Letter Threat*

Patent trolls, otherwise known as “non-practicing entities” or “NPEs” are typically characterized by individuals or organizations who acquire patent rights by buying patents, as opposed to being inventors themselves.¹¹⁸ The patent troll business model relies up notice letters threatening lawsuits, in hopes that recipients will license the technology or settle litigation.¹¹⁹ Patent trolls have been highly criticized for a variety of unwanted side effects, including damaging the image of the “small inventor” in the eyes of Congress and increasing industry costs like research and development for companies that actively participate in inventorship.¹²⁰

While the negative effects of patent trolls are debated, one particular concern scholars have is patent trolls’ use of fraudulent demand letters. Demand letters, used to make alleged infringers aware of patented technology and presented at trial to help prove willfulness, are the bread and butter of the patent troll business.¹²¹ Knowing that settlement is typically cheaper than fighting, companies put on notice of potential infringement are unduly coerced into forgoing a properly adjudicated outcome.¹²²

To think, therefore, that a new policy that so strongly favors patentees over alleged infringers will have no impact on patent trolls’ behavior may be naïve. Demand letters are not bound by the same requirements from state to state.¹²³ In states where laws governing demand letters require little specificity, patent trolls may issue excessive numbers of demand letters to entities that are unlikely to infringe, knowing that the increased threat of treble damages may incentivize companies to settle rather than risk

27, 2016), <https://www.eff.org/deeplinks/2016/06/supreme-court-gives-more-leeway-lower-courts-patents-and-copyright-will-lower> [<https://perma.cc/7WUA-S4GS>].

118. See Tim Pohlmann & Marieke Opitz, *Typology of the Patent Troll Business*, 43 R&D MGMT. 103, 104 (2013).

119. *Id.* at 104–05.

120. See generally Christopher A. Cotropia, *The Individual Inventor Motif in the Age of the Patent Troll*, 12 YALE J.L. & TECH. 52 (2009) (exploring whether the uptick in patent troll litigation has damaged the “individual inventor” image in innovation); James E. Bessen, Michael J. Meurer & Jennifer Laurissa Ford, *The Private and Social Costs of Patent Trolls*, 34 REGULATION 4, Winter 2011-2012, at 26 (arguing that patent troll activity has led to reduced innovation incentives).

121. Scott Burt, *Extortionist Demand Letters Are Wrecking Public Confidence in the U.S. Patent System*, IP WATCHDOG (Oct. 26, 2014), <http://www.ipwatchdog.com/2014/10/26/extortionist-demand-letters-are-wrecking-public-confidence-in-the-u-s-patent-system/id=51811/>.

122. *Id.*

123. Chase Means, *Has the Supreme Court Breathed New Life into Patent Trolls in Halo and Stryker?*, IP WATCHDOG (June 15, 2016), <http://www.ipwatchdog.com/2016/06/15/supreme-court-patent-trolls-halo-stryker/id=70050/>.

willfulness at trial.¹²⁴ Though some scholars disagree with the notion that patent trolls are inherently bad,¹²⁵ unwarranted and fraudulent demand letters are an inexcusable by-product of facilitating damages awards.

Justice Breyer’s “limits” on enhanced awards are a start to protecting legitimate innovation in courts, but facilitating damages may yet have undesirable effects on companies who fearfully settle patent troll demands outside a court of law. There is little reason to believe that, in response to the new *Halo* test, patent trolls won’t increase their demand letters while simply adding the words “egregious conduct” to their complaints.

2. *Utilitarian Limits Protect Lawful Innovation*

Regardless of the Supreme Court’s accuracy in predictions with respect to softening concerns about patent trolls, using utilitarian principles to determine when enhanced damages should apply will likely mitigate these concerns further. This is because courts will likely turn to considerations used in equitable remedies, such as evaluating whether the parties in the lawsuit are competitors, and to what degree the alleged infringement affects the patentee’s market.¹²⁶ Patent trolls, which lack inventorship and production of material goods, will not survive a claim for enhancements under this analysis.¹²⁷ Given that these entities are usually only interested in licensing, litigation that precludes enhancements due to a lack of market impact (even in the case of subjective willfulness), will not preclude damages for patent holders outright, but will adjust compensation in a manner consistent with the damages suffered.¹²⁸ The only damage left unsubstantiated for the patent troll is the cost of the suit, however the Supreme Court specifically noted in *Halo* that enhanced damages are not a

124. *Id.*; Eric J. Riedel, Note, *Patent Infringement Demand Letters: Does Noerr-Pennington or the First Amendment Preempt State Law Liability for Misleading Statements?*, 31 BERKELEY TECH. L.J. 623, 627 (2016).

125. See Marc Morgan, *Stop Looking Under the Bridge for Imaginary Creatures: A Comment Examining Who Really Deserves the Title: Patent Troll*, 17 FED. CIR. B.J. 165, 166 (2008).

126. *eBay, Inc. v. MercExchange*, 126 S. Ct. 1837, 1839–41 (2006) (denying injunctions where plaintiff and defendant are not competitors).

127. See *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1937–38 (2016).

128. See generally J.P. Mello, *Technology Licensing and Patent Trolls*, 12 B.U. J. SCI. & TECH. L. 388 (2006) (discussing the business model of patent trolls, focused on maximization of return and minimization of risk with respect to counterclaims challenging patent validity). Since patent trolls often seek a reasonable royalty, *id.* at 390, willfulness does not merit enhanced damages, since a claim of willfulness has not affected the entity’s business model or operations. In fact, an infringer who acts willfully in a patent troll context may simply make a reasonable royalty easier to obtain since infringement is more readily established.

form of compensation for the patentee.¹²⁹ Consequently, under a utilitarian regime, perhaps it is best not to think of enhanced damages as compensation for the victim, but rather compensation for the industry, whose faith in patent protections is the driver of innovation.

D. JUDGES ALREADY POSSESS THE TOOLS FOR THE INDUSTRY-BASED ANALYSIS

A potential criticism of an emphasis on impact to industry over culpability may be that it requires a substantial analytical investment from the judge. However, such information is already present in damages calculations, and the impact on industry is only incrementally more sophisticated than the analysis judges already perform.¹³⁰ Regardless of the manner in which parties seek damages—whether through reasonable royalty or through an analytical approach—courts possess the necessary information to extrapolate an effect on industry from reasonable royalty evidence.

Under a hypothetical negotiation approach, a method used to calculate a reasonable royalty, courts use the fifteen *Georgia-Pacific* factors to determine the outcome of a theoretical willing licensor/licensee negotiation.¹³¹ These factors require parties to produce sufficient information for the court to determine the effect of the infringement on the relevant industry. Among the *Georgia-Pacific* factors are: (6) the effect of selling the patented specialty in promoting sales of other products of the licensee; that existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales; (8) the established profitability of the product made under

129. See *Halo*, 136 S. Ct. at 1929 (“Some early decisions did suggest that enhanced damages might serve to compensate patentees as well as to punish infringers Such statements, however, were not for the ages.”).

130. See, e.g., *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 893 F. Supp. 1386, 1396–97 (N.D. Ind. 1995). Judge Easterbrook, awarding a reasonable royalty instead of lost profits, performed an analysis of the industry at issue, found that the process that would have been used to create a noninfringing product was available at the time of infringement, though at a greater cost, and that this did not justify infringement, since the company could have produced a noninfringing product at higher internal cost while still capturing some of the patentee’s market. *Id.* at 1390–92. In his analysis, Judge Easterbrook considered the manufacturing processes, alternatives to infringement, and consumer impact of infringing and noninfringing products. The analytical framework suggested would simply demand a consideration of third parties in the market, but would employ the same considerations. *Id.*

131. See, e.g., *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324–25 (Fed. Cir. 2009) (noting the historical emphasis on hypothetical negotiations); *LaserDynamics, Inc. v. Quanta Comput., Inc.*, 694 F.3d 51, 75–77 (Fed. Cir. 2012); *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

the patent; its commercial success; and its continued popularity; (9) the utility and advantages of the patented property over the old modes or devices, if any, that had been used for working out similar results; (10) the nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention; (11) the extent to which the infringer has made use of the invention; and any evidence probative of the value of that use; (13) the portion of the realizable profits that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer; and finally (14) the opinion testimony of qualified experts.¹³² These specific factors are both inward-looking with respect to the infringer's benefits gained by infringement itself, rather than inventing around or seeking alternate solutions in industry, as well as outward looking in assessing the value of the patented technology as an improvement upon prior technologies in the industry at large.

Similarly, if a patentee chooses to prove damages through an analytical method of lost profits, the court will still possess an ability to determine impact to innovation and industry.¹³³ The analytical method has two predominant variations a patentee may use to prove damages. The first variation is the "Entire Market Value Rule," under which a patentee claims that the patented feature is the exclusive driver of the downstream sale, and therefore damages associated with the infringement consist of the entire value of the sale price.¹³⁴ The second version of the analytical method, used when the patented feature may be distilled from the overall purchase price into the "smallest salable unit," is an apportionment method.¹³⁵ While this method may seem exclusively introspective, looking mostly at the infringer's internal profit projections for the infringing product, the infringer's profit projections necessarily bake in the impact its product will have on the market as a whole.¹³⁶ By delving more deeply into the profit projections themselves, experts and juries alike will see a "before and after" of the market absent infringement, and with the infringing competition.

132. *Georgia-Pacific*, 318 F. Supp. at 1120.

133. *See* *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 899 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 852 (1986); *Lucent Techs.*, 580 F.3d at 1324–25.

134. *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226–27 (Fed. Cir. 2014).

135. *Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1326–27 (Fed. Cir. 2014).

136. *See Methodologies for Determining Reasonable Royalty Damages*, FISH & RICHARDSON, www.fr.com/reasonableroyalty/ [<https://perma.cc/B4CY-4KBQ>] (last visited Apr. 23, 2017); Rama Yelkur & Paul Herbig, *Global Markets and the New Product Development Process*, 5 J. PROD. & BRAND MGMT. 38, 38–47 (1996).

IV. CONCLUSION

The Supreme Court's *Halo* decision represents a deviation from the constitutional framework of intellectual property rooted in utilitarian principles. Despite the frequent traditional tort implications in intellectual property lawsuits, viewing the enhanced damages option of 35 U.S.C. § 284 as a punitive clause is yet another imperfect application of tort in intellectual property. Consequently, Justice Breyer's concurrence, emphasizing the limits on enhanced damages to further the progress of the arts and sciences and to promote innovation, should govern analysis of *Halo*'s second prong—whether or not enhanced damages should be awarded upon a finding of willfulness. Chief Justice Roberts' punitive opinion, though consistent with traditional notions of culpability, is inconsistent with the constitutional justification for intellectual property rights. Further, if Justice Breyer's concurrence is law, 35 U.S.C. § 284—permitting treble damages—need not change. Instead, the analysis should be reworked so the decision to enhance damages rests upon an analysis of impact on innovation, not on “egregiousness” of conduct.

DC COMICS V. TOWLE: PROTECTING FICTIONAL CHARACTERS THROUGH STEWARDSHIP

Michael Deamer[†]

“Batman always must be Bruce Wayne. . . and he always must have a Batmobile and a butler. I can take them to the edge, but it always will come back to the basics. Unlike novel characters, comic book characters last an eternity.”¹

Grant Morrison

Since 1954, the United States Court of Appeals for the Ninth Circuit has developed distinct rules for the protection of fictional characters. In 2015, the Ninth Circuit attempted to consolidate its doctrine in *DC Comics v. Towle*.² *Towle* synthesized a three-part test to determine whether a character is protected by copyright. The court then applied this test in its ruling that the Batmobile—Batman’s ubiquitous crime-fighting vehicle—was copyrightable.

The culmination of the copyrightable character doctrine in *Towle* creates an opportunity for more comprehensive assessments of the impact of the Ninth Circuit’s approach to character copyright. The framework *Towle* constructed seeks to protect a uniquely important aspect of creative works. Fictional characters serve as the guiding spirit of storytelling, and are increasingly important in the modern media landscape. *Towle* formulated individual protection of characters through an unorthodox and problematic evaluation that challenges several central tenets of copyright law. However, four notable justifications can be made for *Towle*’s unique framework. This Note classifies these underlying rationales as a privilege of stewardship for copyright owners.

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1. Cyriaque Lamar, *Grant Morrison’s Philosophy of Comics*, 109 (Apr. 14, 2010, 6:47 PM), <http://io9.gizmodo.com/5517352/grant-morrison-philosophy-of-comics> [<https://perma.cc/FSA7-KMU5>].

2. 802 F.3d 1012 (9th Cir. 2015).

Part I of this Note tracks the historical development of copyright in fictional characters leading up to *Towle*. Part II evaluates *Towle* itself, paying special attention to the roots of the test the court used to evaluate the Batmobile. Part III attempts to articulate an explanation for the development of the copyrightable character doctrine. This explanation explores stewardship as a set of rationales for *Towle*. Part IV then uses *Towle* to evaluate two contemporary characters in modern mediums. These assessments problematize not only the components of the *Towle* test but the stewardship principles which justify the court's fundamental departure from established precedent. The Note concludes by proposing several improvements to the *Towle* test and a brief meditation on the doctrine's future.

I. THE HISTORICAL DEVELOPMENT OF COPYRIGHTABLE FICTIONAL CHARACTERS

The theories underlying the copyrightability of fictional characters have developed over nearly a century of jurisprudence. The Constitution authorized Congress to grant copyrights in order to promote the progress of knowledge.³ To achieve this goal, copyright enables “authors to control the use of their intellectual creations.”⁴ The Copyright Act of 1976 protects “original works of authorship fixed in any tangible medium of expression.”⁵ Copyright grants owners a variety of rights, such as control over reproduction and the ability to create derivative works.⁶ The Act contains a non-exhaustive list of protected categories of works, such as literary, musical, and audiovisual pieces.⁷

Taking only a portion of a copyrighted work—such as a character—can still infringe the underlying work. The Nimmer treatise states the dominant view that “[One should] view the subject novel, film, opera, etc. as subject to copyright protection considered as a whole—and infringed to the extent that a delineated character is copied therefrom.”⁸ Courts have employed different frameworks to evaluate this type of infringement. The test the

3. U.S. CONST. art. 1, § 8, cl. 8; see also Pamela Samuelson, *The Quest for a Sound Conception of Copyright's Derivative Work Right*, 101 GEO. L.J. 1505, 1507 (2013).

4. Leslie A. Kurtz, *The Independent Legal Lives of Fictional Characters*, 1986 WIS. L. REV. 429, 439 (1986).

5. 17 U.S.C. § 102(a) (2012).

6. See *id.* § 106 (2012).

7. See *id.* § 102(a).

8. Melville B. Nimmer & David Nimmer, *Nimmer On Copyright* § 2.12[A][2] n.17.1 (2016).

Ninth Circuit outlines in *Towle* combined theories of character copyrightability that originated in different circuits and in different eras.

Most commentators consider the origin of the copyrightability of fictional characters to be Judge Learned Hand's dicta in *Nichols v. Universal Pictures*.⁹ Judge Hand stated that, to his knowledge, a case like it had never arisen, but:

If Twelfth Night were copyrighted, it is quite possible that a second comer might so closely imitate Sir Toby Belch or Malvolio as to infringe, but it would not be enough that for one of his characters he cast a riotous knight who kept wassail to the discomfort of the household, or a vain and foppish steward who became amorous of his mistress.¹⁰

From this passage, the theory originated that a character may so exactly mimic the character from a preexisting work as to infringe the copyright of the preexisting work. Modern commentators synthesized a two-part test for character infringement from *Nichols*: “(1) the infringed character must be sufficiently delineated; (2) the infringing character must ‘closely imitate’ the infringed character.”¹¹ Notably, *Nichols* held that the work ultimately infringed is the work containing the character. Hand reasoned that the infringed work would be the play, not Sir Toby Belch.¹² Thus, the character was not (yet) the basis of the infringement comparison.

Nichols recognized the value of characters, but the infringement analysis remained rooted in the original work as a whole and did not focus solely on the character. This would later change in the Ninth Circuit.

More than any other circuit court, the Ninth Circuit is responsible for the expansion of copyright in fictional characters.¹³ Nevertheless, the court has had trouble articulating a concise standard, and many precedents the court relies on in later cases have different meanings in their original articulation. The evolution of the doctrine can be broadly clustered into

9. See, e.g., *id.* at § 2.12[A][2].

10. *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930).

11. Michael V.P. Marks, *The Legal Rights of Fictional Characters*, 25 COPYRIGHT L. SYMP. 35, 41 (1975).

12. See *Nichols*, 45 F.2d at 121 (introducing the character copyrightability discussion by stating “but we do not doubt that two plays may correspond in plot closely enough for infringement,” which suggests infringing a “subsection” infringes the whole).

13. See, e.g., *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751 (9th Cir. 1978); *Warner Bros. Pictures v. CBS*, 216 F.2d 945 (9th Cir. 1954); see also NIMMER, *supra* note 8, § 2.12[3] (devoting an entire portion of the evaluation of fictional character doctrine to Ninth Circuit jurisprudence).

three parts: (1) post-*Sam Spade* confusion; (2) the evolution of the doctrine in the Central District of California; and (3) the modern doctrine.

A. SAM SPADE, MICKEY MOUSE AND THE A-TEAM (1954–1988)

Warner Bros. Pictures v. CBS, also called the *Sam Spade* case, has evoked myriad critical responses. One commentator described the case as “sphinxlike,”¹⁴ and Richard Posner has bluntly called it “wrong.”¹⁵ Most agree that *Sam Spade* resulted in “massive confusion.”¹⁶ The case concerned the author Dashiell Hammett, who transferred motion picture, radio, and television rights for his book *The Maltese Falcon* to Warner Brothers.¹⁷ Hammett subsequently used Sam Spade, the famous private detective character in the novel, in other works. When these sequels were licensed to CBS and adapted into a successful radio show, Warner filed suit claiming that the sequels infringed their rights to *The Maltese Falcon*.¹⁸

The Ninth Circuit held that even if all rights were assigned to a third party, it does not prevent the author from using the characters in the work because those characters are not protected by copyright.¹⁹ The court provided a very narrow exception to this rule: “It is conceivable that the character really constitutes the story being told, but if the character is only the chessman in the game of telling the story he is not [protected by copyright].”²⁰ This evaluation became known as the *Sam Spade* or “story being told” test, and it left characters essentially unprotectable.²¹ The Ninth Circuit’s holding allowed Hammett to continue to use the characters he created, but it did so by denying the characters any copyright protection, effectively placing them in the public domain.²²

In *Walt Disney Productions v. Air Pirates*,²³ the Ninth Circuit reinterpreted the rules established in *Sam Spade*. Here, Disney filed suit against Air Pirates for their underground comic book that depicted well-

14. See Francis M Nevins, Jr., *Character + Copyright = Catastrophe*, 39 J. COPYRIGHT SOC’Y U.S.A. 303, 315 (1992).

15. See *Gaiman v. McFarlane*, 360 F.3d 644, 660 (7th Cir. 2004) (Posner, J.).

16. See E. Fulton Brylawski, *Protection of Characters—Sam Spade Revisited*, 22 BULL. COPYRIGHT SOC’Y U.S.A. 77, 87 (1974).

17. See *Warner Bros. Pictures v. CBS*, 216 F.2d 945, 947–48 (9th Cir. 1954).

18. See *id.*

19. See *id.* at 950.

20. See *id.*

21. See Marks, *supra* note 11, at 42.

22. The fact that Hammett himself reused the character clearly influenced the court, and the opinion emphasized the importance of familiar characters to subsequent works. See *Warner Bros. Pictures*, 216 F.2d at 949.

23. 581 F.2d 751 (9th Cir. 1978).

known Disney cartoon characters “as active members of a free thinking, promiscuous, drug ingesting counterculture.”²⁴ The court held that Disney’s characters were copyrightable and that *Air Pirates* infringed those rights.²⁵

To reach its conclusion, *Air Pirates* made two notable interpretations. First, the court held that characters are protectable²⁶ but did not elaborate on whether they should be considered independently copyrightable. Interpreting the 1909 Copyright Act, the court described characters as a copyrightable “component part[.]” of the cartoons.²⁷ This assertion, coupled with a reference to *Detective Comics, Inc. v. Bruns Publications*,²⁸ suggests that the court believed the cartoons to be the infringed work, not the character Mickey Mouse. However, the court reasoned in its infringement evaluation that “a cartoon character’s image is intertwined with its personality and other traits, so that the ‘total concept and feel’ of even the component part cannot be limited to the image itself.”²⁹ Hence, an image of Mickey Mouse also inherently includes his character traits as depicted by the overarching work. This portion of the court’s language suggests that characters are in some ways independent from the work in which they are contained. *Air Pirates* also emphasized the “widespread public recognition” of Mickey Mouse and the other Disney characters used in the *Air Pirates* comics.³⁰ This separability arguably suggests that the court evaluated the characters as individual works. Thus, *Air Pirates* is at best unclear about whether the character itself is the infringed work.³¹

The court’s second noteworthy interpretation concerned the *Sam Spade* case. The *Air Pirates* court avoided the restrictions of *Sam Spade*’s “story being told test” by differentiating between literary characters and cartoon characters. “[A] comic book character, which has physical as well as conceptual qualities, is more likely to contain some unique elements of

24. See *id.* at 753 (internal quotation marks omitted). For example, one comic graphically depicted Mickey Mouse violently assaulting a Disney fan that had a Mickey tattoo. See BOB LEVIN, *THE PIRATES AND THE MOUSE: DISNEY’S WAR AGAINST THE UNDERGROUND* 146–47 (2003).

25. See *Air Pirates*, 581 F.2d at 754–58.

26. See *id.* at 754–55.

27. See *id.* at 754.

28. See *id.* In *Bruns*, the court’s infringement evaluation compared the two comics, rather than narrowing the analysis to the two characters contained therein: “[w]e have compared the alleged infringing magazine of Bruns with the issues of ‘Action Comics.’” *Detective Comics, Inc. v. Bruns Publ’ns*, 111 F.2d 432, 433 (2d Cir. 1940).

29. See *Air Pirates*, 581 F.2d at 757 (quotations omitted).

30. See *id.*

31. See Kurtz, *supra* note 4, at 447.

expression.”³² Future courts have accepted this statement without question, although it is certainly arguable that this delineation unduly favors visual expression.³³ To buttress its reasoning, the court planted a seed of doubt with a footnote that stated the *Sam Spade* test could be dicta.³⁴ *Air Pirates* initiated the Ninth Circuit’s confusion as to the appropriate test for character copyrightability. *Olson v. NBC* ossified that confusion.

In *Olson v. NBC*,³⁵ Olson claimed NBC’s “The A-Team” infringed his copyrighted screenplay and treatment for a television series to be entitled “Cargo.”³⁶ Here, the Ninth Circuit unambiguously addressed independent character copyrightability, and declared that it would evaluate “copyright protection [of] a character taken alone.”³⁷ But the court stopped short of addressing how this particularized evaluation conformed with the 1976 Copyright Act’s categorical protection of the underlying work, such as literary and audiovisual works, rather than the characters described therein.

The *Olson* court found the “Cargo” characters not independently copyrightable but provided little clarity on what standard should be used to reach such a conclusion.³⁸ First, the court said an evaluation under the *Sam Spade* standard “doom[s]” the “Cargo” characters.³⁹ During this discussion, the court noted the theory that the *Sam Spade* test was dicta.⁴⁰ By not relegating the theory to a footnote like in *Air Pirates*, *Olson* suggests that the Ninth Circuit gradually gave more credence to the theory.

Olson then applied a second, “more lenient” standard that bestowed characters with protection when they are “especially distinctive.”⁴¹ This evaluation is framed as an exception to *Sam Spade*, and expanded on the theory proffered in *Air Pirates*.⁴² However, *Air Pirates* only noted a

32. See *Air Pirates*, 581 F.2d at 755.

33. It would take highly questionable reasoning to argue the cartoon cat “Garfield” has more expressive value than Jane Austen’s Elizabeth Bennet or John Milton’s Satan.

34. See *Air Pirates*, 581 F.2d at 755 n.10 (referencing the lower court’s opinion analysis of *Sam Spade*).

35. 855 F.2d 1446 (9th Cir. 1988).

36. *Id.*

37. *Id.* at 1452–53.

38. See *id.* at 1452.

39. See *id.*

40. See *id.* at 1451–52 (noting the story being told test “is arguably dicta,” but declining to make a final decision).

41. See *id.* at 1452.

42. See *id.* (acknowledging that “cases subsequent to *Warner Bros.* have allowed” protection for especially distinctive characters). All the cases cited in support of the second standard evaluated non-literary characters. See *id.* (citing *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751 (9th Cir. 1978) (Mickey Mouse and other Disney characters); *Warner Bros., Inc. v. ABC*, 720 F.2d 231 (2d Cir. 1983) (Superman); *Silverman v. CBS*, 632 F. Supp.

distinction between literary and non-literary characters to avoid *Sam Spade*.⁴³ *Olson* used this language to craft an entirely different standard. Thus, by 1988, the Ninth Circuit followed two dramatically different tests for character copyrightability.

B. ROCKY, BOND, AND GODZILLA: THREE INFLUENTIAL DISTRICT COURT DECISIONS (1989–1998)

After *Olson*, the District Court for the Central District of California decided three influential copyrightable character cases regarding Rocky, James Bond, and Godzilla. Each adds an important principle to the evaluation of character copyrightability.

First, in *Anderson v. Stallone*, the court found the boxer Rocky Balboa from the Rocky film series to be a copyrightable character.⁴⁴ The district court here used both copyrightable character standards articulated in *Olson* but noted that *Air Pirates* limited the *Sam Spade* test to only literary characters.⁴⁵ Next, *MGM v. American Honda* recognized the British spy James Bond as a copyrightable fictional character.⁴⁶ Notably, the court supported its holding by reasoning that James Bond had consistent character traits over the sixteen films in which he had been depicted.⁴⁷

Lastly, *Toho v. William Morrow & Co.* declared that Godzilla, the iconic Japanese movie monster, was copyrightable.⁴⁸ The Godzilla case cited *American Honda* for its holding that a character is copyrightable because of an “identifiable set of traits.”⁴⁹ *Toho* expanded on this concept by reasoning that a character may change dramatically in both visual depiction and characterization but can still be copyrightable if an “underlying set of attributes” remains constant.⁵⁰

1344 (S.D.N.Y. 1986) (Amos and Andy from the television show Amos ‘n’ Andy); *Ideal Toy Corp. v. Kenner Prods. Div. of Gen. Mills Fun Grp.*, 443 F. Supp. 291 (S.D.N.Y. 1977) (Star Wars Characters)).

43. See *Air Pirates*, 581 F.2d at 755.

44. See *Anderson v. Stallone*, 11 U.S.P.Q.2d 1161, 1989 WL 206431 (C.D. Cal. Apr. 25, 1989).

45. See *id.* at *6–7.

46. See *Metro-Goldwyn-Mayer, Inc. v. Am. Honda Motor Co.*, 900 F. Supp. 1287 (C.D. Cal. 1995). Here, the court grouped the cases evaluating character copyrightability differently. It included *Olson* in the “story being told” test cluster, and not with *Air Pirates* and *Nichols* in the “character delineation” test cluster. *American Honda* is alone in this delineation, which made no difference in the results. See *id.* at 1296.

47. See *id.*

48. See *Toho Co. v. William Morrow & Co.*, 33 F. Supp. 2d 1206 (C.D. Cal. 1998).

49. See *id.* at 1216.

50. See *id.* at 1215–16.

C. THE MYSTERY MAGICIAN AND ELEANOR: THE NINTH CIRCUIT'S MODERN DOCTRINE (2003–2015)

The Ninth Circuit's modern doctrine has attempted to consolidate and simplify the myriad principles that courts have used to define and evaluate the copyrightability of fictional characters. However, as *Olson's* use of *Air Pirates* exemplifies,⁵¹ reinterpretation can misstate supporting precedent.

In *Rice v. Fox Broadcasting Co.*,⁵² Robert Rice sued Fox for allegedly copying his "Mystery Magician" character, who explained popular magic tricks in a home video feature.⁵³ The Ninth Circuit articulated a multi-step analysis of character copyrightability, and ultimately found the Mystery Magician uncopyrightable.⁵⁴ First, the *Rice* court cited *Sam Spade* and declared that characters are ordinarily not afforded copyright protection.⁵⁵ Second, the court articulated two evaluation standards: the *Sam Spade* "story being told" test and the *Olson* "especially distinctive" test.⁵⁶ The court amplified *Olson's* "especially distinctive" standard by treating it as an alternative test rather than a special exception to *Sam Spade*.⁵⁷ Additionally, *Rice* required an especially distinctive character to be "sufficiently delineated."⁵⁸ The sum of these two standards appears to address the significance of the character.⁵⁹ This standard's origins are rooted in *Nichols*.⁶⁰ However, *Rice* articulated it as a reframing of the "consistent, widely identifiable traits" principle developed by *Anderson*, *American Honda*, and *Toho*.⁶¹ Therefore, although *Rice* used prior case law, it muddled precedents that originally spoke to different concepts. Sufficient delineation in *Nichols* addressed the depth of complexity of a character. In contrast, the "consistent traits" concept evaluated whether a character expressed a stable, recognizable persona.

51. *See supra* Section I.A.

52. 330 F.3d 1170 (9th Cir. 2003).

53. *See id.* at 1173.

54. *See id.* at 1175–76.

55. *See id.* at 1175.

56. *Id.*

57. *See id.* at 1175–76; *supra* Section I.A.

58. *Rice*, 330 F.3d at 1175.

59. *Id.* (noting that the magician was not widely disseminated nor did he have any unique visual features).

60. *See supra* Part I.

61. *Rice*, 330 F.3d at 1175; *see supra* Section I.B.

In 2008 the Ninth Circuit decided *Halicki Films v. Sanderson*.⁶² In 1974, H.B. Halicki released the “heist” film *Gone in 60 Seconds*.⁶³ The movie depicts the theft of multiple classic cars, including “Eleanor,” a 1971 Fastback Ford Mustang.⁶⁴ After Disney purchased a license and remade the film in 2000, Halicki’s widow filed suit regarding merchandising rights for Eleanor.⁶⁵

The court used a slightly modified version of the *Rice* evaluation to conclude that Eleanor could be a copyrightable character. Like *Rice*, the court made a distinction between the *Sam Spade* test and a secondary test. *Halicki* interpreted this other, more lenient test as an amalgam of principles from *Air Pirates* and *Olson*.⁶⁶ Characters, the court reasoned, are either literary or pictorial; *Sam Spade* set limits for literary characters, while *Air Pirates* controlled for pictorial characters.⁶⁷

Halicki held that Eleanor is more like a “comic book character” from *Air Pirates* “than a literary character” from *Sam Spade*.⁶⁸ The court then noted that the lower court’s subsequent evaluation should consider *Olson*’s “especially distinctive” principles and the California Central District’s “consistent traits” evaluation.⁶⁹ Before sending the question back down to the district court, the Ninth Circuit noted the importance of “unique elements of expression,” which the *Air Pirates* court stressed.⁷⁰ Just as in *Rice*, *Halicki* conflated past precedents without establishing how the concepts would operate in practice. The theories pulled from *Air Pirates*, *Olson*, and the California Central District all evaluate essentially the same issue: whether a character is Sir Toby Belch, or just another riotous knight.⁷¹

In sum, the Ninth Circuit is responsible for the expansion of fictional character copyrightability. Other circuit courts recognize the Ninth Circuit’s cases on characters but do not expressly follow them and generally compare the infringing work to the original work as a whole.⁷² Since 2003, the Ninth

62. See *Halicki Films, LLC v. Sanderson Sales & Mktg.*, 547 F.3d 1213 (9th Cir. 2008).

63. See *id.* at 1217.

64. *Id.*

65. *Id.* at 1217–19.

66. See *id.* at 1224.

67. See *id.*

68. *Id.* at 1225.

69. See *id.*

70. See *id.*

71. See discussion of *Nichols v. Universal Pictures Corp.*, 45 F.2d 119 (2d Cir. 1930), *supra* Section I.

72. See, e.g., *Klinger v. Conan Doyle Estate, Ltd.*, 755 F.3d 496, 500–01 (7th Cir. 2014) (holding that Sherlock Holmes was in the public domain, that the publisher was free

Circuit has attempted to consolidate the various principles it has used to evaluate and justify the doctrine. However, up until *Towle* no case had fully covered the breadth of the doctrine.

II. DC COMICS V. TOWLE

Seven years after *Halicki*, the Ninth Circuit again directly addressed the question of whether a fictional character is copyrightable. In *DC Comics v. Towle*,⁷³ the court reviewed another vehicle—this time the Batmobile.⁷⁴ Employing a three-part test, the court ruled that the Batmobile was a copyrightable character.⁷⁵ This Part analyzes *Towle* by contextualizing the significance of the case, examining the district court’s decision, and scrutinizing the Ninth Circuit’s “new” test for the copyrightability of fictional characters.

A. THE BATMOBILE: A QUICK PRIMER

Although DC Comics filed its action against Mark Towle in 2011,⁷⁶ the roots of the case stretch back three quarters of a century. On March 30, 1939, National Comics (which later rebranded to become DC Comics) published Detective Comics #27, “The Case of the Chemical Syndicate.”⁷⁷ Written by Bill Finger and drawn by Bob Kane, the story introduced the superhero Batman.⁷⁸

Batman’s primary vehicle in his fight against crime evolved into the Batmobile.⁷⁹ The earliest Batman comics depict the Caped Crusader using “an ordinary red sedan, but in Batman #5 (Spring 1941) the new Batmobile roared into action sporting its own bat-headed battering ram.”⁸⁰ Batman and

to use him as a character, and that only the original elements in Sherlock Holmes stories still protected by copyright cannot be used); Warner Bros. Entm’t, Inc. v. X One X. Prods., 644 F.3d 584, 597 (11th Cir. 2011) (holding that, despite Ninth Circuit jurisprudence, protection of characters from “Gone With the Wind,” “The Wizard of Oz,” and “Tom and Jerry” extended from the works the characters appeared in, not from the characters themselves); see also NIMMER, *supra* note 8, § 2.12.

73. 802 F.3d 1012 (9th Cir. 2015).

74. *Id.* at 1015.

75. *Id.* at 1022.

76. DC Comics v. Towle, 989 F. Supp. 2d 948 (C.D. Cal. 2013).

77. *Batman at 75: Highlights in the Life of the Caped Crusader*, DC COMICS (July 22, 2014), <http://www.dccomics.com/blog/2014/07/22/batman-at-75-highlights-in-the-life-of-the-caped-crusader> [<https://perma.cc/C8LL-NDRZ>].

78. *Id.*

79. However, the first bat-vehicle that Batman used was the Batplane, which premiered in Detective Comics #31 (September 1939). *Id.*

80. *See id.*

the Batmobile were both redesigned in 1964, and the car has evolved to fit the Caped Crusader's needs ever since.⁸¹ The car's features have included disc launchers, jet engines, and a mobile crime lab.⁸² The Batmobile's description oscillates between high-tech tool and a more nuanced persona. In Frank Miller's seminal work "The Dark Knight Returns," Batman described the Batmobile as an instrument of war.⁸³ However, in *Batman #98* the Batmobile is described as "[a] black thunderbolt on wheels, a swift nemesis to lawbreakers, a mighty machine of justice."⁸⁴ Thus, descriptions of the car often fit the tone of the narrative.

The Batmobile has attained a distinct cultural and economic significance. The car is seemingly ubiquitous in every Batman comic book, television show, and blockbuster movie.⁸⁵ The original Batmobile from the 1966 television series sold at auction for \$4.6 million.⁸⁶ In 2012, all six physical iterations of the Batmobile were displayed together for the first time at Comic Con International in San Diego, where tens of thousands of visitors viewed the exhibit.⁸⁷ This significance likely incentivized the behavior that triggered DC's lawsuit.

B. TOWLE IN THE DISTRICT COURT

In May 2011, DC Comics filed a lawsuit against Mark Towle in the United State District Court for the Central District of California for copyright infringement, trademark violations, and common law unfair competition.⁸⁸ Towle owned, operated, and managed a "business producing

81. *See id.*

82. *See* DC Comics v. Towle, 802 F.3d 1012, 1021–22 (9th Cir. 2015).

83. *See* Frank Miller, *The Dark Knight Returns* 74–75 (1986).

84. Arnold Drake & Bill Finger, *The Return of Mister Future*, *BATMAN*, no. 98, 1956 at 1.

85. *See Towle*, 989 F. Supp. 2d at 967.

86. Jake Lingeman, *Original Batmobile Sells for \$4.6 Million at Barrett-Jackson*, *AUTOWEEK* (Jan. 20, 2013), <http://autoweek.com/article/car-life/original-batmobile-sells-46-million-barrett-jackson> [<https://perma.cc/DVT7-U55E>].

87. *See* Jason Debord, *San Diego Comic Con 2012: Batmobiles from Six Different Batman Movies on Display*, *ORIGINAL PROP* (July 16, 2012), <http://www.originalprop.com/blog/2012/07/16/san-diego-comic-con-2012-batmobiles-from-six-different-movies-on-display/> [<https://perma.cc/5MKS-4NLS>]; *More Women than Ever at San Diego's Comic-Con*, *NPR* (July 13, 2012, 3:00 PM), <http://www.npr.org/2012/07/13/156747555/more-women-than-ever-at-san-diegos-comic-con> (noting that Comic Con's 2012 attendance was above 130,000 people) [<https://perma.cc/2K9M-US5T>]; Kofi Outlaw, *Comic-Con 2012: Batmobile Image Gallery*, *SCREEN RANT* (July 12, 2012), <http://screenrant.com/batman-batmobiles-image-gallery-comic-con-2012/> [<https://perma.cc/VK87-QCYS>].

88. *DC Comics v. Towle*, 989 F. Supp. 2d 948, 954 (C.D. Cal. 2013). The trademark and unfair competition aspects of *Towle* will not be discussed in this Note. The District Court granted DC Comics' motion for summary judgment as to trademark infringement

custom cars modeled after vehicles found in various television shows and movies.”⁸⁹ Two of the vehicles Towle produced were based on Batmobiles, one from the 1966 television show and the other from the 1989 motion picture.⁹⁰ Towle also sold car kits that allowed purchasers to customize their vehicles to look like the Batmobile and had multiple websites advertising his services.⁹¹

In the district court the defendant’s principal argument asserted that DC did not own the copyright registrations to the 1966 *Batman* television show and the 1989 *Batman* film.⁹² The district court held that DC had contractually reserved its right to the Batmobile.⁹³ The court further supported its reasoning by stating that even if DC Comics did not expressly reserve rights to the Batmobile, it “owns copyrights to the original comic book series in which the Batmobile originally appeared.”⁹⁴ In reaching this conclusion, the court declared both Batmobiles derivative of the “Batmobile character that appeared in the comic book series.”⁹⁵ After this assertion, the court then evaluated the copyrightability of the Batmobile as a character.

The district court held that the Batmobile was a copyrightable character under the “character delineation” test articulated in *Rice*.⁹⁶ The court summarized its reasoning by stating, “The comic books portray the Batmobile as a superhero.”⁹⁷ Towle appealed this ruling.

C. THE NINTH CIRCUIT APPEAL AND THE *TOWLE* TEST

The Ninth Circuit’s opinion in *Towle* affirmed the lower court’s ruling that the Batmobile was a copyrightable fictional character. Like *Halicki* and *Rice* before it, *Towle* attempted to clarify and consolidate the various principles of character copyrightability doctrine that had previously sprouted from the circuit court.

and unfair competition, and the Ninth Circuit affirmed the district court’s ruling that Towle did not have a laches defense against the trademark infringement action. *See* DC Comics v. Towle, 802 F.3d 1012, 1017–18, 1027 (9th Cir. 2015); *Towle*, 989 F. Supp. 2d at 960–61.

89. *Towle*, 989 F. Supp. 2d at 953.

90. *Id.*

91. *Id.* These websites also used DC Comics’ registered trademarks.

92. *See id.* at 962.

93. *See id.* at 963–64.

94. *See id.* at 964.

95. *Id.* at 964–65.

96. *See id.* at 966–67.

97. *See id.* at 967.

1. *Towle Clarifies the State of the Doctrine*

In *Towle*, the Ninth Circuit attempted to clarify two lingering issues in the copyrightable character doctrine. First, *Towle* ended any remaining debate over whether the Ninth Circuit’s doctrine aligns with the convention that characters are only protected in conjunction with the work they appear in. The answer was a definitive no: “Although comic book characters are not listed in the Copyright Act, we have long held that such characters are afforded copyright protection.”⁹⁸ Thus, the Ninth Circuit concluded that characters are a separate category of copyrightable work.

Second, the court relegated the *Sam Spade* “story being told” test to an alternative holding or dicta.⁹⁹ Previously, the Ninth Circuit had only conceded that the test was “arguably” dicta.¹⁰⁰ Thus, *Sam Spade* still has some effect, but *Towle* further distances the court from its earlier, controversial ruling. After these two substantive clarifications, the *Towle* court attempted to synthesize the doctrine into a concise, three-part test.

2. *The Consolidated Towle Test*

The *Towle* test attempted to consolidate the analytical process the Ninth Circuit had developed since *Sam Spade*. Before reaching the test, the court implicitly articulated a “step zero” to delineate when *Towle* applies. *Towle* “determin[es] whether a character in a comic book, television program, or motion picture is entitled to copyright protection.”¹⁰¹ The court remained silent as to whether *Towle* only applies to the three qualifying mediums, or if close analogues can also be evaluated. This ambiguity is particularly problematic for literary characters. The Ninth Circuit had previously established that literary characters fall under the purview of the *Sam Spade* test.¹⁰² However, now that *Towle* asserted that *Sam Spade* is either dicta or an alternative holding, the state of literary character copyrightability may be in flux.

If review under *Towle* is appropriate, the first step of the test requires that “the character must generally have ‘physical as well as conceptual qualities.’”¹⁰³ Arguably, the plain language of step one does not preclude literary characters. Few could sincerely argue that Oscar Wilde’s muse

98. *DC Comics v. Towle*, 802 F.3d 1012, 1019 (9th Cir. 2015).

99. *Id.* at 1019 n.5 (citing *Olson v. NBC*, 855 F.2d 1446 (9th Cir. 1988); *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751 (9th Cir. 1978)).

100. *Olson*, 855 F.2d at 1451–52.

101. *Towle*, 802 F.3d at 1021.

102. *See supra* Section I.C.

103. *Towle*, 802 F.3d at 1021 (quoting *Air Pirates*, 581 F.2d at 755).

Dorian Gray or John Kennedy Toole's buffoonish Ignatius J. Reilly do not have an overabundance of physical and conceptual qualities.¹⁰⁴ Nevertheless, *Towle* step one is derived from the *Air Pirates* principle that a character must be pictorial to acquire protection.¹⁰⁵ The original purpose of this assessment was to avoid triggering a *Sam Spade* analysis. To an extent, the opaque limits on *Towle*'s application present in step zero already achieved this demarcation. Step one explicitly reinforces this delineation while arguably overextending the *Air Pirates* rule.

The second step requires a character to be “‘sufficiently delineated’ to be recognizable as the same whenever it appears.”¹⁰⁶ This part appears to address whether a character has the requisite complexity to be protected.¹⁰⁷ *Rice* established the mandate for “sufficient delineation” in the Ninth Circuit, but the language can be traced back to Judge Hand's opinion in *Nichols*.¹⁰⁸ The second step also requires that, if a character appears in “different productions, it must display consistent, indefinable character traits and attributes, although the character need not have a consistent appearance.”¹⁰⁹ Although the court cited *Halicki* for this principle, it first appeared in the Ninth Circuit in *Rice* and was developed in the Central District of California in *Toho, American Honda, and Anderson*.¹¹⁰

The third and final step of *Towle* requires a character to be “‘especially distinctive’ and ‘contain some unique elements of expression.’”¹¹¹ Thus, the third step appears to evaluate the significance of a character.¹¹² The “especially distinctive” requirement originated in *Olson*, where it had the original purpose of, again, delineating between pictorial and nonpictorial characters.¹¹³ Despite this, *Rice* and *Halicki* augmented the especially distinctive standard to act as part of an appraisal of the value of the

104. See JOHN KENNEDY TOOLE, *A CONFEDERACY OF DUNCES 1* (1980); OSCAR WILDE, *THE PICTURE OF DORIAN GRAY: AN ANNOTATED, UNCENSORED EDITION 90* (Nichols Frankel, ed., Belknap Press 2011); see also *supra* note 33; discussion *infra* Section II.C.3.

105. See *Towle*, 802 F.3d at 1021 (reasoning that because the Batmobile has “appeared graphically” in the comics it passed the first step).

106. *Id.* (quoting *Rice v. Fox Broad. Co.*, 330 F.3d 1170, 1175 (9th Cir. 2003)).

107. See also *infra* Section II.C.3.

108. See *supra* Part I.

109. *Towle*, 802 F.3d at 1021 (citing *Halicki Films, LLC v. Sanderson Sales & Mktg.*, 547 F.3d 1213, 1224 (9th Cir. 2008)).

110. See *supra* Sections I.B, I.C.

111. *Towle*, 802 F.3d at 1021 (quoting *Halicki*, 547 F.3d at 1224).

112. See also *infra* Section II.C.3.

113. See *supra* Section I.A.

character.¹¹⁴ The “unique elements of expression” condition stemmed from *Air Pirates* and helps guide this evaluation.¹¹⁵ It also emphasizes the importance of a character’s significance for a finding of copyrightability.

In sum, *Towle* did not reinvent the Ninth Circuit’s copyrightable character doctrine, but merely restated and condensed it. Rather than a radical shift, *Towle* should be viewed as a modest progression of the doctrine. Notably, the Ninth Circuit has gradually detached the principles used in *Towle* from their original purposes.¹¹⁶ This leads to two results. First, the court, despite a plethora of precedent at its disposal, is not very restricted by these rules in its analysis of characters. Second, the way the Ninth Circuit applied its three-part test to the Batmobile is more significant in evaluating character copyrightability than the rhetoric of the rules themselves.

3. *According to the Towle Test, the Batmobile is a Copyrightable Character*

The Ninth Circuit’s evaluation of the Batmobile using a new three-part test illuminates the nuances of the evaluation. Although not explicitly addressed, the Batmobile passed what this Note has called *Towle* step zero because the vehicle appeared in all three qualifying mediums.¹¹⁷ The court first reasoned that the Batmobile passed step one—which requires “physical as well as conceptual qualities”¹¹⁸—because it is a pictorial and not a literary character. “[T]he Batmobile has appeared graphically in comic books, and as a three-dimensional car in television series and motion pictures.”¹¹⁹ The court’s reasoning emphasizes that the purpose of the first step is to protect pictorial characters and to exclude “mere literary character[s].”¹²⁰

The second step of the *Towle* test requires the character to be “sufficiently delineated” with consistent traits.¹²¹ The court reasoned that the Batmobile passed this step because it is a “highly-interactive” vehicle

114. *See supra* Section I.C.

115. *See Towle*, 802 F.3d at 1021 (citing *Halicki*, 547 F.3d at 1224). The court added additional context to the third step by stating that a stock character cannot attain protection—citing *Rice*’s magician—and that speech is not required—citing *Halicki*’s Eleanor. *See Towle*, 802 F.3d at 1021 (citing *Rice v. Fox Broad. Co.*, 330 F.3d 1170, 1175 (9th Cir. 2003)).

116. *See supra* Part I.

117. *See Towle*, 802 F.3d at 1016; *supra* Section II.C.2.

118. *See Towle*, 802 F.3d at 1021.

119. *Id.* at 1021.

120. *See id.*

121. *See id.*

that also has a “consistent,” “bat-like” appearance.¹²² The opinion also cited the personification of the Batmobile in *Batman #5* that the lower court referenced: “the Batmobile is described as waiting ‘[l]ike an impatient steed straining on the reins . . . shiver[ing] as its supercharged motor throbs with energy.’”¹²³ The court further emphasized the car’s consistent traits: “No matter its specific physical appearance, the Batmobile is a ‘crime-fighting’ car with sleek and powerful characteristics that allow Batman to maneuver quickly while he fights villains.”¹²⁴ Thus, step two addresses whether a character has a suitably complex personality and is not simply generic or a stock character.

The third and final step for copyrightability required the Batmobile to be “‘especially distinctive’ and contain[] unique elements of expression.”¹²⁵ The court performed little analysis here and referenced its reasoning in step two to support its conclusion that the Batmobile also passed the third step.¹²⁶ The court only added that the Batmobile has a “unique and highly recognizable name” as proof that “[i]t is not merely a stock character.”¹²⁷ This lack of distinct analysis blurs the line between steps two and three. Step three only adds a further consideration of whether a character is easily identifiable. This analysis—usually restricted to trademark evaluations—arguably focuses on character recognition and its level of value. This reading is supported by the Ninth’s Circuits reinterpretation of the “especially distinctive” requirement in its recent decisions to analyze the significance of a character.¹²⁸ Therefore, step three can be articulated as addressing whether a character has a sufficient level of cultural or economic significance.¹²⁹

122. *Id.*

123. *Id.* (citing *Towle*, 989 F. Supp. 2d 948, 967 (C.D. Cal. 2013)).

124. *Towle*, 802 F.3d at 1021. The Court also described various features of the car, including the “bat-phone” and a “mobile crime lab.” *Id.* at 1022.

125. *Id.* at 1022.

126. *See id.*

127. *Id.*

128. *See supra* Section I.C.

129. The opinion is ripe with references to the Batman story, such as a summary of the history of the Batmobile, and brief interjections, such as, “Holy copyright law, Batman!” This exemplifies the cultural impact of the Batmobile on the decision. *See Towle*, 802 F.3d at 1015.

Consequently, the Batmobile was held to be a copyrightable fictional character.¹³⁰ The finding of copyrightability barred Towle from continuing to sell his car kits and custom Batmobiles.¹³¹

III. ARTICULATING AN UNDERLYING PURPOSE OF *TOWLE*

The *Towle* decision reaffirmed the Ninth Circuit's approval of the doctrine of copyrightable fictional characters. Part II described how *Towle* strengthened the theory of copyrightable characters by summarizing its precedents and simplifying its application. However, the doctrine the court developed has deviated from orthodox copyright doctrine.

This Part attempts to explain the Ninth Circuit's divergence from convention. Under this analysis, *Towle* departed from traditional copyright norms to establish a framework that extracts and enhances protection for valuable fictional characters. Four primary rationales exist for this nonconformity. This Note labels these justifications as stewardship.

A. *TOWLE* DECLINED TO USE TRADITIONAL COPYRIGHT DOCTRINE TO PROTECT MICROWORKS

Copyright law protects “original works of authorship”¹³² but is “silent” on what can be considered a “work.”¹³³ Fundamentally, works must correspond with the “writings” requirement of the Intellectual Property Clause.¹³⁴ As mentioned previously, section 102(a) of the Copyright Act enumerated a non-exhaustive list of eight protected categories of works.¹³⁵ The House report suggests that two types of new works could gain protection: (1) new forms of creative expression made possible by new technology; and (2) works that have existed for “centuries” but have

130. *See id.* at 1026.

131. The fact that Towle created car replicas rather than other fictional works does not affect the analysis that the court makes. Although none of the major Ninth Circuit character cases deal with physical replicas, a long line of cases have found models of characters to infringe copyright while using a traditional infringement analysis. *See, e.g.,* King Features Syndicate v. Fleischer, 299 F. 533, 534, 538 (2d Cir. 1934) (finding that a toy horse mimicking “Spark Plug” from the “Benny Google and Spark Plug” cartoons infringed copyright); Geisel v. Poynter Prods., Inc., 295 F. Supp. 331, 333, 350–51 (S.D.N.Y. 1968) (holding that a publisher that bought the copyright to a cartoon from Dr. Seuss has the right to make dolls out of the characters).

132. 17 U.S.C. § 102(a) (2012).

133. *See* Justin Hughes, *Size Matters (or Should) in Copyright Law*, 74 *FORDHAM L. REV.* 575, 576 (2005).

134. U.S. CONST. art. 1, § 8, cl. 8; *see also* NIMMER, *supra* note 8, § 2.03.

135. 17 U.S.C. § 102(a).

recently come to be recognized as worthy of protection.¹³⁶ “The House Report seems to imply that works of the second type should not be protected unless explicitly described either in the eight categories of Section 102(a), or by further statutory amendment.”¹³⁷ One example of such a category is architectural works, added to Title Seventeen in 1990.¹³⁸

Legal scholars follow this legislative history and agree that conventional copyright does not protect fictional characters independently of the works where they are featured. Characters appear in various types of works but are not themselves a recognized category of work. As Leslie Kurtz explains: “Like the plot, setting or dramatic action, a character is a part of a work that is protected by copyright, but is not itself the subject of copyright. A character as such has no tangible existence outside the specific work or works in which it appears.”¹³⁹ As mentioned in Part I, the Nimmer treatise supports this view as well.¹⁴⁰ *Towle* explicitly rejected conventional copyright doctrine by deeming fictional characters a category of works.

The *Towle* court could have taken a conventional view of infringement and reached the same conclusion. Other courts using standard copyright evaluations have determined that three-dimensional replicas of pictorial characters infringed the original work.¹⁴¹ For example, in *Universal City Studios v. J.A.R. Sales*, the court held that a doll based on the titular alien from the film “E.T.—The Extra-Terrestrial” infringed the *film’s* copyright.¹⁴² *Towle* could have followed this wealth of precedent to similarly hold that *Towle’s* replica infringed the underlying Batman stories owned by DC.¹⁴³ Even if DC could not claim every stylistic decision made

136. See H.R. Rep. No. 2222, at 51 (1909); NIMMER, *supra* note 8, § 2.03.

137. See NIMMER, *supra* note 8, § 2.03.

138. See Architectural Works Protection Copyright Act of 1990, Pub. L. No. 101-650104 Stat. 5133 (1990); NIMMER, *supra* note 8, § 2A.09[A][1][a] n.10.

139. Kurtz, *supra* note 4, at 440.

140. See NIMMER, *supra* note 8, § 2.12 n.17.1; *supra* Part I.

141. See cases cited *supra* note 131.

142. See *Universal City Studios, Inc. v. J.A.R. Sales, Inc.*, 216 U.S.P.Q. 679, 1982 WL 1279, at *3 (C.D. Cal. Oct. 20, 1982) (holding that “the total concept and feel of defendants’ dolls is the same as the character “E.T.” in the copyrighted motion picture and as the copyrighted Kamar dolls”). This case is in the Central District of California and does reference *Walt Disney Products v. Air Pirates*, 581 F.2d 751 (9th Cir. 1978). However, cases involving medium changes have generally aligned closer to conventional copyright. The court did not address independent character copyright in its holding. See Kurtz, *supra* note 4, at 469–72.

143. The licensing agreements DC entered that eventually produced the Batmobiles at issue complicates, but does not hinder, this evaluation. The Batmobiles at issue in *Towle*—the 1966 television version and the 1989 film version—were developed by ABC and Warner Brothers, respectively. The court reasoned that because these two versions of the

by its licensees, a sufficient amount of material existed to find infringement. Towle's replicas included many design elements that matched versions of the Batmobile that appeared in works for which DC held exclusive rights.¹⁴⁴

However, *Towle* rejected the conventional infringement evaluation and explicitly changed the math of infringement by changing the denominator: "Although comic book characters are not listed in the Copyright Act, we have long held that such characters are afforded copyright protection."¹⁴⁵ Instead of comparing Towle's replicas with DC's comics, the court found the replicas to infringe a much smaller "work"—the Batmobile itself.¹⁴⁶

Justin Hughes has termed vanishingly small pieces of creativity afforded copyright protection as "microworks."¹⁴⁷ Courts have previously supported protection of microworks, such as "the sampling of three words and a short keyboard riff" used in a musical remix¹⁴⁸ and the short phrase "weasels ripped my flesh."¹⁴⁹ Hughes used these and other examples to show how copyright protection has become more "'finely grained'—with claims of independent property protection being draped over smaller and smaller pieces of creativity."¹⁵⁰

The Batmobile fits within Hughes's definition of a microwork. The world portrayed in Batman comics, movies, and television has a rich array of characters, locales, and stories. The Batmobile is only one small aspect of that milieu. Just like a short keyboard riff, the Batmobile is only a piece of a larger creative framework. Yet *Towle* granted independent protection to the Batmobile.

As Hughes noted, the "more finely grained protection" of microworks, such as the Batmobile, causes several problems in copyright doctrine.¹⁵¹ For instance, microwork protection acutely distorts fair use and the *de minimis*

Batmobile were derivative works DC still had a copyright interest: "[T]he author of an underlying work is entitled to sue a third party who makes an unauthorized copy of an authorized derivative work to the extent that the material copied derived from the underlying work." *DC Comics v. Towle*, 802 F.3d 1012, 1024 (9th Cir. 2015).

144. *See Towle*, 802 F.3d at 1017 (describing the DC Batmobiles and the Towle replicas as having the same bat-motifs).

145. *Id.* at 1019.

146. *Id.* at 1026.

147. *See Hughes*, *supra* note 133, at 576.

148. *Id.* at 579 n.15 (quoting *Grand Upright Music, Ltd. v. Warner Bros. Records, Inc.*, 780 F. Supp. 182 (S.D.N.Y. 1991)).

149. Hughes, *supra* note 133, at 585 (quoting *Narell v. Freeman*, 872 F.2d 907, 911 (9th Cir. 1989)).

150. Hughes, *supra* note 133, at 575.

151. *Id.* at 576.

doctrine.¹⁵² First, microworks affect several fair use factors.¹⁵³ The first fair use factor now primarily considers transformativeness.¹⁵⁴ Transformativeness considers whether a new work “adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message.”¹⁵⁵ Microworks limit the ability of a new work to be transformative. Protection of the Batmobile removes much of the surrounding milieu of the comic, which makes it more difficult for the borrower to instill a new meaning or message. Next, the third fair use factor evaluates the amount the secondary work takes from the original.¹⁵⁶ Microworks artificially inflate this evaluation. Instead of evaluating a Batman comic holistically, individual protection of the Batmobile means that a borrower of the Batmobile takes the entirety of a protected work.

Second, microworks limit application of the *de minimis* doctrine. The *de minimis* rule allows for the copying of small pieces of a copyrighted work, which directly conflicts with the protection of small microworks.¹⁵⁷ This “recalibration” of the *de minimis* doctrine subverts free expression and the public domain by further limiting the borrowing that all creativity requires.¹⁵⁸

In sum, *Towle* reaffirmed the Ninth Circuit’s protection of fictional characters as independently protectable works. Although not expressly forbidden by the Copyright Act,¹⁵⁹ the decision certainly runs counter to the weight of scholarly opinion about the nature of copyrightable subject matter. Moreover, fundamental problems arise when small “microworks” like the Batmobile are protected by copyright. The next section considers the justifications that exist for this unorthodox approach.

B. TOWLE GRANTS COPYRIGHT OWNERS THE ABILITY TO “STEWARD” VALUABLE MICROWORKS

Towle crafted a test to protect fictional characters, which are a uniquely valuable aspect of creative works. This protection of characters is more

152. See generally Matthew D. Bunker & Clay Calvert, Copyright in Inanimate Characters: The Disturbing Proliferation of Microworks and the Negative Effects on Copyright and Free Expression, 21 COMM. L. & POL’Y 281 (2016).

153. See *id.* at 295–97.

154. See 17 U.S.C. § 107(1) (2012); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578–79 (1994).

155. *Campbell*, 510 U.S. at 579.

156. See 17 U.S.C. § 107(3).

157. Hughes, *supra* note 133, at 577.

158. See *Campbell*, 510 U.S. at 575; Bunker & Calvert, *supra* note 152, at 298.

159. See 17 U.S.C. § 102(a) (2012) (stating that works of authorship “include,” but are not explicitly limited to, the enumerated categories in the section).

“finely grained” and gives copyright owners a greater level of control than standard copyright doctrine. Four principles justify the potent protection granted in *Towle*. This Note labels these rationales “stewardship.” The term stewardship is used because it connotes the meticulous supervision that independent copyright of characters enables. Moreover, the term stewardship is generally associated with the management of valuable resources.¹⁶⁰ This section analyzes four aspects of stewardship that are the *raison d’être* of *Towle*’s doctrine.

Towle and its lineage recognized that characters play a special role in fictional creative works.¹⁶¹ From Sam Spade to the Batmobile, the Ninth Circuit has recognized that characters have a unique economic and cultural value. Modern examples of characters’ economic value abound. The Marvel Cinematic Universe, which has placed Marvel Comics’ biggest superheroes in theaters, has earned over \$21 billion.¹⁶² *Fortune* estimated the James Bond franchise to be worth \$8 billion.¹⁶³ For these representative franchises, the appeal of the characters is the primary draw of the larger works.¹⁶⁴ “The actor at the top of the credit block has come to matter less than the name of the character or the franchise in the title.”¹⁶⁵

Characters can also attain a rich cultural significance. To some extent, economic profit signifies cultural value. As Judge Kenyon stated in *American Honda*, “[A] James Bond film without James Bond is *not* a James

160. *Stewardship*, Merriam-Webster’s Collegiate Dictionary (11th ed. 2003).

161. At the very least, the Ninth Circuit in *Towle* recognizes that fictional characters are valuable enough to deserve independent protection. See *DC Comics v. Towle*, 802 F.3d 1012, 1019 (9th Cir. 2015) (declaring “we have long held that such characters are afforded copyright protection”).

162. Tom Gerencer, *How Much Money Has Every Marvel Movie Made?*, MONEY NATION, (June 1, 2016), <http://moneynation.com/much-money-every-marvel-movie-made> [<https://perma.cc/XQ27-P6R4>].

163. Jonathan Chew, *Star Wars Worth More than Harry Potter and James Bond, Combined*, FORTUNE, Dec. 24, 2015, 8:00 AM, <http://fortune.com/2015/12/24/star-wars-value-worth> [<https://perma.cc/CCV9-5FMC>].

164. *The Simpsons* is a pertinent example outside of film. Through a record twenty-three seasons, the television show has earned Fox an estimated \$1 billion dollars and will likely earn a total of \$2.8 billion. See Tim Molloy, *Study: ‘The Simpsons’ Has Made \$1B in Profits*, TODAY TELEVISION (Oct. 5, 2011, 8:15 PM), http://www.today.com/id/44794519/ns/today-today_entertainment/t/study-simpsons-has-made-b-profits [<https://perma.cc/S655-XAX3>].

165. Marc Bernardin, *Marvel, ‘Star Wars,’ ‘Harry Potter’ and More: Why the Movie Star No Longer Shines as Bright as the Franchise*, L.A. TIMES (June 17, 2016, 4:15 AM), <http://www.latimes.com/entertainment/movies/la-ca-mn-why-movie-stars-dont-matter-25-franchises-20160616-snap-story.html> [<https://perma.cc/4PQA-XHYE>].

Bond film.”¹⁶⁶ More importantly, characters “may embody the ideals of culture to which we aspire and with which we identify; they may be a vehicle through which we express ourselves At the very least, we are entertained.”¹⁶⁷ We name our children after protagonists that inspire us,¹⁶⁸ we marry using the fictional customs of our heroes,¹⁶⁹ and when we die we choose to be interred like our favorite dramatis personae.¹⁷⁰ The cultural significance and economic impact of fictional characters elicited the Ninth Circuit’s grant of greater protection.¹⁷¹

The first stewardship rationale for independent character protection is the prevention of what William Landes and Richard Posner term “congestion externalities.”¹⁷² Intellectual property is traditionally considered immune to the tragedy of the commons:¹⁷³ “There can be no overgrazing of intellectual property. . . because intellectual property is not destroyed or even diminished by consumption. Once a work is created, its intellectual content is infinitely multipliable.”¹⁷⁴ However, Landes and Posner believe this understanding oversimplifies the issue. The authors

166. *Metro-Goldwyn-Mayer, Inc. v. Am. Honda Motor Co.*, 900 F. Supp. 1287, 1296 (C.D. Cal. 1995).

167. Geoffrey R. Scott & Karen E. Maull, *Kryptonite, Duff Beer and the Protection of Fictional Characters and Products in the Global Community*, 38 *MONASH U. L. REV.* 228, 230–31 (2012); see also Julian Sanction, *Why America Worships Superheroes*, *VANITY FAIR*, July 2008, <http://www.vanityfair.com/news/2008/07/why-america-worships-superheroes> [<https://perma.cc/G6AY-LEGH>].

168. See Katie O’Malley, *The World Is Going to Be Full of Babies Named After ‘Stranger Things’ Characters*, *ELLE*, Dec. 5, 2016, <http://www.elleuk.com/life-and-culture/culture/news/a32905/baby-names-stranger-things-2016> [<https://perma.cc/PKF5-59MJ>].

169. See Myles Burke, *UK’s First Star Trek Klingon Wedding Takes Place at Convention*, *THE TELEGRAPH* (Oct. 19, 2012, 10:35 PM), <http://www.telegraph.co.uk/culture/star-trek/9621881/UKs-first-Star-Trek-Klingon-wedding-takes-place-at-convention.html> [<https://perma.cc/32MH-4HKG>].

170. See Brian Lam, *Star Trek Coffin Warps Your Corpse to the Final Nerd Frontier*, *GIZMODO* (Oct. 31, 2007, 2:33 PM), <http://gizmodo.com/317341/star-trek-coffin-warps-your-corpse-to-the-final-nerd-frontier> [<https://perma.cc/ERV5-RCW3>].

171. See *supra* Sections I, II.C.2, II.C.3.

172. William M. Landes & Richard A. Posner, *The Economic Structure of Intellectual Property Law* 222–23 (2003).

173. See Margaret E. Banyan, *Tragedy of the Commons*, *ENCYCLOPEDIA BRITANNICA*, <https://www.britannica.com/science/tragedy-of-the-commons> [<https://perma.cc/F57S-7US7>].

174. LANDES & POSNER, *supra* note 172, at 223 (quoting Denis S. Karjala, Statement of Copyright and Intellectual Property Law Professors in Opposition to H.R. 604, H.R. 2589, and S. 505, “The Copyright Term Extension Act,” Submitted to the Joint Committees of the Judiciary, Jan. 28, 1998, <http://www.public.asu.edu/~dkarjala/legmats/1998Statement.html> [<https://perma.cc/8HXB-KY9G>]).

argue that trademark and right-of-publicity rights inherently “recognize that intellectual property *can* be diminished by consumption.”¹⁷⁵ This overgrazing also implicates copyright concerns. “[T]he total utility [of the copyright] might decline if the lack of excludability and resulting proliferation . . . led to confusion, the tarnishing of the image, or sheer boredom.”¹⁷⁶

The authors argue that a concern about overconsumption has persuaded Disney to practice good “husbandry” of their characters, extending the life of the characters and brand by preventing overgrazing by derivative uses.¹⁷⁷ “If because copyright had expired anyone were free to incorporate the Mickey Mouse character in a book, movie, song, etc., the value of the character might plummet.”¹⁷⁸ *Towle* stewardship promotes copyright husbandry. *Towle* allows DC to avert the devaluation of the Batmobile by preventing other uses, which could generate “boredom” in the character. Character “fatigue” is a common explanation for the poor performance of blockbuster films.¹⁷⁹ This aspect of stewardship prevents fatigue due to sources outside the copyright owner’s control. Additionally, even when copyright owners do facilitate fan creations, terms of use are often put in place to ensure the copyright holder maintains control.¹⁸⁰ The husbandry rationale of stewardship provides an additional degree of security to copyright owners that participate in their fan communities in this way.

The second justification of *Towle* stewardship is that it permits rightsholders to recoup investment and production costs.¹⁸¹ *Towle* protected the lucrative Batmobile merchandise market, which contributes to Warner

175. LANDES & POSNER, *supra* note 174, at 223–24.

176. *Id.* at 224.

177. *See id.* (quoting Bill Britt, *International Marketing: Disney’s Global Goals*, MARKETING, May 17, 1990, at 22, 26).

178. LANDES & POSNER, *supra* note 174, at 225.

179. *See, e.g.*, Tasha Robinson, *X-Men: Apocalypse Has a Bad Case of Batman v. Superman Disease*, THE VERGE (May 11, 2016, 3:26 PM) <http://www.theverge.com/2016/5/11/11653190/x-men-apocalypse-review-marvel-fox> (stating that the film’s lackluster tone may be due to the audience and the director’s fatigue with the X-Men) [<https://perma.cc/83MP-MUG>].

; Tatiana Siegel, *‘Spider-Man’ Fatigue*, THE HOLLYWOOD REP. (July 23, 2014, 6:23 PM) <http://www.hollywoodreporter.com/news/spider-man-fatigue-whats-behind-720365> (reporting on fan fatigue with the character Spiderman after lackluster results at the box office) [<https://perma.cc/EBC2-PFHM>].

180. *See* Lawrence Lessig, *Lucasfilm’s Phantom Menace*, WASH. POST, July 12, 2007, <http://www.washingtonpost.com/wp-dyn/content/article/2007/07/11/AR2007071101996.html> [<https://perma.cc/4D5Z-V3W5>]. Lessig is very critical of this practice, terming it “sharecrop[ping].” *Id.*

181. *See* Samuelson, *supra* note 3, at 1527.

Brothers' \$6 billion annual toy revenue.¹⁸² More generally, many forms of entertainment, such as films and television, are increasingly costly and complicated to make.¹⁸³ Consequently, derivative markets have become increasingly important in the recovery of investment. For some films, merchandising revenue surpasses box-office revenue¹⁸⁴ and can arguably incentivize subpar films with profitable merchandising opportunities.¹⁸⁵ *Towle* stewardship allows copyright owners greater control over these revenue streams.

The third justification of *Towle* stewardship is the prevention of unjust enrichment by unauthorized exploiters.¹⁸⁶ *Towle* represents a textbook example of preventing unjust enrichment. Mark Towle conceded that his replicas copied two versions of the Batmobile and that he advertised the replicas as the Batmobile to market his business.¹⁸⁷ Moreover, Towle attempted to appropriate a foreseeable market that DC had already entered with its own replicas.¹⁸⁸ Even if DC had not yet created working replicas, that market is closely related to the models that DC had already made. By granting DC the ability to steward the Batmobile, the Ninth Circuit prevented Towle from exploiting DC's copyright for his own financial gain.

182. The toy market is an incredibly lucrative market for DC Comics and its parent, Warner Brothers. Warner Brothers has generated around \$6 billion annually from licensing. See Marc Graser, *Mattel Signs New Toy Deal Around DC Comics Superheroes*, VARIETY (June 11, 2014, 6:00 PM), <http://variety.com/2014/biz/news/mattel-signs-new-toy-deal-around-dc-comics-superheroes-exclusive-1201218302/> [<https://perma.cc/QH8Y-PRFM>].

183. See e.g., Pamela McClintock, *\$200 Million and Rising: Hollywood Struggles with Soaring Marketing Costs*, THE HOLLYWOOD REP. (July 31, 2014, 5:00 AM), <http://www.hollywoodreporter.com/news/200-million-rising-hollywood-struggles-721818> [<https://perma.cc/LX3G-RY5M>]; Eric Buchman, *Why Are Movies More Expensive than Ever when Tech Makes Them Easier to Make?*, DIGITAL TRENDS (Dec. 10, 2014 11:00 AM), <http://www.digitaltrends.com/movies/why-hollywood-movies-are-more-expensive-to-make-than-ever> [<https://perma.cc/LLK8-WWQN>].

184. See Natalie Robehmed, *For Disney, Biggest Payday on Star Wars Won't be at the Box Office*, FORBES (Dec. 16, 2015, 10:30 AM), <http://www.forbes.com/sites/natalierobehmed/2015/12/16/how-disneys-star-wars-merchandise-is-set-to-make-billions> [<https://perma.cc/LX7Z-V7R2>].

185. See Brooks Barnes, *It Wasn't a Wreck, Not Really*, N.Y. TIMES, Oct. 17, 2011, <http://www.nytimes.com/2011/10/18/movies/john-lasseter-of-pixar-defends-cars-2.html> (discussing how critics believed Disney forced Pixar to release the film *Cars 2* primarily for its merchandising revenue) [<https://perma.cc/AEP4-VCED>].

186. Samuelson, *supra* note 3, at 1528.

187. DC Comics v. Towle, 802 F. 3d 1012, 1017–18 (9th Cir. 2015).

188. See e.g., Graser, *supra* note 182; *Hot Wheels Batmobiles*, BATMOBILE COLLECTOR, <http://www.batmobilecollector.com/gallery-hotwheels.html> (last visited Nov. 8, 2017) [<https://perma.cc/X7TZ-FA56>].

These first three rationales for *Towle* stewardship gain further support by their connection with the derivative work right. Although the unauthorized use of fictional characters could trigger many exclusive rights, it fits most comfortably within the derivative work right. Protection for fictional characters developed contemporaneously with the emergence of an earlier analogue of the derivative work right in courts.¹⁸⁹ The derivative work right, as established in the Copyright Act of 1976, confers on authors the right to control “work[s] based upon one or more preexisting works.”¹⁹⁰ The Ninth Circuit’s copyrightable character cases mimic this language.¹⁹¹ Thus, because copyrightable characters and the derivative work right are so closely connected, any justification for derivative works to some extent rationalizes *Towle* stewardship as well. Both the investment recoupment and unjust enrichment rationales for *Towle* stewardship were originally justifications for a separate derivative work right.¹⁹² Additionally, congestion externalities and husbandry also originally complimented the derivative work right.¹⁹³

The first *Towle* stewardship rationales should not be considered purely utilitarian, economic justifications. *Towle* stewardship protects value beyond the ledger sheet.¹⁹⁴ As discussed previously, *Towle* sought to protect characters that had in some way captured the public imagination.¹⁹⁵ Similarly, good husbandry prevents the public from becoming “bored[.]” with a character.¹⁹⁶ Investment recoupment and prevention of unjust enrichment can also implicitly prevent the degradation of non-pecuniary value. The protection of the Batmobile certainly protects DC’s profits, but

189. See *Nichols v. Universal Pictures Corp.*, 45 F.2d 119 (2d Cir. 1930); Samuelson, *supra* note 3, at 1511–17. Although many of the early copyrightable character cases mentioned in Part I could not explicitly cite a derivative work right in the 1909 Copyright Act, the type of protection afforded closely resembles what the derivative work right became.

190. See 17 U.S.C. §§ 101, 106(2) (2012).

191. See *e.g.*, *Towle*, 802 F.3d at 1026 (holding that *Towle* “infringed DC’s exclusive right to product derivative works of [the Batmobile]”); *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751, 757–58 (9th Cir. 1978) (holding that a parody of Mickey Mouse, which is inherently based on a preexisting work, was infringing).

192. See Samuelson, *supra* note 3, at 1527–28.

193. See LANDES & POSNER, *supra* note 172, at 226.

194. When Congress passed the 1976 Copyright Act, many commentators believed that the derivative work right could protect moral integrity rights. This theory did not come to fruition, but stewardship arguably has elements of the integrity right. See Jane C. Ginsburg, *Have Moral Rights Come of (Digital) Age in the United States?*, 19 CARDOZO ARTS & ENT. L.J. 9, 9 (2001).

195. See *supra* Section II.C.3.

196. LANDES & POSNER, *supra* note 172, at 224.

it also prevents misuse that could degrade a character's cultural value. Thus, although protecting characters protects economic ventures, *Towle* stewardship can also be seen as protecting cultural value as well.

The fourth and final *Towle* stewardship rationale is that characters that pass the *Towle* test, although they may be microworks, arguably meet the minimum size threshold for a copyrightable work. Hughes asserted three possible ideas for the minimum size of a work: "independent economic value, 'compositional' nature, and copyright owners' understanding."¹⁹⁷ The types of characters that pass the *Towle* test certainly qualify under copyright owners' understanding because of the amount of characterization required in step two—sufficient delineation. Next, cases that *Towle* used to build its test recognized that characters have independent economic value.¹⁹⁸

It is debatable whether characters have an independent compositional nature. However, the Ninth Circuit has reasoned that "a cartoon character's image is intertwined with its personality and other traits."¹⁹⁹ If this is accepted,²⁰⁰ a character may have an independent compositional nature. Therefore, although characters may be considered small pieces of creativity, they are arguably suitably substantial to be considered works. Thus, *Towle* stewardship, because it protects characters that meet a minimum size threshold, may not trigger the problems inherent in protecting microworks.

In sum, *Towle* can be viewed as protecting a copyright owner's ability to steward certain characters. This specialized evaluation is unorthodox, but not unknown. Other works with contentious copyrightability have specialized examinations.²⁰¹ *Towle* stewardship comprises four primary rationales for character copyrightability. First, stewardship enables good "husbandry" by preventing "congestion externalities." Second, stewardship allows copyright owners to recoup their investments. Third, stewardship prevents unjust enrichment. Fourth, *Towle* stewardship protects microworks that still meet a minimum size threshold for copyrightability. *Towle* stewardship advances utilitarian concerns and also protects the cultural value of fictional characters. The final part of this Note will analyze how well the *Towle* test works for other fictional characters.

197. Hughes, *supra* note 133, at 634.

198. See *Walt Disney Co. v. Powell*, 897 F.2d 565, 570 (D.C. Cir. 1990) (concluding that only two copyrights, for Mickey and Minnie Mouse, rather than six, the number of episodes infringed, were at issue when the court considered appropriate damages).

199. *Walt Disney Prods. v. Air Pirates*, 581 F.2d 751, 757 (9th Cir. 1978).

200. See *infra* Section IV.B for a rejection of this concept.

201. See *Comput. Assoc. Int'l v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992) (creating an "abstraction-filtration-comparison" test for evaluating copyright infringement of computer programs).

IV. EVALUATING THE PURPOSE OF COPYRIGHTABLE FICITONAL CHARACTERS: TESTING THE *TOWLE* TEST

Stewardship is the most compelling set of justifications for *Towle's* unconventional protection of fictional characters. Part IV evaluates how well the *Towle* test fulfills these rationales by evaluating two modern fictional characters: Cecil from the *Welcome to Night Vale* podcast, and Pepe the Frog.²⁰² Ultimately, the characters problematize both *Towle's* three-part test and the stewardship framework that attempts to justify *Towle's* deviation from copyright norms.

A. THE PICTORIAL CHARACTER REQUIREMENT: CECIL FROM *WELCOME TO NIGHT VALE*

Welcome to Night Vale is a digital podcast where each audio episode relays a fictional public radio broadcast from a small desert town called Night Vale.²⁰³ The dull format is cleverly subverted by bizarre content, such as government conspiracies and supernatural forces.²⁰⁴ The instrument of each episode is Cecil, the host of Night Vale's public radio program. Virtually every program relies solely on Cecil's narration. As the series developed, Cecil attained more personality: he has spoken of his childhood and family, his pride in the Night Vale community, and his relationship with his love interest, Carlos.²⁰⁵

Welcome to Night Vale is immensely popular and competes with shows with much higher production value, such as *This American Life* from NPR, to be the most popular podcast in the country.²⁰⁶ The first *Welcome to Night Vale* book quickly became a bestseller.²⁰⁷ Accordingly, Cecil has arguably

202. The decision to evaluate these two characters was based on three factors. First, and most importantly, both characters exist in popular, contemporary mediums. Second, both characters are popular enough to warrant consideration of independent copyright protection. Third, both characters have unusual facets that test the limits of the *Towle* doctrine. The Author also notes that many, many other "characters" were considered for evaluation, including the Millennium Falcon from Star Wars, the One Ring from The Lord of the Rings, and Stephen Colbert's persona from his show The Colbert Report.

203. WELCOME TO NIGHT VALE, <http://www.welcometonightvale.com> (last visited Nov. 8, 2017) [<https://perma.cc/R2V9-9BUW>].

204. See Adam Carlson, *America's Most Popular Podcast: What the Internet Did to "Welcome to Nightvale,"* THE AWL (July 24, 2013), <https://theawl.com/americas-most-popular-podcast-what-the-internet-did-to-welcome-to-night-vale-ba78f910fe2> [<https://perma.cc/K2UU-M2LS>].

205. See *id.*

206. See *id.*

207. See Soraya Nadia McDonald, *How "Welcome to Night Vale" Creators Turned a Podcast Experiment into an Industry,* WASH. POST, Nov. 12, 2015, <https://www.washingtonpost.com/news/arts-and-entertainment/wp/2015/11/12/welcome->

attained the characterization and the cultural and economic value required to pass *Towle* steps two and three. However, it is unclear whether Cecil, as a purely audio character, could pass *Towle* step one, which states that a character “must generally have ‘physical as well as conceptual qualities.’”²⁰⁸ The first step seeks to filter out “mere literary character[s].”²⁰⁹

Towle step one does qualify its requirement with “generally.”²¹⁰ A podcast cannot depict the physical qualities of a character like height and hair color, but it does provide more than a “mere” textual description through vocal inflection. Additionally, Cecil’s characterization is debatably connected with his voice in the same way the Ninth Circuit held that Mickey Mouse’s traits were connected to his image in *Air Pirates*.²¹¹ The *Halicki* court reasoned that the car Eleanor could be copyrightable because it was “more akin to a comic book character than a literary character.”²¹² A court evaluating Cecil could reasonably make the same comparison because Cecil is not simply words on a page. He has an additional sensory element, sound, just as comic book characters have a supplementary visual aspect.

This examination demonstrates how the *Towle* test cannot properly evaluate Cecil without bending its own guidelines. Additionally, podcasts are not listed in *Towle*’s implicit step zero. Thus, it seems very possible that Cecil may fall into the *Sam Spade* category of characters. Yet if *Towle* is meant to allow copyright owners to steward their especially valuable works, Cecil seems to be a prime target. Cecil is a popular character in a novel medium,²¹³ developed by small, independent creators. Yet the *Towle* test remains rooted in old, medium-specific distinctions. Cecil will be unlikely to pass the first step of the *Towle* test because he is not a pictorial character. This shortcoming runs counter to the stewardship principles that justify *Towle*.

Cecil and *Welcome to Night Vale* also have a vibrant fan community, which prompts another issue with *Towle* stewardship. Any simple Google search for Cecil surfaces thousands of fan-made depictions of the radio

to-night-vale-creators-chart-the-podcast-path-to-popularity [https://perma.cc/GFT4-AKFT].

208. DC Comics v. Towle, 802 F.3d 1012, 1021 (9th Cir. 2015).

209. *Id.*

210. *See id.*

211. *See* Walt Disney Prods. v. Air Pirates, 581 F.2d 751, 757 (9th Cir. 1978).

212. *Halicki Films, LLC v. Sanderson Sales & Mktg.*, 547 F.3d 1213, 1225 (9th Cir. 2008).

213. *See* Kevin Roose, *What’s Behind the Great Podcast Renaissance*, N.Y. MAG. (Oct. 30, 2014, 1:56 PM) <http://nymag.com/daily/intelligencer/2014/10/whats-behind-the-great-podcast-renaissance.html> [https://perma.cc/6DU2-2FCY].

host.²¹⁴ While the Cecil created by the copyright owners has remained a faceless voice, fans have given him a wealth of physical and conceptual qualities. Rebecca Tushnet asks whether copyright owners should have complete control over these types of derivatives.²¹⁵ The *Welcome to Night Vale* creators are also its copyright owners and tend to encourage fan engagement. Protectionists would argue that these fan derivatives “blur the definitions of [fans’] favorite characters”²¹⁶—and in doing so would make them, as Posner and Landes decried, boring. Proponents of fan participation argue protectionist sentiment “misdescribes copyright ownership as ensuring coherence, and misdescribes unauthorized creations as rewriting the originals rather than adding to them.”²¹⁷

While Tushnet’s concerns may not be as prevalent for Cecil, they are rampant where the author is not the copyright owner, like in the world of comics. “Although DC Comics may be willing to pimp Batman out to make millions, hard core fans may be outraged. . . . Fans’ [right to prevent distortion] may be even stronger than those . . . made by corporations.”²¹⁸ This theory challenges the basic premise in *Towle* that copyright owners deserve the ability to steward characters. Perhaps stewardship should instead only vest in authors or fans.

B. THE LACK OF AN UNDERLYING WORK AND CROWDSOURCING: PEPE THE FROG

Few characters have captured the American zeitgeist quite like Pepe the Frog. Created by Matt Furie for the 2005 comic *Boy’s Club*, Pepe, or the “sad frog,” was a generic character before becoming an internet meme.²¹⁹ The meme portrayed Pepe in various gloomy situations, but the image was eventually co-opted by the “alt-right,” a loosely affiliated group with far-right political ideologies.²²⁰ Pepe proliferated online in the run-up to the

214. See Google Image Search for Cecil, GOOGLE IMAGES, <http://google.com/images> (last visited Nov. 8, 2017) (search “Cecil Welcome to Night Vale”); see also, e.g., littleulvar, *Spam Vale*, DEVIANTART, <http://littleulvar.deviantart.com/art/spam-vale-396296332> (last visited Nov. 8, 2017) [<https://perma.cc/HX2V-K8S4>].

215. See Rebecca Tushnet, Payment in Credit: Copyright Law and Subcultural Creativity, 70 L. & CONTEMP. PROBS. 135 (2007).

216. See *id.* at 165.

217. See *id.*

218. See *id.* at 165–66.

219. See Sarah Begley, *Anti-Defamation League Declares Pepe the Frog a Hate Symbol*, TIME, Sep. 27, 2016, <http://time.com/4510849/pepe-the-frog-adl-hate-symbol> [<https://perma.cc/WQB6-FNXL>].

220. See *id.*

2016 presidential election²²¹ and was often portrayed as anti-Semitic and racist.²²² In September 2016, the Anti-Defamation League added Pepe to its list of hate symbols.²²³ In December 2016, Time Magazine listed Pepe as the most influential character of 2016.²²⁴ Evaluating Pepe with *Towle* raises two distinct problems with the test.

First, although *Towle* claimed to protect characters independently of an underlying work, the existence of an underlying work seems critical to passing the *Towle* test. Debatably, Pepe could not have passed *Towle* steps two and three until internet users imbued him with additional characteristics. Internet users fleshed out Pepe's delineation and cultural significance, but these additional memes would not likely be considered copyrightable works because, individually, they added only *de minimis* contributions to the character.²²⁵ Even if Matt Furie had created all of the memes himself,²²⁶ *Towle* gives no basis to review step two and three without a copyrightable narrative to analyze.

Towle used complete compositions to support its finding of the Batmobile's independent copyrightability.²²⁷ It seems at best unclear whether the court could make the same finding using an assortment of *de minimis*, uncollected internet memes. Moreover, due to Pepe's amalgamated nature, he arguably does not have the independent compositional nature Hughes articulated as a minimum threshold to be considered a copyrightable work. Hence, Pepe runs counter to the fourth *Towle* stewardship justification—that characters under *Towle* meet a minimum size threshold for a copyrightable work. Yet, the delineation and unique elements of expression present in the Pepe character appear

221. Jesse Singal, *How the Internet Trolls Won the 2016 Presidential Election*, N.Y. MAG. (Sept. 16, 2016, 9:00 AM), <http://nymag.com/selectall/2016/09/how-internet-trolls-won-the-2016-presidential-election.html> [<https://perma.cc/F6MY-SFLE>].

222. Press Release, Anti-Defamation League, ADL Adds “Pepe the Frog” Meme, Used by Anti-Semites and Racists, to Online Hate Symbols Database, ANTI-DEFAMATION LEAGUE (Sept. 27, 2016), <http://www.adl.org/press-center/press-releases/extremism/adl-adds-pepe-the-frog-online-hate-symbols-database.html> [<https://perma.cc/8MKE-7YZ6>].

223. *Id.*

224. Daniel D’Addario, *The 10 Most Influential Fictional Characters of 2016*, TIME, Dec. 13, 2016, <http://time.com/4598518/influential-characters-2016/> [<https://perma.cc/46BW-KBCC>].

225. *See, e.g.*, Pepe the Frog, KNOW YOUR MEME <http://knowyourmeme.com/memes/pepe-the-frog> (last visited Dec. 23, 2016) [<https://perma.cc/H3DE-C7EZ>].

226. This would thus amass all copyright ownership in one creator, rather than dealing with the problem of a work created collectively.

227. *See* DC Comics v. Towle, 802 F.3d 1012, 1021–22 (9th Cir. 2015).

undeniable. Pepe is clearly an incredibly significant and influential character.

The second problem with the *Towle* analysis of Pepe is the treatment of the copyright owner when the masses have reappropriated the character. Furie has stated that Pepe should not be used as a symbol of hate.²²⁸ Does *Towle* give Furie the ability to control his character when its delineation and significance were developed by the masses? The answer is arguably no. Pepe as Furie created him could not pass the *Towle* test, even if Pepe as the Internet refashioned him could. Pepe thus raises a question originally considered by *Sam Spade*²²⁹ but in a distinctly modern context: How should character stewardship work when the copyright owner has no meaningful control over the character? *Towle* has not answered this question. It seems doubtful, due to the breadth of the online dissemination of Pepe, that Furie could use *Towle* to prevent racist iterations of the character, even if a court held that Furie could steward the work.

After considering these issues, it seems that *Towle* may not be adequate to analyze modern characters that do not appear in a traditional copyrightable work. Furthermore, Pepe acquired influence through the internet's mass-appropriation of his image. This way of gaining prominence, which is becoming ever more common in the digital era, seems fundamentally incompatible with *Towle* stewardship. Stewardship describes the benefits of particularized, protectionist controls. But those controls are meaningless with Pepe's version of notoriety.

Characters like Pepe will only become more important as internet culture gains more mainstream attention. If *Towle* cannot address character stewardship in this context, it is unclear how effective or long-lasting the test can be.

V. CONCLUSION

The *Towle* evaluation is, if anything, still a work in progress. *Towle* condensed and summarized over sixty years of Ninth Circuit jurisprudence on copyrightable fictional characters. Formatting this doctrine into a three-part test, the Ninth Circuit held that the Batmobile was an independently copyrightable work.

228. See Matt Furie, *Pepe the Frog's Creator: I'm Reclaiming Him. He Was Never About Hate*, TIME, Oct. 13, 2016, <http://time.com/4530128/pepe-the-frog-creator-hate-symbol> [<https://perma.cc/KX6D-5KJH>].

229. See *Warner Bros. Pictures v. CBS*, 216 F.2d 945, 949–50 (9th Cir. 1954) (addressing how copyright claims against the original author should be decided).

Towle deviated from copyright norms to grant copyright owners greater ability to control fictional characters with high economic and cultural worth. This Note labeled the justifications for *Towle*'s enhanced protection as stewardship. Stewardship encompasses four rationales. The first stewardship justification is that *Towle* facilitates good husbandry by limiting congestion externalities. Second, *Towle* allows copyright owners to recoup their investment costs. Third, *Towle* prevents the unjust enrichment of illicit borrowers. The fourth justification of stewardship is that characters that pass the *Towle* test are sufficient to be considered copyrightable works under minimum size principles.

However, when *Towle* is used to evaluate innovative characters in contemporary mediums, it becomes clear that the test is not an adequate guide for copyright decisions. In fact, characters like Cecil from *Welcome to Night Vale* and Pepe the frog challenge not only *Towle*'s specific formulation of a copyrightable character test, but stewardship as well, the primary justifications for *Towle*'s deviation from copyright norms.

Despite these problems, *Towle* may show the benefits of having a flexible copyright doctrine that can evolve to fit new situations. Independent character copyrightability could be beneficial if the Ninth Circuit made certain changes. First, the court should eliminate its medium-specific requirements. The distinction between mediums rendered in *Air Pirates* made the already nebulous *Sam Spade* principles worse. A medium-neutral *Towle* test would increase the test's flexibility. Second, the Ninth Circuit should provide greater clarity on what *Towle* steps two and three require. Step two appears to require sufficient characterization and depth, while step three seems to necessitate some level of cultural or economic significance. The court must elucidate on its limited explanations. Lastly, the court should narrow the copyrightable character doctrine to only apply in special cases, and should apply conventional doctrine for most cases. This would prevent confusion of when *Towle* applies, and would reinforce the robustness of the stewardship justifications.

Grant Morrison has said that comic book characters last forever.²³⁰ But, like case precedent, they can go through many changes before dying—only to be resurrected again.

230. See Lamar, *supra* note 1.

CRITICISM OF THE DEFEND TRADE SECRETS ACT OF 2016: FAILURE TO PREEMPT

Brittany S. Bruns[†]

President Barack Obama signed the Defend Trade Secrets Act of 2016 (DTSA) into law on May 11, 2016.¹ The DTSA amended the Economic Espionage Act (EEA) to create a federal civil cause of action for trade secret misappropriation.²

The DTSA received broad political support.³ It provides additional protection for trade secrets, a critical part of the modern economy,⁴ which are an increasingly common target for theft.⁵ However, the DTSA has a major flaw: it does not preempt state law.⁶ Consequently, it fails to balance the two competing concerns of trade secret law: providing strong protection of trade secrets and encouraging employee mobility and fair competition.⁷ By failing to preempt state trade secret laws, the DTSA increases trade secret protection at the expense of employee mobility and fair competition. Where state trade secret laws emphasize employee mobility, the DTSA undermines those states' policy goals by providing an alternate statutory

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1. Barack Obama, President of the United States, Remarks on Signing the Defend Trade Secrets Act of 2016, 2016 DAILY COMP. PRES. DOC. 1 (May 11, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/05/11/remarks-president-signing-s-1890-defend-trade-secrets-act-2016>.

2. Defend Trade Secrets Act of 2016, Pub. L. No. 114-153, 130 Stat. 376 (to be codified in scattered sections of 18 U.S.C.).

3. 162 CONG. REC. H2046-47 (daily ed. Apr. 27, 2016) (tallying the vote for the DTSA in the House of Representatives with 410 ayes, 2 nays, and 21 not voting); 162 CONG. REC. S1635-36 (daily ed. Apr. 4, 2016) (tallying the vote for the DTSA in the Senate with 87 ayes, 0 nays, and 13 not voting).

4. Lora Kolodny, *Companies Expect IP Theft to Rise in the Next Year, According to a New Survey from Deloitte*, TECHCRUNCH (Oct. 25, 2016), <https://techcrunch.com/2016/10/25/companies-expect-ip-theft-to-rise-in-the-next-year-according-to-a-new-survey-from-deloitte/> [<https://perma.cc/QL6A-EKGH>] (“Across the S&P 500, companies’ total value consisted of 87% intellectual property and just 13% tangible assets in 2015 . . .”).

5. *Id.* (“[O]nline theft of IP is a growing concern in tech, according to a new survey . . .”).

6. Defend Trade Secrets Act of 2016 § 2(f), 18 U.S.C. § 1838.

7. *See* Morlife, Inc. v. Perry, 66 Cal. Rptr. 2d 731, 734 (Ct. App. 1997) (discussing the delicate balance of trade secret law’s competing policy considerations).

option for plaintiffs.

This Note argues that Congress should amend the DTSA to preempt state and common law in order to protect trade secrets, preserve employee mobility, and encourage fair competition without undermining state policies. Part I of this Note is a primer on the policy implications of trade secret law and a brief history of the development of trade secret law in the United States. Part II explains some of the key DTSA provisions.⁸ Part III proposes amending the DTSA to preempt state and common law trade secret claims. It details the problems caused by the current lack of preemption and explains the benefits of preemption in this area of the law.

I. BACKGROUND

This Part lays the foundation necessary for understanding the problems created by the DTSA's failure to preempt state trade secret laws. The first Section of this Part explains the warring policy concerns of trade secret law: innovation, disclosure, employee mobility, and fair competition. Then, the following Section provides a brief primer on the basic trade secret law doctrines. The final Section provides an overview of the history of trade secret law, from its common law roots to the enactment of the DTSA.

A. THE POLICY CONSIDERATIONS OF TRADE SECRET LAW

Trade secret law implicates classic intellectual property law policies of encouraging innovation⁹ and promoting disclosure.¹⁰ Laws that protect trade secrets foster innovation by assuring innovators that the fruits of their labor will be protected. Information is a public good.¹¹ It is both

8. A detailed analysis of the substantive provisions of the DTSA is outside the scope of this Note, which focuses on the ramifications of concurrent state and federal trade secret law created by the DTSA's failure to preempt state and common law trade secret claims.

9. Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 STAN. L. REV. 311, 326 (2008) ("We grant rights over secret information for the same reason we grant rights in patent and copyright law—to encourage investment in the research and development that produces the information.").

10. Trade secret law promotes disclosure by providing a remedy for misappropriated trade secrets. Without this remedy, trade secret owners would resort to extreme measures to avoid disclosure, even where disclosure is efficient. *Id.* at 313.

11. Joseph E. Stiglitz, *Knowledge As a Global Public Good*, in GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY 308 (Inge Kaul, Isabelle Grunberg & Marc A. Stern eds., 1999) ("Thomas Jefferson, the third president of the United States, described knowledge in the following way: 'he who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.' In doing so, Jefferson anticipated the modern concept of a public good. Today we recognize that knowledge is not only a public good but also a global or international public good.").

nonrivalrous and nonexclusive.¹² Without some sort of legal protection or incentive for creation, it will be undersupplied by the free market.¹³ In addition to encouraging innovation, trade secret law also encourages disclosure. Without legal protection, innovators would closely guard their trade secrets because they would be without legal recourse if anyone knew and shared their secret. As a public good, information cannot provide a commercial advantage to a single competitor if it is known to everybody. Thus, innovators have a commercial incentive to keep their information goods closely guarded secrets. Trade secret law assures innovators that the benefits of their commercial advantage will not be lost if they disclose their secrets to their employees or contractors.

However, trade secret law also has policy implications for employee mobility and fair competition.¹⁴ Trade secret cases arise in the context of the relationship between competitors, the relationship created by business transactions, and the relationship between employers and employees.¹⁵ These settings create policy concerns absent in other forms of intellectual property: the policies of not inhibiting employee mobility and of not hindering fair competition.

One extreme example concerns the artisans of the Taj Mahal. According to myth, Shah Jahan had the hands of his skilled artisans cut off after the construction of his monument so that they would never build another thing to rival its beauty.¹⁶ However, we need not turn to myth for examples of trade secret laws' impact on employee mobility. Nor is the impact on employee mobility necessarily as extreme as maiming former employees to

12. *Id.* (“A public good has two critical properties: nonrivalrous consumption—the consumption of one individual does not detract from that of another—and nonexcludability—it is difficult if not impossible to exclude an individual from enjoying the good.”).

13. *Id.* at 311 (“The central public policy implication of public goods is that the state must play some role in the provision of such goods; otherwise they will be undersupplied. If firms cannot appropriate the returns to producing knowledge, then they will have limited incentive to produce it: in deciding how much to invest, they will look only at the return that they acquire, not the benefits that accrue to others.”).

14. Madhavi Sunder, *Trade Secret and Human Freedom*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* 334–335 (Shyamkrishna Balganeshe 1 ed. 2013) (“[T]rade secret law implicates . . . the freedom to move, to work, to compete, and to think.”).

15. Lemley, *supra* note 9, at 318. The employment relationship is the most common context of trade secret litigation. David S. Almeling et al., *A Statistical Analysis of Trade Secret Litigation in Federal Courts*, 45 GONZ. L. REV. 291, 302 (2009) [hereinafter Almeling, *Federal Court Statistical Analysis*].

16. *Myths About Taj Mahal*, TAJ MAHAL, <http://www.tajmahal.com/56/info/myths-about-taj-mahal.htm> [<https://perma.cc/P4M8-YQAH>] (last visited Feb. 8, 2017).

protect an employer's trade secrets. Under American trade secret law, former employers use litigation, or the threat of litigation, to discourage employees from working for the employer's competitors.¹⁷ Strong trade secret protection thus increases the scope of an employee's potential liability and decreases employee mobility.¹⁸ Decreased mobility then decreases innovation, as employees no longer carry unprotected knowledge and information to new jobs and environments.¹⁹ Additionally, since employers have a lower risk of employee attrition, overall employee compensation is lower in states with broad trade secret protection than in states with narrower protection.²⁰

The policy goals of trade secret law are in tension. Robust protection of trade secrets may hinder employee mobility and free competition.²¹ Thus, any trade secret law must perform a delicate balance: providing strong trade secret protection without discouraging fair competition or employee

17. James Bessen, *How Companies Kill Their Employees' Job Searches*, ATLANTIC (Oct. 17, 2014), <https://www.theatlantic.com/business/archive/2014/10/how-companies-kill-their-employees-job-searches/381437/> [<https://perma.cc/92B3-HR2Z>] ("Employers are increasingly taking legal action to prevent former employees from taking their knowledge and skills to new jobs, using trade-secret laws and contracts that cover post-employment activity. The number of lawsuits over noncompete agreements and trade secrets has nearly tripled since 2000. Now Congress is about to go further, giving employers new powers to sue employees under federal law.").

18. *See id.* ("The combination of expanding trade-secret law and the growing use of employment contracts covering post-employment activity has a huge impact on the career trajectories of many workers.").

19. Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 578 (1999) ("Silicon Valley's culture of mobility—the constant penetration of local firms' open architecture by job-hopping engineers and the corresponding bias against vertical integration—is much more conducive to the regional distribution of innovative knowledge than Route 128's culture of career-long employment supported by more traditionally organized, vertically integrated firms.").

20. Bessen, *supra* note 17 ("In short, noncompete agreements limit the job opportunities of highly skilled workers. When their choices are so limited, employees have less incentive to develop new skills and new knowledge. Statistical analysis supports this: Comparing states that allow firms to enforce noncompete agreements to those that do not, Mark Garmaise of UCLA found that managers earn less and they receive incentive compensation less often in states with noncompete enforcement, all else equal. Other researchers have found a similar effect in states that provide employers stronger controls via trade-secret law.").

21. JOHN R. THOMAS, CONG. RESEARCH SERV., R41391, THE ROLE OF TRADE SECRETS IN INNOVATION POLICY (2010) (Summary) ("On the other hand, trade secret protection involves the suppression of information, which may hinder competition and the proper functioning of the marketplace. An overly robust trade secret law also could restrain employee mobility . . .").

mobility.

B. THE BASICS OF TRADE SECRET LAW

All trade secret laws share a few common characteristics. A trade secret is information that has value²² and has been subject to reasonable efforts to preserve its secrecy.²³ Actionable misappropriation of trade secrets includes unauthorized acquisition, use, or disclosure of the trade secret.²⁴

C. HISTORY OF TRADE SECRET LAW IN THE UNITED STATES

Federal statutes have long protected patents,²⁵ copyrights,²⁶ and trademarks.²⁷ Federal statutory trade secret protection has lagged far behind.²⁸ Common law has protected trade secrets for much of American legal history.

1. *Common Law Development*

Modern American trade secret law originated during the industrial

22. See, e.g., UNIF. TRADE SECRET ACT § 1(4)(i) (UNIF. LAW COMM'N 1985) (defining a trade secret as information that “derives independent economic value . . . from not being generally known to . . . other person who can obtain economic value from its disclosure or use”); RESTATEMENT (FIRST) OF TORTS § 757 cmt. b (AM. LAW INST. 1939) (defining a trade secret as something which imparts competitive advantage).

23. See, e.g., UNIF. TRADE SECRET ACT § 1(4)(ii) (UNIF. LAW COMM'N 1985) (defining a trade secret as information that “is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.”); Restatement (First) of Torts § 757 (1939) (“[A] substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information.”).

24. See, e.g., UNIF. TRADE SECRET ACT § 2(i)–(ii) (UNIF. LAW COMM'N 1985); RESTATEMENT (FIRST) OF TORTS § 759 (AM. LAW INST. 1939) (“One who, for the purpose of advancing a rival business interest, procures by improper means information about another’s business is liable to the other for the harm caused by his possession, disclosure or use of the information.”).

25. The first federal patent legislation was the Patent Act of 1790. Pasquale J. Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237 (1936).

26. Copyright law became the subject of a federal statute in 1790. Oren Bracha, *The Adventures of the Statute of Anne in the Land of Unlimited Possibilities: The Life of a Legal Transplant*, 25 BERKELEY TECH. L. J. 1427, 1428 (2010).

27. The first federal trademark statute was created in 1870. Mark P. McKenna, *The Normative Foundations of Trademark Law*, 82 NOTRE DAME L. REV. 1839, 1859 n. 82 (2007). However, the Supreme Court struck down that statute as unconstitutional in 1879. *In Re Trade-Mark Cases*, 100 U.S. 82, 99–100 (1879). Shortly thereafter, in 1881, Congress created a new federal trademark act. David S. Almeling, *Seven Reasons Why Trade Secrets Are Increasingly Important*, 27 BERKELEY TECH. L. J. 1091, 1096 (2012) [hereinafter Almeling, *Increasingly Important*].

28. Almeling, *supra* note 27, at 1096.

revolution.²⁹ Early trade secret cases arose from property, tort, and contract law.³⁰ These disparate threads coalesced into the first cohesive statement of trade secret law in the 1868 Massachusetts Supreme Court case, *Peabody v. Norfolk*.³¹ In *Peabody*, the Court recognized a broad property interest in trade secrets, which allowed a trade secret owner to recover from a party who takes or discloses a trade secret in violation of a duty imposed by contract or tort law.³² Thus, *Peabody v. Norfolk* recognized trade secret law's foundation in property, contract, and tort laws, and distinguished it as its own area of law.

Despite *Peabody*'s statement of trade secret law's premise, courts continued to apply varied approaches to trade secret cases. Trade secret law failed to achieve uniformity until seventy years after *Peabody*³³ when the First Restatement of Torts attempted national uniformity by including a section on trade secret law.³⁴ The First Restatement of Torts was published in 1939 to promote "certainty and clarity"³⁵ by informing judges and lawyers of the law.³⁶ However, courts did not uniformly adopt the Restatement's provisions on trade secret law.³⁷ Thus, trade secret law continued to develop without a unified theory. In the decades after the Restatement's publication,³⁸ common law and new state statutes bred

29. Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CALIF. L. REV. 241, 251 (1998).

30. Sunder, *supra* note 14, at 337–38.

31. See *Peabody v. Norfolk*, 98 Mass. 452, 458 (1868) ("If he invents or discovers, and keeps secret, a process of manufacture, whether a proper subject for a patent or not, he has not indeed an exclusive right to it as against the public, or against those who in good faith acquire knowledge of it; but he has a property in it, which a court of chancery will protect against one who in violation of contract and breach of confidence undertakes to apply it to his own use, or to disclose it to third persons.").

32. *Id.*

33. William B. Barton, *A Study in the Law of Trade Secrets*, 13 U. CIN. L. REV. 507, 558 (1939) ("Neither the English nor American basis for dealing with trade secrets has yet crystallized around any particular pattern.").

34. David S. Almeling, *Four Reasons to Enact a Federal Trade Secrets Act*, 19 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 769, 772 (2008) [hereinafter Almeling, *Reasons for Federal Act*].

35. RESTATEMENT (FIRST) OF TORTS INTRO. (AM. LAW INST. 1934).

36. *Institute Projects*, AM. LAW INST., <https://www.ali.org/about-ali/institute-projects/> [<https://perma.cc/N2VN-2KVL>] (last visited Oct. 9 2016).

37. James Pooley, *The Top Ten Issues in Trade Secret Law*, 70 TEMP. L. REV. 1181, 1183 (1997).

38. Trade secret law was not included in another restatement until 1995. RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39–45 (AM. LAW INST. 1995).

“conflict and confusion.”³⁹ In response to this lack of uniformity, the Uniform Law Commission (ULC) suggested that states adopt a uniform statute.

2. *The Uniform Trade Secrets Act*

In 1979, the ULC published the Uniform Trade Secrets Act (UTSA) to provide a simple and flexible statutory solution to trade secret misappropriation.⁴⁰ The UTSA was “the first comprehensive effort to codify the law of trade secrets protection, incorporating the major common law principles while filling gaps left by the courts.”⁴¹

Forty-seven states have adopted the UTSA.⁴² However, states that adopted the UTSA were free to alter their adoptions. Consequently, the UTSA has failed to achieve complete uniformity, even in the states that have adopted it.

3. *State Statutes*

Although the majority of states have adopted the UTSA in whole or in part, small differences between states’ laws can have effects on litigation. Trade secret law uniformity is the subject of heated academic debate.⁴³ Some scholars emphasize the negative consequences of variations between

39. Note, *Theft of Trade Secrets: The Need for a Statutory Solution*, 120 U. PA. L. REV. 378, 378 (1971) (“Meanwhile, the body of state and federal law that has traditionally coped with the problem [of trade secret misappropriation] languishes in a deepening maze of conflict and confusion.”).

40. *Why States Should Adopt the UTSA*, UNIF. LAW COMM’N, <http://www.uniformlaws.org/Narrative.aspx?title=Why%20States%20Should%20Adopt%20UTSA> [https://perma.cc/N2VT-ZXEZ] (last visited Oct. 9, 2016).

41. *Id.*

42. *Trade Secret Act*, UNIF. LAW COMM’N, <http://www.uniformlaws.org/Act.aspx?title=trade%20Secrets%20Act> [https://perma.cc/2PZ6-BHZX] (last visited Oct. 17, 2016). There is dispute over whether North Carolina has adopted a slightly modified version of the UTSA or whether North Carolina’s Trade Secrets Protection Act is so heavily changed that it is not an adoption of the Uniform Trade Secrets Act. See Christopher B. Seaman, *The Case Against Federalizing Trade Secrecy*, 101 VA. L. REV. 317, 353 n. 247 (2015). The ULC does not list North Carolina among the states that have adopted the UTSA. *Trade Secret Act*, UNIF. L. COMM’N, <http://www.uniformlaws.org/Act.aspx?title=trade%20Secrets%20Act> [https://perma.cc/2PZ6-BHZX] (last visited Oct. 17, 2016). Massachusetts and New York, the two other states which have not adopted the UTSA, introduced bills to enact the UTSA in 2016. H. 32, 189th Gen. Court (Mass. 2015); S. 3770, 2015 Leg., Reg. Sess. (N.Y. 2015).

43. See, e.g., R. Mark Halligan, *Protection of U.S. Trade Secret Assets: Critical Amendments to the Economic Espionage Act of 1996*, 7 J. MARSHALL REV. INTELL. PROP. L. 656, 670 (2008) (arguing that worries about the variations between state law are overblown, but that a federal civil statute is still necessary to increase uniformity); Seaman, *supra* note 42, at 352–359 (arguing that state trade secret laws are substantially uniform).

states' trade secrets laws: increased litigation costs, increased investigatory costs, decreased innovation, and increased risk of trade secret misappropriation.⁴⁴ Others argue that state laws are substantially uniform and that stories of the risks of trade secret law's variability are more smoke than fire.⁴⁵ However, the differences in states' laws have real consequences and uniformity is only possible with a federal trade secret law that preempts state laws.

4. *California Trade Secret Law*

California trade secret law provides a useful case study of changes made to the UTSA to enact state policy goals because California adopted a modified version of the UTSA and the California Uniform Trade Secrets Act (CUTSA) has been thoroughly interpreted by the judiciary. The modifications made to the UTSA in the CUTSA protect trade secrets while preserving employee mobility and discouraging anticompetitive behavior.⁴⁶ Silicon Valley's thriving technology industry owes its successes in part to the priority California places on employee mobility.⁴⁷ Additionally, the CUTSA provides a valuable benchmark for federal trade secret statutes because California's law is one of the most often applied trade secret laws.⁴⁸

44. See, e.g., Almeling, *Reasons for Federal Act*, *supra* note 34, at 776–78; R. Mark Halligan, *Revisited 2015: Protection of US Trade Secret Assets: Critical Amendments to the Economic Espionage Act of 1996*, 14 J. MARSHALL REV. INTELL. PROP. L. 476, 496 (2015).

45. See, e.g., Seaman, *supra* note 42, at 353–59.

46. In *Computer Economics, Inc. v. Gartner Group, Inc.*, 50 F. Supp. 2d 980, 985 (S.D. Cal. 1999), the court quoted a Memorandum from Messrs. John Carson and Greg Wood to Assemblyman Harris re: Assembly Bill 501:

One area not addressed by the Uniform Act is the area of plaintiff's abuse in initiating trade secret lawsuits for the purpose of harassing or even driving a competitor out of business by forcing a competitor to spend large sums in defending unwarranted litigation. For example, where a plaintiff's employee quits and opens a competing business, a plaintiff often files a lawsuit for trade secret misappropriation which states that the defendant took and is using plaintiff's trade secrets, but does not identify the trade secrets. The plaintiff can then embark upon extensive discovery which the new business is ill equipped to afford. Furthermore, by not informing the defendant with any degree of specificity as to what the alleged trade secrets are, defendant may be forced to disclose its own business or trade secrets

47. See Gilson, *supra* note 19 (crediting Silicon Valley's success relative to Massachusetts Route 128's high technology corridor to California's restrictions on covenants not to compete).

48. California's state courts saw the most trade secret cases between 1995 and 2009, with 16% of state court trade secret litigation brought in California state courts. David S. Almeling et al., *A Statistical Analysis of Trade Secret Litigation in State Courts*, 46 GONZ.

The DTSA impacts the many litigants who previously used California law.⁴⁹

California adopted the CUTSA in 1984.⁵⁰ The CUTSA differs from the UTSA in several ways.

a) California Trade Secret Disclosure

Under California law, a trade secret owner must disclose the trade secret at issue before pursuing discovery.⁵¹ The UTSA does not suggest this requirement, nor have any other states included it in their statutes. Courts have noted that California's early disclosure rule serves four related policy goals:

First, it promotes well-investigated claims and dissuades the filing of meritless trade secret complaints. Second, it prevents plaintiffs from using the discovery process as a means to obtain the defendant's trade secrets. Third, the rule assists the court in framing the appropriate scope of discovery and in determining whether plaintiff's discovery requests fall within that scope. Fourth, it enables defendants to form complete and well-reasoned defenses, ensuring that they need not wait until the eve of trial to effectively defend against charges of trade secret misappropriation.⁵²

Thus, an early disclosure rule discourages anticompetitive behavior⁵³ and preserves employee mobility by discouraging frivolous lawsuits and limiting a plaintiff's otherwise broad powers of discovery.⁵⁴ California's early disclosure rule enables defendants to more easily defend against both

L. REV. 57, 74 (2010) [hereinafter Almeling, *State Court Statistical Analysis*]. Federal district courts located in California saw the second highest number of trade secret cases between 1995 and 2008. Only federal district courts in Illinois saw more trade secret cases. Almeling, *supra* note 15, at 310.

49. Almeling, *Federal Court Statistical Analysis*, *supra* note 15, at 308.

50. Cal. Civ. Code § 3426 (West 2016).

51. Cal. Civ. Proc. Code § 2019.210 (West 2016) (“[B]efore commencing discovery relating to the trade secret, the party alleging the misappropriation shall identify the trade secret with reasonable particularity[.]”).

52. *Brescia v. Angelin*, 90 Cal. Rptr. 3d 842, 848–49 (Ct. App. 2009).

53. *Comput. Econ.*, 50 F. Supp. 2d at 985 (quoting Memorandum from Messrs. John Carson and Greg Wood to Assemblyman Harris re: Assembly Bill 501).

54. *Mattel, Inc. v. MGA Entm't, Inc.*, 782 F. Supp. 2d 911, 967 (C.D. Cal. 2011) (quoting *Whyte v. Schlage Lock Co.*, 125 Cal. Rptr. 2d 277, 286 (Ct. App. 2002)) (“To prevent employers from using trade secret law as a weapon against employee mobility, California requires that ‘a party seeking to protect trade secrets . . . describe the subject matter of the trade secret with sufficient particularity to separate it from matters of general knowledge in the trade or of special knowledge of those persons who are skilled in the trade, and to permit defendant to ascertain at least the boundaries within which the secret lies.’”).

frivolous and well-founded claims of trade secret misappropriation.⁵⁵

Courts in other states⁵⁶ have identified three policy considerations weighing against requiring early disclosure of trade secrets:⁵⁷

First, plaintiffs are entitled to broad discovery under the Federal Rules of Civil Procedure.⁵⁸ Requiring plaintiffs to disclose their trade secrets early in litigation could bring the litigation to a premature end before plaintiffs get the benefit of broad discovery to ascertain the scope of the misappropriation. Second, plaintiffs may not know which trade secrets a defendant has misappropriated until after discovery.⁵⁹ Third, the requirement forces the plaintiff into a precarious position: disclose too much and reveal new trade secrets, or disclose too little and fail to capture trade secrets that the defendant has misappropriated.⁶⁰

Thus, the choice to adopt an early disclosure rule is a choice based on policy and a decision with a substantial effect on litigation.

b) The CUTSA Has a Broader Definition of Trade Secrets than the UTSA

The UTSA requires that trade secrets not be readily ascertainable by proper means.⁶¹ In contrast, the CUTSA does not include that requirement.⁶² This difference creates broader trade secret protection in

55. *Perlan Therapeutics, Inc. v. Superior Court*, 101 Cal. Rptr. 3d 211, 228–29 (Ct. App. 2009) (“Defendants gain strategic and tactical advantages when they are able to convince trial courts that plaintiffs should be required to provide more details pursuant to section 2019.210 before plaintiffs are able to commence discovery. These advantages could be significant, not only because plaintiffs must ‘go first,’ which allows defendants to tailor their defense to plaintiffs’ disclosure, but also because there is often significant delay and cost in compelling satisfactory interrogatory responses.”).

56. California is the only state with a statutory early disclosure requirement. Margaret A. Esquenet & John F. Hornick, *Trade Secret Identification: The Importance of Timing in Discovery*, FINNEGAN (Feb. 2005) <http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=ac7cf37b-c333-4b4e-bafe-6cb9dda0db42> [https://perma.cc/9YUM-P8UL]. However, courts in others states have occasionally imposed similar disclosure requirements. *See, e.g.*, *Del Monte Fresh Produce Co. v. Dole Food Co. Inc.*, 148 F. Supp. 2d 1322, 1323 (S.D. Fla. 2001); *MSCI Inc. v. Jacob*, 945 N.Y.S.2d 863, 865 (Sup. Ct. 2012); *Vesta Corp. v. Amdocs Mgmt. Ltd.*, 147 F. Supp. 3d 1147, 1153 (D. Or. 2015).

57. *DeRubeis v. Witten Techs., Inc.*, 244 F.R.D. 676, 680 (N.D. Ga. 2007).

58. *Id.*

59. *Id.*

60. *Id.*

61. UNIF. TRADE SECRET ACT § 1(4)(i) (UNIF. LAW COMM’N 1985).

62. Cal. Civ. Code § 3426.1(d) (West 2016); *Imax Corp. v. Cinema Techs., Inc.*, 152 F.3d 1161, n. 10 (9th Cir. 1998) (quoting *ABBA Rubber Co. v. Seaquist*, 286 Cal. Rptr. 518, 528, n.9 (Ct. App. 1991)) (“The district court ruled that Imax ‘conveniently

California than in states that have adopted the UTSA's proposed definition. For example, customer lists may be more likely to be protected by trade secret law in California than in other jurisdictions with the "readily ascertainable" restriction.⁶³ Colorado,⁶⁴ Illinois,⁶⁵ and Oregon,⁶⁶ like California, do not exclude "readily ascertainable" trade secrets.

c) California Courts Reject the Inevitable Disclosure Doctrine

The inevitable disclosure doctrine allows an employer to prevent a former employee from working for a competitor even without evidence of actual misappropriation.⁶⁷ The theory behind this doctrine is that a former employee, armed with their former employer's trade secrets, will inevitably use those trade secrets to their new employer's advantage.⁶⁸

California courts have explicitly rejected the inevitable disclosure doctrine.⁶⁹ In *Whyte v. Schlage Lock Co.*, the court found that the doctrine conflicted with California's strong policy "favoring employee mobility."⁷⁰ Since the inevitable disclosure doctrine arises entirely out of the judicially crafted common law, its use and development vary across the states. A few states, like California, have firmly rejected the inevitable disclosure doctrine.⁷¹ Several states have embraced the inevitable disclosure doctrine,⁷² while a few states, including Kansas and Kentucky, have not addressed the issue.⁷³ Many states' courts have applied the doctrine

overlook[ed] the [Uniform Trade Secret Act] requirement that to qualify as a "trade secret" the information at issue must not be available through public means.' We note, however, that whether information is "readily ascertainable" is not part of the definition of a trade secret in California.'").

63. Almeling, *State Court Statistical Analysis*, *supra* note 48, at 74 (stating that 68% of California's trade secret cases are customer list cases, compared to 49% of cases in other states' courts); *see, e.g., ABBA Rubber*, 286 Cal. Rptr. at 528 (holding that customer list can be trade secret even if information it contains was available from trade directory).

64. COLO. REV. STAT. § 7-74-102(4) (2016).

65. 765 ILL. COMP. STAT. 1065/2(d) (1998).

66. OR. REV. STAT. § 646.461(4) (2015).

67. *PepsiCo, Inc. v. Redmond*, 54 F.3d 1262 (7th Cir. 1995).

68. *Id.*

69. *Whyte v. Schlage Lock Co.*, 125 Cal. Rptr. 2d 277, 291 (Ct. App. 2002).

70. *Id.*

71. Ryan M. Wiesner, *A State-by-State Analysis of Inevitable Disclosure: A Need for Uniformity and a Workable Standard*, 16 MARQ. INTELL. PROP. L. REV. 211, 216-28(2012).

72. *Id.* (listing Arkansas, Connecticut, Delaware, Illinois, Iowa, North Carolina, Pennsylvania, Utah, and Washington as states that have adopted the inevitable disclosure doctrine).

73. *Id.* (listing Colorado, Louisiana, Maryland, and Virginia as states that, like California, have rejected the inevitable disclosure doctrine).

intermittently and inconsistently.⁷⁴

The inconsistency of state statutes and common law points to the need for a nationally consistent federal law. Trade secret owners, innocent employees, and thieves cross state lines. A national trade secret law is necessary.

5. *Federal Trade Secret Law Leading Up To The DTSA*

In 1996, the Economic Espionage Act (EEA) became the first federal criminal statute to address trade secret misappropriation directly.⁷⁵ However, the EEA did not provide for a civil cause of action for trade secret misappropriation.

Legal scholars and legislators have long felt that the patchwork of state laws and the EEA do not provide sufficient protection for trade secrets.⁷⁶ Legislators have tried to create a federal civil cause of action as far back as 1965.⁷⁷ Efforts to create a federal civil cause of action escalated before the passage of the DTSA. Legislators unsuccessfully introduced bills with a civil cause of action for trade secret misappropriation in 2012,⁷⁸ 2013,⁷⁹ 2014,⁸⁰ 2015,⁸¹ and, ultimately succeeded in 2016.⁸² The DTSA, enacted on May 11, 2016, finally introduced a federal civil cause of action for trade secret misappropriation.⁸³

Proponents laud the DTSA for providing greater protection to trade secrets, which constitute a significant portion of the economy⁸⁴ and are

74. *Id.* (compiling case law on the inevitable disclosure doctrine in states that have considered the issue and finding that courts in Florida, Indiana, Massachusetts, Michigan, Minnesota, New Jersey, New York, and Texas apply the doctrine inconsistently).

75. Robin L. Kuntz, *How Not to Catch a Thief: Why the Economic Espionage Act Fails to Protect American Trade Secrets*, 28 BERKELEY TECH. L.J. 901, 904 (2013).

76. *See, e.g., Theft of Trade Secrets, supra* note 39, at 378 (“Meanwhile, the body of state and federal law that has traditionally coped with the problem languishes in a deepening maze of conflict and confusion.”).

77. J. M. C., *Trade Secrets Law After Sears and Compco*, 53 VA. L. REV. 356, 372–74 (1967).

78. Protecting American Trade Secrets and Innovation Act of 2012, S. 3389, 112th Cong.

79. Private Right of Action Against Theft of Trade Secrets Act of 2013, H.R. 2466, 113th Cong.

80. Defend Trade Secrets Act of 2014, S. 2267, 114th Cong.

81. Defend Trade Secrets Act of 2015, H.R. 3326, 115th Cong.

82. Defend Trade Secrets Act of 2016, Pub. L. No. 114-153, 130 Stat. 376 (to be codified in scattered sections of 18 U.S.C.).

83. *See* Obama, *supra* note 1.

84. Alissa Cardillo, *Another Bite at the Apple for Trade Secret Protection: Why Stronger Federal Laws Are Needed to Protect a Corporation’s Most Valuable Property*, 10 BROOK. J. CORP. FIN. & COM. L. 577, 577 (2016).

increasingly at risk of digital theft.⁸⁵ The DTSA brought trade secrets under Congressional control so that Congress could craft cohesive intellectual property policy.⁸⁶ The DTSA provides greater extraterritorial reach than state civil trade secret laws⁸⁷ amid growing fears of international trade secret theft.⁸⁸ Proponents of a federal civil law hoped that federal legislation would bring uniformity to trade secret law.⁸⁹ However, the DTSA failed to create uniformity by not preempting state laws.

II. THE DEFEND TRADE SECRETS ACT

This Part provides an overview of the major provisions of the DTSA. This side-by-side comparison of the definitions and provisions of the DTSA with the UTSA and various state statutes reveal specific ways in which the DTSA has increased the variability of trade secret law. The differences between the DTSA and state statutes begin in the definitions that delimit the scope of the law.

A. DEFINITIONS

1. *Trade Secret*

The DTSA modified the definition of trade secret found in the EEA to more closely align with the definition in the UTSA.⁹⁰ The EEA definition was broader than the UTSA definition.⁹¹ One difference between the definition in the UTSA and the EEA that broadened the definition of trade

85. *Economic Espionage and Trade Secret Theft: Are Our Laws Adequate for Today's Threats? Hearing Before the Subcomm. on Crime & Senate Terrorism of the S. Comm. on the Judiciary*, 113th Cong. 3 (2014) (testimony of Drew Greenblatt) (“Trade secrets increasingly are at risk in today’s mobile and interconnected global marketplace. Estimates of losses from trade secrets theft range from one to three percent of GDP in the United States and other advanced developed economies. The head of the National Security Agency and U.S. Cyber Command believes theft costs American companies \$250 billion per year.”).

86. Almeling, *Reasons for Federal Act*, *supra* note 34, at 788–91.

87. Halligan, *supra* note 44, at 495.

88. See EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, ADMINISTRATION STRATEGY ON MITIGATING THE THEFT OF U.S. TRADE SECRETS 1–2 (2013).

89. Almeling, *Reasons for Federal Act*, *supra* note 34, at 776–82.

90. See *Defend Trade Secrets Act of 2016* § 2(b)(1), Pub. L. No. 114-153, 18 U.S.C. § 1839(3), 130 Stat. 376, 380.

91. *United States v. Hsu*, 155 F.3d 189, 196 (3d Cir. 1998) (“The EEA’s definition of a ‘trade secret’ is similar to that found in a number of state civil statutes and the Uniform Trade Secrets Act (‘UTSA’), a model ordinance which permits civil actions for the misappropriation of trade secrets. There are, though, several critical differences which serve to broaden the EEA’s scope.”).

secrets protected by the EEA was that trade secrets protected by the EEA must derive “independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public,” while the UTSA only requires that trade secrets derive “independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.”⁹² The DTSA replaces the words “the public” in the EEA definition with the words “another person who can obtain economic value from the disclosure or use of the information.”⁹³ Thus, the DTSA definition is more similar to the UTSA definition than the EEA definition was. However, the DTSA definition preserves some other differences between the EEA and UTSA definitions and may still be broader than the UTSA definition.⁹⁴ The DTSA definition is meant to be substantively similar to the UTSA definition, despite these differences.⁹⁵

Although the DTSA definition is substantially similar to the UTSA definition, it is not necessarily similar to the definitions adopted in state laws. Recall that California adopted a broader trade secret definition by not requiring that a trade secret not be “readily ascertainable.”⁹⁶ Other states

92. *Hsu*, 155 F.3d at 196 (“[T]he EEA alters the relevant party from whom proprietary information must be kept confidential. Under the UTSA, information classified as a “trade secret” cannot be generally known by businesspersons or competitors of the trade secret owner. UTSA § 1(4). The EEA, however, indicates that a trade secret must not be generally known to, or readily ascertainable by, the general public, rather than simply those who can obtain economic value from the secret’s disclosure or use.”). *Compare* Economic Espionage Act, 18 U.S.C. § 1839(3)(b) (2012) (Trade secrets are “information [that] derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public[.]”), *with* Unif. Trade Secret Act § 1(4)(i) (Unif. Law Comm’n amended 1985) (Trade secrets are information that “derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use[.]”).

93. Defend Trade Secrets Act of 2016 § 2(b)(1), Pub. L. No. 114-153, 18 U.S.C. § 1839(3), 130 Stat. 376, 380.

94. *Hsu*, 155 F.3d at 196 (“There are, though, several critical differences which serve to broaden the EEA’s scope. First, and most importantly, the EEA protects a wider variety of technological and intangible information than current civil laws. Trade secrets are no longer restricted to formulas, patterns, and compilations, but now include programs and codes, ‘whether tangible or intangible, and whether or how stored.’ “).

95. S. REP. NO. 114-220, at 10 (2016) (“While other minor differences between the UTSA and Federal definition of a trade secret remain, the Committee does not intend for the definition of a trade secret to be meaningfully different from the scope of that definition as understood by courts in States that have adopted the UTSA.”).

96. *See* Cal. Civ. Code § 3426.1(d) (West 2016); *see also supra* Section I.C.4.b).

have modified the scope of a trade secret in other ways. For example, Tennessee's definition is broader than the UTSA's definition because it identifies categories of information not listed in the UTSA.⁹⁷

2. *Misappropriation*

The DTSA added a definition of misappropriation that was not included in the original EEA.⁹⁸ The DTSA and recommended UTSA definitions are substantially identical.⁹⁹ In the DTSA, misappropriation is defined as “acquisition of a trade secret” by someone “who knows or has reason to know that the trade secret was acquired by improper means,” or “disclosure or use of a trade secret . . . without express or implied consent” by someone who improperly acquired the trade secret or who knew or had reason to know that the information was an improperly acquired or disclosed trade secret.¹⁰⁰ Although the DTSA definition is substantially identical to the UTSA definition, a few states have modified the definition of misappropriation in their adoptions of the UTSA. For example, Alabama's statute defines misappropriation in terms of “[a] person who discloses or uses the trade secret of another, without a privilege to do so.”¹⁰¹

B. DAMAGES AND REMEDIES

1. *Injunctions*

The DTSA allows courts to grant an injunction “to prevent actual or threatened misappropriation,” so long as the injunction does not prevent a person's employment.¹⁰² Although the DTSA injunction provision was “drawn directly from” the UTSA,¹⁰³ there is one difference between the injunctive relief offered by the DTSA and that recommended by the UTSA.

97. *Hamilton-Ryker Grp., LLC v. Keymon*, No. W200800936COAR3CV, 2010 WL 323057, at *14 (Tenn. Ct. App. Jan. 28, 2010) (“The Tennessee legislature adopted . . . additions which make Tennessee's definition even broader than the definition in the Uniform Act.”).

98. *Compare* Defend Trade Secrets Act of 2016 § 2(b)(3), Pub. L. No. 114-153, 18 U.S.C. § 1839(5), 130 Stat. 376, 381 (adding a definition for misappropriation to 18 U.S.C. § 1839), *with* Economic Espionage Act, 18 U.S.C. § 1831(a) (2013) (defining the *actus reus* and *mens rea* necessary for criminal economic espionage, not civil trade secret misappropriation).

99. *Compare* Defend Trade Secrets Act of 2016 § 2(b)(3), Pub. L. No. 114-153, 130 Stat. 376 (defining actionable misappropriation under the DTSA), *with* UNIF. TRADE SECRET ACT § 1(4)(i) (UNIF. LAW COMM'N 1985) (defining misappropriation in substantially similar language as the DTSA).

100. Defend Trade Secrets Act of 2016 § 2(b)(3), Pub. L. No. 114-153, 130 Stat. 376.

101. Ala. Code § 8-27-3 (1987).

102. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 130 Stat. 376.

103. H.R. Rep. No. 114-529 at 12 (2016).

The UTSA specifies that “an injunction shall be terminated when the trade secret has ceased to exist, but the injunction may be continued for an additional reasonable period of time in order to eliminate commercial advantage that otherwise would be derived from the misappropriation.”¹⁰⁴ The DTSA contains no such limitation, but rather allows injunctions “on such terms as the court deems reasonable.”¹⁰⁵ It is unclear what effect this difference in language will have. As with most provisions of the UTSA, some states have modified the injunction provision and thus have statutes which differ from both the UTSA and DTSA. For example, the adoptions of the UTSA in Alabama¹⁰⁶ and Colorado¹⁰⁷ lack the limitation that “an injunction shall be terminated when the trade secret has ceased to exist.”

2. Damages

The DTSA authorizes monetary damages for “actual loss caused by the misappropriation,” and “any unjust appropriation” beyond the amount included in the “actual loss.”¹⁰⁸ Alternately, the DTSA authorizes the use of a “reasonable royalty.”¹⁰⁹ The DTSA allows punitive or exemplary damages up to double the amount of compensatory and unjust enrichment damages in cases of willful and malicious misappropriation.¹¹⁰ In very similar language, the UTSA authorizes the same damages subject to the caveat that damages should not be awarded “to the extent that a material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation renders a monetary recovery inequitable.”¹¹¹ Eleven states do not include this limitation in their adoptions of the UTSA.¹¹² It is unclear

104. UNIF. TRADE SECRET ACT § 2 (UNIF. LAW COMM’N 1985).

105. Defend Trade Secrets Act of 2016 §2(a), 18 U.S.C. § 1836(b)(3)(A)(i), 130 Stat. at 379–80.

106. Ala. Code § 8-27-4(a)(1)a (1987).

107. Colo. Rev. Stat. § 7-74-103 (2016).

108. Defend Trade Secrets Act of 2016 § 2(a), 18 U.S.C. § 1836(b)(3)(B)(i), 130 Stat. at 380.

109. Defend Trade Secrets Act § 2(a), 18 U.S.C. § 1836(b)(3)(B)(ii), 130 Stat. at 380.

110. Defend Trade Secrets Act § 2(a), 18 U.S.C. § 1836(b)(3)(C), 130 Stat. at 380.

111. UNIF. TRADE SECRET ACT § 3(a) (UNIF. LAW COMM’N 1985).

112. Alabama, Arkansas, California, Connecticut, Georgia, Illinois, Indiana, Louisiana, Texas, Virginia, and Washington’s trade secret statutes do not limit monetary damages “to the extent that a material and prejudicial changes of position prior to acquiring knowledge or reason to know of misappropriation renders a monetary recovery inequitable.” ALA. CODE § 8-27-4 (1987); ALASKA STAT. § 45.50.915 (2011); ARK. CODE ANN. § 4-75-606 (2017); CAL. CIV. CODE § 3426.3 (West 2016); CONN. GEN. STAT. § 35-53 (1995); GA. CODE ANN. § 10-1-763 (2016); 765 ILL. COMP. STAT. § 1065/4 (1998); IND. CODE § 24-2-3-4 (1984); LA. STAT. ANN. § 51:1433 (2016); TEX. CIV. PRAC. & REM CODE ANN. § 134A.004 (2015); VA. CODE ANN. § 59.1-338 (1990); WASH. REV. CODE § 19.108.030 (1981).

whether the lack of this restriction in the DTSA will affect monetary damages awards.

3. *Attorney's Fees and Litigation Costs*

The DTSA provides that a prevailing party may recover reasonable attorney's fees "if a claim of the misappropriation is made in bad faith," if "a motion to terminate an injunction is made or opposed in bad faith, or the trade secret was willfully and maliciously misappropriated."¹¹³ The UTSA contains the same provision, in very similar language.¹¹⁴ Some states that have adopted the UTSA have changed this rule. For example, the statutes in Alaska,¹¹⁵ Idaho,¹¹⁶ Missouri,¹¹⁷ and Nebraska¹¹⁸ do not provide for the award of attorney's fees. The laws of California,¹¹⁹ New Jersey,¹²⁰ and Pennsylvania¹²¹ allow for recovery of both attorney's fees and litigation costs. The Vermont Trade Secrets Act awards attorney's fees and litigation costs to the substantially prevailing party.¹²²

C. EX-PARTE SEIZURE

The ex-parte seizure provision¹²³ is one of the most controversial aspects of the DTSA.¹²⁴ This provision allows a court to grant an ex-parte seizure order in "extraordinary circumstances" where it is "necessary to prevent the propagation and dissemination of the trade secret."¹²⁵ The statute strictly limits the circumstances under which a court may order an ex-parte seizure.¹²⁶ Several scholars have already analyzed this controversial provision.¹²⁷ Opponents of the provision fear that it will lead

113. Defend Trade Secrets Act of 2016 § 2(a), 18 U.S.C. § 1836(C), 130 Stat. at 380.

114. UNIF. TRADE SECRET ACT § 4 (UNIF. LAW COMM'N 1985).

115. ALASKA STAT. § 45.50.915 (2011).

116. IDAHO CODE § 48-803 (1990).

117. MO. REV. STAT. § 417.457 (2016).

118. NEB. REV. STAT. § 87-504 (1988).

119. CAL. CIV. CODE § 3426.4 (West 2016).

120. N.J. STAT. ANN. § 56:15-6 (West 2016).

121. 12 PA. CONS. STAT. § 5305 (2004).

122. VT. STAT. ANN. tit. 9, § 4603 (2016).

123. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(b)(2), 130 Stat. at 376-79.

124. Seaman, *supra* note 42, at 342.

125. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(b)(2), 130 Stat. at 376-79.

126. *Id.*

127. See, e.g., James Pooley, *The Myth of the Trade Secret Troll: Why the Defend Trade Secrets Act Improves the Protection of Commercial Information*, 23 GEO. MASON L. REV. 1045 (2016); David S. Levine & Sharon K. Sandeen, *Here Come the Trade Secret Trolls*, 71 WASH. & LEE L. REV. ONLINE 230 (2015).

to anticompetitive litigation with businesses attempting to seize their competitor's trade secrets.¹²⁸ Proponents of the provision argue that the provision protects against unfair seizures through a narrow "extraordinary circumstances" standard and by providing victims of unfounded seizure orders with a cause of action for damages resulting from the seizure.¹²⁹

As of October 28, 2016, courts have only granted two ex parte seizures.¹³⁰ Courts have required plaintiffs requesting an ex parte seizure to show why a temporary restraining order or preliminary injunction issued under Federal Rule of Civil Procedure 65 is insufficient, and have found those arguments unconvincing more often than not.¹³¹ In addition to showing that a temporary restraining order would be inadequate, plaintiffs requesting an ex parte seizure must provide sufficient evidence for the court to make seven additional factual findings.¹³² This evidentiary burden is

128. David S. Levine & Sharon K. Sandeen, *An Open Letter to the Sponsors of the Revised Defend Trade Secrets Act* (Aug. 3, 2015), <http://cyberlaw.stanford.edu/publications/open-letter-sponsors-revised-defend-trade-secrets-act> [<https://perma.cc/B2ZH-PBVD>].

129. Pooley, *supra* note 127, at 1063.

130. Tony Dutra, *Trade Secret Law Seizure Provision Little-Used So Far*, Bloomberg BNA (Oct. 31, 2016), <https://www.bloomberglaw.com> [<https://perma.cc/YLJ9-LYLJ>] ("[C]ourts have issued seizure orders in only two cases, according to panelists at an Oct. 28 discussion during the 2016 meeting of the American Intellectual Property Law Association in Washington."); *see, e.g.*, *Mission Capital Advisors, LLC v. Romaka*, No. 1:16-cv-05878-LLS (S.D.N.Y. July 29, 2016) (ordering that customer contact lists be seized from defendant after an original ex parte seizure motion was denied and the defendant failed to appear at hearings and ignored court orders).

131. *See, e.g., OOO Brunswick Rail Management v. Sultanov*, where the court stated:

A court may issue a seizure order only if, among other requirements, an order under Fed. R. Civ. P. 65 or another form of equitable relief would be inadequate. 18 U.S.C. § 1836(b)(2)(A)(ii). Here, the Court finds that seizure under the DTSA is unnecessary because the Court will order that Sultanov must deliver these devices to the Court at the time of the hearing scheduled below, and in the meantime, the devices may not be accessed or modified.

No. 5:17-CV-00017-EJD, 2017 WL 67119, at *2 (N.D. Cal. Jan. 6, 2017); *Jones Printing, LLC v. Adams Lithographing Co.*, 1:16-cv-442 (E.D. Tenn. Nov. 3, 2016) ("Perhaps most importantly, Plaintiff does not specify why relief under Rule 65 is inadequate in this case, which appears to be the preferred form of injunctive relief under § 1836 to date.").

132. In *Balearia Caribbean Ltd. Corp. v. Calvo*, the court held:

Under the recently enacted DTSA, the Court may only issue an ex parte seizure order in 'extraordinary circumstances' and only after making eight factual findings: (1) an order issued pursuant to Rule 65 of the Federal Rules of Civil Procedure would be inadequate, (2) an immediate and irreparable injury would occur if seizure is not ordered, (3) the harm to the movant from denial of the order outweighs the harm to the

especially high considering the very early stage of litigation at which an ex parte seizure is requested. The high evidentiary burden and unlikely success may convince plaintiffs to rely on more traditional temporary restraining orders. Although the initial reticence to grant ex parte seizures may be due to the DTSA's youth and courts' reluctance to be the first to award a new remedy, it seems, at least initially, that fears of overuse of the provision are overblown.

D. STATUTE OF LIMITATIONS

The statute of limitations for claims under the DTSA is three years,¹³³ consistent with the UTSA.¹³⁴ However, some states have adopted statutes of limitations that differ from the UTSA's three-year limit. For example, the Alabama legislature shortened the statute of limitations to two years.¹³⁵ The statutes in Maine,¹³⁶ Nebraska,¹³⁷ and Ohio¹³⁸ extended the statute of limitations to four years. The statutes in Georgia,¹³⁹ Illinois,¹⁴⁰ and

legitimate interests of the person against whom seizure would be ordered, and substantially outweighs the harm to any third parties; (4) the movant is likely to succeed in showing that the information is a trade secret and the person against whom seizure would be ordered misappropriated the trade secret by improper means or conspired to use improper means to do so, (5) the person against whom seizure is to be ordered has actual possession of the trade secret and the property to be seized; (6) the motion describes with reasonable particularity the matter to be seized and identifies, to the extent practicable, the location where the matter is to be seized, (7) the person against whom seizure would be ordered, or persons acting in concert, would destroy, move, hide, or otherwise make such matter inaccessible to the court if the movant were to proceed on notice, and (8) the movant has not publicized the requested seizure.

No. 1:16-cv-23300-KMV (S.D. Fla. Aug. 5, 2016).

133. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(d), 130 Stat. 376, 380 (“A civil action under subsection (b) may not be commenced later than 3 years after the date on which the misappropriation with respect to which the action would relate is discovered or by the exercise of reasonable diligence should have been discovered. For purposes of this subsection, a continuing misappropriation constitutes a single claim of misappropriation.”).

134. UNIF. TRADE SECRET ACT § 6 (UNIF. LAW COMM’N 1985). (“An action for misappropriation must be brought within 3 years after the misappropriation is discovered or by the exercise of reasonable diligence should have been discovered.”).

135. Ala. Code § 8-27-5 (1987).

136. Me. Rev. Stat. Ann. tit. 10, § 1547 (2016).

137. Neb. Rev. Stat. § 87-506 (1988).

138. Ohio Rev. Code Ann. § 1333.66 (LexisNexis 2016).

139. Ga. Code Ann. § 10-1-766 (2016).

140. 765 Ill. Comp. Stat. 1065/7 (1998).

Missouri¹⁴¹ extended the statute of limitations to five years. The Vermont Trade Secrets Act doubled the UTSA's statute of limitations to six years.¹⁴²

E. PRE-DISCOVERY DISCLOSURE OF TRADE SECRETS

Unlike the CUTSA, the DTSA does not explicitly require that a trade secret owner alleging misappropriation disclose the trade secrets at issue before commencing discovery. Whether federal courts will impose this requirement is an open question.¹⁴³

F. INEVITABLE DISCLOSURE DOCTRINE

The DTSA appears to reject the inevitable disclosure doctrine, because a court may grant an injunction “to prevent any actual or threatened misappropriation,”¹⁴⁴ but may not “prevent a person from entering into an employment relationship.”¹⁴⁵ All conditions placed by a court on a party's employment must “be based on evidence of threatened misappropriation and not merely on the information the person knows.”¹⁴⁶ Injunctions under the Act may not “conflict with an applicable State law prohibiting restraints on the practice of a lawful profession, trade, or business.”¹⁴⁷

A court applying the DTSA in California should not use the inevitable disclosure doctrine to enjoin a party's employment, because California has rejected the inevitable disclosure doctrine. However, whether the inevitable disclosure doctrine may be used to prove misappropriation is an open question.¹⁴⁸ Thus, a court may impose monetary damages under an inevitable disclosure theory.¹⁴⁹ Consequently, while the DTSA did not

141. Mo. Rev. Stat. § 417.461 (2016).

142. Vt. Stat. Ann. tit. 12, § 523 (2016).

143. Warren Braunig & Andrea Nill Sanchez, *What the Defend Trade Secrets Act Means for California*, RECORDER (July 23, 2016), <http://www.therecorder.com/id=1202762489915/What-the-Defend-Trade-Secrets-Act-Means-for-California?slreturn=20160914114004> [<https://perma.cc/T3UB-NVD6>].

144. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(b)(3)(A)(i), 130 Stat. 376, 379–80.

145. *Id.*

146. *Id.*

147. *Id.*

148. Victoria Lee, Rajiv Dharnidharka & Katherine Cheung, *Obama Signs Federal Trade Secret Bill into Law: Key Points for IP*, DLA PIPER (May 11, 2016) <https://www.dlapiper.com/en/us/insights/publications/2016/05/obama-signs-federal-trade-secret-bill-into-law/> [<https://perma.cc/69NR-UV6G>]; *cf.* PepsiCo, Inc. v. Redmond, 54 F.3d 1262, 1269 (7th Cir. 1995) (“[A] plaintiff may prove a claim of trade secret misappropriation by demonstrating that defendant's new employment will inevitably lead him to rely on the plaintiff's trade secrets.”).

149. Lee, *supra* note 148.

embrace the inevitable disclosure doctrine, it also did not eliminate it.

G. WHISTLEBLOWERS

The DTSA introduces “immunity from liability for confidential disclosure of a trade secret to the government or in a court filing.”¹⁵⁰ This provision, colloquially known as the whistleblower provision, allows for protected disclosure of a trade secret for “reporting a suspected violation of law” to the government or for filing a lawsuit under seal.¹⁵¹ The DTSA requires employers to notify their employees with contracts governing confidential information of the whistleblower provision’s immunity.¹⁵² If an employer fails to inform their employees about the whistleblower provision, the employer cannot collect exemplary damages or attorney’s fees in a trade secret suit for trade secret misappropriation against the uninformed employee.¹⁵³ The whistleblower provision is a new feature of the DTSA and does not appear in the UTSA or state trade secret laws. The whistleblower provision is the only provision in the DTSA which preempts state law.¹⁵⁴

H. PREEMPTION

The DTSA explicitly does not preempt state laws, except as part of the whistleblower provision.¹⁵⁵ The legislative history of the DTSA is silent on this choice to not preempt. Consequently, we are left to speculate on the possible reasons for this meaningful choice.

The DTSA may explicitly disclaim preemption to be uniform with the EEA,¹⁵⁶ which also expressly rejects preemption. It makes sense for the federal criminal statute to reject preemption. Federal prosecutors are overburdened.¹⁵⁷ Rejecting preemption for federal criminal trade secret

150. Defend Trade Secrets Act of 2016 § 7, 18 U.S.C. § 1833(2), 130 Stat. at 384–86.

151. *Id.*

152. *Id.*

153. *Id.*

154. *Id.* § 7(a), 18 U.S.C. § 1833(b)(1), 130 Stat. at 384 (“An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret [under the whistleblower provision].”).

155. *Id.* § 2(f), 18 U.S.C. § 1838, 130 Stat. at 382 (“Nothing in the amendments made by this section shall be construed to modify the rule of construction under section 1838 of title 18, United States Code, or to preempt any other provision of law.”); *Id.* § 7(a), 18 U.S.C. § 1833(b)(1), 130 Stat. at 384 (“An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret [under the whistleblower provision].”).

156. *See* Economic Espionage Act, 18 U.S.C. § 1838 (2013).

157. BRIAN T. YEH, PROTECTION OF TRADE SECRETS: OVERVIEW OF CURRENT LAW AND LEGISLATION at Summary (2014) (“[B]ecause the U.S. Department of Justice and its

misappropriation allows state prosecutors to share the federal prosecutors' burden and bring more misappropriators to justice. However, a civil cause of action, such as the DTSA, does not suffer from prosecutorial overwork. It does not make sense to extend the choice not to preempt in the EEA to the DTSA on those grounds.

Congress may have chosen not to preempt state laws out of fear of displacing well-developed state laws with undeveloped federal law. Courts have spent decades interpreting state laws.¹⁵⁸ With that precedent comes legal certainty. A new law, such as the DTSA, has no interpretive precedent. However, Congress, for the most part, used identical or similar language to the UTSA.¹⁵⁹ Where the DTSA uses UTSA language, judicial opinions interpreting that language likely exist. If Congress's intent was to avoid uncertainty, it was unnecessary to choose not to preempt state laws.

Congress may have opted not to preempt state laws to allow states to be laboratories of legislative innovation,¹⁶⁰ a commonly cited benefit of federalism.¹⁶¹ A closely related benefit of allowing states to legislate free from federal preemption is that states can enact legislation reflecting their specific policy goals.¹⁶² For example, California has used its trade secret laws to encourage employee mobility. However, the DTSA undermines states' ability to experiment through legislation or enact local policy by

Federal Bureau of Investigation have limited investigative and prosecutorial resources, as well as competing enforcement priorities, some observers assert that the federal government cannot adequately protect U.S. trade secrets from domestic and foreign threats.”); Adam M. Gershowitz & Laura R. Killinger, *The State (Never) Rests: How Excessive Prosecutorial Caseloads Harm Criminal Defendants*, 105 NW. U. L. REV. 261 (2011); Daniel C. Richman & William J. Stuntz, *Al Capone's Revenge: An Essay on the Political Economy of Pretextual Prosecution*, 105 COLUM. L. REV. 583, 613 (2005) (“[E]xtreme disjunction between federal jurisdiction and federal resources has bred a norm of radical underenforcement”).

158. However, some states' laws have been more thoroughly analyzed and interpreted by courts than other states' laws. This is one of the factors cited for the lack of uniformity between states' trade secret laws. See Seaman, *supra* note 42, at 325.

159. See S. REP. NO. 114-220, at 10 (2016) (“[T]he Committee does not intend for the definition of a trade secret to be meaningfully different from the scope of that definition as understood by courts in States that have adopted the UTSA.”).

160. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) (“It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.”).

161. Robert R. M. Verchick & Nina A. Mendelson, *Preemption and Theories of Federalism*, in PREEMPTION CHOICE: THE THEORY, LAW, AND REALITY OF FEDERALISM'S CORE QUESTION 13, 17 (William W. Buzbee ed., 2009).

162. *Id.* at 16 (“[P]olicies chosen within a state will tend to be tailored to local concerns and to citizen preferences.”).

giving plaintiffs the option to sue under the DTSA *or* state law.¹⁶³

Alternatively, perhaps Congress simply wished to provide more options for trade secret owners to protect their trade secrets. If this was Congress's unstated intention, then the choice not to preempt is certainly effective. However, by giving trade secret owners the power to select from state or federal statutes, Congress has given trade secret owners additional power at the expense of employee mobility and fair competition.

Trade secret law should balance competing policy concerns of protecting intellectual property, encouraging fair competition, and preserving employee mobility.¹⁶⁴ By allowing trade secret owners to choose from different federal and state trade secret laws, the DTSA gives trade secret owners more power at the expense of employees and other potential defendants in trade secret misappropriation cases. Thus, this Note argues that Congress should amend the DTSA to preempt state law to better balance the competing policy goals of trade secret law.

III. THE DEFEND TRADE SECRETS ACT SHOULD BE AMENDED TO PREEMPT STATE LAW

Congress acknowledged trade secret law's impact on the relationships between employers and employees when it directly addressed the employment relationship in the DTSA. Under the DTSA, a court may not issue an injunction that prevents someone "from entering into an employment relationship" or that "otherwise conflict[s] with an applicable State law prohibiting restraints on the practice of a lawful profession, trade, or business."¹⁶⁵ The text confirms that Congress entertained policy concerns beyond encouraging innovation and protecting trade secrets when creating the DTSA.¹⁶⁶

However, Congress failed to consider the effect that the DTSA's lack of preemption would have on employees and state policy considerations. Amending the DTSA to preempt state law will better serve the interests of Congress in providing strong, uniform protection of trade secrets while remedying several of the problems caused by a lack of preemption.

This Part first explores some of the problems created by the DTSA's failure to preempt and then discusses the positive ramifications of amending

163. See *supra* Section III.B.4 (discussing the one-way policy ratchet).

164. See *Morlife, Inc. v. Perry*, 66 Cal. Rptr. 2d 731, 734 (Ct. App. 1997) (discussing the delicate balance of trade secret law's competing policy considerations).

165. *Defend Trade Secrets Act of 2016* § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(b)(3)(A), 130 Stat. 376, 379–80.

166. S. Rep. No. 114-220 at 8 (2016).

the DTSA to preempt state and common law. The first Section explains the repercussions of the failure to preempt: decreasing legal uniformity, increasing forum shopping, increasing employee uncertainty, undercutting state law policies, and potentially resuscitating previously extinct common law claims. The second Section explains the benefits of preemption in federal trade secret law: increasing uniformity, decreasing choice of law disputes, increasing employee certainty, and notifying states that their trade secret law policies are undercut by the federal law.

A. PROBLEMS WITH THE LACK OF PREEMPTION

By explicitly disclaiming preemption, the DTSA allows selective preemption at the choice of trade secret owners. A trade secret owner now has the power to choose between federal law and any applicable state laws. Thus, the lack of preemption in the DTSA decreases the uniformity of trade secret law, encourages forum shopping, prevents certainty in employment contexts, and undermines state policy goals. Additionally, the DTSA may reintroduce common law claims previously preempted by state laws. These common law claims may open up defendants to increased liability and further shift the balance of litigious power toward plaintiffs.

1. *Uniformity*

Both proponents and opponents of the DTSA alike criticize the act because the lack of preemption in the DTSA undermines uniformity.¹⁶⁷

While Congress enacted the DTSA partly in response to the variability of state laws,¹⁶⁸ the DTSA fails to unify the law. The DTSA simply adds another layer of protection over the patchwork of state laws. Substantive differences between the DTSA and various state laws increase the overall variability in trade secret law. This variability increases the power of trade secret owners, who, as plaintiffs, will take advantage of the legal variety by choosing the law most friendly to them.¹⁶⁹ For example, the DTSA allows

167. See, e.g., David S. Almeling, *Guest Post: Defend Trade Secrets Act—A Primer, an Endorsement, and a Criticism*, PATENTLY-O (May 30, 2014) <http://patentlyo.com/patent/2014/05/secrets-endorsement-criticism.html> [<https://perma.cc/VJ7R-FJG5>] [hereinafter Almeling, *DTSA Primer*]; Seaman, *supra* note 42, at 359–62.

168. Cf. H.R. Rep. No. 114-529 at 4 (2016) (“While 48 states have adopted variations of the UTSA, the state laws vary in a number of ways and contain built-in limitations that make them not wholly effective in a national and global economy.”).

169. There are already many resources to help plaintiffs choose the “friendliest” trade secret law. See, e.g., Braunig & Sanchez, *supra* note 143; Michael Barbee, *Trade Secret Forum Shopping: DTSA vs. Texas UTSA*, LAW360 (July 20, 2016, 12:05 PM), <http://www.law360.com/articles/819494/trade-secret-forum-shopping-dtsa-vs-texas-utsa> [<https://perma.cc/7UPG-NCEV>]; NAT’L ALL. FOR JOBS & INNOVATION, PROTECTION OF

punitive damages of up to twice the amount of compensatory damages in cases of willful and malicious misappropriation.¹⁷⁰ A plaintiff with the option of bringing a claim under Ohio trade secret law would be encouraged to choose Ohio law over the DTSA because Ohio law allows punitive damages of up to three times compensatory damages.¹⁷¹ Similarly, a plaintiff with the option of filing a case under Alabama trade secret law would be encouraged to choose the DTSA over Alabama law because Alabama law limits potential punitive damages to the amount of compensatory damages.¹⁷² The availability of punitive damages is just one example of differences that will influence plaintiffs' choice of law. The variability in trade secret laws harms employees and other potential defendants who cannot foresee which law will apply to them or their potential scope of liability.

Although some courts de-emphasize differences between various state laws,¹⁷³ the differences between state trade secret laws can be dispositive.¹⁷⁴ Choice of law disputes in 2008, eight years before enactment of the DTSA, occurred in approximately 12% of trade secret cases.¹⁷⁵ Arguments over the

INTELLECTUAL PROPERTY RIGHTS UNDER STATE TRADE SECRET LAWS, (2016), http://naji.org/wp-content/uploads/2016/10/PROTECTION-OF-IP-RIGHTS-UNDER-STATE-TRADE-SECRET-LAWS_NAJI_2016-10-05-1.pdf [<https://perma.cc/M3B6-SDKJ>].

170. Defend Trade Secrets Act of 2016 § 2(a), Pub. L. No. 114-153, 18 U.S.C. § 1836(b)(3)(C), 130 Stat. 376, 380.

171. Ohio Rev. Code. Ann. § 1333.63 (LexisNexis 2016). Similarly, the Mississippi, Missouri, Montana, North Carolina, and Vermont statutes do not explicitly limit punitive damages to double the amount of other damages and could yield larger punitive damages awards than the DTSA. Miss. Code Ann. § 75-26-7(2) (2016); Mo. Rev. Stat. § 417.457(2) (2016); Mont. Code Ann. § 30-14-404(2) (1995); N.C. Gen. Stat. Ann. § 66-154(c) (2016); Vt. Stat. Ann. tit. 9 § 4603(b) (2016).

172. Ala. Code § 8-27-4(a)(3) (1987). Similarly, Arkansas, Colorado, Louisiana, Michigan, Nebraska, and Virginia's statutes either limit the amount of potential punitive damages to less than twice the amount available under the DTSA, or do not mention punitive damages in their statutes. Ark. Code Ann. § 4-75-606 (2017); Colo. Rev. Stat. § 7-74-104(2) (2016); La. Stat. Ann. § 51:1433 (2016); Mich. Comp. Laws § 445.1904 (1998); Neb. Rev. Stat. § 87-504 (1988); Va. Code Ann. § 59.1-338(B) (1990).

173. RF Tech. Corp. v. Applied Microwave Tech., Inc., 369 F. Supp. 2d 17, 22 n. 5 (D. Me. 2005) ("Iowa trade secret law is also based upon the Uniform Trade Secrets Act and contains the same definition of a trade secrets as Maine . . . The Court need not resolve any choice of law issue if the 'outcome is the same under the substantive law of either jurisdiction.'").

174. See, e.g., Katch, LLC v. Sweetser, 143 F. Supp. 3d 854, 865 (D. Minn. 2015) ("Whether California or Minnesota law applies to Katch's trade secrets claim is important because California categorically rejects the 'inevitable disclosure' doctrine.").

175. Almeling, *Federal Court Statistical Analysis*, *supra* note 15, at 312. Choice of law disputes seem to be increasing. *Id.*

choice of law in litigation may signify a lack of substantive uniformity in the laws as each party argues for application of the law most beneficial to them.¹⁷⁶ This lack of uniformity is one of the reasons that proponents of a federal civil cause of action called for a uniform federal law.¹⁷⁷ However, instead of increasing the uniformity of trade secret law, the DTSA decreased uniformity.

The decreased uniformity created by the DTSA is harmful to potential defendants in trade secret cases. Plaintiffs have the option to choose between different federal and state laws. Defendants do not get to decide whether they will be sued under federal or state law. Thus, concurrent federal and state trade secret laws shift the balance of litigious power toward plaintiffs and away from defendants. Additionally, the lack of uniformity in the law may burden all parties due to increased costs associated with contracts governing trade secrets.¹⁷⁸

2. *Forum Shopping*

Both before and after the DTSA, a plaintiff in a trade secret case may be able to select several different forums for its trade secret case: the state of the plaintiff's place of business or incorporation;¹⁷⁹ the state of an individual defendant's domicile;¹⁸⁰ the state of a defendant corporation's place of incorporation or principal place of business;¹⁸¹ any state where the defendant's "affiliations with the State are so 'continuous and systematic' as to render them essentially at home in the forum state;"¹⁸² the state where the alleged misappropriation occurred (location where the conduct causing

176. *Id.*

177. Almeling, *Reasons for Federal Act*, *supra* note 34, at 776–82.

178. Rachel Kincaid, *Foreign Forum-Selection Frustrations: Determining Clause Validity in Federal Diversity Suits*, 4 STAN. J. COMPLEX LITIG. 131, 135 (noting that varying state laws governing enforcement of forum selection clauses creates uncertainty that "creates a barrier to efficient contracting, which ultimately costs parties money").

179. *See, e.g.*, Dayton Superior Corp. v. Yan, 288 F.R.D. 151, 161–62 (S.D. Ohio 2012) (describing situations in which Ohio courts have found personal jurisdiction over employees of Ohio companies who were not themselves Ohio residents).

180. Goodyear Dunlop Tires Operations, S.A. v. Brown, 564 U.S. 915, 924 (2011) ("For an individual, the paradigm forum for the exercise of general jurisdiction is the individual's domicile[.]").

181. Daimler AG v. Bauman, 134 S. Ct. 746, 749 (2014) ("The paradigm all-purpose forums for general jurisdiction are a corporation's place of incorporation and principal place of business.").

182. *Goodyear*, 564 U.S. at 919 (quoting *Int'l Shoe Co. v. Washington*, 326 U.S. 310, 317 (1945)).

the injury occurred);¹⁸³ the state where the trade secrets were allegedly transported to (place where the injury occurred);¹⁸⁴ or the state where harm was felt, if the defendant directed activity toward that forum.¹⁸⁵

Before the DTSA, plaintiffs could only choose state court forums unless they had access to the federal courts through supplemental or diversity jurisdiction. The DTSA gave federal court system access to all parties. Although most parties already had access to federal courts,¹⁸⁶ the DTSA has increased opportunities for plaintiffs to forum shop.

The DTSA has not only increased the opportunities to forum shop, it has increased the incentive to forum shop. Parallel federal and state laws, such as the DTSA and state trade secret laws, allow trade secret owners to choose the applicable statute that is most beneficial to their case. There are already resources to help potential litigants forum shop for the most beneficial law, and therefore, the most beneficial forum.¹⁸⁷

Forum shopping in the case of parallel state and federal law is particularly harmful when it is caused by a plaintiff's desire to select between the federal and state laws because it stifles the defendant's ability to advocate for application of a more forgiving state law. The choice of law disputes in 12% of 2008 trade secret cases were among various state laws, as no federal statute applied to trade secret misappropriation claims at that time.¹⁸⁸ In those 2008 disputes, both the trade secret owner plaintiff and the alleged misappropriator defendant could present arguments for the application of the state law that was most forgiving to their case.¹⁸⁹ The DTSA stifles a defendant's ability to argue for the use of a more beneficial

183. *Lewis v. Fresne*, 252 F.3d 352, 358–59 (5th Cir. 2001) (“A single act by a defendant can be enough to confer personal jurisdiction if that act gives rise to the claim being asserted.”).

184. *Id.* (“A single act by a defendant can be enough to confer personal jurisdiction if that act gives rise to the claim being asserted.”).

185. *See Paolino v. Channel Home Ctrs.*, 668 F.2d 721 (3d Cir. 1981) (holding that Pennsylvania courts had specific jurisdiction over a non-resident company who knew that its misappropriation of a Pennsylvania company's trade secret would cause harm in Pennsylvania). *But see Surgical Laser Techs., Inc. v. C.R. Bard, Inc.*, 921 F. Supp. 281, 284–85 (E.D. Pa. 1996) (holding that Pennsylvania courts did not have specific jurisdiction over a defendant who had not directed any activity at Pennsylvania even though the alleged misappropriation harmed a Pennsylvania company).

186. ROGER M. MILGRIM, 1-1 MILGRIM ON TRADE SECRETS § 13.01 (2015).

187. *See, e.g., Barbee*, *supra* note 169; *Braunig & Sanchez*, *supra* note 143.

188. *Almeling, Federal Court Statistical Analysis*, *supra* note 15, at 312.

189. *Cf. Daimler-Chrysler Servs. N. Am., LLC v. Summit Nat., Inc.*, 289 F. App'x 916, 921 (6th Cir. 2008) (“In tort actions such as this, Michigan choice of law principles provide that Michigan law applies absent a rational reason—such as another state's interest—to apply other law.”).

state law. If the plaintiff determines that the DTSA is better for their case than state law, the plaintiff will only sue under the DTSA. The defendant has no argument for application of a more forgiving state law. This has two adverse effects in addition to increased forum shopping.¹⁹⁰ First, it makes it more difficult for potential defendants to anticipate the direction of potential litigation, making it more difficult for them to make informed choices about their actions. Second, it undercuts the policies that states have incorporated into their trade secret laws.

3. *Employee Uncertainty*

Certainty in trade secret law would allow employees, the most common defendants in trade secret cases, to make informed decisions. Conversely, uncertainty in the law, such as the uncertainty created when an employee does not know whether federal or state law will be used against them, prevents employees from making informed decisions. Employees who wish to go work for their employer's competitor will have to analyze the scope of their liability under not only state law, but federal law as well. Even innocent employees will be dissuaded from changing jobs by potential increased liability and frivolous litigation. Consequently, uncertainty stifles employee mobility.

For example, before the DTSA, a California employee of a California company who left to work for a California competitor knew that California trade secret law would apply to any case their employer brought against them for alleged misappropriation. The employee could plan to leave their current employer for another California employer, safe in the knowledge that California has rejected the inevitable disclosure doctrine, and that California's early disclosure rule would discourage frivolous suits against the employee or new employer. Now, the employee may be sued under the DTSA or California trade secret law. The employee no longer enjoys the certainty of California's defendant-friendly law. Consequently, an innocent employee might be discouraged from seeking new employment by the uncertainty of future litigation.

4. *The DTSA's Faux Federalism Undercuts State Policy Goals*

The DTSA undermines state policies by not preempting state laws. This

190. Allowing a plaintiff to select a federal statute has a positive effect: it eliminates costly choice of law disputes in those cases. However, it does not eliminate choice of law disputes where the plaintiff elects to sue under state law. A better solution would be to preempt state law and only allow plaintiffs to sue under the DTSA. *See infra* Section III.B.3.

counterintuitive result has also occurred in trademark law.

Trademark law, like trade secret law, is governed concurrently by federal and state laws.¹⁹¹ The federal trademark statute, the Lanham Act, does not preempt state trademark laws.¹⁹² Although this scheme seems to empower states to enact their policy goals through trademark statutes, it does not. Professor Mark McKenna has termed this effect of concurrent federal and state trademark law “trademark law’s faux federalism.”¹⁹³

While state and federal claims are available in trademark cases, the state claims are only relevant if they are broader than federal claims.¹⁹⁴ Thus, “[s]tate regulation in this area is a one-way ratchet: state law can only have a meaningful effect to the extent it grants broader rights than are available under federal law.”¹⁹⁵ States can only achieve their policy goals if they increase trademark protection beyond that offered by the Lanham Act.

Similarly, trade secret law is now a one-way ratchet. Only state laws with greater trade secret protection than the federal law will have an effect. If a state’s trade secret laws prioritize policy goals other than protecting trade secrets, such as California’s emphasis on employee mobility,¹⁹⁶ those state policies are undermined by the stronger trade secret protection of the DTSA. For example, if courts interpret the DTSA to not require the plaintiff to disclose the trade secrets at issue early in the litigation, plaintiffs have a clear incentive to choose to sue only under the DTSA and not include a CUTSA claim.¹⁹⁷ This undercuts the policies incorporated in California trade secret law. California requires early disclosure of trade secrets in part to discourage anticompetitive trade secret litigation against a trade secret owner’s competitors.¹⁹⁸ If a California company can avoid California’s early disclosure rule by bringing only a federal claim, the policies behind California’s early disclosure rule are easily circumvented.

State legislatures are lauded as laboratories of legislative

191. Mark P. McKenna, *Trademark Law’s Faux Federalism*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* 288, 288 (Shyamkrishna Balganeshe ed., 2013).

192. *Id.*

193. *Id.*

194. *Id.* at 302.

195. *Id.* at 305.

196. *See Whyte v. Schlage Lock Co.*, 125 Cal. Rptr. 2d 277, 292 (Ct. App. 2002).

197. *Comput. Econ., Inc. v. Gartner Grp., Inc.*, 50 F. Supp. 2d 980, 992 (S.D. Cal. 1999) (“A plaintiff with a weak trade secret claim would have ample reason to choose federal court if it offered a chance to circumvent the requirements of CCP § 2019(d).”).

198. *Id.* at 985 (quoting Memorandum from Messrs. John Carson and Greg Wood to Assemblyman Harris re: Assembly Bill 501).

experimentation.¹⁹⁹ However, when conflicting federal and state laws are allowed to coexist, the plaintiff becomes the experimenter, able to select at will the friendliest law, and the states are lulled into a false sense of security that their laws are implementing their policy concerns.

Although states whose trade secret laws are narrower, or less plaintiff-friendly, will be undermined by the DTSA, states whose trade secret laws are broader, or more plaintiff-friendly, will still see their statutes used. Thus, only state policy concerns that prioritize strong and broad trade secret protection are preserved by the DTSA. States are still free to experiment with stronger trade secret protection than that offered by the DTSA. Congress is, of course, free to structure federal trade secret law as a floor of trade secret protection and allow states to offer stronger protection. However, that choice has extensive policy ramifications. It should merit Congressional debate and deliberation. The complete silence on preemption in the legislative history of this DTSA is evidence that Congress did not specifically establish the DTSA as the floor for trade secret protection, but rather did not consider the broad implications of preemption at all.

5. *DTSA May Resuscitate Common Law Claims Which Were Preempted by State Trade Secret Statutes*

Many states' UTSA adoptions preempt overlapping common law claims,²⁰⁰ such as claims for conversion, unfair competition, and tortious interference.²⁰¹ In contrast, the DTSA preempts nothing.²⁰² This lack of preemption may revive duplicative claims unavailable under state law.²⁰³

Common law claims have a broader reach than trade secret claims. Where statutory trade secret claims require courts to consider the bounds of a trade secret, common law contract and tort claims do not.²⁰⁴ Allowing both

199. *See* *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

200. UNIF. TRADE SECRET ACT § 7 (UNIF. LAW COMM'N 1985) ("Except as provided in subsection (b), this Act displaces conflicting tort, restitutionary, and other law of this State providing civil remedies for misappropriation of a trade secret.").

201. Maia T. Woodhouse, *International Report—Federal Defend Trade Secrets Act: Potential Clashes with Existing State Law Pre-emption*, IAM (July 27, 2016), <http://www.iam-media.com/reports/Detail.aspx?g=d4e1ff66-9f4a-4d8a-a10a-78a808394f15> [<https://perma.cc/44L8-DKSS>].

202. Defend Trade Secrets Act of 2016 § 2(f), Pub. L. No. 114-153, 18 U.S.C. § 1838, 130 Stat. 376, 382.

203. Almeling, *DTSA Primer*, *supra* note 167.

204. Lemley, *supra* note 9, at 314 ("Analyzing trade secret claims as IP claims rather than common law contract or tort claims requires courts to focus on what the law is protecting, how, and why—something the common law did not do.").

a federal claim under the DTSA and common law claims arising out of the same set of facts may increase defendants' liability and litigation costs.²⁰⁵ This increased liability may limit competition through fear of overbroad litigation.²⁰⁶

B. PROPOSAL FOR AMENDING THE DTSA TO INCLUDE PREEMPTION

To address the problems caused by the DTSA's failure to preempt state and common law claims, this Note recommends a simple solution: Congress should amend the DTSA to preempt state trade secret claims and related common law claims. Amending the DTSA to preempt state civil trade secret laws would decrease time intensive and costly choice of law disputes. Additionally, it would allow employees to foresee potential litigation and make decisions accordingly, thus enabling employee mobility. It would also put states on notice that state trade secret law is no longer a vehicle for the state's policies, encouraging states to incorporate those policy considerations into other laws, such as employment or contract law.

1. *Preemption Would Increase Uniformity in Trade Secret Law*

Amending the DTSA to preempt state trade secret law would replace the current scheme of fifty state trade secrets laws and one federal law with a single federal law. One federal law is inherently more uniform than fifty-one laws covering the same topic.

Although amending the DTSA to preempt state laws will not eliminate forum shopping among federal courts, it will certainly remove one of the incentives to forum shop. Without preemption, companies are encouraged to forum shop for substantive differences in governing statutes. Amending the DTSA to preempt state law claims would eliminate that incentive.

2. *Preemption Would Decrease Costly Choice of Law Disputes*

If the DTSA were amended to preempt state trade secret laws, choice of law disputes would decrease. Since trade secret law is intertwined with the law governing contractual and employment relationships, amending the DTSA to preempt state trade secret law will not eliminate choice of law disputes completely,²⁰⁷ but will minimize them. Thus, preemption of state

205. Woodhouse, *supra* note 201.

206. Lemley, *supra* note 9, at 314 ("Understanding trade secrets . . . as imposing a consistent set of standards on claims that would otherwise be based on disparate legal theories and claims of entitlement or free riding-advances the goals of innovation and promotes responsible business conduct without limiting the vigorous competition on which a market economy is based.").

207. Almeling, *Reasons for Federal Act*, *supra* note 34, at 781–82.

trade secret laws will decrease the cost and complexity of trade secret litigation.

3. *Preemption Would Provide Potential Defendants with Certainty*

Amending the DTSA to preempt state law would provide potential defendants with certainty about which law governs their conduct. Consequently, they would be able to make informed choices. Employees, the most common defendant in trade secret cases, would not be discouraged from changing employment by uncertainty. Thus, amending the DTSA to preempt state laws would encourage employee mobility.

4. *Preemption Would Put States on Notice that Trade Secret Law is No Longer a Valid Vehicle for their Policy Concerns*

Trademark law's "faux federalism" has gone largely unnoticed by state legislatures.²⁰⁸ Professor McKenna has speculated that "the extent of federalization has been obscured by the appearance of concurrent regulation."²⁰⁹ Similarly, concurrent regulation in trade secret law may obscure the degree to which the DTSA undercuts state law policies. If the DTSA were amended to preempt state laws, states would be put on notice that they can no longer rely on trade secret law to enact policy goals.

Trade secret claims are inherently intertwined with other state law doctrines, such as employment law.²¹⁰ The laws that accompany many trade secret claims can incorporate state policy concerns, and thus both uniform trade secret laws and state policy goals can exist simultaneously. For example, states can incorporate concerns about employee mobility in laws restricting agreements not to compete, as California has done.²¹¹ Additionally, states that have judicially adopted California's early disclosure rule, or who have not addressed the issue, could enact statutes that explicitly adopt the early disclosure rule and thus provide potential trade secret misappropriation defendants with additionally procedural protection against frivolous lawsuits. Thus, other areas of law, such as contract law, employment law, and procedural rules can be used to enact the policies currently ingrained in state's trade secret statutes and judicial interpretations of those statutes.

208. McKenna, *supra* note 191, at 304–05.

209. *Id.* at 305.

210. Almeling, *Reasons for Federal Act*, *supra* note 34, at 793–94.

211. CAL. BUS. & PROF. CODE § 16600 (West 2017) ("Except as provided in this chapter, every contract by which anyone is restrained from engaging in a lawful profession, trade, or business of any kind is to that extent void.").

IV. CONCLUSION

Congress should amend the DTSA to preempt state law and common law trade secret claims while preserving states' employment and contract laws. This amendment would better balance the competing concerns of trade secret law. It would preserve the DTSA's strong trade secret protection, thus motivating innovation and disclosure. It would also encourage employee mobility and fair competition and allow states to incorporate policy concerns through other areas of law, such as employment and contract law.

SPOKEO, INC. V. ROBINS: DETERMINING WHAT MAKES AN INTANGIBLE HARM CONCRETE

Vanessa K. Ing[†]

In 1970, Congress enacted the Fair Credit Reporting Act (FCRA) to “prevent consumers from being unjustly damaged because of inaccurate or arbitrary information in a credit report.”¹ Congress did so in recognition that “there is a need to insure that consumer reporting agencies exercise their grave responsibilities with fairness, impartiality, and a respect for the consumer’s right to privacy.”² Today, in the Internet Age, companies, policymakers, and courts struggle with the scope of the FCRA’s application to the online reporting of consumer data.³

*Spokeo, Inc. v. Robins*⁴ illustrates the struggle to apply the FCRA to enforce the modern consumer’s right to privacy. In *Spokeo*, the plaintiff brought suit under the FCRA based on inaccurate information about him that was posted online.⁵ *Spokeo* also touches on larger questions in the

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1. S. REP. NO. 91-517, at 1 (1969).

2. Fair Credit Reporting Act, 15 U.S.C. § 1681(a)(4) (2012).

3. See Natasha Singer, *Congress to Examine Data Sellers*, N.Y. TIMES (Jul. 24, 2012), <http://www.nytimes.com/2012/07/25/technology/congress-opens-inquiry-into-data-brokers.html> [<https://perma.cc/UJP3-X3L3>]; *FTC Warns Data Broker Operations of Possible Privacy Violations: Letters Issued As Part of Global Privacy Protection Effort*, FTC.GOV (May 7, 2013), <https://www.ftc.gov/news-events/press-releases/2013/05/ftc-warns-data-broker-operations-possible-privacy-violations> [<https://perma.cc/3R4X-LH5T>]; see, e.g., Joe Van Acker, *High Court Takes on Spokeo’s Challenge to FCRA Standing*, LAW360 (Apr. 27, 2015), <https://www.law360.com/articles/648078/high-court-takes-on-spokeo-s-challenge-to-fcra-standing> [<https://perma.cc/43A4-RE46>]; *Spokeo to Pay \$800,000 to Settle FTC Charges Company Allegedly Marketed Information to Employers and Recruiters in Violation of FCRA*, FTC.GOV (Jun. 12, 2012), <https://www.ftc.gov/news-events/press-releases/2012/06/spokeo-pay-800000-settle-ftc-charges-company-allegedly-marketed> [<https://perma.cc/BU7N-B3JN>].

4. 136 S. Ct. 1540 (2016).

5. First Amended Complaint for: (1) Violations of the Fair Credit Reporting Act, 15 U.S.C. § 1681e; (2) Violations of the Fair Credit Reporting Act, 15 U.S.C. § 1681b; (3) Violations of the Fair Credit Reporting Act, 15 U.S.C. § 1681j; (4) Violations of Cal. Bus. & Prof., Code § 17200 et seq. ¶¶ 30–31, 63–65, *Robins v. Spokeo, Inc.* No. CV10-05306 ODW (AGRx), 2011 WL 597867 (C.D. Cal. Sept. 19, 2011) (No. 2:10-cv-5306-ODW-AGR), 2011 WL 7782796 [hereinafter *Robins’s Complaint*].

information privacy space: in an era where we conduct many of our transactions and communications online, what is the legal status of the various injuries that may occur?⁶ How can statutes enacted long before the Internet's existence provide remedies for these harms?⁷

In *Spokeo*, the Supreme Court addressed these questions by treating the privacy-related injury as an “intangible harm,” requiring further analysis to determine whether there is standing to sue in federal court.⁸ In the wake of *Spokeo*, the mere violation of statutes regulating internet transactions may be insufficient for standing,⁹ because for Article III standing the injury in fact must be both concrete *and* particularized.¹⁰

This Note addresses *Spokeo*'s impact on data security and information privacy litigation by analyzing how an intangible harm can be concrete. More specifically, this Note considers two key questions: First, what makes an intangible harm a concrete injury according to *Spokeo*? Second, how should courts interpret *Spokeo* and apply this definition of an intangible harm? This Note argues that courts should apply a three-step test, developed from post-*Spokeo* decisions, to determine whether an intangible harm is concrete.

Part I of this Note provides the legal background for Article III and statutory standing and explains the nature of intangible injuries. Part II summarizes the relevant holdings from the *Spokeo* decision. Part III analyzes what makes an intangible harm concrete in light of *Spokeo* and, given this analysis, proposes a three-step test for determining whether an intangible harm is concrete.

I. LEGAL BACKGROUND

This Part first provides a brief overview of Article III standing, focusing on the concreteness requirement of an injury in fact. Next, the nature of intangible injuries is examined. Finally, this Part analyzes modern statutory standing from the 1992 case *Lujan v. Defenders of Wildlife* through the pre-

6. See Callie Schroeder, *Intangible Privacy Harms Post-Spokeo*, IAPP.ORG: PRIVACY TRACKER (Dec. 15, 2016), <https://iapp.org/news/a/intangible-privacy-harms-post-spokeo/> [<https://perma.cc/RA4Y-CFY4>].

7. See, e.g., *In re Nickelodeon Consumer Privacy Litig.*, 827 F.3d 262, 284–86 (3d Cir. 2015) (describing Congress's attempt to regulate the data sharing practices of online services with the Video Protection Privacy Act (VPPA), in light of the VPPA's legislative history).

8. See *Spokeo*, 136 S. Ct. at 1548–50.

9. See Schroeder, *supra* note 6.

10. *Spokeo*, 136 S. Ct. at 1548–50.

Spokeo information privacy cases.¹¹

A. ARTICLE III STANDING

Article III of the Constitution grants federal courts power over cases or controversies.¹² Standing, a judge-made doctrine based on the case or controversy requirement,¹³ determines whether a litigant is entitled to have a court rule on the merits of a dispute.¹⁴ The doctrine prevents the judiciary from “usurp[ing] the powers of the political branches,”¹⁵ because without standing any act of the legislative or executive branch would be subject to judicial review.¹⁶

To demonstrate standing, a plaintiff must meet three requirements: (1) the plaintiff must have suffered an injury in fact,¹⁷ (2) this injury in fact must be traceable to the actions of the defendant,¹⁸ and (3) the injury must be likely to be redressed by a favorable judicial decision.¹⁹ This Note addresses only the first requirement, as *Spokeo* is primarily concerned with this requirement.²⁰

11. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992).

12. U.S. CONST. art. III, § 2 (The “Judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority; . . . to Controversies to which the United States shall be a Party;—to Controversies between two or more States . . .”).

13. *See Lujan*, 504 U.S. at 561; *Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.*, 528 U.S. 167, 180–81 (2000).

14. *Warth v. Seldin*, 422 U.S. 490, 498 (1975). If the plaintiff lacks standing at any time during the litigation, the court must dismiss the case. *United States v. AVX Corp.*, 962 F.2d 108, 113 (1st Cir. 1992).

15. *Clapper v. Amnesty Int’l USA*, 133 S. Ct. 1138, 1146 (2013).

16. *U.S. v. Richardson*, 418 U.S. 166, 188 n.7 (1974) (noting that the “dramatic changes in standing doctrine” made by the legislature would be “only Act I of any contest . . . Act II would, with the usual brief interlude, follow in the courts . . .”); *see* 13A CHARLES ALAN WRIGHT ET AL., *FEDERAL PRACTICE & PROCEDURE* § 3531.3 n.17 (rev. 3d ed. Supp. 2016) (“Except when necessary in the execution of that function, courts have no charter to review and revise legislative and executive action.”); *see also* ALEXANDER M. BICKEL, *THE LEAST DANGEROUS BRANCH: THE SUPREME COURT AT THE BAR OF POLITICS* 16 (1st ed. 1962) (“The root difficulty is that judicial review is a counter-majoritarian force in our system.”).

17. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992).

18. *Id.*; *Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.*, 528 U.S. 167, 180–81 (2000); *see also* *Allen v. Wright*, 468 U.S. 737, 750 (1984).

19. *Lujan*, 504 U.S. at 561; *Friends of the Earth, Inc.*, 528 U.S. at 180–81.

20. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1547 (2016) (noting that injury in fact is the “[f]irst and foremost” of standing’s three elements). Because the Court found that the Ninth Circuit failed to do a complete analysis of the injury-in-fact requirement, the Court

To establish an injury in fact, the plaintiff must satisfy two requirements. First, she must show that the injury is “actual or imminent,”²¹ not “ ‘conjectural’ or ‘hypothetical.’ ”²² That is, she must show that she is in immediate danger of an injury because of the defendant’s challenged conduct.²³ Second, a plaintiff must show that the injury is “concrete and particularized.”²⁴ This requirement ensures that a plaintiff has a “personal stake in the outcome of the controversy.”²⁵

A “concrete” injury is distinguishable from an “abstract” injury.²⁶ For example, in *Schlesinger v. Reservists Committee to Stop the War*, the plaintiffs lacked standing to sue because their claim that the government had failed to comply with the Incompatibility Clause would only affect the “generalized interest of all citizens in constitutional governance.”²⁷ This alleged injury, according to the Court, was abstract.²⁸ In contrast, to allege a “concrete injury,” a plaintiff must suffer harm particular to the alleged unlawful action.²⁹ The plaintiff’s “personal stake” allows her to authoritatively explain the adverse consequences that flow from the specific set of facts.³⁰

The concreteness requirement for injuries prevents unnecessary adjudication and abuse of the judicial process.³¹ More specifically, the *Schlesinger* Court noted that two policies support this requirement: (1) a plaintiff alleging a concrete injury expresses a “real need” for judicial review to protect her interests; and (2) the specific set of facts behind a concrete injury ensures that the relief provided is no broader than those facts require.³²

did not reach the next two questions of whether Robins’s injury was traceable or redressable. *See id.* at 1550.

21. *Lujan*, 504 U.S. at 560.

22. *City of Los Angeles v. Lyons*, 461 U.S. 95, 102 (1983).

23. *Id.*

24. *Warth v. Seldin*, 422 U.S. 490, 498 (1975) (citing *Baker v. Carr*, 369 U.S. 186 (1962)).

25. *Id.*

26. *See* WRIGHT ET AL., *supra* note 16, § 3531.4.

27. 418 U.S. 208, 217 (1974); *see also* WRIGHT ET AL., *supra* note 16, § 3531.4 n.34.

28. *Schlesinger*, 418 U.S. at 217.

29. *Id.* at 221.

30. *Id.*

31. *Id.*

32. *Id.* at 221–22.

B. INTANGIBLE INJURIES³³

A concrete injury that satisfies the injury-in-fact requirement may be either tangible or intangible.³⁴ Courts often expect an injury to produce a “tangible economic or physical harm.”³⁵ For example, a tangible economic harm produced by a violation of the FCRA might be the loss of money or the denial of employment.³⁶ Intangible injuries, on the other hand, are more amorphous and difficult for courts to analyze.³⁷ Many injuries in information privacy cases are intangible harms.³⁸

Libel and slander are two examples of conduct causing intangible harms.³⁹ Rather than cause physical or economic harms, these injuries cause loss of reputation.⁴⁰ Victims of these injuries may recover nominal damages even when unable to prove the extent of reputational harm, or that an injury even occurred.⁴¹ An injury is presumed because an “injury to reputation is extremely difficult to demonstrate, even when it is obvious that serious harm has resulted.”⁴² Whether such an intangible injury is sufficient to confer standing in federal court often depends on the relevant statutory scheme, as the next Section explains.

C. STATUTORY STANDING

A plaintiff may achieve standing by alleging an injury that Congress has

33. Note that the Court in *Spokeo* uses the terms “intangible injuries” and “intangible harms” interchangeably. See *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549 (2016) (confirming that “intangible injuries can nevertheless be concrete” and that “Congress is well positioned to identify intangible harms that meet Article III requirements”). For clarity, this Note will use the terms “concrete injury” or “injury in fact” to refer to injuries that meet Article III standing requirements.

34. *Spokeo*, 136 S. Ct. at 1549.

35. *Church v. Accretive Health*, 654 Fed. Appx. 990, 995 (7th Cir. 2016).

36. See *Burke v. Fed. Nat’l Mortg. Ass’n*, No. 3:16cv153-HEH, 2016 WL 4249496, at *3 (E.D. Va. Aug. 9, 2016), *vacated*, No. 3:16cv153-HEH, 2016 WL 7451624, at *1 (E.D. Va. Dec. 6, 2016) (dismissing the case after the parties stipulated that the court lacked subject-matter jurisdiction).

37. See Schroeder, *supra* note 6; *cf. Spokeo*, 136 S. Ct. at 1549 (noting that “tangible injuries are perhaps easier to recognize”).

38. See Schroeder, *supra* note 6.

39. See *Spokeo*, 136 S. Ct. at 1549 (citing RESTATEMENT (FIRST) OF TORTS §§ 569, 670 (AM. LAW INST. 1938)).

40. See RESTATEMENT (FIRST) OF TORTS §§ 569, 670 (AM. LAW INST. 1938).

41. *Spokeo*, 136 S. Ct. at 1549 (citing RESTATEMENT (FIRST) OF TORTS §§ 569, 670 (AM. LAW INST. 1938)).

42. Eaton, *The American Law of Defamation Through Gertz v. Robert Welch, Inc. and Beyond: An Analytical Primer*, 61 VA. L. REV. 1349, 1357 (1975).

created by statute.⁴³ *Lujan* established that Congress may elevate “concrete, *de facto*⁴⁴ injuries that were previously inadequate at law” to become legally recognizable and sufficient to establish standing.⁴⁵ By enacting statutes, Congress may create legal rights, and the invasion of these rights is sufficient for standing, “even though no injury would exist without the statute.”⁴⁶ And the Court has emphasized that an injury sufficient for Article III standing “may exist *solely in virtue of*” such statutes creating legal rights.⁴⁷

This principle is best illustrated with *Havens Realty Corp. v. Coleman*.⁴⁸ In *Havens Realty*, the Court held that a tester-plaintiff’s assertion of an alleged violation of the Fair Housing Act was sufficient to satisfy the requirements for an injury in fact.⁴⁹ The tester-plaintiff’s only alleged injury was that she had been given false information about the availability of housing.⁵⁰ The Court held that the Fair Housing Act “establishes an enforceable right to truthful information concerning the availability of housing” and that “a tester who has been the object of a misrepresentation . . . has suffered injury in precisely the form the statute was intended to guard against.”⁵¹ So, even though the tester never intended to rent an apartment from the defendant, the tester had adequately alleged an injury in fact.⁵² The Court emphasized that while Article III sets the floor for standing requirements, Congress intended standing under the Fair Housing Act “to extend to the full limits of Art. III.”⁵³

Havens Realty also presents an example of an *intangible* statutory violation sufficient for standing: the failure to receive particular housing information mandated by law.⁵⁴ The plaintiffs in *Havens Realty* alleged that

43. *Linda R.S. v. Richard D.*, 410 U.S. 614, 617 n.3 (1973).

44. “Actual; existing in fact; having effect even though not formally or legally recognized.” *De facto*, BLACK’S LAW DICTIONARY (10th ed. 2014).

45. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 578 (1992); *see id.* at 580 (Kennedy, J., concurring).

46. *Linda R.S.*, 410 U.S. at 617 n.3.

47. *Warth v. Seldin*, 422 U.S. 490, 500 (1975) (emphasis added).

48. *Havens Realty Corp. v. Coleman*, 455 U.S. 363 (1982).

49. *Id.* at 372–73.

50. *Id.* at 373–74.

51. *Id.*

52. *Id.* at 374.

53. *Id.* at 372. Indeed, *Havens Realty* notes that whether the testers had standing is guided by the *Gladstone Realtors v. Village of Bellwood* decision, *id.*, in which the Court stated that Congress can “expand standing to the full extent permitted by Art. III,” *Gladstone Realtors v. Vill. of Bellwood*, 441 U.S. 91, 100 (1979).

54. *Havens Realty*, 455 U.S. at 367–78.

the defendant's practices deprived them of the "social, professional, and economic benefits" of "interracial associations" free from discriminatory housing practices.⁵⁵ In this way, an injury sufficient for Article III standing exists solely because of a statute creating a legal right to particular housing information.⁵⁶

Information privacy decisions before *Spokeo* generally recognized that while courts cannot lower the threshold for standing below what is constitutionally required, standing does not require that a plaintiff show "actual monetary loss" to allege an injury in fact.⁵⁷ For example, in *Sterk v. Redbox*, the plaintiffs alleged that Redbox's disclosure of their personally identifiable information (PII) to Stream, a third-party vendor providing Redbox with customer services, constituted a violation of the Video Protection Privacy Act (VPPA).⁵⁸ The Seventh Circuit found that these "technical violations" of the statute are "precisely what Congress sought to illegalize" by enacting the violated statute.⁵⁹

In sum, plaintiffs must allege a concrete injury in order to have standing to sue in federal court. These injuries may be tangible or intangible, and may be established by the relevant statute. *Spokeo* provides guidance on what makes an intangible harm concrete in the context of a particular statute designed to protect consumers from informational harm.

II. SPOKEO, INC. V. ROBINS CASE SUMMARY

This Part first provides the facts and procedural history of *Spokeo*. Next, this Part explains the Supreme Court's key holdings and the standing doctrine policies that undergird the majority, concurrence, and dissent.

A. FACTS AND PROCEDURAL HISTORY

Spokeo, Inc. is a search engine company that aggregates data about

55. *Id.* at 369. The loss of these benefits constituted a "palpable injury." *See id.* at 377.

56. *Id.* at 373–74.

57. *In re Google Inc. Cookie Placement Consumer Privacy Litig.*, 806 F.3d 125, 134 (3d Cir. 2015) (emphasizing that, in situations involving a breach of laws protecting privacy, a focus on "economic loss is misplaced").

58. *Sterk v. Redbox Automated Retail, LLC*, 770 F.3d 618, 621 (7th Cir. 2014).

59. *Id.* at 623; *see also* *Austin-Spearman v. AMC Network Entertainment LLC*, 98 F. Supp. 3d 662, 666 (S.D.N.Y. 2015) (holding that the VPPA establishes a privacy right sufficient to confer standing through its deprivation). The Seventh Circuit reaffirmed that Congress has the power to enact statutes that allow a plaintiff to sue "even though no injury would exist without the statute." *Sterk*, 770 F.3d at 622 (citing *Kyles v. J.K. Guardian Sec. Servs., Inc.*, 222 F.3d 289, 294 (7th Cir. 2000)).

individuals from social networks, white pages listings, business sites, and other public records.⁶⁰ This data can include a person's age, occupation, wealth, marital status, email address, and phone number.⁶¹

Thomas Robins alleged that Spokeo's website listed inaccurate information about him;⁶² it incorrectly stated that his wealth put him in the "top 10%," that he was "currently employed in a professional or technical field," and that he had a graduate degree and a family.⁶³ In reality, Robins was unemployed and actively seeking employment.⁶⁴ This misinformation posed actual harm to his employment prospects, Robins argued, because it made him appear "overqualified," "less mobile," and "expectant of a higher salary than employers would be willing to pay."⁶⁵

On this ground, Robins alleged that Spokeo willfully violated provisions of the Fair Credit Reporting Act.⁶⁶ His injury stemmed from the violation of 15 U.S.C. § 1681e(b), which requires credit reporting agencies to "follow reasonable procedures to assure maximum possible accuracy" of the reports produced.⁶⁷ Because of Spokeo's continued willful failure to follow reasonable procedures to assure the maximum possible accuracy of the information it provided, Robins claimed to have suffered actual, imminent, and ongoing harm.⁶⁸ Specifically, Robins alleged that he "lost and continue[d] to lose money," and that he "suffered actual harm in the form of anxiety and stress about his diminished employment prospects."⁶⁹ Unconvinced, the district court ruled that Robins had failed to plead an

60. *What is Spokeo?*, SPOKEO, <http://www.spokeo.com/> (last visited Dec. 23, 2016).

61. *See* Robins v. Spokeo, Inc., 742 F.3d 409, 410 (9th Cir. 2013), *vacated*, 136 S. Ct. 1540 (2016).

62. Robins's Complaint, *supra* note 5, ¶¶ 30–31.

63. Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1554 (2016) (Ginsburg, J., dissenting).

64. *Id.*

65. *Id.*

66. Robins's Complaint, *supra* note 5, ¶¶ 58–65, 66–71, 72–75. The allegedly violated provisions require credit reporting agencies to "follow reasonable procedures to assure maximum possible accuracy," 15 U.S.C. § 1681e(b) (2012), to notify providers and users of consumer information of their responsibilities under the Act, 15 U.S.C. § 1681e(d) (2012), to limit the circumstances in which such agencies provide consumer reports "for employment purposes," 15 U.S.C. § 1681b(b)(1) (2012), and to establish streamlined processes for consumers to request free annual consumer reports, 15 U.S.C. § 1681j(a) (2012).

67. 15 U.S.C. § 1681e(b) (2012).

68. Robins's Complaint, *supra* note 5, ¶¶ 35, 63–65.

69. *Id.* ¶¶ 36–37.

injury in fact.⁷⁰

On appeal, the Ninth Circuit found that Robins had adequately alleged an injury in fact sufficient to achieve Article III standing.⁷¹ The court considered whether violations of statutory rights created by FCRA are “concrete, *de facto* injuries” that Congress can elevate into legally cognizable injuries.⁷² To answer this question, the Ninth Circuit identified two limitations on the power of Congress to confer standing on injuries previously not recognized at law: (1) a plaintiff must allege that the defendant violated *her* statutory right, and (2) the statutory right must protect against an individual harm.⁷³ The court held that the violation of statutory rights met these requirements⁷⁴ and that the harm was sufficiently “concrete and particularized.”⁷⁵ Spokeo appealed and the Supreme Court granted certiorari.⁷⁶

B. SUPREME COURT OPINION

This Section discusses the Supreme Court’s holding in *Spokeo*. First, concreteness and particularization must be analyzed separately. Second, a bare procedural violation of a statute is insufficient for Article III standing. And third, intangible harms may be concrete.

1. *Concreteness and Particularization Must be Analyzed Separately*

The Court found that the Ninth Circuit erred in its analysis of whether Robins had adequately demonstrated an injury in fact by conflating its analysis of whether Robins’s alleged injury met the “concrete” requirement with its analysis of whether Robins’s alleged injury met the “particularized” requirement.⁷⁷ The Court emphasized that a plaintiff must establish that the alleged injury is both “concrete *and* particularized.”⁷⁸ The Court then focused on the separate concreteness analysis that it faulted the Ninth

70. *Robins v. Spokeo, Inc.*, No. CV10-05306 ODW (AGRx), 2011 WL 597867 (C.D. Cal. Jan. 27, 2011).

71. *Robins v. Spokeo, Inc.*, 742 F.3d 409, 413 (9th Cir. 2013), *vacated*, 136 S. Ct. 1540 (2016).

72. *Id.*

73. *Id.* at 412.

74. *Id.* at 413.

75. *Id.*

76. *See Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1546 (2016).

77. *Id.* at 1550.

78. *Id.* at 1548. The Court then remanded so that the Ninth Circuit could conduct a separate analysis of whether Robins’s alleged injury was concrete. *Id.*

Circuit for eliding.⁷⁹

2. *A Bare Procedural Violation of a Statute is Insufficient for Article III Standing*

The Court reaffirmed that Congress may make injuries previously not recognized at law legally cognizable.⁸⁰ However, a violation of a statutory right must still satisfy the concreteness requirement for Article III standing.⁸¹ The Court found it unclear whether Robins's alleged statutory violation was a "concrete" harm, because the Ninth Circuit did not conduct a separate analysis of whether the alleged statutory violation was concrete.⁸² Implicit in the Court's opinion is that Robins alleged a procedural violation because he alleged that Spokeo had violated what the Court considered the FCRA's "procedural requirements."⁸³ Absent harm, the Court held that a "bare procedural violation" is insufficient for Article III standing.⁸⁴

3. *Intangible Harms May be Concrete*

The Court noted that injuries need not be "tangible" to be "concrete."⁸⁵ Whether an intangible harm is concrete requires an examination of history and the judgment of Congress.⁸⁶ With respect to history, the Court considered whether the alleged harm was closely related to a harm traditionally sufficient for standing at common law.⁸⁷ With respect to the judgment of Congress, the Court did not provide specific guidance, but noted that Congress is well-positioned to identify intangible harms that satisfy Article III requirements.⁸⁸ The Court recalled its statement in *Lujan* that "Congress has the power to define injuries . . . that will give rise to a

79. *Id.*

80. *Id.* at 1549.

81. *Id.*

82. *Id.* at 1550.

83. *See id.*; 15 U.S.C. § 1681e(b) (2012). The Court did not explicitly explain why the violation was procedural, but noted that the "[D]eprivation of a procedural right without some concrete interest . . . is insufficient to create Article III standing," *Spokeo*, 136 S. Ct. at 1549 (citing *Summers v. Earth Island Institute*, 555 U.S. 488, 496 (2009)). It was possibly a "bare" procedural violation because a violation of one of the FCRA's procedural requirements "may result in no harm." *See id.* at 1550.

84. *Spokeo*, 136 S. Ct. at 1549.

85. *Id.* at 1549. According to the Court, examples of intangible injuries include violations of the Free Speech Clause and Free Exercise Clause of the First Amendment. *See id.*

86. *See id.*

87. *Id.* at 1549.

88. *Id.*

case or controversy where none existed before.”⁸⁹ However, a new injury created by Congress does not automatically satisfy the injury-in-fact requirement.⁹⁰

The Court noted an intangible harm that poses a “risk of real harm” may satisfy the concreteness requirement for an injury in fact.⁹¹ According to the Court, common law intangible harms such as libel and slander are analogous to some violations of procedural rights granted by statute.⁹² One example is a group of voters’ “inability to obtain information” that Congress has made available to the public by statute.⁹³ Thus, a violation of a procedural right granted by statute can qualify as an injury in fact so long as it presents a “risk of real harm.”⁹⁴

Here, the Court viewed the alleged violation as an intangible harm.⁹⁵ Because the Ninth Circuit failed to address whether the alleged violation of the FCRA posed a degree of risk sufficient to meet the concreteness requirement, the Court remanded the case for further proceedings.⁹⁶

4. *The Majority, Concurrence, and Dissent Look to Standing Doctrine Policies*

Spokeo is a divided opinion, but the majority, concurrence, and dissent all touch upon the policy behind standing doctrine.⁹⁷ As the *Spokeo* majority noted, standing doctrine ensures that federal courts “do not exceed their authority as it has been traditionally understood.”⁹⁸ Standing as articulated by Article III prevents the judicial branch from being used to “usurp the powers of the political branches.”⁹⁹

Justice Thomas’s concurrence echoed this policy behind Article III standing, but added this condition: there is no concern about judicial

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.* at 1549.

93. See *id.*

94. See *id.* The Court did not explain what constitutes a “real” harm, other than to define “real” in opposition to “not ‘abstract.’” *Id.* at 1548.

95. See *id.* at 1549.

96. *Id.* at 1550. On December 13th, 2016, the Ninth Circuit heard oral arguments for *Spokeo* on remand. See Cara Bayles, *9th Circ. Hears Landmark Spokeo Row on High Court Remand*, LAW360.COM (Dec. 13, 2016), <https://www.law360.com/articles/871165/9th-circ-hears-landmark-spokeo-row-on-high-court-remand> [<https://perma.cc/F26N-V34W>].

97. *Id.* at 1547, 1550–52, 1555.

98. *Id.* at 1547.

99. *Id.* (citing *Clapper v. Amnesty Int’l USA*, 133 S. Ct. 1138, 1146 (2013)) (internal quotation marks omitted).

overreach when a plaintiff seeks only to enforce his “personal rights” against another private party.¹⁰⁰ Here, the right at issue created by the FCRA is a public right: it is a regulatory duty that Spokeo owes to the public.¹⁰¹ Therefore, Robins had no standing to sue Spokeo as a private plaintiff for the violation of this public right.¹⁰² However, Thomas granted that one of Robins’s claims rested on a statutory provision that might create a private right:¹⁰³ § 1681(e)(b) might create a private right because it requires Spokeo to “follow reasonable procedures” with respect to the *individual* reported on.¹⁰⁴

Justice Ginsburg’s dissent briefly addressed Article III standing, noting that Robins’s claim was not at odds with standing doctrine because he sought a remedy for Spokeo’s misinformation specifically about *him*, not for “harm to the citizenry.”¹⁰⁵ Thus, Robins’s injury was sufficient for standing.¹⁰⁶

Justice Ginsburg’s dissent also stated that standing doctrine should be flexible enough to grant plaintiffs standing when their injury implicates societally valuable interests.¹⁰⁷ Justice Ginsburg noted that the Court has previously considered various informational injuries to individuals sufficient for standing: the inability to acquire political donor and contributions information from the Federal Election Commission in *Federal Election Commission v. Akins*, the inability to access the ABA Committee’s meetings and records on federal judgeship nominees subject to disclosure under the Federal Advisory Committee Act in *Public Citizen v. Department of Justice*,¹⁰⁸ and the failure to acquire truthful information about housing availability in *Havens Realty Corp.*¹⁰⁹ In Justice Ginsburg’s view, these

100. *Id.* at 1551 (Thomas, J., concurring).

101. *Id.* at 1553.

102. *Id.*

103. “Private rights” are “rights belonging to individuals” and include “rights of personal security (including security of reputation), property rights, and contract rights.” *Id.* at 1551 (citing 3 WILLIAM BLACKSTONE, COMMENTARIES *2).

104. Spokeo, 136 S. Ct. at 1554 (Thomas, J., concurring). Thus, on remand, the Ninth Circuit should consider whether this provision created a duty owed *specifically* to Robins to ensure the accuracy of his specific information, thus creating a private right. *Id.* If so, Robins need not allege any harm beyond the provision’s violation because he would be enforcing his “personal rights” against another private party. *See id.*

105. *Id.* at 1555 (Ginsburg, J., dissenting).

106. *Id.*

107. *See id.* at 1554–55.

108. *See Fed. Election Comm’n v. Akins*, 524 U.S. 11, 19–20 (1998); *Pub. Citizen v. U.S. Dep’t of Justice*, 491 U.S. 440, 449 (1989).

109. *Havens Realty Corp. v. Coleman*, 455 U.S. 363, 373 (1982).

injuries are “substantive harm[s]” that are connected to “procedural requirements.”¹¹⁰ In this way, Justice Ginsburg’s dissent implicitly argues that standing doctrine must be flexible enough to grant plaintiffs standing when their injury implicates societally valuable interests, such as an individual’s interest in fair elections, a qualified judiciary, and fair housing.¹¹¹

III. ANALYSIS: INTANGIBLE CONCRETE HARMS

This Part focuses on what makes intangible harms concrete and therefore sufficient for Article III standing. The first Section examines the requirement for what makes an intangible harm concrete, using *Spokeo* and decisions interpreting *Spokeo*. The second Section addresses how courts should interpret *Spokeo*.

A. WHAT MAKES AN INTANGIBLE HARM CONCRETE?

While the Court’s opinion did not seem to change the definition of intangible harms,¹¹² *Spokeo* clearly held that intangible injuries may be concrete.¹¹³ This Note proposes that courts should interpret *Spokeo* as establishing a three-step test to determine whether an intangible harm is concrete. First, do both history and the judgment of Congress support the proposition that the intangible harm is concrete? Second, if so, what kind of right is created by statute? A procedural right, or a substantive right? If the right created is substantive, no further harm need be alleged. Third, if the right created is procedural, does the intangible harm pose a “risk of real harm”? The following chart explains the proposed three-step test in *Spokeo*.

110. *Spokeo*, 136 S. Ct. at 1555 (Ginsburg, J., dissenting).

111. *See id.* at 1554–55.

112. *See id.* at 1549.

113. *Id.*

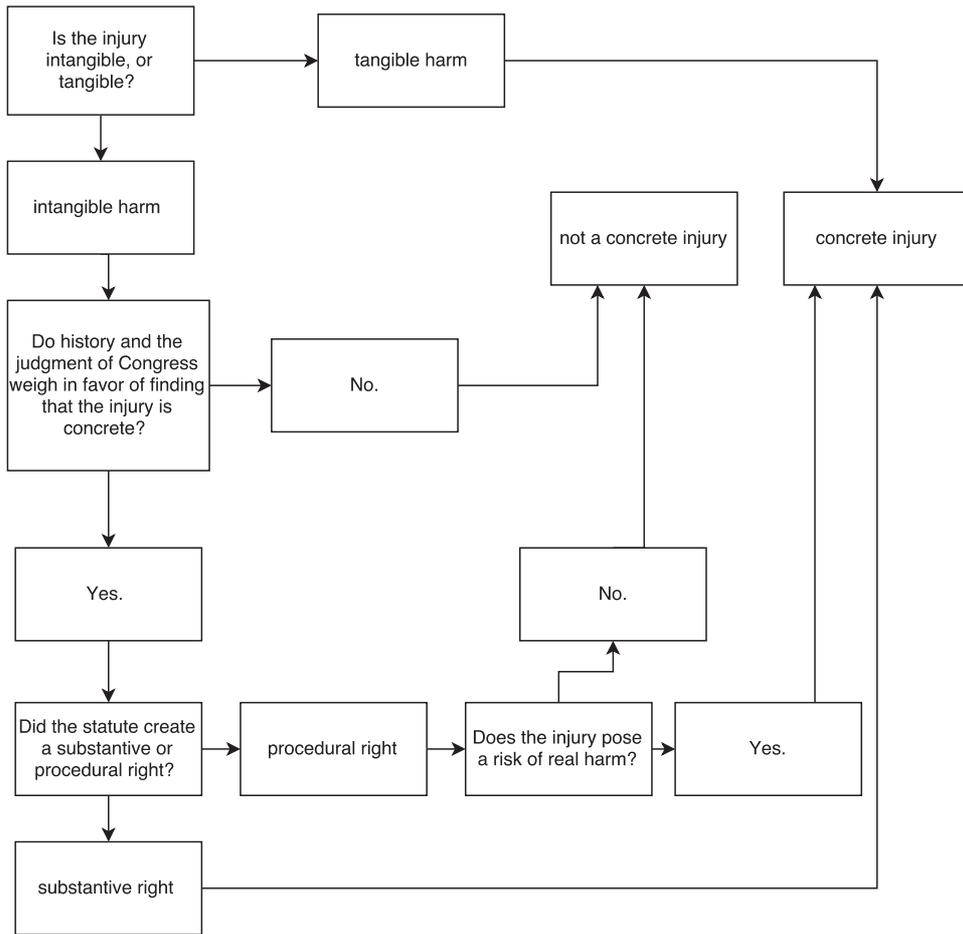


Figure 1: Flowchart explaining the proposed three-step test to determine whether an intangible harm is concrete.

In *Spokeo*, the Court provided two factors to consider in determining whether an intangible harm constitutes a concrete injury: history and the “judgment of Congress.”¹¹⁴ After discussing the important roles played by both factors, the *Spokeo* court offered separate guidance on how an intangible harm may be concrete enough for standing,¹¹⁵ stating that intangible harms that pose a “risk of real harm” may satisfy the concreteness requirement.¹¹⁶ For example, intangible harms like libel and slander, which

114. *Spokeo*, 136 S. Ct. at 1549.

115. *Id.*

116. *Id.*

do not require proof of harm to reputation, pose a “risk of real harm” according to the Court, and are thus concrete.¹¹⁷

*Yershov v. Gannet Satellite Info. Network, Inc.*¹¹⁸ presents a careful reading of *Spokeo* and a convincing framework for interpreting the Court’s guidance. In *Yershov*, the plaintiff sued under the VPPA, alleging that the defendant disclosed users’ “personally identifiable information” to Adobe Systems, a third-party data analytics company, every time the plaintiff watched a video through the application.¹¹⁹ The *Yershov* court applied *Spokeo*’s guidance to analyze whether the plaintiff had alleged a “bare procedural violation” of the VPPA.¹²⁰ First, the court applied the two-factor test to determine whether history and Congress’s judgment weigh in favor of finding that the injury at issue is concrete.¹²¹ Second, it noted that history and Congress’s judgment are not dispositive: if the statute created a procedural right, courts must also apply the “risk of real harm” standard.¹²² The following sections explain these steps in greater detail by examining how courts have applied *Spokeo*.

1. *Step One: Do History and the Judgment of Congress Support the Proposition that the Intangible Harm is Concrete?*

As noted by the *Spokeo* majority and Justice Thomas, standing doctrine prevents the judicial branch from usurping the power of the political branches.¹²³ By asking a court faced with this issue to first look to history and Congress’s judgment, this step ensures that the alleged injury is one for which Congress intended to provide a judicial remedy.¹²⁴

In *Yershov*, the court first applied the two-factor test to find that both history and Congress’s judgment weighed in favor of finding that the VPPA violation was concrete.¹²⁵ With respect to the judgment of Congress, the court examined legislative history and found that the VPPA was necessary

117. *Id.* (citing RESTATEMENT (FIRST) OF TORTS §§ 569–70 (AM. LAW INST. 1938)).

118. *Yershov v. Gannet Satellite Info. Network, Inc.*, No. 14-13112-FDS, 2016 WL 4607868 (D. Mass. Sept. 2, 2016).

119. *Yershov*, 2016 WL 4607868, at *1. *Yershov* claimed that with these disclosures Adobe could identify *Yershov* and attribute an individualized profile of his video records. In this way, *Yershov* argued that his “statutorily defined rights to privacy” under the VPPA were violated. *Id.* at *2.

120. *Id.* at *7.

121. *See id.* at *8.

122. *See id.* at *6.

123. *See Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549–51 (2016).

124. *See id.* at 1549, 1555.

125. *See Yershov*, 2016 WL 4607868, at *8.

to “preserve personal privacy with respect to the rental, purchase, or delivery of video tapes or similar audio visual materials.”¹²⁶ With respect to history, the court noted that the right to privacy has long been the basis for a lawsuit in English and American courts.¹²⁷ The court also noted that “Congress may create a statutory right to privacy in certain information that strengthens or replaces the common law, and citizens whose statutory right to informational privacy has been invaded to have standing to bring suit under the statute to vindicate that right.”¹²⁸ The court found that both factors weighed in favor of finding that the violation was concrete.¹²⁹

The court next explicitly noted that history and Congress’s judgment are not dispositive: if the statute created a procedural right, courts must also apply the “risk of real harm” standard.¹³⁰ However, the court did not perform a “risk of real harm” analysis, finding that because Congress created a statutory right to informational privacy, and specifically because the VPPA created a substantive right to remedy the alleged disclosure, the VPPA provided Yershov with standing.¹³¹ Therefore, a breach of the statute was not a “bare procedural violation” of a technical requirement, but a substantive violation. In the court’s view, the VPPA “plainly” provided plaintiffs with standing and the right to relief.¹³²

2. *Step Two: If History and the Judgment of Congress Say the Intangible Harm is Concrete, What Kind of Statutory Right is Created?*

After finding that the two-factor test weighs in favor of finding that a bare statutory violation is concrete, courts should ask what kind of right is created by the statute. By examining whether the right created by the statute at issue is substantive or procedural, the test is consistent with the *Spokeo*

126. *Id.* at *8 (citing S. REP. NO. 100-599, at 1 (1988)).

127. *Id.* (citing *United States Dep’t of Justice v. Reporters Comm. for Freedom of Press*, 489 U.S. 749, 763 (1989) (“Both the common law and literal understandings of privacy encompass the individual’s control of information concerning his or her person.”)).

128. Statutes creating a right to informational privacy include the Electronic Communications Privacy Act, the Right to Financial Privacy Act, and the VPPA. *Id.* (citing *Thomas v. FTS USA, LLC*, No. 3:13-cv-825, 2016 WL 3653878, at *10 (E.D. Va. June 30, 2016)).

129. *Id.*

130. *Id.* at *6.

131. *Id.* at *8, *8 n.5 (“[A]ccepting the complaint’s allegations as true, [Gannett’s disclosure of information to Adobe] is the precise type of disclosure for which the VPPA created a substantive right to prevent and remedy.”).

132. *Id.* at *8. The court repeated *Spokeo*’s holding that a bare procedural violation is insufficient for Article III standing. *Id.* at *6.

dissent’s implicit emphasis on the need for standing doctrine to allow for plaintiffs to claim intangible harms, especially if these implicate societally valuable interests.¹³³

- a) A bare statutory violation is sufficient for standing if that statute creates a substantive right.

One way that courts have avoided the question of whether a “bare procedural violation” poses a “risk of real harm” is by finding that the violated statute at issue creates a substantive right, rather than a procedural right.¹³⁴ In this way, the alleged violation is not a procedural violation at all, but a *substantive* one.¹³⁵ This method is clearly articulated in *Burke v. Federal National Mortgage Association*.¹³⁶

In *Burke*, the court found that the plaintiff’s alleged violation of the FCRA constituted a concrete injury because the provision of the FCRA at issue created a substantive right to privacy.¹³⁷ *Burke* alleged that the Federal National Mortgage Association violated her rights under the FCRA by unlawfully obtaining credit under false pretense of an “account review” even though no account existed.¹³⁸ *Burke* claimed that this action resulted in an increased risk of identity theft and/or data breach, causing her anxiety and stress.¹³⁹

The court first noted that *Spokeo* requires more than a bare procedural violation to reach the threshold of a concrete injury.¹⁴⁰ The legislative history of the FCRA demonstrated that Congress intended to give consumers the right to privacy in their consumer reports.¹⁴¹ The court stated that when a defendant fails to comply with statutory rules protecting privacy, the plaintiff’s privacy has been unlawfully invaded and the plaintiff

133. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1555 (2016) (Ginsberg, J., dissenting).

134. In doing so, these courts take a line of reasoning similar to Justice Thomas’s concurrence in *Spokeo*, which makes a distinction between statutes that create public rights and statutes that create private rights. *See id.* at 1551–52 (Thomas, J., concurring).

135. *See Burke v. Fed. Nat’l Mortg. Ass’n*, No. 3:16cv153-HEH, 2016 WL 4249496, at *2 (E.D. Va. Aug. 9, 2016), *vacated*, No. 3:16cv153-HEH, 2016 WL 7451624, at *1 (E.D. Va. Dec. 6, 2016) (dismissing the case after the parties stipulated that the court lacked subject-matter jurisdiction).

136. *Id.* at *3.

137. *Id.*

138. *Id.* at *4.

139. *Id.* at *1.

140. *Id.* at *2.

141. *Id.*

has suffered a concrete injury, regardless of actual damages.¹⁴² Given the “purposes, framework, and structure of the FCRA,” the court found that the FCRA established a right to privacy that is “more substantive than procedural.”¹⁴³ Thus, Burke’s alleged injury was not a bare procedural violation, but a violation of a substantive right created by the FCRA, and thus a concrete injury.¹⁴⁴

There is a distinction between substantive rights and procedural rights. While courts can greatly simplify the question of whether an intangible harm is concrete by concluding that the right created is substantive rather than procedural, the difference between substantive and procedural rights is disputed and not entirely clear.¹⁴⁵ Generally, a substantive right is one that can be “protected or enforced by law; a right of substance rather than form.”¹⁴⁶ A procedural right is one that “derives from legal or administrative procedure; a right that helps in the protection or enforcement of a substantive right.”¹⁴⁷ In *Sibbach v. Wilson*, the Court noted that substantive rights are rights “conferred by law to be protected and enforced in accordance with the adjective law of judicial procedure,” one of which is the “right not to be injured in one’s person by another’s negligence.”¹⁴⁸ In this way, “procedure is the essential safeguard that protects substantive rights.”¹⁴⁹ However, these general definitions are vague and not particularly helpful. There are various approaches to fleshing out the substantive-procedural distinction,¹⁵⁰ but *Landrum v. Blackbird Enterprises, LLC* is

142. *Id.* at *2. Upon examining the language of the FCRA, the court found that the FCRA makes explicit that Congress limited circumstances in which a consumer report may be legitimately obtained to protect the “consumer’s right to privacy,” and to ensure the “confidentiality” of consumers’ credit information. *Id.* at *3; see 15 U.S.C. § 1681 (2012).

143. *Burke*, 2016 WL 4249496, at *4. The FCRA is meant to protect the consumer from the violation of privacy; it does not intend to prevent this violation simply as a means to protect the consumer from other “more tangible” harms.

144. *Id.* at *4.

145. See, e.g., Larry Alexander, *Are Procedural Rights Derivative Substantive Rights?*, 17 L. & PHIL. 19 (1998) (arguing that “procedural rights just are substantive rights, albeit substantive rights of a special (but quite numerous) kind: rights against risks”). *Burke* does not clarify the distinction between a substantive right and a procedural right. See *Burke*, 2016 WL 4249496, at *4.

146. *Substantive Right*, BLACK’S LAW DICTIONARY (10th ed. 2014).

147. *Procedural Right*, BLACK’S LAW DICTIONARY (10th ed. 2014).

148. *Sibbach v. Wilson*, 312 U.S. 1, 13 (1941).

149. WRIGHT ET AL., supra note 16, § 3531.4, at 249–50 n.141 (citing *Ingalls Shipbuilding, Inc. v. Director, Office of Workers’ Comp. Programs*, U.S. Dept. of Labor, 102 F.3d 1385, 1389–90 (5th Cir. 1996)).

150. See, e.g., Erwin Chemerinsky, *Substantive Due Process*, 15 TOURO L. REV. 1501, 1501–02 (1999).

especially relevant.¹⁵¹ The alleged injuries in *Spokeo* and *Landrum* both arise under the FCRA, and *Landrum* explicitly applies *Spokeo*'s guidance.¹⁵²

In *Landrum*, one of the plaintiff's alleged "concrete" injuries was his failure to receive a disclosure to which he was statutorily entitled under the FCRA.¹⁵³ The court defined a substantive right as one that can be "protected or enforced by law; a right of substance rather than form," and found that the FCRA protects a substantive right to be notified of the acquisition and use of a consumer report for employment purposes.¹⁵⁴ The FCRA's requirement that this notice take the form of a stand-alone disclosure is a "procedural protection of that substantive right."¹⁵⁵ In the court's view, "a statutory right to information is substantive. A statutory right to receive that information in a particular format is procedural."¹⁵⁶ The court found that the plaintiff's alleged injury was a bare procedural violation because the plaintiff failed to receive notice in the proper *format*.¹⁵⁷ In this way, an analysis of whether a statutorily created right is substantive or procedural turns on whether that right is a right of "substance rather than form."¹⁵⁸

3. *Step Three: If the Right Created is Procedural, Does the Intangible Harm Pose a "Risk of Real Harm"?*

Spokeo provided an exception to the "bare procedural violation rule," allowing that a "risk of real harm" presented by a bare procedural violation may satisfy the concreteness requirement.¹⁵⁹ Therefore, if a court finds that the violated statute at issue creates a procedural right, rather than a substantive right, a court should ask whether the violation poses a "risk of real harm."

151. *Landrum v. Blackbird Enterprises*, No. H-16-0374, 2016 WL 6075446 (S.D. Tex. Oct. 3, 2016).

152. *See Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1554–46 (2016); *Landrum*, 2016 WL 6075446, at *1–4.

153. *Landrum*, 2016 WL 6075446, at *1.

154. *Id.* at *3.

155. *Id.* at *4.

156. *Id.*

157. *Id.* Note that the plaintiff did not claim that he substantively failed to receive notice that the Defendants intended to perform a background check. *Id.* at *4.

158. *See id.*

159. *See Yershov v. Gannet Satellite Info. Network, Inc.*, No. 14-13112-FDS, 2016 WL 4607868, at *8 (D. Mass. Sept. 2, 2016) (citing *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549–50 (2016)).

For example, torts like libel and slander, which do not require proof of harm to reputation, pose a “risk of real harm” according to the Court, and are thus concrete.¹⁶⁰ In contrast are statutory violations that present “no harm” or “no material risk of harm.”¹⁶¹ For instance, a consumer reporting agency’s failure to provide a required notice to one of its users may result in no harm, because the information may still be accurate.¹⁶² In addition, inaccuracies like the dissemination of an incorrect zip code cause no harm.¹⁶³ These injuries are “bare procedural violations” because they violate procedural requirements (required by law) but cause no harm.¹⁶⁴

However, in some circumstances, the violation of a procedural requirement may pose a risk of real harm sufficient to make the harm concrete.¹⁶⁵ For example, the inability to acquire campaign donor and contributions information that Congress has decided to make public by statute poses a risk of real harm to voters, because it hinders voters’ ability to evaluate candidates for office and to evaluate the role money might play in their election.¹⁶⁶ In these circumstances, “a plaintiff need not allege any *additional* harm beyond the one Congress has identified” because the *risk* of real harm is enough to make the harm concrete.¹⁶⁷

Two circuit courts’ interpretations of *Spokeo* shed some light on what kind of procedural violation constitutes a risk of real harm sufficient to meet the concreteness requirement. In *Strubel v. Comenity Bank*,¹⁶⁸ the Second Circuit found that the plaintiff had standing to sue under the Truth in Lending Act (TILA) because the alleged defects in Comenity’s disclosure raised a “degree of the risk of real harm necessary to concrete injury and Article III standing.”¹⁶⁹ To determine whether a procedural violation

160. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549 (2016) (citing RESTATEMENT (FIRST) OF TORTS §§ 569, 570 (AM. LAW INST. 1938)).

161. *Id.* at 1549.

162. *Id.* at 1550.

163. *Id.*

164. *Id.*

165. *Spokeo*, 136 S. Ct. at 1549.

166. *Id.* (citing *Federal Election Comm’n v. Akins*, 524 U.S. 11, 21 (1998) (holding that respondents’ injury seems “concrete and particular”)).

167. *Id.* The Court cites *Clapper v. Amnesty International USA*, 133 S. Ct. 1138 (2013) to support its statement that the risk of real harm may satisfy the requirement of concreteness. *Id.* However, *Clapper* is an odd case for the Court to cite because (1) the language “risk of real harm” is not used in the opinion, and (2) the closest analog, “risk of harm,” is used to analyze a different prong of the injury-in-fact analysis, the “actual or imminent” prong. See *Clapper v. Amnesty Int’l USA*, 133 S. Ct. 1138, 1150 (2013).

168. 842 F.3d 181, 190 (2d Cir. 2016).

169. *Strubel*, 842 F.3d at 190.

demonstrates a “risk of real harm” sufficient to constitute a concrete injury, *Strubel* considered (1) whether Congress created a procedural right “to protect an individual’s concrete interests,” and (2) whether a procedural violation demonstrates a “risk of real harm” to the underlying interest.¹⁷⁰ The court found that two of the disclosure requirements at issue “protect a consumer’s concrete interest in ‘avoid[ing] the uninformed use of credit,’ a core object of the TILA.”¹⁷¹ The Second Circuit found that the alleged violations were concrete because a consumer who is not given notice of his own obligations is unlikely to fulfill them, leading to the loss of the “very credit rights that the law affords him.”¹⁷² Thus, the alleged violation of these disclosure requirements posed a “risk of real harm” to *Strubel*’s underlying interest in avoiding the uninformed use of credit.¹⁷³ In this way, the risk of losing the very credit *rights* afforded to *Strubel* by the law posed a risk of real harm sufficient to constitute a concrete injury.¹⁷⁴

Using a similar analysis but reaching the opposite conclusion, the Fifth Circuit in *Lee v. Verizon Communications, Inc.* found that the ERISA statutory violation was insufficient to create standing because there was “no allegation of a real risk” that the plaintiff’s “concrete interest” in the payment plan was at risk from the violation.¹⁷⁵ The court established that the “concrete interest” was the plaintiff’s “right to payment.”¹⁷⁶ The court noted that merely alleging “fiduciary misconduct in violation of ERISA” without any allegation of risk to the plaintiff’s “actual benefits” did not constitute an injury sufficiently concrete for standing.¹⁷⁷ In other words, we might infer that an allegation of risk of economic harm would weigh in favor of finding that the right to payment was at risk.¹⁷⁸ As in *Strubel*, a “risk of real harm” is a risk that some underlying right will be deprived.¹⁷⁹

170. *Id.* at 190, 200.

171. *Id.* at 190 (quoting 15 U.S.C. § 1601(a) (1976)). For example, one of these requirements required a creditor to give notice to a consumer of how the consumer’s actions can affect his rights with respect to credit transactions. *Id.*

172. *Id.*

173. *Id.* at 190.

174. *Id.*

175. *Lee v. Verizon Commc’ns, Inc.*, 837 F.3d 523, 530 (5th Cir. 2016).

176. *Id.*

177. *Id.*

178. *See id.*

179. *See id.*; *Strubel*, 842 F.3d at 190. Note that these rights are not procedural—while the violation of procedural rights is insufficient for standing without a showing of a risk of real harm, alleging risk to *these* underlying rights would likely be sufficient for standing.

B. HOW SHOULD COURTS INTERPRET *SPOKEO*?: APPLYING THE THREE-STEP TEST TO THE FACTS OF *SPOKEO*

To illustrate how the proposed three-step test would work, this Section applies the three-step test to the facts of *Spokeo*.¹⁸⁰ It assumes that the harm at issue is intangible, and begins by asking whether history and the judgment of Congress weigh in favor of finding that the harm is concrete.

1. *Applying History and the Judgment of Congress*

In its analysis of history's guidance, the *Spokeo* Court considered "whether the alleged intangible harm has a close relationship to a harm that has traditionally been regarded as providing a basis for a lawsuit in English or American courts."¹⁸¹

The FCRA states a need to insure a "respect for the consumer's right to privacy," and the common law has long recognized a right to personal privacy.¹⁸² Here, the alleged intangible harm is Spokeo's posting of inaccurate information about Robins.¹⁸³ This alleged injury appears similar to the common law injury of defamation.¹⁸⁴ Defamation requires "(a) a false and defamatory statement concerning another; (b) an unprivileged publication to a third party; (c) fault amounting at least to negligence on the part of the publisher; and (d) either actionability of the statement irrespective of special harm or the existence of special harm caused by the publication."¹⁸⁵ Victims of these injuries may recover damages even when they are unable to prove actual harm.¹⁸⁶ Similarly, the inaccurate report posted by Spokeo (a) makes false statements about Robins, (b) is an unprivileged publication to the public at large, (c) is arguably negligent in that it has not been verified before being disseminated for public consumption, and (d) has statements that are demonstrably false and are the

180. In effect, this Section provides guidance as to how *Spokeo should* come out on, given that the Supreme Court remanded so that the Ninth Circuit could conduct a separate analysis of whether Robins's alleged injury was concrete.

181. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549 (2016) (citing *Vermont Agency of Nat. Res. v. United States ex rel. Stevens*, 529 U.S. 765, 775–777 (2000)).

182. *Thomas v. FTS USA, LLC*, No. 3:13-cv-825, 2016 WL 3653878, at *10 (E.D. Va. June 30, 2016) (citing *United States Dep't of Justice v. Reporters Comm. for Freedom of Press*, 489 U.S. 749, 763 (1989)).

183. *Spokeo*, 136 S. Ct. at 1544–45; Robins's Complaint, *supra* note 5, ¶¶ 30–37, ¶¶ 63–65.

184. RESTATEMENT (SECOND) OF TORTS § 558 (AM. LAW INST. 1977).

185. *Id.*

186. *Id.* at § 558(d); *see also* RESTATEMENT (FIRST) OF TORTS § 575 cmt. b (AM. LAW INST. 1938).

grounds for legal action irrespective of “special harm” caused by Spokeo—the FCRA provides damages for willfully failing to comply with § 1681e, without requiring actual harm.¹⁸⁷ Thus, history weighs in favor of finding that the alleged injury provides basis for standing.

Although the *Spokeo* Court did not provide guidance for assessing the judgment of Congress,¹⁸⁸ examining Congress’s judgment with respect to the FCRA in general, and then with respect to the provisions at issue, seems appropriately rigorous. By enacting the FCRA in 1970, Congress intended (1) to address concerns about abuses in the consumer reporting industry and (2) to guard against technological developments that would open “the possibility of a nationwide data bank covering every citizen,”¹⁸⁹ stating that these data banks put an individual in “great danger of having his life and character reduced to impersonal ‘blips’ and key-punch holes in a stolid and unthinking machine which can literally ruin his reputation without cause, and make him unemployable.”¹⁹⁰ This was not a speculative concern: with the advent of these “computerized data banks,” Congress found that “in too many instances agencies were reporting inaccurate information that was adversely affecting the ability of individuals to obtain employment.”¹⁹¹ By passing the FCRA, Congress sought “to prevent consumers from being unjustly damaged because of inaccurate or arbitrary information.”¹⁹²

There are four provisions at issue in *Spokeo*, but Robins’s alleged injury is most clearly a violation of § 1681e(b), which requires consumer reporting agencies “to follow reasonable procedures to assure maximum possible accuracy of consumer reports.”¹⁹³ Robins alleged that Spokeo failed to

187. The FCRA imposes liability on “[a]ny person who willfully fails to comply with any requirement [of the Act] with respect to any” individual. 15 U.S.C. § 1681n(a) (2012).

188. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1549 (2016).

189. S. REP. NO. 91-517, at 2 (1969).

190. 116 CONG. REC. 36570 (1970) (statement of Rep. Sullivan).

191. *Dalton v. Capital Associated Indus., Inc.*, 257 F.3d 409, 414 (4th Cir. 2001) (citing Rep. Sullivan’s remarks in 116 CONG. REC. 36570 (1970)).

192. S. REP. NO. 91-517, at 1 (1969) (emphasis added). More generally, the FCRA states that “there is a need to insure that consumer reporting agencies exercise their grave responsibilities with fairness, impartiality, and a respect for the consumer’s right to privacy.” 15 U.S.C. § 1681(a)(4). This need to respect a consumer’s right to privacy in the context of the FCRA first appeared in a Senate bill to amend the Federal Deposit Insurance Act, introduced in the Senate on January 31, 1969. S. 823, 91st Cong. § 162(a)(4) (as reported by S. Comm. on Banking and Currency, Jan. 31, 1969).

193. 15 U.S.C. § 1681e(b). This provision originates from a Senate bill intended to “enable consumers to protect themselves against arbitrary, erroneous, and malicious credit information.” S. 823, 91st Cong. § 601 (as reported by S. Comm. on Banking and Currency, Nov. 5, 1969).

follow reasonable procedures.¹⁹⁴ The bill's accompanying Senate committee report states that the title's purpose was to require consumer reporting agencies to adopt "reasonable procedures" to ensure accurate information¹⁹⁵ and to protect consumers "from being unjustly damaged because of inaccurate or arbitrary information in a credit report."¹⁹⁶ Moreover, willful failure to comply with this requirement makes that entity civilly liable to the consumer under the FCRA.¹⁹⁷ Congress understood that actual damages from a violation of the FCRA "may be difficult to quantify or prove," but wanted to provide a statutory remedy for willful failure to comply with the FCRA's requirements.¹⁹⁸

According to the judgment of Congress, then, the willful failure to comply with § 1681e(b) is an injury sufficient to provide standing to sue. Since all injuries that provide the injured with standing must be concrete, this means that the willful failure to comply with this provision is concrete. Thus, the judgment of Congress appears to weigh in favor of finding that the harm at issue is concrete. However, even if history and judgment of Congress weigh in favor of finding that the alleged intangible harm is a concrete injury, these factors are not dispositive.¹⁹⁹

2. *Applying the Substantive vs. Procedural Distinction*

The next question in the three-step test is whether the FCRA provision at issue created a substantive or procedural right. If the FCRA provision created a substantive right, the violation of the provision is a concrete injury and is sufficient for standing.²⁰⁰ If the FCRA provision created a procedural right, the next step is to ask whether this is a bare procedural violation.

Here, § 1681e(b) requires credit reporting agencies "to follow reasonable procedures to assure maximum possible accuracy of consumer

194. Robins's Complaint, *supra* note 5, ¶¶ 65, 71, 75.

195. S. 823, 91st Cong. § 602(b) (as reported by S. Comm. on Banking and Currency, Nov. 5, 1969).

196. S. REP. NO. 91-517, at 1 (1969).

197. 15 U.S.C. § 1681n. Under § 1681n(a)(1)(A), the entity is then liable to that consumer for either "any actual damages sustained by the consumer as a result of the failure or damages of not less than \$100 and not more than \$1,000" (emphasis added). *Id.*

198. Thomas v. FTS USA, LLC, No. 3:13-cv-825, 2016 WL 3653878, at *11 (E.D. Va. June 30, 2016).

199. Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1549 (2016).

200. Burke v. Fed. Nat'l Mortg. Ass'n, No. 3:16cv153-HEH, 2016 WL 4249496, at *4 (E.D. Va. Aug. 9, 2016), *vacated*, No. 3:16cv153-HEH, 2016 WL 7451624, at *1 (E.D. Va. Dec. 6, 2016) (dismissing the case after the parties stipulated that the court lacked subject-matter jurisdiction).

reports.”²⁰¹ Using the *Landrum* court’s approach, whether a statutorily created right is substantive or procedural turns on whether that right is a right of “substance rather than form.”²⁰² Accordingly, the substantive right protected by the FCRA is the consumers’ interest in an accurate report. And the procedural protection of that right is the requirement that credit reporting agencies follow reasonable procedures to assure maximum possible accuracy of consumer reports.²⁰³ Thus, § 1681e(b) creates a procedural right.²⁰⁴

3. Applying the “Risk of Real Harm” Standard

Since the provision at issue created a procedural right, the next question is whether Robins’s alleged injury posed a “risk of real harm.” Applying the Second Circuit’s approach in *Strubel*, we consider (1) whether Congress created a procedural right “to protect an individual’s concrete interests,” and (2) whether a procedural violation demonstrates a “risk of real harm” to the underlying interest.²⁰⁵

In § 1681e(b), Congress created a procedural right to have credit reporting agencies follow reasonable procedures to assure maximum possible accuracy of consumer reports.²⁰⁶ The concrete interest that § 1681e(b) protects is the substantive right to have consumer reports of maximum accuracy.²⁰⁷ However, both the Second Circuit in *Strubel* and the Fifth Circuit in *Lee* identified broad concrete interests that were the “core object(s)” of the laws at issue, such as the right to “informed use of credit” and the “right to payment.”²⁰⁸ Here, the core object of the FCRA is to protect individuals from being “unjustly damaged because of inaccurate or arbitrary information,” particularly in the context of obtaining employment.²⁰⁹ Therefore, the underlying interest § 1681e(b) protects is the right not to be harmed by inaccurate information.²¹⁰

So, does the alleged procedural violation of § 1681e(b) demonstrate a “risk of real harm” to the underlying interest in an individual’s right not to

201. 15 U.S.C. § 1681e(b).

202. *Landrum v. Blackbird Enterprises*, No. H-16-0374, 2016 WL 6075446, at *4 (S.D. Tex. Oct. 3, 2016).

203. *See* 15 U.S.C. § 1681e(b).

204. *See id.*

205. *Strubel v. Comenity Bank*, 842 F.3d 181, 190 (2d Cir. 2016).

206. *See* 15 U.S.C. § 1681e(b).

207. *See id.*

208. *Strubel*, 842 F.3d at 190; *Lee*, 837 F.3d at 530.

209. S. REP. NO. 91-517, at 1 (1969).

210. *Cf. Strubel*, 842 F.3d at 190; *Lee*, 837 F.3d at 530; S. REP. NO. 91-517, at 1 (1969).

be harmed because of inaccurate information? In *Lee*, the Fifth Circuit found that the plaintiff's right to payment was not at risk because there was no allegation of risk to the plaintiff's "actual benefits"—in other words, no risk of economic harm alleged.²¹¹ But in *Spokeo*, Robins alleged that the inaccurate information not only posed a *risk* of harm to his employment prospects but also that the creation, display, and marketing of inaccurate information about him had caused *actual* harm to his employment prospects.²¹² Spokeo's marketing,²¹³ in combination with the inaccuracies in Robins's consumer report, affected Robins's ability to find a job by making him seem overqualified, unwilling to move for a job due to family commitments, or likely to require a salary higher than prospective employers were prepared to offer.²¹⁴ In addition, Robins alleged that he had suffered actual harm in the form of anxiety and stress about his reduced employment prospects.²¹⁵

Whether the alleged procedural violation poses a "real risk of harm," then, turns on whether a court would find that Robins had sufficiently alleged a "risk of real harm" from the inaccurate information posted about him. As in *Lee*, a court might be persuaded because the allegations include actual economic harm.²¹⁶ Justice Ginsburg, for one, found that Robins's complaint "already conveys concretely" that Spokeo's misinformation caused actual harm to his employment prospects.²¹⁷

IV. CONCLUSION

At first glance, *Spokeo* appears to be a win for defendants because it holds that a bare procedural violation is insufficient for Article III standing. Many harms alleged in information privacy and data security cases are

211. *Lee*, 837 F.3d at 530.

212. Robins's Complaint, *supra* note 5, ¶ 35.

213. Spokeo actively marketed its services to employers for the purpose of conducting background checks on potential employees. Robins's Complaint, *supra* note 5, ¶ 35. For example, in Spokeo's list of "Ten Great Uses for Spokeo People Search"—which was posted on its blog—Spokeo included this point: "[L]ooking to hire someone, or maybe work for a company? Spokeo free people search is a great research tool to learn more about prospective employers and employees." Robins's Complaint, *supra* note 5, ¶ 35.

214. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1554 (2016) (Ginsberg, J., dissenting) (citing Brief for Center for Democracy & Technology et al. as Amici Curiae in Support of Respondent, *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540 (2016) (No. 13-1339), 2015 WL 5302536, at *13).

215. Robins's Complaint, *supra* note 5, ¶ 37.

216. *See Lee*, 837 F.3d at 530.

217. *Spokeo*, 136 S. Ct. at 1554 (Ginsberg, J., dissenting).

likely bare procedural violations because they are intangible and do not involve economic or physical damage.²¹⁸ However, *Spokeo* may be less defendant-friendly than it appears, as the Court explicitly allowed that an intangible harm, such as the inaccurate posting of information about an individual, could in theory constitute a concrete injury if it posed a risk of real harm.²¹⁹ With this allowance, the Court opened the door to a greater range of injuries,²²⁰ and lower courts are in the process of developing a framework for evaluating the risks associated with these intangible harms.

As such, this Note proposes a three-step test: (1) Do both history and the judgment of Congress support the proposition that the intangible harm is concrete? (2) If so, what kind of right is created by statute—a procedural right, or a substantive right? If the right created is substantive, no further harm need be alleged. (3) If the right created is procedural, does the intangible harm pose a “risk of real harm”?

This test is consistent with standing doctrine and lends clarity to the decision-making process courts will use to decide whether an alleged statutory violation is concrete. As applied to the facts of *Spokeo*, the proposed three-step test opens the door for a court to find that Robins’s alleged injury, which implicates a greater interest in an individual’s right to informational privacy,²²¹ is concrete: the alleged injury very likely poses a risk of real harm, as evidenced by the actual economic and emotional harm incurred by Robins. On a larger scale, this proposed test gives courts greater ability to address new informational harms in the Internet Age,²²² and to balance an individual’s right to privacy with the advances of technology.

218. See Angelique Carson, *Why the Spokeo Ruling Maybe Isn’t What You Thought*, IAPP.ORG: PRIVACY ADVISOR (May 17, 2016), <https://iapp.org/news/a/why-the-spokeo-ruling-maybe-isnt-what-you-thought/> [<https://perma.cc/M33F-9Z9H>].

219. *Spokeo*, 136 S. Ct. at 1549–50.

220. *See id.* at 1549–50.

221. *See* *Burke v. Fed. Nat’l Mortg. Ass’n*, No. 3:16cv153-HEH, 2016 WL 4249496, at *4 (E.D. Va. Aug. 9, 2016), *vacated*, No. 3:16cv153-HEH, 2016 WL 7451624, at *1 (E.D. Va. Dec. 6, 2016) (dismissing the case after the parties stipulated that the court lacked subject-matter jurisdiction); *cf. Spokeo*, 136 S. Ct. 1551 (Thomas, J., concurring) (noting that the right to personal security (including security of reputation) is a traditional private right).

222. *See* Schroeder, *supra* note 6.

ENCRYPTION SERVED THREE WAYS: DISRUPTIVENESS AS THE KEY TO EXCEPTIONAL ACCESS

Dustin Taylor Vandenberg[†]

Recently, there has been a rapid increase in the deployment of encryption technologies.¹ While the ubiquity of encryption has led to innovations in security and privacy,² these benefits stand at odds with government interests in access to data.³ Controversial court cases in San Bernardino⁴ and New York⁵ highlight the modern debate over exceptional access to encrypted data. However, the debate over encryption is not new. The debate began back in the 90s in what has been dubbed the “crypto

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1. See Susan W. Brenner, *Intellectual Property Law Symposium: Encryption, Smart Phones, and the Fifth Amendment*, 33 WHITTIER L. REV. 525, 533 (2012) (“I believe we will see an increased use of encryption and other data-protection measures that will make it increasingly difficult, if not impossible, for officers to access the contents of a smart phone or other digital device by bypassing minimal, if any, security measures.”); see also, e.g., Craig Timberg, *Newest Androids Will Join iPhones in Offering Default Encryption, Blocking Police*, WASH. POST BLOG (Sept. 18, 2014) (“The next generation of Google Android’s operating system . . . will encrypt data by default.”) https://www.washingtonpost.com/news/the-switch/wp/2014/09/18/newest-androids-will-join-iphones-in-offering-default-encryption-blocking-police/?utm_term=.0800c87af627 [<https://perma.cc/S7ZS-J9XP>].

2. H Abelson et al., *Keys Under Doormats: Mandating Insecurity by Requiring Government Access to All Data and Communications*, MASS. INST. OF TECH. COMPUT. SCI. & ARTIFICIAL INTELLIGENCE LAB. 5 (2015) (“After lengthy debate and vigorous predictions of enforcement channels ‘going dark,’ these attempts to regulate the emerging Internet were abandoned. In the intervening years, innovation on the Internet flourished.”).

3. See, e.g., MAJORITY STAFF OF H. HOMELAND SEC. COMM., 114TH CONG., GOING DARK, GOING FORWARD: A PRIMER ON THE ENCRYPTION DEBATE (2016), <http://homeland.house.gov/wp-content/uploads/2016/07/Staff-Report-Going-Dark-Going-Forward.pdf> [<https://perma.cc/6ALL-QHE8>] [hereinafter GOING DARK, GOING FORWARD].

4. *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, CA License Plate 35 KGD203*, No. ED-0451M, 2016 WL 618401 (C.D. Cal. Feb. 16, 2016).

5. *In re Apple, Inc.*, 149 F. Supp. 3d 341 (E.D.N.Y. 2016).

wars.”⁶ While the initial round of the crypto wars was won by proponents of strong cryptography, difficult questions still remain. Recently, the debate over cryptography has reignited over exceptional access to encrypted data. Some recently proposed policies regarding exceptional access have been broad and unclear in their scope.⁷

In order for the debate over exceptional access to encryption to move forward, it is important to understand the three primary contexts where encryption is used: data in the cloud, data in-transit, and data on endpoint devices. This Note seeks to provide some clarity as to how policymakers can include these nuances in their discussions on encryption. Policymakers should carefully consider the technology underpinning encryption, the usage of encryption, and the risks associated with exceptional access to encrypted data—a combination called “disruptiveness.”

Part I will cover some of the necessary technical background on encryption to frame the discussion. Part II proposes a new framework to the debate over exceptional access, focusing on the disruptiveness that exceptional access would have on each of the three major implementations of encryption. Part III applies this framework in the cloud context. Part IV examines data-in-transit. Part V analyzes data at rest on endpoints. Finally, Part VI looks to the potential future of the debate over exceptional access with disruptiveness in mind.

I. WHAT ARE ENCRYPTION AND EXCEPTIONAL ACCESS?

Before diving into the debate, it is important to have a clear idea what encryption and exceptional access are and how they work.

A. ENCRYPTION

In order to distinguish among various implementations of encryption, it is necessary to understand what encryption is. In the most basic sense,

6. See Urs Gasser et al., *Don't Panic. Making Progress on the "Going Dark" Debate* at 5, BERKMAN CTR. FOR INTERNET & SOC'Y AT HARV. UNIV. (2016).

7. Draft language of the Compliance with Court Orders Act of 2016 requires that companies provide “information or data” to the government in an “intelligible format” or provide “technical assistance as is necessary to obtain such information or data.” Compliance with Court Orders Act of 2016, S. ___, 114th Cong. § 3(a)(1) (Discussion Draft 2016) [hereinafter Compliance with Court Orders Act], http://www.feinstein.senate.gov/public/_cache/files/5/b/5b990532-cc7f-427f-9942-559e73eb8bfb/6701CF2828167CB85F51D12F7CB69D74.bag16460.pdf [<https://perma.cc/F2Q4-2G93>]; see also GOING DARK, GOING FORWARD, *supra* note 3, at 6 (“Any legislative ‘solutions’ yet proposed come with significant trade-offs, and provide little guarantee of successfully addressing the issue.”).

encryption is a method of taking readable data (called “plaintext”) and “scrambling” it into a ciphertext that is unreadable.⁸ Encryption requires a “key,” which effectively tells the encryption process how to “scramble” the data.⁹ Decryption is the opposite of encryption, taking that “scrambled” ciphertext and turning it back into a readable format.¹⁰ In order for the data to be readable, typically, the decryption algorithm must use the exact same key as the encryption process.¹¹

Data can be stored either at-rest or in-transit. Data at-rest is data that is sitting on one device (such as a laptop, phone, or server).¹² Data in-transit is data being sent among two or more devices.¹³ When one encrypts data, one must be sure that the key is only shared with individuals who should be allowed to decrypt that data.¹⁴ For data in-transit, this requires that the two communicating parties know a shared secret key so that the parties can encrypt and decrypt each other’s communications.¹⁵ Because both parties must have the exact same key, encryption of data in-transit using a shared secret key is typically referred to as “symmetric encryption.”¹⁶

One of the major difficulties in using symmetric encryption is that two parties must therefore have a method to exchange the private key. Throughout the history of cryptography, this posed the risk that anyone eavesdropping on their conversation would be able to determine what their shared private key was.

This problem was solved using what is called a Diffie-Hellman key exchange.¹⁷ This exchange requires that each party has two keys, one public and one private.¹⁸ The public and private keys from each party are combined so that both of the parties end up with the same shared private session key,

8. SERGE VAUDENAY, A CLASSICAL INTRODUCTION TO CRYPTOGRAPHY: APPLICATIONS FOR COMMUNICATIONS SECURITY 21 (2006).

9. *Id.*

10. *Id.*

11. BRUCE SCHNEIER, APPLIED CRYPTOGRAPHY: PROTOCOLS, ALGORITHMS, AND SOURCE CODE IN C 2–3 (1994).

12. Dave Shackleford, *Regulations and Standards: Where Encryption Applies* at 2, SANS INST. INFOSEC READING ROOM (2007), <https://www.sans.org/reading-room/whitepapers/analyst/regulations-standards-encryption-applies-34675> [<https://perma.cc/RA28-9LFW>].

13. *Id.*

14. KLAUS SCHMEH, CRYPTOGRAPHY AND PUBLIC KEY INFRASTRUCTURE ON THE INTERNET 42–43 (2003).

15. SCHNEIER, *supra* note 11, at 2–3.

16. SCHMEH, *supra* note 14, at 42–43.

17. See Whitfield Diffie & Martin E. Hellman, *New Directions in Cryptography*, 22 IEEE TRANSACTIONS ON INFO. THEORY 644 (1976).

18. SCHNEIER, *supra* note 11, at 29–30.

which is essentially a mix of both parties' private and public keys.¹⁹ An adversary who did not know the private keys of both parties would be unable to replicate the "mix" and determine what that shared private key is, even if the adversary saw all the communications between the two parties.²⁰ Because this method requires that both parties begin with two distinct keys, one public and one private, it is referred to as "asymmetric encryption."²¹

B. EXCEPTIONAL ACCESS

Exceptional access is giving an individual or organization (often the Government) access to the readable data someone has encrypted. Exceptional access requires that the third party be granted access to the plaintext data associated with encrypted data.²² Exceptional access to communications requires one of the following: key escrow,²³ key generation vulnerabilities,²⁴ brute-force attacks,²⁵ or a vulnerability known as a "zero-day."²⁶

Under key escrow, each individual communication still uses a private key to encrypt the data, but that key is stored in escrow.²⁷ Under this scheme, when the government needs access to encrypted content, the government would get the secret key from the key escrow and use that key to decrypt the data at issue.²⁸

A second method of exceptional access is to introduce a vulnerability into the key generation process. Virtually all key generation in cryptography relies upon pseudo-random number generators.²⁹ When two parties want to communicate, the parties use these generators to create random keys that

19. SCHMEH, *supra* note 14, at 94–95.

20. *Id.*

21. VAUDENAY, *supra* note 8, at 229.

22. K. W. Dam et al., *Cryptography's Role in Securing the Information Society*, NAT'L ACAD. PRESS 80 (1996) ("Exceptional access refers to situations in which an authorized party needs and can obtain the plaintext of encrypted data.").

23. *Id.* at 167 ("Escrowed encryption is the basis for a number of Administration proposals that seek to reconcile needs for information security against the needs of law enforcement and to a lesser extent national security.").

24. SCHNEIER, *supra* note 11, at 140–145 ("[An attacker] doesn't have to attempt to cryptanalyze your cryptographic algorithm when [they] can cryptanalyze your key generation algorithm.").

25. VAUDENAY, *supra* note 8, at 51–62.

26. ROBERT O'HARROW, *ZERO DAY: THE THREAT IN CYBERSPACE* 7 (2013) (a 'zero day' is "a vulnerability in the software that has never been made public and for which there is no known fix").

27. K. W. Dam et al., *supra* note 22, at 80.

28. *Id.*

29. SCHNEIER, *supra* note 11, at 39–41.

are then used to generate the shared private key.³⁰ If a third party were able to replicate that random number generation, the third party could follow the same publicly-known steps as the parties to gain access to the same shared private key.³¹ Under this scheme, the pseudo-random number generators would need to allow the government to replicate the random number generation used by the communicating parties at the time of key generation; that way the government could replicate the process using those mandated generators.

There are other approaches that do not fully satisfy governmental interests. An actor seeking access may simply guess passwords until the correct key is obtained, bypassing the protections afforded by encryption. This process is known as a “brute-force” attack.³² In cases with short passwords, such as 4-digit PINs on phones, this may be an effective solution. However, brute-force attacks may be impractical depending on the length and complexity of the password and the design of the cryptographic system.³³

Another partial solution for specific cryptographic products is using an unintended vulnerability known as a “zero-day.” By definition, a zero-day is a vulnerability that has not yet been exposed or patched.³⁴ This is the vulnerability the FBI used to gain access to the San Bernardino shooter’s iPhone.³⁵ Using zero-day vulnerabilities may not, however, be a practical solution for day-to-day operations in law enforcement and intelligence. The San Bernardino zero-day, for example, reportedly cost over \$1,300,000

30. See SCHMEH, *supra* note 14, at 134–39 (describing commonly implemented generators using feedback functions, cryptographic hash functions, and linear feedback shift registers).

31. *Id.*

32. SCHNEIER, *supra* note 11, at 129–136.

33. Complex PINs longer than a few digits or passwords containing a variety of letters, numbers, or symbols may take hundreds of millions of years of computing time to guess, even without any delay imposed by the hardware or software; however, shorter passwords and dedicated brute-force hardware may be able to reduce this computing time depending on the protocols utilized. See *Id.*

34. These vulnerabilities are called “zero-days” because there have been zero days since the vulnerability was released to the public, making them highly valuable and extremely effective because no patch exists to prevent the vulnerability. See O’HARROW, *supra* note 26, at 7.

35. Ellen Nakashima, *FBI Paid Professional Hackers One-Time Fee to Crack San Bernardino iPhone*, WASH. POST (April 12, 2016), https://www.washingtonpost.com/world/national-security/fbi-paid-professional-hackers-one-time-fee-to-crack-san-bernardino-iphone/2016/04/12/5397814a-00de-11e6-9d36-33d198ea26c5_story.html?utm_term=.c79030c4e81f [<https://perma.cc/46T9-RKLC>].

alone and may not work on phones with different versions of iOS or different hardware.³⁶

II. MAKING PROGRESS ON EXCEPTIONAL ACCESS THROUGH DISRUPTIVENESS

One of the first battles in the “crypto wars” involved a device known as the “Clipper Chip.”³⁷ In 1993, as cryptography transitioned from military and government use to consumers and corporations, there was a fear that the government would be locked out of crucial communications. In response, the NSA designed a small computer chip, which manufacturers would implement into electronics throughout the United States.³⁸ The chip was designed to contain a government master key that could provide access to encrypted communications when legally appropriate.³⁹ This key escrow system was met with intense criticism by civil libertarians and technologists. There were concerns over the security implications of the clipper chip,⁴⁰ the impact on innovation in cryptography,⁴¹ and the effects on privacy.⁴² As a result of this backlash, the clipper chip proposal died.⁴³

Jumping forward to today, Congress has begun to discuss legislative solutions to provide exceptional access to encrypted data in light of the battle between Apple and the FBI. In the last Congress, draft legislation known as “The Compliance with Court Orders Act of 2016” would have required that companies provide “information or data” to the government in an “intelligible format” or provide “technical assistance as is necessary to obtain such information or data.”⁴⁴ This proposal was met with resistance

36. Tom Spring, *Experts Weigh-In Over FBI \$1.3 Million iPhone Zero-Day Payout*, THREATPOST (April 22, 2016), <https://threatpost.com/experts-weigh-in-over-fbi-1-3-million-iphone-zero-day-payout/117614/> [<https://perma.cc/93UK-TR38>].

37. H. Abelson et al., *supra* note 2, at 5.

38. *Id.*

39. *Id.*

40. See e.g., Matt Blaze, *Protocol failure in the Escrowed Encryption Standards*, AT&T BELL LABS. (1994).

41. See, e.g., LANCE J. HOFFMAN, BUILDING IN BIG BROTHER 393-399 (1995).

42. See, e.g., Marc Rotenberg et al., *Crypto Experts Letter on Clipper* (Jan. 1994), https://epic.org/crypto/clipper/crypto_experts_letter_1_94.html [<https://perma.cc/TJ3D-QM2B>].

43. Parker Higgins, *On the Clipper Chip’s Birthday, Looking Back on Decades of Key Escrow Failures*, ELECTRONIC FRONTIER FOUND. (April 16, 2015) (Blog post), <https://www.eff.org/deeplinks/2015/04/clipper-chips-birthday-looking-back-22-years-key-escrow-failures> [<https://perma.cc/25Z4-XHS2>].

44. Compliance with Court Orders Act of 2016, S. ____, 114th Cong. § 3(a)(1) (Discussion Draft 2016).

from industry and advocacy groups such as the Information Technology and Innovation Foundation,⁴⁵ the Internet Association,⁴⁶ and the Electronic Frontier Foundation,⁴⁷ as well as from elected officials.⁴⁸ This proposal did not distinguish among differing forms of encryption,⁴⁹ rendering it overly broad and unrealistic to implement.⁵⁰ Because of some of these criticisms, the bill was not enacted.⁵¹

A. ENCRYPTION IN THE LEGAL SPHERE

At a federal level, encryption has played a large role in debates surrounding access to digital communications. The Communications Assistance for Law Enforcement Act (CALEA) of 1994 required that telecommunications carriers ensure that the government could, with lawful

45. Daniel Castro, *Compliance with Feinstein-Burr Encryption Bill Would Create Untenable Legal Paradox for U.S. Companies*, INFO. TECH. AND INNOVATION FOUND. (2016) (“In short, this bill sets up a legal paradox that would further muddy the waters about how and when the government can compel the private sector to assist in gaining access to private information”).

46. Michael Beckerman, *Statement on the Compliance with Court Orders Act of 2016*, INTERNET ASS’N (Apr. 11, 2016). The statement read, in part:

The draft legislation, as currently written, creates a mandate that companies engineer vulnerabilities into their products or services, which will harm national security and put Americans at risk. Strong encryption is vital to protecting national security, personal privacy, communications, the electric grid, hospitals, and our defense systems. Mandating the weakening of encryption will put the United States’ national security and global competitiveness at risk without corresponding benefits. As the Administration considers its response to the bill, we hope President Obama takes a position that supports the use of strong encryption without backdoors.

47. Patrick Howell O’Neill, *EFF Vows to Tie Up Encryption ‘Backdoor’ Legislation in Court ‘For Years.’* DAILY DOT (Apr. 8, 2016) (“The first thing that’s going to happen is that any backdoor legislation is going to be tied up in the courts for years The EFF is going to lead that effort.”).

48. See, e.g., Ron Wyden, *Wyden Statement on Burr-Feinstein Anti-Encryption Bill* (April 13, 2016) (“Americans who value their security and liberty must join together to oppose this dangerous proposal. I intend to oppose this bill in committee and if it reaches the Senate floor, I will filibuster it.”).

49. See Compliance with Court Orders Act of 2016, S. ___, 114th Cong. § 4(5)(B) (including “information stored remotely or on a device provided, designed, licensed, or manufactured by a covered entity” in the definition of “data,” thus failing to distinguish between data on an endpoint versus data in the cloud.).

50. Cindy Cohn, *The Burr-Feinstein Proposal is Simply Anti-Security*, ELECTRONIC FRONTIER FOUND. (Apr. 8, 2016).

51. Dustin Volz et al., *Push for Encryption Law Falters Despite Apple Case Spotlight*, REUTERS (May 27, 2016).

authorization, intercept wire and electronic communications.⁵² In 2005, CALEA was expanded to cover voice over internet protocol (VoIP) service;⁵³ however, CALEA states that telecommunication carriers are not “responsible for decrypting, or ensuring the government’s ability to decrypt, any communication encrypted by a subscriber or customer, unless the encryption was provided by the carrier and the carrier possesses the information necessary to decrypt the communication.”⁵⁴

Encryption has also worked its way into regulatory frameworks surrounding cybersecurity best practices. While not always explicitly required, agencies like the Federal Trade Commission (FTC) have found security measures to be unreasonable, in part, because of a lack of encryption utilization.⁵⁵ Furthermore, state legislatures have viewed encryption as an important safeguard against data breaches, with many states incorporating “safe harbors” to data breach notification requirements when companies encrypt their data.⁵⁶

Finally, the courts have recognized the extensive personal information which is available on many consumer electronic devices, which may pave the way for stronger privacy protections through encryption.⁵⁷ Conversely, there are a number of pending cases that exemplify the risks law enforcement face when key evidence is locked away with encryption.⁵⁸

B. THE CULTURAL BATTLE BEHIND ENCRYPTION

A cultural battle between the technology community and the legal/policy community must be recognized in this debate. At a fundamental

52. 47 U.S.C. § 1002(a) (1994).

53. See Fed. Comm’n Comm., *In the Matter of Communications Assistance for Law Enforcement Act and Broadband Access and Services*, 20 FCC Rcd. 14989 (Sept. 2005).

54. 47 U.S.C. § 1002(b) (1994). As an aside, it is unclear whether this exemption would protect carriers who do encrypt and *could* possess the information necessary to decrypt, but choose not to keep encryption keys used by their customers, as is the case with forward secrecy.

55. See Complaint at 2, *In Re BJ’s Wholesale Club, Inc.*, No. 042 3160 (F.T.C. 2005).

56. Baker & Hostetler LLP, *Data Breach Charts* (2016), https://www.bakerlaw.com/files/uploads/documents/data%20breach%20documents/data_breach_charts.pdf [<https://perma.cc/BKW9-WQ8C>] (showing as of January 1, 2017, 49 states and territories grant some form of encryption safe harbor).

57. See *Riley v. California*, 134 S. Ct. 2473 (2014), which is discussed in greater detail *infra* Section V.C.3.

58. See, e.g., *People v. Sandel, Rivera, and Cruz*, Indictment No. 3158/15 (N.Y. Sup. Ct. 2015) (rape and robbery conspiracy); *People v. Hirji*, Indictment No. 3650/15 (N.Y. Sup. Ct. 2015) (child pornography); *People v. Brown*, Indictment Nos. 865/12, 3908/12, and 3338/13 (N.Y. Sup. Ct. 2013) (sex trafficking); *People v. Rosario*, Indictment No. 1859/10 (N.Y. Sup. Ct. 2010) (homicide exoneration).

level, these two groups see encryption and government access to data through very different lenses.

The prototypical Silicon Valley technologist sees technology and innovation as the keys to progress. Computer code should be written to be bug free and secure.⁵⁹ From this viewpoint, any vulnerability in encryption goes against the fundamental principle that drives Silicon Valley forward: innovation. In this mindset, innovations in security are what have created the secure communications⁶⁰ which underpin the U.S. economy.⁶¹ Exceptional access asks these technologists to abandon this progress and leave their customers with a product that is less secure than current technology allows, which is extremely unappealing. This side of the debate believes the government's demands are unnecessary, as the proliferation of

59. See, e.g., Apple, *iOS Security Guide: iOS 9.3 or Later* at 18 (May 2016) (“[Apps are] reviewed by Apple to ensure they operate as described and don’t contain obvious bugs or other problems . . . [which] gives customers confidence in the quality of the apps they buy.”); Brief of the Center for Democracy & Technology as *Amicus Curiae* in Support of Apple Inc.’s Motion to Vacate and in Opposition to Government’s Motion to Compel Assistance at 2, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)) (“[S]ystems need to be safe from malicious third party attacks. A decision compelling Apple to weaken critical security features on its phones will leave [consumers] . . . vulnerable. Companies . . . work hard to make [their technology] secure.”); Brief of *Amicus Curiae* AirBnB, Inc.; Atlassian Pty. Ltd.; Automatic Inc.; Cloudflare, Inc.; eBay Inc.; GitHub, Inc.; Kickstarter, Pbc; LinkedIn Corporation; Mapbox Inc.; A Medium Corporation; Meetup, Inc.; Reddit, Inc.; Square, Inc.; Squarespace, Inc.; Twilio Inc.; Twitter, Inc.; and Wickr Inc. at 4, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)). According to this brief:

The increasing ubiquity of the Internet in all aspects of life has ushered in a new generation of innovative products and services for consumers and businesses. In the midst of this digital revolution—and the ever-present and increasing dangers posed by hackers, identity thieves, and other wrongdoers—ensuring that users’ data is handled in a safe, secure, and transparent manner that protects privacy is of utmost importance.

60. Brief of *Amicus Curiae* AirBnB, Inc., *supra* note 59, at 4 (“These services provide the ability to communicate with friends, family, colleagues, external advisers and the world at large; to share and read live news from around the world or in-depth works of commentary and expression.”).

61. *Id.* (“For the companies operating in today’s ever-connected digital world, the values of privacy, security, and transparency are essential guiding principles for building trust with their users.”).

devices and communications has placed us in the “golden age of surveillance.”⁶²

Meanwhile, a completely different mindset can be found in the law enforcement and intelligence community. While those advocating for exceptional access can understand the importance of encryption to computer security, their profession revolves around managing risk, not eliminating it.⁶³ Decisions are based upon comparing a wide array of less-than-ideal solutions to try and minimize harms and maximize benefits. From this viewpoint, this sort of balancing is required to meet the operational goals of protecting our communities and national security.⁶⁴ The government fears that the continued proliferation of encryption will lead to a future where access to key evidence⁶⁵ and intelligence⁶⁶ is impossible, a fear known as “going dark.”⁶⁷ To advocates on this side, cases like San Bernardino are just the tip of the iceberg, as more and more devices are

62. *Going Dark: Encryption, Technology, and the Balance Between Public Safety and Privacy: Hearing Before the S. Comm. On the Judiciary*, 114TH CONG. (2015) (statement of Prof. Peter Swire).

63. Jonathan Remy Nash, *The Supreme Court and the Regulation of Risk in Criminal Law Enforcement*, 92 B.U. L. REV. 171, 178 (“Insofar as it involves risk to alleged criminals, convicted criminals, the public, and law enforcement officers, criminal law enforcement raises a host of risk-related issues.”).

64. Brief of *Amici Curiae* Federal Law Enforcement Officers Association, Association of Prosecuting Attorneys, Inc., and National Sheriffs’ Association in Support of the Government’s Motion to Compel Apple, Inc. to Comply with This Court’s February 16, 2016 Order Compelling Assistance in Search at 2, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)). The *Amici* members are:

[C]alled upon on a daily basis to protect and serve the public by investigating criminal activity and wrongdoing to ensure that the individuals responsible for it pay the penalty for their crimes. In order to fulfill their duties, *Amici* members must have access to all reasonable means of procuring relevant evidence.

65. See Manhattan Dist. Attorney’s Office, *Report of the Manhattan District Attorney’s Office on Smartphone Encryption and Public Safety* at 9–12 (November 2015) (discussing cases where encryption rendered evidence unavailable for homicides, rape and robbery conspiracy, child pornography, sex trafficking, cybercrime and identity theft, and unlawful surveillance).

66. MAJORITY STAFF OF H. HOMELAND SEC. COMM., *supra* note 3, at 10 (“[L]aw enforcement and intelligence officials have reported to Committee staff that their inability to obtain access to the digital communications of criminals is increasingly hindering their activities . . . Unfortunately, terrorists also use encryption technology to hide their communications from law enforcement and intelligence professionals.”).

67. *Encryption Tightrope: Balancing Americans’ Security and Privacy*, 114TH CONG. 9–13 (2016) (statement of James B. Comey, Director of Federal Bureau of Investigation).

becoming unreachable⁶⁸ despite having a legal right to access the data on the device. Advocates on this side contend that the rationales for ubiquitous encryption may be overstated and misleading.⁶⁹ They argue, on balance, that these concerns may not outweigh the societal costs associated with a lack of access to evidence and intelligence.⁷⁰

C. A BETTER WAY FORWARD: DISRUPTIVENESS ON THREE FRONTS

Past attempts to address the issue of exceptional access (such as the Clipper Chip or the Compliance with Court Orders Act) teach valuable lessons for future attempts to forge compromise. Rather than attempting to broadly address all encryption, proposals should be tailored. Encryption is deployed in three very different contexts, and moving forward, policymakers should recognize how these varying implementations can entail differing technologies, incentives, and risks. Without this context on the forefront of the discussion, future policy proposals are likely to meet the same fate as their predecessors.

This Note proposes viewing the “disruptiveness” of exceptional access as a way to compare exceptional access in the cloud, in-transit, and in endpoints. While the phrase “disruptiveness” is a somewhat broad metric, the extensive nature of this problem requires a metric broad enough to

68. *Id.*

69. *See Government’s Motion to Compel Apple Inc. to Comply with This Court’s February 16, 2016 Order Compelling Assistance in Search* at 6-7, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)) (“Apple appears to object based on a combination of: a perceived negative impact on its reputation and marketing strategy were it to provide the ordered assistance to the government, numerous mischaracterizations of the requirements of the Order, and an incorrect understanding of the All Writs Act.”); *see also Amicus Curiae Brief of Greg Clayborn, James Godoy, Hal Houser, Tina Meins, Mark Sandefur, and Robert Velasco* at 6, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)) (“Apple is conflating many different policy debates for the dual purposes of excusing itself from compliance with current law and protecting its public image.”).

70. *See* Manhattan Dist. Attorney’s Office, *supra* note 62, at 2–3. The report states:

Previous Apple and Google operating systems allowed law enforcement to access data on devices pursuant to search warrants. There is no evidence of which we are aware that any security breaches have occurred relating to those operating systems. Apple and Google have never explained why the prior systems lacked security or were vulnerable to hackers, and thus, needed to be changed. Those systems appeared to very well balance privacy and security while still being accessible to law enforcement through a search warrant.

encompass the various aspects of the debate.⁷¹ Disruptiveness can, in a basic sense, be thought of as a combination of two separate measurements: (1) the extent that encryption is used in a particular context and (2) the risks associated with exceptional access in that context.

These measurements should be viewed with an eye toward the unique aspects of encryption technology in the differing contexts of the cloud, in-transit, and endpoints. Unless the debate recognizes these nuances, proposals may lack clarity and create technically infeasible requirements.

1. Extent of Use of Encryption

The first factor of disruptiveness examines how prevalent the use of encryption is within a given context. After all, if encryption is not widely deployed in a particular context, then a mandate that potentially undermines the effectiveness of that encryption may not disrupt as many individuals. However, it is important to note not only the current utilization of encryption, but also the trends moving forward. Even if encryption is minimally deployed within a particular context, efforts to undermine encryption may serve to chill future use of encryption—which can increase the disruptiveness in that context.

2. Risks of Exceptional Access

When evaluating the risks associated with mandating exceptional access within a particular context of encryption, there are four key factors to assess: (1) Within that context, what threats are faced? (2) How does encryption respond to those threats? (3) Would exceptional access undermine those protections? (4) Can alternatives to encryption also respond to the threats?

This framework provides consistency in the analysis among the various contexts where encryption is used while taking into account the fundamental purposes behind having encryption in the first place. If there are alternatives to encryption that can provide similar protections, then a mandate of exceptional access may have limited disruptiveness.

D. THE IMPLICATIONS OF DISRUPTIVENESS

Finally, even if there is a clear idea of how “disruptive” exceptional access is in a given context the natural next question is: what are the implications of that level of disruptiveness? By-and-large, disruptiveness

71. Exceptional access implicates issues with cybersecurity, innovation, law enforcement, national security, privacy, human rights, technical interoperability, consumer interests, corporate interests, international relations, and more. This Note will provide only a limited contribution towards the full understanding of how disruptive exceptional access may be in various contexts.

can serve as a guide to help guide progress in the debate over exceptional access. As a general rule, areas where exceptional access would be less disruptive are likely better avenues for debate—as the negative ramifications of exceptional access are lessened.

However, this disruptiveness must also be balanced against the various needs for exceptional access in each of the three contexts of encryption. If, for instance, the need for exceptional access to endpoint devices is significantly greater for law enforcement and intelligence when compared to data in-transit or in the cloud, then that need should be counterbalanced against the disruptiveness to provide a comparison between exceptional access in each separate context.

Currently, however, it is unclear if there are reasons why the government (if it were forced to prioritize) would choose any one particular context over another. Given the diversity in missions and resources between local law enforcement, federal law enforcement, domestic intelligence agencies, and foreign intelligence agencies, it can be difficult to define what “the government” as a whole even wants when it comes to exceptional access, short of “everything.”

Encryption on endpoint devices can limit access both to devices for local law enforcement’s evidence gathering in a murder case⁷² and access to key intelligence recovered from raids on terrorist networks overseas.⁷³ Likewise, intelligence agencies may use monitoring of internet messages and e-mails to help investigate and stop criminal activity and national security threats.⁷⁴ Furthermore, warrants to search data stored by cloud

72. See Manhattan Dist. Attorney’s Office, *supra* note 62, at 9. *People v. Hayes*, Indictment Number 4451/12:

The victim was filming a video using his iPhone when he was shot and killed by the defendant. The video captured the shooting. Because the iPhone was not passcode-locked, the video was recovered and admitted into evidence at trial. The video corroborated eyewitness testimony. The defendant was convicted of murder and sentenced to 35 years to life.

73. See Emily Rand, *Source: 2.7 terabytes of data recovered from bin Laden compound*, CBS NEWS (May 6, 2011), <http://www.cbsnews.com/news/source-27-terabytes-of-data-recovered-from-bin-laden-compound/> [<https://perma.cc/D7L3-X4NQ>]. A law enforcement source told CBS News that “2.7 terabytes of data were recovered from the laptops, computers, hard drives and other storage devices seized from the bin Laden compound . . . Sources said much of the material seized in the daring raid was encrypted so the messages could not be read if they were intercepted.”

74. See Charlie Savage & Nicole Perlroth, *Yahoo Said to Have Aided U.S. Email Surveillance by Adapting Spam Filter*, N.Y. TIMES (Oct. 5, 2016), <https://www.nytimes.com/2016/10/06/technology/yahoo-email-tech-companies-government-investigations.html> [<https://perma.cc/8Ezt-2SX2>]. According to this article:

providers like Facebook may be key for law enforcement at all levels.⁷⁵ It is difficult to guess which of these missions is the most important and would be prioritized, as all can be crucial to advancing the mission of various government agencies.

Moving forward, clarity on where exactly the need for exceptional access is greatest would help inform and potentially counterbalance disruptiveness. Given the limited scope of this Note, until the prioritization of these contexts by the government is clear, we can operate on the assumption that the government treats all forms of encryption and all sources of data as roughly equivalent in importance. Therefore, disruptiveness acts as the primary differentiator between progress on exceptional access to encrypted data in the cloud, in-transit, or at endpoints.

In this Note, disruptiveness is roughly scored on a scale from low to medium to high. Where exceptional access is highly disruptive, policymakers should be wary of mandating exceptional access, as the costs (monetary, security, public perception, privacy, etc.) will likely outweigh any benefits that exceptional access may provide; however, where disruptiveness is low or medium, there is more potential for a meaningful compromise which can allow government access while protecting the security of computer systems within that context.

III. ENCRYPTION IN THE CLOUD

First, we can examine the potential disruptiveness of exceptional access to encrypted data stored in the cloud. Here, there has been limited adoption of encryption technology, yet encryption can be effective at protecting some

Yahoo customized an existing scanning system for all incoming email traffic, which also looks for malware . . . [T]he system stored and made available to the Federal Bureau of Investigation a copy of any messages it found that contained the digital signature . . . Investigators had learned that agents of the foreign terrorist organization were communicating using Yahoo's email service and with a method that involved a 'highly unique' identifier or signature.

75. See LEXISNEXIS, SOCIAL MEDIA USE IN LAW ENFORCEMENT 2 (2014), <https://www.lexisnexis.com/risk/downloads/whitepaper/2014-social-media-use-in-law-enforcement.pdf> [<https://perma.cc/9JV4-BHRV>]. The report states:

Law enforcement professionals throughout the U.S. are increasingly turning to modern technology, including social media, to aid in carrying out their public safety mission, with a primary goal of preventing and investigating crime. The frequency of social media use by law enforcement, while already high, is projected to rise even further in the coming years.

cloud systems. Therefore, the disruptiveness is somewhere between low and medium.

A. CLOUD TECHNOLOGY AND DEPLOYMENT MODELS

The National Institute of Standards and Technology defines cloud computing as “a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) . . .”⁷⁶ Generally speaking, this means that cloud computing is an internet-based service for users to access software, resources, and information stored elsewhere and managed by someone else.⁷⁷ However, the exact technical implementation of a cloud depends on the deployment model of the cloud provider. There are four types of cloud deployment models: private, community, public, and hybrid.⁷⁸

A private cloud model requires that the cloud services are used by a single organization.⁷⁹ A public cloud model provides a service to the general public and gives the cloud provider full control of the cloud services.⁸⁰ A community cloud model provides cloud services to a number of organizations which are jointly managed by a single provider.⁸¹ A hybrid model combines any of the other deployment models.⁸²

Every deployment model except for public can allow the users of the cloud services to manage their own servers. This gives them control over the encryption of data and the keys to decrypt that data. However, many cloud services⁸³ depend on third party servers, wresting control away from the end user and allowing the cloud service provider to decide what data is encrypted and who has the capacity to decrypt that data.

B. LIMITED USE OF ENCRYPTION IN THE CLOUD

Unlike other contexts, the cloud has been slow to adopt encryption technologies. This may be because of the risks of encrypting data without a

76. Nat'l Inst. of Standards & Tech., *Final Version of NIST Cloud Computing Definition Published* (Oct. 25, 2011) (Press release), <http://www.nist.gov/itl/csd/cloud-102511.cfm> [<https://perma.cc/3GLL-SM92>].

77. Cindy Pham, *E-Discovery in the Cloud Era: What's a Litigant to Do?*, 5 HASTINGS SCI. & TECH. L.J. 139, 142 (2013).

78. *Id.* at 151.

79. *Id.* at 151-52.

80. *Id.* at 152-53.

81. *Id.* at 153.

82. *Id.* at 153-54.

83. For example: Gmail, Google Drive, Yahoo Mail, Apple iCloud, Dropbox, Amazon Web Services.

backup key. If a cloud provider encrypts data without any exceptional access protocol, there is a risk that a user could forget their password and leave everyone without access to the user's data. The value of access to data may also be limiting deployment. However, these concerns are counterbalanced by the growing cybersecurity threats to cloud service providers.

1. *Cloud Business Models Disincentivize Encryption*

Many cloud-based services, particularly those that offer free services, monetize user data.⁸⁴ That monetization requires that the companies have access to data that is stored on their servers, which may disincentivize the use of encryption.⁸⁵ This is evidenced by a July 2015 study by SkyHigh Networks.⁸⁶ The study analyzed 12,000 cloud providers and found that only 9.4% encrypted data at rest on their servers. Among those companies listed as storing data without encryption were Facebook, Twitter, LinkedIn, Gmail, PayPal, and eBay⁸⁷—many companies that offer free services and largely drive their profits from monetization of data through targeted advertising.⁸⁸

Another deterrent to utilization of encryption in the cloud is the difficulty that the creator of the data would face in searching and utilizing encrypted data. When data is encrypted, the difficulty of searching and indexing data is significantly increased.⁸⁹

2. *Security and Regulatory Incentives May Spur Deployment*

There are, however, regulatory incentives for companies to encrypt the data they store on their servers. Data breaches have become a major

84. See Urs Gasser et al., *supra* note 6, at 10 (“For the past fifteen years, consumer-facing Internet companies have relied on advertising as their dominant business model. Ads are frequently used to subsidize free content and services. Internet companies more recently have been shifting towards data-driven advertising.”).

85. *Id.* (“To fuel this lucrative market, companies typically wish to have unencumbered access to user data—with privacy assured through either restricting dissemination of identifiable customer information outside the boundaries of the company (and of governments, should they lawfully request the data). Implementing end-to-end encryption by default for all, or even most, user data streams would conflict with the advertising model and presumably curtail revenues.”).

86. Cameron Coles, *Only 9.4% of Cloud Providers are Encrypting Data at Rest*, SKYHIGH NETWORKS (2015), <https://www.skyhighnetworks.com/cloud-security-blog/only-9-4-of-cloud-providers-are-encrypting-data-at-rest/> [<https://perma.cc/W9V8-9HQD>].

87. *Id.*

88. See Urs Gasser et al., *supra* note 6, at 10.

89. *Id.* (“End-to-end encryption is currently impractical for companies who need to offer features in cloud services that require access to plaintext data.”).

concern.⁹⁰ Recent breaches of private data, from companies both within and outside the tech industry, have led to the loss of private information of hundreds of millions of individuals.⁹¹ From October 2014 to December 2015, there were eighty-three federal class action complaints resulting from data breaches.⁹² In addition to the threats against privacy implicated by these breaches, there are significant monetary costs associated with a data breach. A study by IBM and the Ponemon Institute concluded that the average consolidated total cost of a data breach in the United States grew from \$6,530,000 to \$7,010,000 in 2016.⁹³ As data breaches continue to make headlines, companies may view encryption as a means to limit their risk, as thieves are less likely to try to steal encrypted data. Furthermore, even if encrypted data is stolen, the private information is more likely to remain secret.

Beyond the security benefits of encryption, regulations surrounding data breaches have begun to incentivize the use of encryption. Most states have specific data breach notification requirements, requiring notice to be sent to parties whose data may have been stolen in a data breach.⁹⁴ However,

90. See Privacy Rights Clearinghouse, *Chronology of Data Breaches: Security Breaches 2005–Present*, <http://www.privacyrights.org/data-breach> [<https://perma.cc/9RLT-9VQV>] (last visited Dec. 20, 2016) (showing 901,013,077 breached records from 5,245 data breaches made public since 2005).

91. See e.g., Mark Fahey & Nicholas Wells, *Yahoo Data Breach is Among the Biggest in History*, CNBC (Sept. 22, 2016) (showing at least 500,000,000 breached accounts), <http://www.cnbc.com/2016/09/22/yahoo-data-breach-is-among-the-biggest-in-history.html> [<https://perma.cc/H6HB-KSF3>]; Off. of Personal Mgmt., *Cybersecurity Incidents* (showing two incidents with 21,500,000 breached social security numbers and 4,200,000 thefts of personal information on Federal government employees), <https://www.opm.gov/cybersecurity/cybersecurity-incidents/> [<http://perma.cc/73CZ-RXB5>] (last visited Dec. 20, 2016); Jonathan Keane, *Security Researcher Dumps 427 Million Hacked Myspace Passwords Online*, DIGITAL TRENDS (July 1, 2016) (showing at least 427,000,000 breached accounts from Myspace data breach), <http://www.digitaltrends.com/social-media/myspace-hack-password-dump/> [<https://perma.cc/KKC2-R9QH>].

92. BRYAN CAVE LLP, 2016 DATA BREACH LITIGATION REPORT 4 (2016), <https://d11m3yrngt251b.cloudfront.net/images/content/8/2/v2/82494/DataBreachLitigationReport.pdf> [<https://perma.cc/88DP-SPS7>].

93. PONEMON INSTITUTE, 2016 COST OF DATA BREACH STUDY: UNITED STATES 2 (2016), <https://public.dhe.ibm.com/common/ssi/ecm/se/en/sel03094usen/SEL03094USEN.PDF> [<https://perma.cc/6UJH-VPCA>].

94. National Conference of State Legislatures, *Security Breach Notification Laws* (Jan. 4, 2016) (“Forty-seven states, the District of Columbia, Guam, Puerto Rico and the Virgin Islands have enacted legislation requiring private, governmental or educational entities to notify individuals of security breaches of information involving personally identifiable information.”), <http://www.ncsl.org/research/telecommunications-and>

almost all states and territories have encryption safe harbors.⁹⁵ Companies that know the stolen data was properly encrypted may therefore be exempt from the notice requirements.⁹⁶

C. HEIGHTENED RISKS ON THE INTERNET

Data stored in the cloud is subject to a large number of security risks and attacks, as cloud systems are often highly interconnected and complicated.

1. *Risks of External Attackers on a Large Attack Surface*

Cloud providers face a significant challenge in protecting themselves against external threats. The more connected and complex a cloud service is, the more avenues there are for potential vulnerabilities to arise and be exploited. Security analysts refer to these avenues of attack as the “attack surface” of a given system.⁹⁷ Because cloud systems are constantly communicating with a large number of devices, storing and analyzing information on a variety of servers, and relying upon a large number of external devices and systems to perform analysis and data management, the “attack surface” of these systems can be vast. Because a potential vulnerability at *any* place in the system may compromise the system as a whole, cloud providers face an uphill battle in protecting complex networks from external threats.

2. *Encryption Protects Against Some External Threats*

Encryption does not necessarily reduce the surface area that attackers may exploit; nor does it prevent attacks from occurring. However,

-information-technology/security-breach-notification-laws.aspx [https://perma.cc/XE3D-Q9KB].

95. Baker & Hostetler LLP, *Data Breach Charts* (2016) (showing, as of January 1, 2017, that 49 states and territories grant some form of encryption safe harbor), https://www.bakerlaw.com/files/uploads/documents/data%20breach%20documents/data_breach_charts.pdf [http://perma.cc/YNS3-D5WF].

96. *See, e.g.*, 201 Mass. Code Regs. §§ 17.02(1)(a) (2009). Massachusetts defines a “breach of security” as: “[T]he unauthorized acquisition or unauthorized use of unencrypted data or, encrypted electronic data and the confidential process or key that is capable of compromising the security, confidentiality, or integrity of personal information . . . that creates a substantial risk of identity theft or fraud against a resident of the Commonwealth.”

97. . *See generally* TRIPWIRE, UNDERSTANDING YOUR ATTACK SURFACE: THE FIRST STEP IN RISK-BASED SECURITY INTELLIGENCE (2014) (discussing the three attack surfaces that organizations face: software attack surface, network attack surface, and human attack surface), <http://www.tripwire.com/register/understanding-your-attack-surface-the-first-step-in-risk-based-security-intelligence/showMeta/2/> [http://perma.cc/UV4H-HHGD].

encrypting data stored in the cloud dramatically reduces the risks resulting from theft. An attacker who steals encrypted data would still need to find a way to decrypt the data, which may be impractical without access to the secret key used to encrypt the data.⁹⁸

However, these benefits are not universal. There are methods whereby an attacker can gain access to unencrypted data even if the server stores data in an encrypted format. Data breaches involving misappropriation of data by insiders or social engineering would not necessarily be prevented even if data was encrypted. This is because insiders and employees have access to unencrypted data, which means they can provide that information to an outside attacker. In 2015, roughly 10% of all data breaches were a result of insider theft.⁹⁹

3. *Exceptional Access Erodes Security and Trust*

Exceptional access to encryption in the cloud context undermines some of the protections that encryption provides. Because exceptional access would require that a key be stored in a manner accessible to the government, there is a risk that the key could also be accessible to an outside attacker.¹⁰⁰

Regardless of the exact security risk that exceptional access would create, the mere threat of a vulnerability may have negative repercussions for trust in the cloud. If consumers and companies are aware of the security risks that exceptional access may implicate, consumers and companies may be less willing to store private information in the cloud.

Furthermore, this could also impact behaviors worldwide, as promulgating exceptional access would encourage authoritarian governments to demand access using the same methods the United States

98. VAUDENAY, *supra* note 8, at 21.

99. SYMANTEC, INTERNET SECURITY THREAT REPORT: VOLUME 21, 53 (2016), <https://www.symantec.com/content/dam/symantec/docs/reports/istr-21-2016-en.pdf> [<https://perma.cc/MSS4-DQWM>].

100. *See* H Abelson et al., *supra* note 2, at 1, 12. The report states: [I]n a small but troubling number of cases, weakness related to [key escrow] requirements have emerged and been exploited by state actors and others. Those problems would have been worse had key escrow been widely deployed . . . the requirement of key escrow creates a long-term vulnerability: if any of the private escrowing keys are ever compromised, then all data that ever made use of the compromised key is permanently compromised. That is, in order to accommodate the need for surreptitious, third-party access by law enforcement agencies, messages will have to be left open to attack by anyone who can obtain a copy of one of the many copies of the law enforcement keys.

government would require.¹⁰¹ This bears great risks to the protection of activists and journalists exposing human rights abuses, as their communications could be compromised.¹⁰²

4. *It Is Unclear if there Are Effective Alternatives to Encryption*

If one operates under the assumption that exceptional access would undermine the security of encryption in the cloud, there are still some alternatives that may provide some (although not perfect) security. Systems that monitor traffic going in and out of servers, known as “intrusion detection systems,” can watch for suspicious behavior and protect against external threats.¹⁰³ However, these systems will not be 100% effective at detecting malicious behavior and preventing attacks.¹⁰⁴

D. LOW-TO-MEDIUM DISRUPTIVENESS

Based on these considerations, exceptional access in the cloud would likely have a low-to-medium disruptiveness impact. Encryption is one of the most effective solutions to minimize the impact of data breaches. However, encryption itself may stand at odds with the business interests of many cloud data providers, who want fast and efficient access to the data they store and monetize. At least for now, it appears that the interests of

101. *Id.* (“The US and UK governments have fought long and hard to keep the governance of the Internet open, in the face of demands from authoritarian countries that it be brought under state control. Does not the push for exceptional access represent a breathtaking policy reversal?”).

102. *See* AMNESTY INTL., ENCRYPTION: A MATTER OF HUMAN RIGHTS 4 (2016) (“Encryption is a particularly critical tool for human rights defenders, activists and journalists, all of whom rely on it with increasing frequency to protect their security and that of others against unlawful surveillance”), http://www.amnestyusa.org/sites/default/files/encryption_-_a_matter_of_human_rights_-_pol_40-3682-2016.pdf [<https://perma.cc/8V3Z-PGF6>].

103. *See generally* NAT’L INST. OF STANDARDS AND TECH., NIST SPECIAL PUBLICATION 800-94, GUIDE TO INTRUSION DETECTION AND PREVENTION SYSTEMS (IDPS): RECOMMENDATIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (2007). Likewise, other security measures, such as red-teaming or scanning e-mails for phishing attempts, can help protect organizations which store data remotely in the cloud.

104. *Id.* at § 2.3:

Another common attribute of IDPS technologies is that they cannot provide completely accurate detection. When an IDPS incorrectly identifies benign activity as being malicious, a false positive has occurred. When an IDPS fails to identify malicious activity, a false negative has occurred. It is not possible to eliminate all false positives and negatives; in most cases, reducing the occurrences of one increases the occurrences of the other.

monetization are winning out over the interests of security in the cloud, as encryption is not widely deployed and data breaches are increasing in frequency and severity. Because of this, the disruptiveness of exceptional access to cloud-based data would be reduced. However, should encryption play a larger role in the security of the cloud in the future, mandating exceptional access would likewise become a more disruptive proposition.

IV. ENCRYPTION OF DATA IN-TRANSIT

Next, we can analyze the disruptiveness of exceptional access to data in-transit. Here, there is widespread use of encryption with increasing risks of attack, leading to a high level of disruptiveness.

A. TECHNOLOGY OF DATA IN-TRANSIT

In practice, the most common form of encryption of data in-transit uses Secure Sockets Layer and Transport Layer Security, commonly referred to as SSL/TLS.¹⁰⁵ SSL uses variations on the Diffie-Hellman key exchange protocol to provide both parties with a shared private key for communications.¹⁰⁶ This shared private key allows the communicating parties to establish an encrypted line of communication.¹⁰⁷ SSL also includes various protocols to ensure authentication through the use of certificates.¹⁰⁸ SSL is deployed in the HTTPS protocol, which websites can implement to encrypt data sent from their servers to internet browsers.¹⁰⁹

B. WIDESPREAD USE ACROSS PLATFORMS

There are a large number of incentives for widely deployed encryption of data in-transit. Encryption allows for secure communications between

105. SCHMEH, *supra* note 14, at 343.

106. *Id.* at 346.

107. Companies are also beginning to integrate an innovation known as “forward secrecy” into their encryption schemes. This protocol allows for every single message sent between two parties to generate a unique, temporal, session key—meaning that a key is only applicable for the single message that it encrypted. Facebook has begun integrating forward secrecy into its messenger application, and WhatsApp already utilizes this protocol to encrypt communications between its users. See Scott Helme, *Perfect Forward Secrecy – An Introduction* (May 10, 2014), <https://scotthelme.co.uk/perfect-forward-secrecy/> [<https://perma.cc/G7A4-KTRF>]; Andy Greenberg, *You Can All Finally Encrypt Facebook Messenger, So Do It* (Oct. 4, 2016), <https://www.wired.com/2016/10/facebook-completely-encrypted-messenger-update-now/> [<https://perma.cc/Z5MN-HD6P>]; WhatsApp, *WhatsApp FAQ: End-to-End Encryption*, <https://www.whatsapp.com/faq/en/general/28030015> [<https://perma.cc/6VH5-MG25>].

108. SCHMEH, *supra* note 14, at 354.

109. *Id.* at 353.

parties over the internet, which is important given the open structure of the internet.¹¹⁰ Data exchanged between parties over the internet is routed through a wide array of devices and networks, potentially exposing data to a large number of prying eyes.¹¹¹

In addition to the security benefits of encryption, there are regulations and standards that may require companies to implement encryption of data in-transit. The Gramm-Leach-Bliley Act imposes requirements for the banking and financial services industry to protect consumer data.¹¹² Companies under this regulatory umbrella are obligated to “respect the privacy” of their consumers and “protect the security and confidentiality of those consumers’ non-public personal information”¹¹³ Encryption can be a valuable tool for companies to ensure that customer data is private and secure.

Furthermore, regulatory agencies, such as the FTC, have used encryption as a metric in determining reasonable security standards. For example, in 2005 the FTC charged BJ’s Wholesale with failing to provide reasonable security for sensitive customer information. Specifically, one of the allegations was that BJ’s “failed to encrypt consumer information when it was transmitted . . . in BJ’s stores.”¹¹⁴ In 2008, ValueClick was cited for “using only an insecure form of alphabetic substitution that [was] not consistent with, and less protective than, industry-standard encryption.”¹¹⁵ In 2016, the FTC settled with Henry Schein Practice Solutions, Inc. over

110. *Id.* at 20–21.

111. *Id.*

112. 15 U.S.C. § 6801(b) (1999). Which states, in part:
[E]ach agency . . . shall establish appropriate standards for the financial institutions subject to their jurisdiction relating to administrative, technical, and physical safeguards—
(1) to insure the security and confidentiality of customer records and information;
(2) to protect against any anticipated threats or hazards to the security or integrity of such records; and
(3) to protect against unauthorized access to or use of such records or information which could result in substantial harm or inconvenience to any customer. . . .

113. 15 U.S.C. § 6801(a) (1999) (“It is the policy of the Congress that each financial institution has an affirmative and continuing obligation to respect the privacy of its customers and to protect the security and confidentiality of those customers’ nonpublic personal information . . .”).

114. Complaint at 2, *In Re BJ’s Wholesale Club, Inc.*, No. 042 3160 (F.T.C. 2005).

115. Fed. Trade Comm’n, *ValueClick to Pay \$2.9 Million to Settle FTC Charges* (2008) (Press release), <https://www.ftc.gov/news-events/press-releases/2008/03/valueclick-pay-29-million-settle-ftc-charges> [<https://perma.cc/B47R-L6RF>].

charges that the company falsely advertised the level of encryption provided to protect user data.¹¹⁶ In fact, Terrell McSweeney, the FTC Commissioner, has gone as far as saying that: “I think mandating backdoors is a terrible idea.”¹¹⁷

C. INCREASING RISKS WITH NO FEASIBLE ALTERNATIVE

Data in-transit is subject to interception, which encryption is designed to protect against. There are few robust alternatives to encryption which can provide security against the risk of interception.

1. *Man-in-the-Middle Attacks Present a Risk to Data Security*

Vulnerabilities in SSL/TLS encryption have shown their potential for harm. The “Heartbleed” vulnerability, for example, affected the OpenSSL implementation of SSL/TLS operating on web servers.¹¹⁸ In response to this massive vulnerability, consumer trust may have been eroded in some online communications. A 2014 study by the Pew Research Center asked those familiar with the Heartbleed vulnerability about their responses to the attack. The study found that 39% of those polled took steps to secure their accounts and information by doing such things as changing passwords or canceling accounts, and 29% of those polled believed their personal information was put at risk because of Heartbleed.¹¹⁹

2. *Encryption Is Effective at Mitigating Risks*

Encryption, when properly implemented, is effective at protecting against man-in-the-middle attacks. When data is encrypted, the content of that data is unreadable to any eavesdroppers, preserving the confidentiality of the communications. If lengthy session keys are kept secret and the encryption algorithm is sufficiently robust, it is computationally infeasible for an attacker to obtain any plaintext from encrypted data in-transit.¹²⁰

116. Fed. Trade Comm’n, *Dental Practice Software Provider Settles FTC Charges It Misled Customers About Encryption of Patient Data* (2016) (Press release) <https://www.ftc.gov/news-events/press-releases/2016/01/dental-practice-software-provider-settles-ftc-charges-it-misled> [<https://perma.cc/JB4B-VN9Z>]

117. Eric Geller, *FTC commissioner: Mandating encryption backdoors ‘is a terrible idea,’* DAILY DOT (May 24, 2016).

118. See generally Zakir Durumeric et al., *The Matter of Heartbleed*, PROCEEDINGS OF THE 2014 CONFERENCE ON INTERNET MEASUREMENT 475–88 (Nov. 2014).

119. PEW RESEARCH CENTER, HEARTBLEED’S IMPACT 3 (Apr. 2014), http://www.pewinternet.org/files/2014/04/PIP_Heartbleed-impact_043014.pdf [<https://perma.cc/J3GD-46SK>].

120. VAUDENAY, *supra* note 8, at 21.

3. *Exceptional Access Could Undermine Encryption's Effectiveness and Hamper Innovation*

Mandating exceptional access for existing technologies such as SSL/TLS would require fundamental changes to the technology underlying encryption of data in-transit. Key exchange protocols are designed to protect the confidentiality of secret session keys used to encrypt data during communications. If the protocol must allow for exceptional access, there either must be a vulnerability in the key exchange protocol, which could allow an attacker to gain access to the secret session key, or there must be a “master key” which allows decryption regardless of the specific session key. Either requirement would fundamentally undermine the security of the existing SSL/TLS framework.

Beyond the technical risks associated with exceptional access to data in-transit, there is a potential for a chilling effect on the public's trust in secure communication channels. The already limited trust in the security of online communications¹²¹ could be further eroded if consumers knew that security vulnerabilities are integrated into the encryption protocols. Furthermore, the concerns about human rights abuses and authoritarian governments expressed above in Section III.C.3 are also relevant to exceptional access to data in-transit. A requirement for exceptional access may also limit technical innovation on encryption of data in-transit. Innovations such as forward secrecy¹²² are at odds with exceptional access to data in-transit.

4. *No Feasible Alternative Currently Exists*

Man-in-the-middle attacks are difficult to detect in the absence of SSL/TLS encryption. The creation of a vulnerability in SSL may discourage its use generally, which may harm some of the authentication benefits SSL provides. Many current attack detection schemes rely upon finding spoofed

121. See PEW RESEARCH CENTER, PUBLIC PERCEPTIONS OF PRIVACY AND SECURITY IN THE POST-SNOWDEN ERA 4 (Nov. 2014) (showing that 81% feel “not very” or “not at all secure” using social media sites when they want to share private information with another trusted person or organization, 68% feel insecure using chat or instant messages to share private information, and 57% feel insecure sending private information via email), http://www.pewinternet.org/files/2014/11/PI_PublicPerceptionsofPrivacy_111214.pdf [<https://perma.cc/CG6M-4HCV>].

122. Exceptional access requires that *all* messages be available. Either every single message's session key would need to be accessible or a “master key” would need to be able to access every single message, defeating the purpose of forward secrecy should the master key become stolen.

SSL certificates (used for authentication),¹²³ which is impracticable if SSL is not utilized due to concerns with confidentiality.

D. HIGH DISRUPTIVENESS

Given the great number of risks associated with mandating exceptional access to data in-transit, it appears likely that a mandate would be a highly disruptive proposition. Exceptional access could undermine the security of financial transactions, VPNs, remote management of critical infrastructure systems, personal communications, health communications, and login information. Consumer trust may (rightfully) erode in these communications, hampering progress in utilizing the internet to help consumers manage their financial accounts, health data, and more. Furthermore, this type of encryption is widely adopted and there is no feasible alternative for protecting user data online.

Finally, a mandate of exceptional access doesn't square with prevailing regulatory movements toward encryption. As agencies like the FTC push companies to better secure data and implement encryption-based security practices, exceptional access gives rise to new risks that these security practices are vulnerable to attack.

V. ENCRYPTION OF ENDPOINTS

Finally, we can turn to the disruptiveness of exceptional access to endpoint devices. Here, there is currently limited use of encryption and there are a number of alternatives which may adequately protect data stored on endpoint devices, leading to medium disruptiveness.

A. TECHNOLOGY OF ENDPOINT ENCRYPTION

Data at endpoints can be encrypted at the device level or the file level. The manner in which data is encrypted can affect the strength of that encryption and limit brute-force attacks.

1. *Encryption of Devices vs. Files*

Endpoint encryption can be implemented to encrypt the entirety of a hard disk (full disk encryption), or to apply to individual files or folders

123. See, e.g., Lin-Shung Huang et al., *Analyzing Forged SSL Certificates in the Wild*, PROC. OF THE 2014 IEEE SYMP. ON SECURITY AND PRIVACY 83–97 (2014); Peter Burkholder, *SSL Man-in-the-Middle Attacks*, SANS INST. INFOSEC READING ROOM (2002).

within a hard disk (partial disk encryption).¹²⁴ While the underlying principles for encryption are the same no matter what content is encrypted, each of these implementations involves a different method of utilizing encryption, leading to differing approaches required for exceptional access.

Full disk encryption may be applied when a device is locked or powered down or may operate in real time as the device is being used.¹²⁵ When the device is encrypted when locked, a hardware mechanism can be used to encrypt the drive and subsequently decrypt the drive when the proper password is provided on boot.¹²⁶ An alternative solution is software encryption, where the device, either on lock or on boot, runs a program that allows for data on the device to be encrypted/decrypted.¹²⁷ Partial disk encryption is typically accomplished with software that runs on the device, encrypting or decrypting the files provided to it.¹²⁸

2. *Limiting Effectiveness of Brute-Force Attacks*

Hardware-based implementations are advantageous because they can be integrated into the device itself and configured to make brute-force attacks impracticable. This prevents a situation where an attacker extracts the data from the device onto a more powerful computer in order to try to crack the encryption more quickly.¹²⁹

For example, newer versions of the iPhone contain an integrated cryptographic processor called a “Secure Enclave.”¹³⁰ This crypto processor contains a unique number tied to the specific device known as a “unique

124. NAT'L INST. OF STANDARDS AND TECH., NIST SPECIAL PUBLICATION 800-111, GUIDE TO STORAGE ENCRYPTION TECHNOLOGIES FOR END USER DEVICES 5–9 (2007).

125. *Id.* at 5.

126. *Id.*

127. *Id.* at 8.

128. *Id.* at 9.

129. Dedicated hardware for brute-force attacks can drastically increase the speed of an offline brute-force attack. For example, a dedicated brute force system used at the Passwords¹² Conference in Oslo, Norway was able to guess 348 billion hashed passwords using the popular NTLM algorithm. Practically, this means that it could guess any eight-character password in five and a half hours—assuming there is no hardware preventing brute force guessing. Paul Roberts, *Update: New 25 GPU Monster Devours Passwords in Seconds*, SECURITY LEDGER (Dec. 4, 2012), <https://securityledger.com/2012/12/new-25-gpu-monster-devours-passwords-in-seconds/> [<https://perma.cc/E9SX-XFE6>].

130. Apple, *iOS Security Guide: iOS 9.3 or Later* (May 2016); Mike Ash, *What is the Secure Enclave?* (Feb. 19, 2016) <https://www.mikeash.com/pyblog/friday-qa-2016-02-19-what-is-the-secure-enclave.html> [<https://perma.cc/QK4H-T2RZ>]; See generally Tarjei Mandt, *Demystifying the Secure Enclave Processor* (presentation from Black Hat USA 2016), <https://www.blackhat.com/docs/us-16/materials/us-16-Mandt-Demystifying-The-Secure-Enclave-Processor.pdf> [<https://perma.cc/72JD-UX84>].

identifier” (UID).¹³¹ This UID is then combined with the user’s password to provide the encryption key used to encrypt or decrypt the iPhone’s data.¹³² The UID is not accessible outside of the Secure Enclave, meaning that any attempt to derive the encryption key must be done through the Secure Enclave.¹³³ Because all password guess attempts must go through the Secure Enclave, Apple was able to integrate various delay functions into the Secure Enclave after successive incorrect guesses¹³⁴ and can wipe the phone after a certain point.¹³⁵

B. LIMITED USAGE WITH POTENTIAL FOR GROWTH

While encryption is currently underutilized on endpoint devices, new innovations are bringing encryption to the masses.

1. *Consumer Device Manufacturers Are Making Encryption Accessible*

Companies have responded to the increased demand for privacy by making device-level encryption accessible to virtually anyone. Both iPhones¹³⁶ and Android¹³⁷ phones allow users to integrate encryption into the existing password protections on their devices. Microsoft¹³⁸ and Apple¹³⁹ have also integrated device encryption into certain versions of their Windows and OS X computer operating systems. In addition to the full disk encryption offered by major software and hardware developers, a number of programs allow users to easily encrypt specific files and folders on their devices.¹⁴⁰

131. Mike Ash, *What is the Secure Enclave?* (Feb. 19, 2016), <https://www.mikeash.com/pyblog/friday-qa-2016-02-19-what-is-the-secure-enclave.html> [<https://perma.cc/QK4H-T2RZ>].

132. *Id.*

133. *Id.*

134. *Id.*

135. *Id.*

136. Apple, *iOS Security Guide: iOS 9.3 or Later* (May 2016).

137. Android, *Encryption*, <https://source.android.com/security/encryption/> [<https://perma.cc/9SSB-QY3S>].

138. Microsoft, *BitLocker Drive Encryption Overview* (2016), <https://technet.microsoft.com/en-us/library/cc732774.aspx> [<https://perma.cc/ZT7R-VKYR>].

139. Apple, *Use FileVault to Encrypt the Startup Disk on Your Mac* (Dec. 2016), <https://support.apple.com/en-us/HT204837> [<https://perma.cc/FZ9N-EP9C>].

140. For example, free software like AxCrypt can encrypt specific files or folders with user chosen passwords.

2. *Despite Access, Many Endpoint Devices Are Still Not Protected by Encryption*

For consumers, a 2014 study by Consumer Reports found that only 47% of smartphone users actually set a screen lock with a PIN, password, or unlock pattern.¹⁴¹ If users fail to implement encryption on their devices, the presence of exceptional access makes little difference.

The enterprise also shows low usage of encryption. A 2015 survey of 1,700 IT decision makers around the world suggested that only 60% of organizations encrypted their laptops with encryption and only 29% of organizations encrypted their smartphones or tablets.¹⁴² However, encryption may become more widespread, as 90% of organizations reported planning to extend their data protection approach with encryption,¹⁴³ and 69% were planning to do so within the next one to two years.¹⁴⁴

C. ALTERNATIVE SOLUTIONS CAN TEMPER EXCEPTIONAL ACCESS RISKS

Encryption may not be the only method to ensure that data is kept safe on lost or stolen endpoint devices, and alternative solutions may limit some of the risks of mandating exceptional access.

1. *Lost or Stolen Devices Represent a Serious Risk*

In 2013, 1.4 million smartphones were lost and 3.1 million stolen,¹⁴⁵ so a policy requiring exceptional access could have far-reaching consequences to the security of consumer data. While exceptional access schemes may be designed to minimize the risk of a “master key” being released or to complicate the task of circumventing encryption, there is virtually no way to ensure that exceptional access would only apply to the proper parties and

141. Consumer Reports, *Smart Phone Thefts Rose to 3.1 Million in 2013* (May 2014) (36% used a 4-digit PIN while 11% used a PIN longer than 4 digits, a password, or unlock pattern), <http://www.consumerreports.org/cro/news/2014/04/smart-phone-thefts-rose-to-3-1-million-last-year/index.htm> [<https://perma.cc/67D4-S4TU>].

142. SOPHOS, *THE STATE OF ENCRYPTION TODAY: RESULTS OF AN INDEPENDENT SURVEY OF 1700 IT MANAGERS* 5 (Dec. 2015), <https://secure2.sophos.com/en-us/medialibrary/Gated-Assets/white-papers/the-state-of-encryption-today-wpna.pdf?la=en> [<https://perma.cc/LB9U-SBZG>].

143. It is not completely clear whether this refers to encryption of data at endpoints, data in the cloud, or data in-transit; however, this still suggests that encryption (as a whole) will become more widespread in the coming years.

144. SOPHOS, *supra* note 142, at 9.

145. Consumer Reports, *supra* note 141.

would never be inappropriately used by third parties.¹⁴⁶ This risk may cause consumer trust in their devices to erode.

2. *Encryption Can Minimize This Risk*

Device-level encryption blocks access to all data on a device unless the user enters a password. In addition to protecting data, this powerful security may deter the theft of devices. If an adversary knows that a device will be locked and inaccessible, there is very little to gain from stealing that device. As a result, widely deployed encryption may reduce the prevalence of device theft.

3. *Exceptional Access Can Undermine Security and Chill Usage*

Because endpoint encryption primarily serves to protect against lost or stolen devices, exceptional access may limit the security of data on lost or stolen devices. Exceptional access, whether that be through some sort of “master key” or a method to circumvent the encryption protections on a device, could allow a thief to gain access to the very data that is supposed to be secure.

Seminal privacy cases, such as *Riley v. California*, and the arguments of *Amici* in the San Bernardino litigation exemplify the concerns over exceptional access. As the court in *Riley* noted, “Modern cell phones are not just another technological convenience. With all they contain and all they may reveal, they hold for many Americans ‘the privacies of life.’”¹⁴⁷ The protection of the content of electronic devices (whether encrypted or not) has been recognized in American jurisprudence apart from *Riley*.¹⁴⁸

Likewise, the *amici* for Apple in the San Bernardino case argued that exceptional access may “forever alter” the relationship between technology providers and users, as these “vulnerabilities could be exploited to the

146. See H Abelson et al., *supra* note 2, at 7 (“An organization that holds an escrow key could have a malicious insider that abuses its power or leaks that organization’s key. Even assuming an honest agency, there is an issue of competence: cyberattacks on keyholders could easily result in catastrophic loss.”). The additional complexity of a key escrow system compounds these risks.

147. *Riley v. California*, 134 S. Ct. 2473 (2014) (quoting *Boyd v. United States*, 116 U.S. 616, 630 (1886)).

148. See e.g., *United States v. Doe*, 670 F.3d 1335 (11th Cir. 2012) (holding that compelled decryption of an encrypted hard drive would violate the 5th Amendment); *United States v. Graham*, 796 F.3d 332 (4th Cir. 2015) (holding that the government engages in a Fourth Amendment search when it examines historical cell site location information stored on a cell phone); *United States v. Whiteside*, 2015 U.S. Dist. LEXIS 84369 (S.D.N.Y. 2015) (extending the protections of *Riley* to digital cameras).

detriment of everyone who uses connected devices.”¹⁴⁹ There is a risk that exceptional access may have chilling effects on how people treat data. Users may be reluctant to store personal information on devices they feel are insecure.

4. *Alternatives to Encryption Also Mitigate Some Risks*

While encryption is a powerful tool for protecting endpoint devices, it is far from the only method of ensuring that data on devices remain secure. For example, “Find My iPhone”¹⁵⁰ or “Android Device Manager”¹⁵¹ allow users to remotely find, lock, and wipe devices connected to the internet. In addition, these systems are based on the user’s Apple ID or Google Account, which is accessible to the manufacturers of the devices (and therefore to the government with legal authority). However, because these non-encryption systems require that a device be connected to the internet to function effectively, these alternatives are not a complete replacement to the security benefits that encryption offers to endpoint devices.

D. MEDIUM DISRUPTIVENESS

All-in-all, exceptional access to endpoint devices likely comes out around the middle of the disruptiveness scale. Regardless of the exact extent to which exceptional access may create new vulnerabilities and the extent to which those vulnerabilities are actively exploited, there are undoubtedly risks associated with mandating exceptional access to endpoint devices. Exceptional access creates new vulnerabilities in encryption, harming both cybersecurity and the public’s perception of the security of their devices. There is potential for data theft arising from lost or stolen devices to increase

149. Brief of the Center for Democracy & Technology as *Amicus Curiae* in Support of Apple Inc.’s Motion to Vacate and in Opposition to Government’s Motion to Compel Assistance at 6-7, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)); *see also* Brief of *Amicus Curiae* AirBnB, Inc., *supra* note 59, at 4 (“ensuring that users’ data is handled in a safe, secure, and transparent manner that protect privacy is of utmost importance.”); Brief of *Amici Curiae* Amazon.com, Box, Cisco Systems, Dropbox, Evernote, Facebook, Google, Microsoft, Mozilla, Nest, Pinterest, Slack, Snapchat, Whatsapp, and Yahoo in Support of Apple, Inc. at 18, *In the Matter of the Search of an Apple iPhone Seized During the Execution of a Search Warrant on a Black Lexus IS300, California License Plate 35KGD203* (2016) (ED No. CM 16-10 (SP)) (“[A]s storing sensitive personal and commercial data electronically becomes less of a luxury and more of a necessity, protecting that data has also become a necessity.”).

150. Apple, *Find My iPhone, iPad, and Mac*, <http://www.apple.com/icloud/find-my-iphone.html> [<https://perma.cc/VV8R-BPXY>].

151. Google, *Find Your Device Using Android Device Manager*, <https://support.google.com/accounts/answer/6160491> [<https://perma.cc/6Q5W-V82J>].

as even encrypted data may be accessible via vulnerabilities that exceptional access introduces.

On the other hand, the lack of utilization of encryption and the existence of alternatives to encryption helps counterbalance the risks of exceptional access. Many of the risks that encryption protects against may be mitigated using methods that don't impede government access to data. Today, encryption is easier to deploy than ever before, however consumers and the enterprise are still not utilizing encryption en masse. Some may see this as a sign that consumers and the enterprise feel that non-encryption based security methods are sufficient and better align with their goals, such as having access to employee data and not getting locked out of their own devices.

VI. WHERE DO WE GO FROM HERE?

The limited analysis provided is an example of how the framework can be used. Substantially more in-depth consideration of the disruptiveness factors would be required to fully understand the complete disruptiveness that could arise from exceptional access in each of these contexts.

Given the contentious nature of the debate over encryption, reaching consensus on exceptional access is an uphill battle. Fundamental disagreements in worldview and culture put technologists at odds with the government; however, public opinion may force policymakers into making decisions that one (or both sides) may not love, but nevertheless would have to live with.

For the discussion to move forward, trying to compare these risks in the framework of disruptiveness can give a sense of where progress may be possible and where the risks are just too high. Above all else, a nuanced and technically-minded discussion of the issues is the only way to ensure that encryption policy thoughtfully assesses risks and balances the goals of our country—from cybersecurity to national security.

A FEDERAL GMO LABELING LAW: HOW IT CREATES UNIFORMITY AND PROTECTS CONSUMERS

Jordan James Fraboni[†]

Senate bill S. 764 was signed into law on July 29, 2016 as the National Bioengineered Food Disclosure Law.¹ It is the first federal law that requires foods made from a genetically modified organism (GMO) be labeled as such. Several states have introduced legislation for GMO labeling, but the federal law differs in its requirements.² For example, the federal law permits disclosures through electronic or digital links such as a Quick Response (QR) code.³ The new law strikes an effective balance between providing consumers with knowledge and preventing misinformation about the safety of GMOs while also preempting prior state GMO labeling requirements.

This Note details the history and use of GMOs, how States have started to create laws for GMOs, and how concerns of uniformity and misunderstanding led to a federal GMO labeling law. An analysis of the bill's sections shows that the federal law effectively addresses those concerns, even though it does not provide as much information to consumers as some people would have liked. Part I explains the background of bioengineering and federal labeling, including prior state labeling requirements. Part II highlights and contextualizes key provisions in S. 764 and how they relate to the legislative history. Part III analyzes how S. 764 weighs various interests as well as implications for consumers.

I. BACKGROUND

This Part provides an overview of what GMOs are, arguments for why they should be labeled, and how both Federal and State governments have approached labeling GMOs in the past.

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1. S. Res. 764, 114th Cong. (2016) (enacted).
2. State law disclosure such as in Vermont would have required labeling on the package so that consumers could see whether a food was made with genetic modifications. *See* H. 112, 2014 Gen. Assemb., Reg. Sess. (Vt. 2014).
3. *See* 7 U.S.C.A. § 1639b(b)(2)(D) (West 2016).

A. GMOs AND HOW THEY ARE CREATED

Genetically modified organisms are created by modifying their original DNA.⁴ Because DNA acts as the template or recipe for proteins which determine an organism's traits, modifications in DNA can result in new beneficial features.⁵ Short sequences of DNA called genes can be identified in one species and added to another by cutting them out and inserting them into the second species.⁶ This allows the secondary species known as the target vector to produce new proteins that can result in advantageous traits.⁷ For example, genes from bacteria can be added to corn so that it becomes resistant to insects or tolerant to herbicides.⁸ Genetically modified rice, known as Golden Rice, was developed to combat Vitamin A deficiencies by having higher levels of beta-carotene, a precursor to Vitamin A.⁹ These types of changes allow farmers to produce higher yields of quality crops or decrease the cost of food production.¹⁰ This Section explains how the government regulates food and drugs from a broader perspective as well as the history of GMO use in the United States.

1. *How Food and Drugs Are Regulated in the United States*

The federal government previously regulated GMOs under the general statutory authority of safety, environmental, and health laws.¹¹ Introducing genetically modified plants required approval from the Animal and Plant Health Inspection Service.¹² GMO foods fell under the umbrella of the U.S. Food and Drug Administration (FDA) and did not need premarket approval

4. JANE B. REECE ET AL., CAMPBELL BIOLOGY 412–13, 831–32 (Beth Wilbur et al. eds., 10th ed. 2014).

5. *Id.*

6. *Id.*

7. *Id.*; see also Theresa Phillips, *Genetically Modified Organisms (GMOs): Transgenic Crops and Recombinant DNA Technology*, 1 NATURE EDUC. 213 (2008) (detailing some of the advantageous traits GMOs can provide for crops such as corn and soybeans).

8. See Chelsea Powell, *How to Make a GMO*, HARV. U. GRADUATE SCH. ARTS & SCI.: SITN (Aug. 9, 2015), <http://sitn.hms.harvard.edu/flash/2015/how-to-make-a-gmo/> [<https://perma.cc/Q5FE-RCDM>] (describing how a GMO is made and providing examples of new traits provided by genetic engineering).

9. REECE, *supra* note 4, at 832.

10. Phillips, *supra* note 7, at Current Use of Genetically Modified Organisms.

11. See Luis Acosta, *Restrictions on Genetically Modified Organisms: United States*, LAW LIBRARY CONG. (Mar. 2014), <https://www.loc.gov/law/help/restrictions-on-gmos/usa.php> [<https://perma.cc/9UDB-JGC7>].

12. *Id.* at Section IV.A.

unless they differed significantly in structure, function, or composition from non-GMO foods.¹³ This position was articulated by the FDA in 1992.¹⁴

The FDA requires biological products with or without genetic modifications to be licensed.¹⁵ Unlike food that would be eaten, biological products include those involved in “the prevention, treatment, or cure of a disease or condition of human beings.”¹⁶ Examples of biological products include antitoxins, viruses, therapeutic serums, vaccines, blood, and proteins.¹⁷ The FDA also requires drugs to be tested for safety and effectiveness regardless of genetic modification.¹⁸ Likewise, the U.S. Environmental Protection Agency (EPA) requires that all pesticides be registered before they can be distributed commercially.¹⁹

2. *History and Growth of the Use of GMOs*

GMO products were sold in supermarkets starting in 1994²⁰ when the FDA determined the Flavr Savr tomato was “as safe as other commonly consumed tomatoes.”²¹ Calgene, Inc. voluntarily submitted Flavr Savr tomatoes to the FDA for an advisory opinion about whether they would be subject to the same regulation as other tomatoes.²² The FDA treated the request as a consultation in accordance with its 1992 policy statement about food derived from new plant varieties.²³ In accordance with the 1992 statement, the Flavr Savr tomatoes could be treated the same as other tomatoes without requiring additional labeling because there was no difference in safety.²⁴

The genetically modified Flavr Savr tomato could stay ripe and fresh longer than conventional tomatoes and was in high demand following its

13. *Id.* at Section IV.B.1.

14. Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. 22,984, 22,991 (May 29, 1992). The FDA itself acknowledged this stance as recently as 2015. Voluntary Labeling Indicating Whether Food Has or Has Not Been Derived From Genetically Engineered Atlantic Salmon; Draft Guidance for Industry: Availability, 80 Fed. Reg. 73,193, 73,194 n.1 (Nov. 24, 2015).

15. Acosta, *supra* note 11, at Part III(B)(3).

16. 42 U.S.C.A. § 262(i)(1) (2012).

17. *Id.*

18. Acosta, *supra* note 11, at Section III.B.4.

19. *Id.* at Section III.C.1.

20. G. Bruening & J.M. Lyons, *The Case of the FLAVR SAVR Tomato*, 54 CAL. AGRIC. 6, 6–7 (2000).

21. U.S. FOOD & DRUG ADMIN., AGENCY SUMMARY MEMORANDUM RE: CONSULTATION WITH CALGENE, INC., CONCERNING FLAVR SAVR™ TOMATOES (1994).

22. *Id.*

23. *Id.*

24. *Id.*; see Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. 22,984, 22,991 (May 29, 1992).

release.²⁵ Over 1.8 million cans of Flavr Savr tomato paste were sold in chains such as Safeway and Sainsbury's between 1996 and 1999.²⁶ However, in 1998 sales dropped, and grocery store chains switched to house brands that were not genetically engineered.²⁷ The switch was made to satisfy customer concerns and not because of any identified safety problem.²⁸

In 1995 the EPA approved the first pesticide-producing crop,²⁹ which is a plant with the genetic ability to produce its own pesticide and control pests when they feed on the plant.³⁰ The EPA approval also marked the beginning of more widespread use of GMO crops such as Bt (*bacillus thuringiensis*, a naturally occurring bacteria) pesticide protein crops.³¹ Since the emergence of GMO crops there has been decreased use of synthetic pesticides that can contaminate groundwater, increase herbicide tolerant crops, increase crop yield, and increase crop quality.³² Planting acreage of genetically engineered crops in the United States has sharply risen over the last few decades.³³ In 2012, U.S. GMO crops made up approximately 88 percent of corn, 94 percent of cotton, and 93 percent of soybean plantings.³⁴

25. Bruening & Lyons, *supra* note 20, at 6–7.

26. *Id.* at 7.

27. *Id.*

28. *Id.*

29. Gabriel Rangel, *From Corgis to Corn: A Brief Look at the Long History of GMO Technology*, HARV. U. GRADUATE SCH. ARTS & SCI.: SITN (Aug. 9, 2015), <http://sitn.hms.harvard.edu/flash/2015/from-corgis-to-corn-a-brief-look-at-the-long-history-of-gmo-technology/> [https://perma.cc/994V-X8MK].

30. U.S. ENVTL. PROT. AGENCY, OVERVIEW OF PLANT INCORPORATED PROTECTANTS (2016), <https://www.epa.gov/regulation-biotechnology-under-tsca-and-fifra/overview-plant-incorporated-protectants> [https://perma.cc/9RPD-MVHS].

31. *Id.*

32. U.S. DEP'T OF AGRIC., BIOTECHNOLOGY FREQUENTLY ASKED QUESTIONS (FAQS) (2016), <http://www.usda.gov/wps/portal/usda/usdahome?navid=AGRICULTURE&contentid=BiotechnologyFAQs.xml> [https://perma.cc/ZQN8-QEL5].

33. U.S. DEP'T OF AGRIC., RECENT TRENDS IN GE ADOPTION (2016), <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx> [https://perma.cc/LB5Y-2K37].

34. U.S. DEP'T OF AGRIC., BIOTECHNOLOGY FREQUENTLY ASKED QUESTIONS (FAQS) (2016).

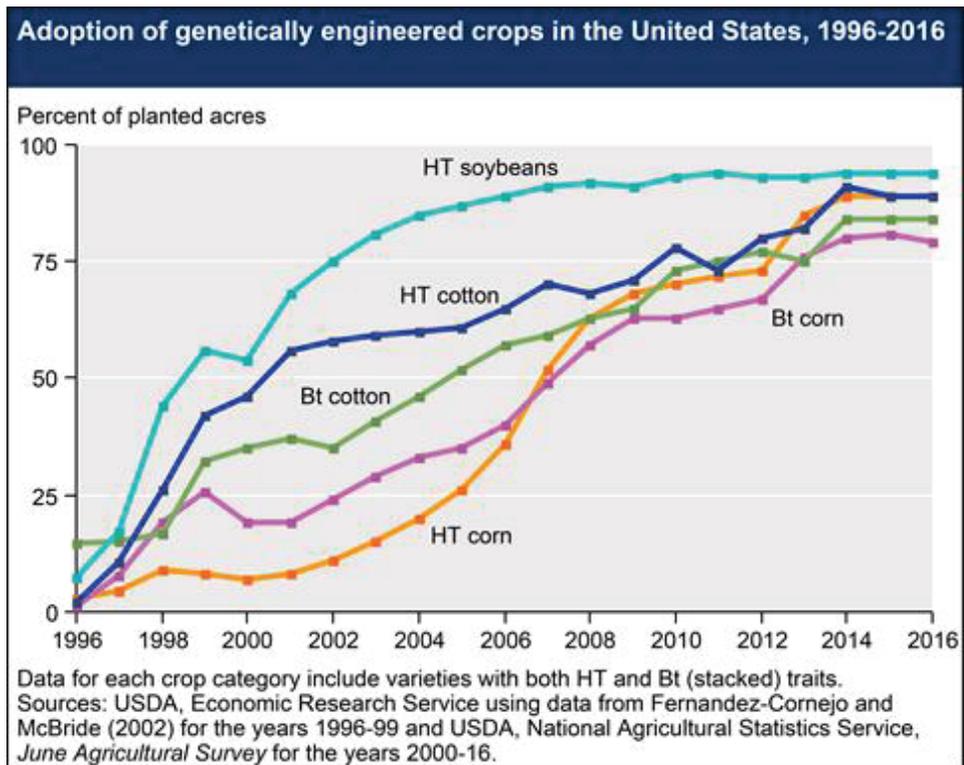
Figure 1: GMO trends over the past two decades³⁵

Figure 1 crops denoted by “Bt” are crops that contain a pesticide producing gene from the *Bacillus thuringiensis* soil bacteria. HT indicates that the crop is herbicide-tolerant, meaning that it has the genetic ability to survive specific herbicides that would otherwise kill the crop.

B. ARGUMENTS IN FAVOR OF GMO LABELING

As GMOs became more widespread over the past decade, the focus of most of the policy debate in the United States has been on labeling.³⁶ Proponents of labeling requirements for GMOs have argued that people have a right to know what they are consuming and should be informed before purchasing any product containing GMOs.³⁷ Knowing whether

35. U.S. DEP’T OF AGRIC., RECENT TRENDS IN GE ADOPTION (2016).

36. See, e.g., The Editors, *Labels for GMO Foods Are a Bad Idea*, SCI. AM. (Sept. 1, 2013), <https://www.scientificamerican.com/article/labels-for-gmo-foods-are-a-bad-idea/> [<https://perma.cc/N9FN-ACDY>] (highlighting how the wide consumption of GMOs in the United States has caused a debate on whether GMOs should be labeled).

37. See, e.g., *Senator Stabenow and Senator Roberts GMO Labeling Legislation, JUST LABEL IT!*, <http://www.justlabelit.org/dark-act/> [<https://perma.cc/8JE8-8MFQ>].

GMOs are part of a food product could influence consumers with a religious objection to genetically changing organisms, consumers who are concerned that cross-contamination could affect the marketability of other crops, or those who fear the unknown long term effects of consuming GMOs.³⁸

One specific concern is that increasing reliance on GMOs could decrease the planet's overall genetic diversity.³⁹ If GMO products produce higher returns, food producers could rely on those few efficient strains.⁴⁰ Without sufficient genetic diversity, the limited crop strains could be compromised and result in future crop devastation, like Ireland's over reliance on genetically uniform potatoes that resulted in the potato famine.⁴¹

Besides potential health and biodiversity concerns, opponents of GMOs also raise concerns about the economic incentives for companies that produce GMOs.⁴² Colin Tudge questions whether GMOs really produce more insect resistant and nutritious crops, offering non-GMO alternatives such as proper garden cultivation and management (also known as horticulture) as healthier ways to produce food.⁴³ He thinks GMOs are a way for businesses to make greater profit by pressuring the government to support them.⁴⁴ With the GMO market dominated by "just a few very big companies," the incentive is to monopolize the market instead of actually producing good food.⁴⁵

Additionally, opponents of GMOs argue that long term consequences are unknown at this point.⁴⁶ There might be a risk of increased food allergies when unknown quantities of GMOs are introduced to the food supply.⁴⁷ Between 1997 and 2007, the same time genetically engineered foods became more prevalent, food allergies increased by eighteen percent.⁴⁸ Although not clear causation, the correlation between use of GMOs and

38. See H. 112, 2014 Gen. Assemb., Reg. Sess. (Vt. 2014) (detailing the purpose of Vermont's genetic engineering labeling law).

39. Darren Smits & Sean Zaboroski, *GMOS: Chumps or Champs of International Trade?*, 1 ASPER REV. INT'L BUS. & TRADE L. 111, 114 (2001); Sommer Jenkins, *Genetic Engineering and Seed Banks: Impacts on Global Crop Diversity*, 9 MACQUARIE J. INT'L & COMP. ENVTL. L. 67, 67–68 (2013).

40. Smits, *supra* note 39, at 114.

41. *Id.*; Jenkins, *supra* note 39, at 67–69.

42. Mark Lynas & Colin Tudge, *GMOS: A Solution or a Problem?*, 67 J. INT'L AFFS. 131, 136–37 (2014).

43. *Id.* at 137–38.

44. See *id.* at 136–37.

45. *Id.* at 136.

46. Richard Dahl, *To Label or Not to Label: California Prepares to Vote on Genetically Engineered Foods*, 120 ENVTL. HEALTH PERSP. 358, 360 (2012).

47. See *id.*

48. *Id.*

food allergies suggests that there could be health risks associated with consuming GMOs.⁴⁹ Consumers should be aware of that uncertainty and have the ability to select against those food products with potential risks by having genetically engineered food labeled.⁵⁰

Finally, proponents of GMO labeling point to unintended environmental effects, such as herbicide resistant weeds, as a reason to require labeling.⁵¹ Some GMOs have been engineered to be genetically resistant to herbicides such as the powerful Roundup herbicide.⁵² The extensive use of Roundup might have accelerated the growth of herbicide resistant weeds.⁵³ Consequentially, farmers would need to use other herbicides or remove the weeds manually which goes against the purpose of creating Roundup-resistant GMOs.⁵⁴

C. PRIOR FEDERAL TREATMENT OF GMO LABELING

Before the National Bioengineered Food Disclosure Law, food manufacturers could participate in a voluntary labeling program to indicate whether food products had been derived from genetically engineered plants.⁵⁵ Separate from the voluntary genetically engineered program, a product could also be labeled as organic.⁵⁶ The United States Department of Agriculture (USDA) requires that there be no GMOs used in the process of creating a labeled organic food.⁵⁷ This means that animals cannot eat GMO crops, no GMO ingredients can be used to create the final food, and that there must be a buffer zone between organic and GMO crops.⁵⁸

In 1992 the FDA published a policy stance on biotechnology and foods derived from new plant varieties.⁵⁹ At the time the FDA “ha[d] not

49. *See id.*

50. *Id.*

51. Jonathan H. Adler, *How Not to Label Biotech Foods*, 36 THE NEW ATLANTIS 37, 37 (2012).

52. *Id.*

53. *Id.*

54. *Id.*

55. See U.S. FOOD & DRUG ADMIN., GUIDANCE FOR INDUSTRY: VOLUNTARY LABELING INDICATING WHETHER FOODS HAVE OR HAVE NOT BEEN DERIVED FROM GENETICALLY ENGINEERED PLANTS (2016), <http://www.fda.gov/Food/Guidance/Regulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm059098.htm> [<https://perma.cc/X76D-W96L>].

56. U.S. DEPT. OF AGRIC., *Can GMOs Be Used in Organic Products?* (2013), <https://www.ams.usda.gov/sites/default/files/media/Can%20GMOs%20be%20Used.pdf> [<https://perma.cc/M46D-AV6X>] (explaining the requirements for organic labeling).

57. *Id.*

58. *Id.*

59. Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. 22,984, 22,991 (May 29, 1992)

considered the methods used in the development of a new plant variety . . . to be material information” that would require a label.⁶⁰ The FDA stated they “[were] not aware of any information” that shows foods derived from biotechnology present “any different or greater safety concern than foods developed by traditional plant breeding.”⁶¹ Recent statistical studies suggest the likelihood of GMO products causing harm is at best weak evidence that cannot be distinguished from pure chance.⁶² Groups such as the American Association for the Advancement of Science have also determined that “crop improvement by the modern molecular techniques of biotechnology is safe.”⁶³

D. PRIOR STATE APPROACHES TO LABELING GMOS

Before the National Bioengineered Food Disclosure Law was enacted, several states created bills aimed at regulating labeling for GMOs.⁶⁴ While some of the state GMO labeling bills were defeated, three states (Connecticut, Maine, and Vermont) successfully passed GMO labeling laws.⁶⁵ The following Sections describe similarities between state approaches including the purpose of the laws, and how those laws would be enacted. The last Section connects the timing of state legislation with the development of the federal GMO labeling legislation.

1. *Similarities Between State Laws*

While there are some differences between the enacted state laws, they share several key features. First, all three required labeling for food produced with genetic engineering, with “clear and conspicuous” labels.⁶⁶ No laws allowed the use of electronic disclosure such as a QR code or link

60. *Id.* (section VI on labeling).

61. *Id.*

62. Alexander Y. Panchin & Alexander I. Tuzhikov, *Published GMO Studies Find No Evidence of Harm When Corrected for Multiple Comparisons*, 37 CRITICAL REVIEWS IN BIOTECH. 213, 213 (2016), [http://www.tandfonline.com/doi/full/10.3109/07388551.2015.1130684?src=recsys& \[https://perma.cc/FA8C-Q3PU\]](http://www.tandfonline.com/doi/full/10.3109/07388551.2015.1130684?src=recsys&[https://perma.cc/FA8C-Q3PU]).

63. *Statement by the AAAS Board of Directors On Labeling of Genetically Modified Foods*, AM. ASS’N FOR THE ADVANCEMENT OF SCI. (Oct. 20, 2012), <https://www.aaas.org/news/statement-aaas-board-directors-labeling-genetically-modified-foods> [<https://perma.cc/Q7UF-K5LU>].

64. H.R. REP. NO. 114-208, at 11 (2015) (detailing the concerns of the House with requiring GMO labeling).

65. *Id.*

66. *See* ME. REV. STAT. ANN. tit. 22, § 2593(1) (2013) (setting out Maine’s disclosure requirement that labeling be conspicuous); CONN. GEN. STAT. ANN. § 21a-92c (West 2013). (requiring clear and conspicuous words); VT. STAT. ANN. tit. 9, § 3043 (West 2013) (requiring clear and conspicuous words).

to a website.⁶⁷ Additionally, the labeling requirement would not extend to products “derived from an animal that was not genetically engineered but was fed genetically engineered food.”⁶⁸

2. *Purposes of State Labeling Laws*

While the Connecticut and Maine bills do not explicitly mention the reasoning for their labeling laws, Vermont’s bill is very clear about its purposes. The Vermont bill first points to public opinion polls to show that a “a large majority of Vermonters want foods produced with genetic engineering to be labeled as such.”⁶⁹ Other polling from the New York Times suggests that people think labelling would “reduce consumer confusion or deception regarding the food they purchase.”⁷⁰ Another reason Vermont thought it was important to inform consumers was to allow people “to conform to religious beliefs and comply with dietary restrictions.”⁷¹ Aside from consumer choice considerations, Vermont’s bill sought to protect the environment and people from “potential health risks of food produced from genetic engineering.”⁷² A Colorado proposition that did not pass was entitled the “Colorado Right to Know Act” and used the same economic, religious, and safety considerations as the Vermont bill.⁷³ Maine alluded to similar purposes in calling its bill “An Act To Protect Maine Food Consumers’ Right To Know about Genetically Engineered Food and Seed Stock.”⁷⁴

3. *Maine and Connecticut Enactment Requirements*

Unlike Vermont’s law, which took effect on May 8, 2014 when it was signed by the Governor,⁷⁵ both the Maine and Connecticut laws had provisions that restricted when the law would come into effect.⁷⁶ For

67. See ME. REV. STAT. ANN. tit. 22, § 2593(1) (2013); CONN. GEN. STAT. ANN. § 21a-92c (West 2013); VT. STAT. ANN. tit. 9, § 3043 (West 2013).

68. H.R. 718, 126th Leg., 1st Reg. Sess. (Me. 2013).

69. H. 112, 2014 Gen. Assemb., Reg. Sess. (Vt. 2014).

70. *Id.* § 1(5)(B).

71. *Id.* § 1(5)(D).

72. VT. STAT. ANN. tit. 9, § 3041(1) (West 2013).

73. See Proposition 105 (Colo. 2014), [http://www.leg.state.co.us/LCS/Initiative%20Referendum/1314InitRefr.nsf/acd7e51d3fc2b60b87257a3700571f9f/73677eb31474260a87257cd0004d9bad/\\$FILE/Proposition%20105%20Merged.pdf](http://www.leg.state.co.us/LCS/Initiative%20Referendum/1314InitRefr.nsf/acd7e51d3fc2b60b87257a3700571f9f/73677eb31474260a87257cd0004d9bad/$FILE/Proposition%20105%20Merged.pdf) [<https://perma.cc/P6D5-W2P9>]. Proposition 105 was a voter initiative that did not pass. When signatures were being collected the title of the document was the Colorado Right to Know Act which was then accepted for the ballot and designated as proposition 105.

74. H.R. 718, 126th Leg., 1st Reg. Sess. (Me. 2013).

75. H. 112, 2014 Gen. Assemb., Reg. Sess. (Vt. 2014).

76. See H.R. REP. NO. 114-208, at 11–12 (2015).

example, Maine's contingent effective date is based on "when legislation substantially similar to this Act has been adopted in at least 5 other states," or when states with a combined population of twenty million people adopt such a law.⁷⁷ Connecticut also requires both that four other states in the northeast region have similar laws and that over twenty million people are covered by those laws.⁷⁸

The Maine and Connecticut provisions would have prevented a patchwork of different state requirements in the Northeast region. That does not mean that other areas of the country would have the same labeling requirements. The fact that the Maine and Connecticut laws had a contingency for when they would be effective shows an intent to have uniformity in the area. The two states identified a balance between providing information about how food is made for consumers and uniformity.⁷⁹ Because the contingency provisions were not met with sufficient states or population, neither the Maine nor Connecticut bills ever took effect.⁸⁰

4. *Timeline and Development of the Federal Labeling Requirement*

While the states were enacting labeling laws, in 2014 Congress started working on a law that would provide uniformity through federal preemption of state labeling laws.⁸¹ One version of the law, House Report 1599, contained a preemption provision along with a voluntary program for GMO crops that were not materially different, such as crops with different nutritional characteristics or allergenicity, the disclosure of which would be "necessary to protect public health."⁸² The proposed voluntary program would have allowed the FDA to evaluate processes and crops that utilize GMOs.⁸³ The FDA could have required a label if the genetic modification created a "material difference" between the non-GMO version and was "necessary" to protect the public health.⁸⁴ Food would not be required to be

77. H.R. 718, 126th Leg., 1st Reg. Sess. (Me. 2013) (detailing the Maine labeling law's contingent effective date and contingent repeal in 2033 if the requirement has not been met).

78. CONN. GEN. STAT. ANN. § 21a-92c (West 2013).

79. *See id.*; ME. REV. STAT. ANN. tit. 22, § 2593 (2013).

80. *See* ME. REV. STAT. ANN. tit. 22, § 2593 (2013); CONN. GEN. STAT. ANN. § 21a-92c (West 2013).

81. *See* H.R. REP. NO. 114-208, at 11–12 (2015).

82. H.R. 1599, 114th Cong. (2015).

83. *Id.* § 424(a) (referring to the FDA's 1992 policy statement).

84. *Id.* § 424(b)(2).

labeled just because it was made from GMOs under House Report 1599.⁸⁵ Similar to the voluntary organic program, House Report 1599 would have allowed a voluntary genetically engineered food certificate.⁸⁶ The certificate would allow for the labeling of non-GMOs if the food could be processed and handled “in compliance with a genetically engineered food plan.”⁸⁷

According to the Committee on Agriculture’s Report accompanying House Report 1599, the major goals of the bill were to create uniformity, and prevent consumer misunderstanding.⁸⁸ The Report stated that “[s]tate labeling initiatives would produce a state-by-state patchwork of laws that lead to misinformation and confusion for consumers as well as costly disruptions to the food supply chain.”⁸⁹ The creators of the bill argued that “[b]y ensuring that food labeling is the sole purview of the federal government, the bill guarantees that state labeling mandates do not mislead and misinform consumers.”⁹⁰

With the possibility of a federal labeling law for GMOs, many food manufacturers, such as the Grocery Manufacturer’s Association (GMA), spent time and effort pushing for a law that would create more uniformity.⁹¹ GMA President and CEO Pamela Bailey highlighted that a federal law “would eliminate consumer uncertainty created by a state-by-state patchwork of labeling laws, advance food safety, inform consumers and provide consistency in labeling.”⁹² She explained that “[t]he alternative—a patchwork of state and local food laws across the country with different labeling mandates and requirements—will create confusion, cause significant new costs for Americans, and lead to critical problems for our nation’s grocery supply chain.”⁹³ Other food companies such as Campbell Soup Company started to push for a federal labeling law in early 2016.⁹⁴ Campbell opposed “a patchwork of state-by-state labeling laws, which it

85. *Id.* § 424(b)(1).

86. *Id.* § 291B.

87. *Id.* § 291B(a)(1).

88. *See* H.R. REP. NO. 114-208, at 11–12 (2015).

89. *Id.* at 11.

90. *Id.* at 12.

91. Press Release, Grocery Manufacturer’s Association, GMA Praises Introduction of National Food Labeling Bill (Mar. 25, 2015), <http://www.gmaonline.org/news-events/newsroom/gma-praises-introduction-of-national-food-labeling-bill/> [<https://perma.cc/7CHL-W64N>] (advocating for a national food labeling bill for GMOs).

92. *Id.*

93. *Id.*

94. Press Release, Campbell Soup Co., Campbell Announces Support for Mandatory GMO Labeling (Jan. 7, 2016), <http://investor.campbellsoupcompany.com/phoenix.zhtml?c=88650&p=irol-newsArticle&ID=2127542%20> [<https://perma.cc/RV79-VKZG>].

believed were incomplete, impractical and create unnecessary confusion for consumers.”⁹⁵

This debate and the failed House Report 1599 set the stage for Senate Bill S. 764, which ultimately passed. Different stances on labeling GMOs and the increased importance of implementing policy drove both states and the federal government to pass legislation.

II. SUMMARY OF THE FEDERAL GMO LABELING LAW

The National Bioengineered Food Disclosure Law,⁹⁶ S. 764, is the first federal law requiring food containing GMOs to be labeled. The bill details what types of foods are covered, how products need to be labeled, and how the Secretary of Agriculture will implement the new program.⁹⁷ S. 764 gives the USDA a substantial role in implementing the new labeling law.⁹⁸ This Part provides an overview of what the federal GMO labeling law does by focusing on how products could be labeled and how the federal law preempts state law.

In general, the GMO labeling law requires that foods made from bioengineering have a label indicating so.⁹⁹ The definition of bioengineered food excludes animals that have not been genetically altered themselves, but that have consumed GMO crops.¹⁰⁰ The label can be written on the packaging or in the form of an electronic link such as a QR code that can be scanned.¹⁰¹ Additionally, the federal GMO labeling law preempts all state GMO labeling laws unless they are identical to the federal law.¹⁰² The federal GMO labeling law does not, however, prevent states from having and enforcing their own remedies for violations of the federal law.¹⁰³

The USDA has issued several memos and policy statements that provide direction as to how the law will be implemented.¹⁰⁴ For example, the USDA issued a policy statement that no food certified as organic will require a

95. *Id.*

96. S. Res. 764, 114th Cong. (2016) (enacted).

97. *See* 7 U.S.C.A. § 1639 (West 2016).

98. *Congress Passes Legislation Mandating a National Bioengineered Food Disclosure Standard: Five Things You Need to Know*, SIDLEY (July 21, 2016), <http://www.sidley.com/news/07-21-2016-environmental-update> [https://perma.cc/9RCY-596R] (explaining key aspects of the Federal GMO labeling law).

99. 7 U.S.C.A. § 1639b(b)(2)(D).

100. *Id.* § 1639b(b)(2)(A).

101. *Id.* § 1639b(b)(2)(D).

102. *Id.* § 1639b(e); 7 U.S.C.A. § 1639i.

103. 7 U.S.C.A. § 1639j.

104. *E.g.*, U.S. DEP'T OF AGRIC., *GMO DISCLOSURE & LABELING* (2017) <https://www.ams.usda.gov/rules-regulations/gmo> [https://perma.cc/9AEU-Z3AV].

GMO label, since by definition a food that can be labeled as organic is not classified as a bioengineered food, and that no proposed rules will require modification of the organic certification rules.¹⁰⁵ Additionally, the USDA has sent preemption letters to the governors of each state suggesting that states look at the federal law before attempting to make any labeling laws for GMOs and that the state laws must adopt standards “identical to the national bioengineered food disclosure standard.”¹⁰⁶ Two particularly important provisions of the National Bioengineered Food Disclosure Law concern electronic disclosure and federal preemption.

A. ELECTRONIC DISCLOSURE STANDARD

The method of disclosure provision, § 1639b(b)(2)(D), specifies how foods containing GMOs must be labeled.¹⁰⁷ It states that “the form of a food disclosure under this section be a text, symbol, or electronic or digital link, but excluding Internet website Uniform Resource Locators not embedded in the link, with disclosure option to be selected by the food manufacturer.”¹⁰⁸ Textually, there are three pieces of information in the method of disclosure provision: (1) what disclosures are permissible, (2) restrictions to permissible disclosures, and (3) who decides how to label the product.

The disclosure required by National Bioengineered Food Disclosure Law can be text, which is also the form of labeling for cigarettes.¹⁰⁹ Cigarette labels must be in text, contain nine different warnings including “WARNING: Cigarettes cause fatal lung disease,” and must be in a conspicuous place.¹¹⁰ The cigarette label is required to be on every package of cigarettes and must be “in a manner that contrasts” the typography, layout, or color of all other printed matter.¹¹¹ GMOs can be labeled by text, but the act does not specify how this text must be presented or what it has

105. Memorandum from Elanor Starmer, Administrator, U.S. Department of Agriculture, to AMS Deputy Administrators (Sept. 19, 2016), <https://www.ams.usda.gov/sites/default/files/media/PolicyMemoGMODisclosureNOPConsistency.pdf> [<https://perma.cc/86N5-QRNU>].

106. *E.g.*, Letter from Edward Avalos, Under Secretary, U.S. Dep’t of Agric. Marketing and Regulatory Programs, to Bill Walker, Governor of Alaska (Aug. 1, 2016) <https://www.ams.usda.gov/sites/default/files/media/GMOExemptionLettersto50Governors.pdf> [<https://perma.cc/6AAR-NDA6>] (cautioning states from passing their own laws that might conflict with the preemption provisions within the new national law).

107. 7 U.S.C.A. § 1639b(b)(2)(D).

108. *Id.*

109. 15 U.S.C. § 1333 (2012) (specifying how text of cigarette labeling should appear and what it should say).

110. *Id.*

111. *Id.*

to say,¹¹² which is starkly different than other labeling regimes where every detail about the label is included within the statute.¹¹³

Alternatively, the disclosure for bioengineered foods can be in the form of an “electronic or digital link.”¹¹⁴ Because the statute uses the word “or,” both a textual and electronic version of labeling are not required.¹¹⁵ The method of disclosure provision prohibits electronic or digital links with “Internet website Uniform Resource Locators not embedded in the link.”¹¹⁶ At first glance it is unclear what is meant by this qualification to the electronic disclosure requirement.

However, other language in the disclosure section suggests that an electronic disclosure must be able to be scanned, instead of only a static URL that must be separately typed in to a browser to view.¹¹⁷ The disclosure requirement must be “in accordance” with subsection (d) which outlines additional disclosure requirements.¹¹⁸ For example, there must be on-package language that accompanies the electronic disclosure stating “Scan here for more food information.”¹¹⁹ Similarly, the electronic disclosure must be of sufficient size “to be easily and effectively scanned or read by a digital device.”¹²⁰ Both instructions clarifying the electronic disclosure show that it needs to be scannable, such as through a QR code. If a disclosure requires someone to type in a URL on their phone, the digital link would not be scanned and would not meet the requirements under the disclosure standard.¹²¹

The last important part of the method of disclosure provision is that food manufacturers control what method of labeling they wish to use.¹²² This means that comparable products from different manufacturers could be labeled in a different way. Or even that different products from a single manufacturer could be different. While some might have a symbol, others could use text or an electronic disclosure. Cereal could be labeled differently from frozen pizza, which could be labeled differently from a

112. 7 U.S.C.A. § 1639b(2)(D).

113. 15 U.S.C. § 1333.

114. 7 U.S.C.A. § 1639b(2)(D). While the statute also mentions a symbol as a labeling option there is no guidance or information in the statute about what would constitute an adequate disclosure using a symbol.

115. *Id.*

116. *Id.*

117. *Id.* § 1639b(d).

118. *Id.* § 1639b(b)(2)(D).

119. *Id.* § 1639b(d)(1)(A).

120. *Id.* § 1639b(d)(5).

121. *See id.* §§ 1639b(b)(2)(D), (d).

122. *Id.* § 1639b(b)(2)(D).

bottle of oil. Additionally, the USDA can not require manufacturers to use one specific labelling option under the statute.¹²³

The legislation recognizes the possibility that electronic disclosures may not be effective for all consumers such as people without phones capable of scanning or inputting the electronic disclosure.¹²⁴ Section 1639b(c)(1), the electronic study requirement, states that “[n]ot later than 1 year after the date of enactment of this subtitle, the Secretary [of Agriculture] shall conduct a study to identify potential technological challenges that may impact whether consumers would have access to the bioengineering disclosure through electronic or digital disclosure methods.”¹²⁵ As part of the study, the Secretary will consider the availability of wireless Internet or cellular networks, landline telephones in stores, challenges for small or rural retailers, and the costs and benefits of installing digital link scanners in stores that could provide disclosure information.¹²⁶ If the study shows that consumers do not have sufficient access to the bioengineering disclosure through electronic or digital means, the Secretary “shall provide additional and comparable options to access the bioengineering disclosure.”¹²⁷

The electronic study requirements put the text of the disclosure provision into context. While electronic or digital disclosures are allowed, the study includes safeguards to ensure that this particular method of disclosure can provide information to consumers. It also means that electronic disclosures could be subject to change either in what is required of the label, or in how smaller retailers handle the technological aspect of the disclosure.

There are no explicit justifications for the electronic disclosure requirement. However, the House Report for a previous version of the bill details reasoning for why there should be a federal labeling requirement which sheds light on why the electronic disclosure might have been added to the National Bioengineered Food Disclosure Law.¹²⁸ The House Report for the earlier bill focuses on economic reasons for why GMOs should be labeled at the federal level such as ease and cost for manufacturers,¹²⁹ but does not consider consumer-related rationales of informational knowledge

123. *See id.*

124. *See id.* § 1639b(c)(1).

125. *Id.*

126. *Id.* § 1639b(c)(3).

127. *Id.* § 1639b(c)(4).

128. *See* H.R. REP. NO. 114-208, at 11–12 (2015) (explaining the reasoning for provisions of H.R. 1599 which was later amended and passed as S. 764).

129. *See id.*

or making informed decisions.¹³⁰ The earlier version of the law did not focus on consumer information or allowing consumers to make informed decisions.¹³¹ The electronic disclosure could be seen as a way to address the economic concerns of cost for manufacturers to produce food—which Congress seems to care about. At the same time, this may not be helpful to consumers seeking information—which Congress does not seem to care about.¹³² Even though Congress does not appear concerned about consumer information or making informed choices, it included the electronic disclosure study as a safety valve to appease those who want plain textual disclosure by establishing a future study into the effectiveness of electronic disclosure.

B. STATE PREEMPTION PROVISIONS

Section 1639b(e), the bioengineered preemption, and § 1639i(b), the genetically engineered preemption, are the two federal preemption provisions within the National Bioengineered Food Disclosure Law that restrict state GMO labeling.¹³³ But why are there two separate state preemption provisions instead of just one? Section 1639b(e) uses the specific language of the federal labeling law to preempt state laws, while § 1639i(b) uses a broader scope of preemption based on language used within existing state laws to prevent states from undermining the federal law with different labeling standards.¹³⁴ This Section analyzes the two separate preemption provisions and their impact on state GMO labeling laws. It also demonstrates the connection between legislative reasoning to pass the bill and how the preemption was implemented.

1. *Textual Analysis of the Two Provisions*

Section 1639b(e) prohibits states from establishing “any requirement” of labeling “whether a food is bioengineered or was developed or produced using bioengineering,” when the food is already subject to regulation by S. 764, unless such labeling requirement is “identical” to that required by S. 764.¹³⁵ The use of the word “any” shows that the restriction is absolute.¹³⁶ Preemption applies to all labeling of bioengineered food as defined by the federal labeling statute. This federal preemption restricts state labeling laws for bioengineered foods so that they must be “identical” to the federal

130. *See id.*

131. *See id.*

132. *See id.*

133. 7 U.S.C.A. §§ 1639(e), 1639i(b) (West 2016).

134. *Id.*

135. *Id.* § 1639b(e).

136. *See id.*

law.¹³⁷ States are not allowed to have any additional labeling restrictions for bioengineered food other than what the federal law imposes.¹³⁸ If the statute requires that a food be labeled because it falls into the definition of “bioengineered food,” states are preempted from any different labeling.¹³⁹

The second preemption provision, § 1639i, has similar restrictions to the bioengineered preemption, but uses broader language and targets the language used in prior State GMO labeling laws.¹⁴⁰ This second preemption provision states that no state can establish “any requirement relating to the labeling of whether a food . . . or seed is genetically engineered.”¹⁴¹ The term “genetically engineered” explicitly includes “other similar terms” under § 1639i.¹⁴² Additionally, the state preemption applies to food or seeds “developed or produced using genetic engineering.”¹⁴³ Unlike the bioengineered preemption in § 1639b(e), § 1639i adds “other similar terms” which serves as a catchall for other forms of food modification related to “genetically engineered.”¹⁴⁴ However, the “other similar terms” language is not part of the bioengineered preemption, most likely because the genetically engineered preemption was written based on the language used in existing State GMO labeling laws.¹⁴⁵

The language of § 1639i matches the “genetically engineered” wording that Maine, Connecticut and Vermont used to define GMOs subject to labeling.¹⁴⁶ Because the genetically engineered preemption uses the same language as the state laws, that provision should be understood to preempt the prior state laws more specifically. The preemption of state laws is stronger when the language is more encompassing, so it makes sense that “other similar terms” appears only in the genetically engineered provision.¹⁴⁷ Including both provisions for preemption ensures that existing

137. *Id.*

138. *Id.* § 1639b(e).

139. *Id.* § 1639a(a).

140. *Id.* §§ 1639b(e), 1639i(b).

141. *Id.* § 1639i(b).

142. *Id.*

143. *Id.*

144. *See Id.* §§ 1639b(e), 1639i(b).

145. *See id.*

146. *Compare Id.* § 1639i(b) (preempting state laws using the “genetically engineered” wording and other similar terms), *with* ME. REV. STAT. ANN. tit. 22, § 2592 (2013) (defining “genetically engineered” products subject to the law), *and* CONN. GEN. STAT. ANN. § 21a-92b (West 2013) (defining “genetically engineered” products), *and* VT. STAT. ANN. tit. 9, § 3042 (West 2013) (defining “genetically engineered” products).

147. *See* § 1639i(b).

state GMO labeling law is not enforceable while protecting the new provisions and requirements in S. 764.

2. *Legislative History Concerns Match the Resulting Preemption Provisions*

The legislative history from the House Report outlines several considerations that are reflected in the two preemption provisions.¹⁴⁸ One of the main concerns of the House was to create “national uniformity regarding labeling of foods derived from genetically engineered plants.”¹⁴⁹ They thought that “a patchwork of conflicting State or local labeling laws” would “inherently interfere with interstate and foreign commerce.”¹⁵⁰

The law’s legislative history suggests that food supply chain stakeholders would suffer economically if different states had varying labeling laws for GMOs.¹⁵¹ For example, farmers would have to segregate genetically engineered crops from non-engineered crops and create additional transport routes for each type of crop.¹⁵² Additionally, there are sometimes errors in the supply chain that are not the fault of the manufacturer, but which could result in manufacturer fines.¹⁵³ If each state were to have a different labeling requirement that would also mean more effort and money to accommodate different packaging needs. Ultimately the House was concerned that patchwork state requirements would be more difficult for farmers and manufacturers causing prices to increase for consumers.¹⁵⁴

The way to avoid economic concerns for food producers would be to ensure that all states had to follow the same guidelines. That is what the preemption sections of S. 764 require.¹⁵⁵ With only one federal labeling requirement the “costly price hikes associated with a patchwork of state labeling laws” can be avoided.¹⁵⁶

The federal GMO labeling law has a number of provisions for its future implementation, but the intent behind many sections is not immediately clear, similar to the unclear intent of the electronic disclosure option.

148. See H.R. REP. NO. 114-208, at 11–12 (2015) (explaining the reasoning for provisions of H.R. 1599 which was later amended and passed as S. 764).

149. *Id.* at 11.

150. *Id.*

151. *Id.*

152. *Id.* at 11–12.

153. *Id.* at 12.

154. *Id.* at 11–12.

155. See 7 U.S.C.A. §§ 1639b(e), 1639i(b) (West 2016).

156. H.R. REP. NO. 114-208, at 12 (2015).

Analyzing the potential risks of labeling GMOs can provide insight behind the meaning of these sections.

III. DISCUSSION OF HOW THE GMO LABELING LAW FAVORS USE OF GMOS

At first glance, the National Bioengineered Food Disclosure Law seems to satisfy the concerns those who champion uniformity. Groups advocating for the importance of the right to know, such as “Just Label It!”, have deemed S. 764 the “DARK Act,” an acronym for the Deny Americans the Right-to-Know Act.¹⁵⁷ Some analysts have concluded that the act might not cover all GMO foods because the bill only recognized one type of genetic modification technology and a showing that the modification could not be “obtained through natural means or traditional breeding.”¹⁵⁸ States that previously passed GMO labeling laws might also be unhappy with the federal law since the uniformity necessarily preempts their laws.¹⁵⁹ However, uniformity alone does not explain why the electronic disclosure provision was incorporated.

The primary objection to the new federal GMO labeling law appears to be the “ineffective” electronic disclosure to consumers.¹⁶⁰ Polls indicate that over 88 percent of Americans would prefer a textual package label instead of a scannable QR code with separate data on the product’s genetically modified ingredients.¹⁶¹ Arguably, a QR code would require a shift in consumer behavior as well as more widespread smartphone technology. As of February 2016, 33 percent of U.S. adults do not have smartphones.¹⁶² Groups including “Just Label It!” are unhappy with the limitations of the federal labeling law and call into question why the law was framed so cryptically. It would be more straightforward to require clear text or a

157. JUST LABEL IT!, *supra* note 37 (describing information about the National Bioengineered Food Disclosure Act, its potential shortcomings, and the purported pressing need to label all GMO products).

158. Memorandum from Bracewell LLP to Just Label It! (July 1, 2016), <http://4bgr3aepis44c9bxt1ulxsyq.wpengine.netdna-cdn.com/wp-content/uploads/2016/07/Bracewell-Memo-to-JLI.pdf> [<https://perma.cc/HA7M-NZ37>].

159. 7 U.S.C.A. §§ 1639(e), 1639i(b).

160. *See* JUST LABEL IT!, *supra* note 37.

161. Memorandum from The Mellman Group, Inc. to Just Label It! (Nov. 23, 2015), <http://4bgr3aepis44c9bxt1ulxsyq.wpengine.netdna-cdn.com/wp-content/uploads/2015/12/15memn20-JLI-d6.pdf> [<https://perma.cc/N275-6YK4>] (finding people prefer in-text labels for food products).

162. *Evaluation of QR Code Effectiveness for GMO Labeling*, JUST LABEL IT! (Feb. 26, 2016), http://4bgr3aepis44c9bxt1ulxsyq.wpengine.netdna-cdn.com/wp-content/uploads/2016/02/qrcode_effectiveness_deck_022616.pdf [<https://perma.cc/B9NL-SQXM>] (analyzing QR code effectiveness).

symbol identifying bioengineered food directly on the food itself, similar to labels used to identify kosher foods. So why create provisions of electronic disclosure that obstruct access to information?

This Part analyzes the implications of the GMO labeling law. The first Section explains that the labeling requirement provides an *opportunity* to know, and not a *right* to know whether a food product contains genetically modified products. The next Section explores how the required labeling may be a compromise in order to achieve the more desired outcome of a uniform federal labeling regime with state law preemption. The final Section addresses how the law balances competing concerns of informing consumers with preventing misunderstood information, and tends to favor the latter as a better means of protecting consumers.

A. THE LAW'S LABELING REQUIREMENTS PROVIDE AN OPPORTUNITY TO KNOW, NOT A RIGHT TO KNOW

While several of the previous state labeling laws suggest that people have a right to know whether food products are genetically engineered,¹⁶³ the federal law provides at best an opportunity to know, to the dismay of its critics. Since the food manufacturer determines what type of label to use, hypothetically all bioengineered food could have an electronic link.¹⁶⁴ Even though a digital link's bioengineering disclosure must be "in a consistent and conspicuous manner, on the first product information page," looking at a product in the store would not provide any indication of that information.¹⁶⁵ If one of the main goals of the federal GMO labeling law was to ensure consumers' right to know, the information should be easily discernable in the store.

The electronic disclosure could be viewed as a deceptive way to avoid labeling bioengineered foods, but the electronic disclosure study appears to ensure that electronic disclosures provide consumers with the necessary information.¹⁶⁶ However, the timing of the electronic study hinders its ability to be an effective safeguard. For example, the study must be conducted "[n]ot later than 1 year after the date of enactment," but there are no parameters for how long it can take to conduct the study.¹⁶⁷ Similarly,

163. See, e.g., Proposition 105 (Colo. 2014), [http://www.leg.state.co.us/LCS/Initiative%20Referendum/1314InitRefr.nsf/acd7e51d3fc2b60b87257a3700571f9f/73677eb31474260a87257cd0004d9bad/\\$FILE/Proposition%20105%20Merged.pdf](http://www.leg.state.co.us/LCS/Initiative%20Referendum/1314InitRefr.nsf/acd7e51d3fc2b60b87257a3700571f9f/73677eb31474260a87257cd0004d9bad/$FILE/Proposition%20105%20Merged.pdf) [<https://perma.cc/P6D5-W2P9>]; H.R. 718, 126th Leg., 1st Reg. Sess. (Me. 2013).

164. See 7 U.S.C.A. § 1639b(b)(2)(D) (West 2016).

165. *Id.* § 1639b(d)(2).

166. See *Id.* § 1639b(c)(1).

167. *Id.*

even if there are issues with consumers having sufficient access to the disclosure, there is no time-frame of when “comparable options” would have to be implemented.¹⁶⁸ If the focus were on providing a right to know, there could have been a provision stating that if the electronic disclosure is not deemed effective within a certain number of years after the study, then disclosure must be text on the packaging. Because a provision of that nature is missing, this suggests that the electronic study might not provide the best safeguard for a right to know.¹⁶⁹

In reality, the electronic or digital disclosure creates another level of separation between the consumer and the bioengineering information. Assuming that everyone had smartphones that could be used to get to the electronic links and there were no problems accessing the link, people would need to physically take out their phones and scan each product to see the bioengineering disclosure. That requires more effort from the consumer than picking up the product and knowing whether it is partially bioengineered from a clear and conspicuous label. If knowing about the presence of bioengineered products by labeling were taken as a right, Congress would have the incentive to make access as easy as possible. The fact that information is more distant than a direct label suggests that consumers will not have a right to know if a food is bioengineered, but rather the opportunity to know, with additional proactive effort required to obtain such knowledge.

B. REQUIRED LABELING MIGHT BE A COMPROMISE TO ENSURE STATE PREEMPTION

If the goal of the labeling law is not based on the rationale that consumers have the right to know if there are bioengineered products within their food, why would it require labeling of bioengineered foods? A clue to the answer might be found in previous versions of the bill. The earlier House version of the bill, House Report 1599, essentially preempted states from requiring labeling of GMO foods without requiring bioengineered foods to be labeled.¹⁷⁰ However, the proposed version would have retained the voluntary non-GMO labeling policy.¹⁷¹ Opponents of the original House Report 1599 bill, such as James McGovern and Ann Kuster, argued that “[c]onsumers have the right to know what is in their food” and that the bill

168. *See Id.* § 1639b(c)(4).

169. *See Id.* § 1639b(c)(1).

170. *See* H.R. REP. NO. 114-208, at 61 (2015) (dissenting views state: “H.R. 1599 would preempt states from labeling GMO foods and would invalidate existing state laws.”).

171. *Id.* (“It would codify the existing voluntary non-GMO labeling policy that causes confusion among customers.”)

would make it even harder to know as it would take away states' powers to require GMO labeling.¹⁷²

If there were enough people opposed to House Report 1599 on the grounds that it obstructed consumers' rights to know, future versions of the bill were likely amended with these considerations in mind to ensure that it would pass. The S. 764 bill that eventually was signed into law kept the preemption provisions from the earlier House Report 1599, but added the labeling requirement,¹⁷³ likely in an effort to appease earlier criticisms.

C. MISLEADING INFORMATION CAN NEGATIVELY AFFECT CONSUMERS

The new federal GMO labeling bill has provisions for electronic disclosure that address the risk of consumers being misled by textual labeling. If the emphasis of the federal bill was on label uniformity there would have been no need to adjust the labeling requirements from the direct label information required by prior state laws. However, rather than just adopt the standards used by state GMO laws, Congress added the option of electronic or digital disclosure.¹⁷⁴ This intentional departure from the states' labeling requirement suggests that the interest in not misleading consumers is a significant emphasis of the law.¹⁷⁵ House Report 1599 notes that with GMOs "[t]here is a great deal of misinformation that can be confusing to consumers and policymakers alike."¹⁷⁶ The report argues that there is a "need" for bioengineered foods given the growing population and the cost to produce food.¹⁷⁷

This Section explains how information on labels can lead consumers to make incorrect assumptions. The connection is highlighted with several examples of labeling that affected product availability and consumer behavior. Further, an explanation of informational cascades illuminates how people can be led to faulty assumptions, and how these faulty assumptions can develop from required GMO labeling.

1. *Labels on Food Can Mislead Consumers*

Food labels are a source of information that consumers use to determine how healthy food options are, and if consumers misunderstand what labels

172. *See id.*

173. *See* 7 U.S.C.A. §§ 1639b(b)(2)(D), (e) (West 2016).

174. *Id.* § 1639b(c)(1).

175. *See* H.R. REP. NO. 114-208, at 11.

176. *Id.*

177. *See id.*

mean it can affect what they buy.¹⁷⁸ When consumers make judgements about what is healthier and safer, factors such as the production technology used can play a role.¹⁷⁹ Generally, self-imposed risk, such as cooking the food, is “more acceptable to consumers than technology-based risk,”¹⁸⁰ such as those associated with genetic engineering. Familiar risks are seen as less severe than unfamiliar ones.¹⁸¹ This means that when a new technology such as genetic engineering is used to make food, and the customer is aware of that, people are inclined to perceive a higher health risk with those foods.¹⁸² Each of the above consumer risks can change consumer choices if people do not understand how GMOs are made or whether they are safe.

2. *Examples of How Consumer Assumptions Can Affect Product Availability*

There are several examples of consumer perceived risks affecting food labeling and availability, including European Union (E.U.) labeling of GMO foods and milk labeling in the United States.¹⁸³ In 1997, amidst a growing opposition to foods containing GMOs, the E.U. required GMO foods to be labeled.¹⁸⁴ European opposition to GMO foods grew such that by 2010, close to 95 percent of Europeans thought GMO foods were potentially unsafe and lacking benefits.¹⁸⁵ In the 1990s, over 80 percent of people in Germany had a negative opinion of GMOs.¹⁸⁶ In the years following the E.U. GMO labeling requirement, European retailers removed GMOs from foods to avoid driving customers away,¹⁸⁷ despite a lack of evidence that there were any legitimate safety issues associated with GMO

178. Clare Hall & Felipe Osses, *A Review to Inform Understanding of the Use of Food Safety Messages on Food Labels*, 37 INT’L J. OF CONSUMER STUD. 422, 423 (2013).

179. Klaus G. Grunert, *Food Quality and Safety: Consumer Perception and Demand*, 32 EUROPEAN REV. AGRIC. ECON. 369, 381 (2005).

180. *Id.* at 382.

181. *Id.*

182. *Id.*

183. *See* The Editors, *supra* note 36.

184. *Id.*

185. *Europeans Wary of GMO Foods*, INDEP. (Nov. 17, 2010), <http://www.independent.co.uk/life-style/health-and-families/europeans-wary-of-gmo-foods-2137817.html> [<https://perma.cc/8BMS-LV25>].

186. Diahanna Lynch & David Vogel, *The Regulation of GMOs in Europe and the United States: A Case-Study of Contemporary European Regulatory Politics*, COUNCIL ON FOREIGN REL. (Apr. 5, 2001), <http://www.cfr.org/agricultural-policy/regulation-gmos-europe-united-states-case-study-contemporary-european-regulatory-politics/p8688> [<https://perma.cc/RZ7W-C5AG>].

187. *See*, The Editors, *supra* note 36.

products. As a result, it is nearly impossible to find GMO foods in European supermarkets as of 2013.¹⁸⁸

Another labeling controversy that affected consumer assumptions about food was labeling for how milk is produced.¹⁸⁹ Cows can produce more milk if they are injected with a genetically engineered growth hormone called rbST (or the similar rBGH genetically engineered growth hormone).¹⁹⁰ The FDA created a labeling guideline for rbST milk in 1994 that stated that “rbST free” labels could imply that milk created using rbST is less safe than other milk.¹⁹¹ At the time of the statement, the FDA asserted that implying rbST milk was less safe would be false and misleading.¹⁹² If companies wanted to use a “rbST free” label, they could do so with an accompanying statement: “No significant difference has been shown between milk derived from rbST-treated and non-rbST-treated cows.”¹⁹³ The FDA explained that the additional statement would put the claim into context and no longer be misleading.¹⁹⁴ Even with the FDA’s guidance, consumer pressure resulted in roughly 60 percent of milk being produced rbST free as of 2010.¹⁹⁵ Many states allowed the label of “rbST free” milk leading up to 2010, and as of 2010 all states permit “rbST free” labeling,¹⁹⁶ despite the lack of evidence that rbST milk has any significant difference from non-rbST milk. These examples demonstrate how consumer pressure can influence labeling, and how consumers can be affected by such labels.

188 *See id.*

189. Terence J. Center and Kyle W. Lathrop, *Labeling rbST-Derived Milk Products: State Responses to Federal Law*, 45 U. KAN. L. REV. 511, 515–16 (1997); Tom Laskawy, *Court Rules rBGH-free Milk *is* Better Than the Kind Produced with Artificial Hormones. Now what?*, GRIST (Oct. 7, 2010), <http://grist.org/article/food-2010-10-06-court-rules-on-rbgh-free-milk/> [<https://perma.cc/2HCC-P69P>] (detailing the labeling controversy for milk made from rBGH).

190. Laskawy, *supra* note 189.

191. *See* Center, *supra* note 189, at 515–16.

192. Interim Guidance on the Voluntary Labeling of Milk and Milk Products from Cows That Have Not Been Treated with Recombinant Bovine Somatotropin, 59 Fed. Reg. 6,279, 6,280 (Feb. 10, 1994).

193. *Id.*

194. *Id.*

195. Laskawy, *supra* note 189.

196. Libby Moulton, *Labeling Milk from Cows Not Treated with rbST: Legal in all 50 States as of September 29th, 2010*, COLUMBIA SCI. & TECH. L. REV. BLOG (Oct. 28, 2010), <http://stlr.org/2010/10/28/labeling-milk-from-cows-not-treated-with-rbst-legal-in-all-50-states-as-of-september-29th-2010/> [<https://perma.cc/9MJC-G722>].

3. *How Informational Cascades Can Lead People to Faulty Assumptions*

In addition to assumptions about what labels mean, consumers are often influenced by others when deciding what to buy. When people hear their friends state a belief, there are psychological pressures to agree and adopt the stated view.¹⁹⁷ Hearing many other people state a belief can create an information cascade making it more likely to conform to that belief.¹⁹⁸ This can lead to assumptions that the underlying belief is accurate, without basing any of this assumption on impartial evidence.¹⁹⁹ As a result, people can make inaccurate assumptions based on how others act.

The concept of informational cascades can be applied to the decision-making process based on food labels. Some people question the safety of GMOs in food, and demand to know whether GMOs are present in the food they consume.²⁰⁰ An information cascade could occur if that set of people decided to only buy food that did not contain GMOs. This would be an echo of the decrease in bioengineered foods used in Europe.²⁰¹ The theory would be that if an individual were close to a group who buy only non-GMO for safety concerns, she might adopt the belief that GMO foods are less safe than non-GMO foods.²⁰² As a result her purchase choices could also change.

4. *How Faulty Assumptions Can Develop from Required GMO Labeling*

A required label, as in Europe, could mislead consumers into thinking that GMO foods are inferior or even more dangerous than non-GMO counterparts.²⁰³ The FDA's position that "rbST-free" labeling can be misleading is different than an information cascade because it only requires the consumer to misunderstand the label itself instead of being influenced

197. DAVID EASLEY & JON KLEINBERG, NETWORKS, CROWDS, AND MARKETS: REASONING ABOUT A HIGHLY CONNECTED WORLD, 483–84 (2010). *See also* Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 720–23 (1999); *Availability Cascade, Information Cascade and Reputation Cascade: The Relevance of Cascades to Cotton*, COTTON ASS'N OF INDIA (Aug. 23, 2015), <http://cottonanalytics.com/wp-content/uploads/2015/08/13b.-Availability-Cascade.pdf> [<https://perma.cc/5YGH-6BPT>].

198. *See* COTTON ASS'N OF INDIA, *supra* note 197.

199. *See id.*

200. *E.g.*, JUST LABEL IT!, *supra* note 37.

201. *See* COTTON ASS'N OF INDIA, *supra* note 197.

202. *See id.* (affecting the information cascade and relying on faulty assumptions for social acceptance).

203. *See* INDEP., *supra* note 185.

by what others think.²⁰⁴ The same risk can occur when the product is labeled as “made from genetic engineering” without context. Even when there is defined labeling, the combined influence of the labeling with an information cascade can affect consumer choice by stigmatizing the GMO product. An example of this effect is demonstrated by the majority of manufacturers that switched to rbST free milk,²⁰⁵ despite the total lack of evidence that rbST milk was unsafe. As a result of uncontextualized labeling and information cascades, when the consumer shops she might avoid foods labeled as containing GMOs. Those assumptions for avoiding bioengineered food are problematic given that the FDA has determined that they are as safe as non-bioengineered options.²⁰⁶

If the label disclosure were electronic, a customer would not know whether food contained GMOs without additional research or scanning for more information.²⁰⁷ Therefore, if labels were required to be spelled out on the product there could be a decrease in GMO food purchases that otherwise would not exist. Europe’s required labeling that resulted in a lack of GMO foods is evidence that the same trend can happen in the United States if consumers’ beliefs shift as a result of information on labels.²⁰⁸

The easiest way to avoid misleading consumers is to prevent or reduce exposure to potentially misleading information. If GMO labeling were required directly on food labels, anyone who looked at the label closely would be able to tell that the food was made from GMOs. This would include consumers who mistakenly believe GMOs are unsafe based on faulty assumptions. They could assume that if foods containing GMOs were safe, there would be no need to label the product with such a warning.²⁰⁹

The electronic or digital disclosure can be understood as a method to prevent customers from making the faulty assumption that GMOs are dangerous, while allowing those with specific objections to GMOs (e.g.

204. See Interim Guidance on the Voluntary Labeling of Milk, *supra* note 192, at 6,280.

205. See Laskawy, *supra* note 189.

206. Statement of Policy: Foods Derived from New Plant Varieties, 57 Fed. Reg. at 22,991.

207. See 7 U.S.C.A. § 1639b(d)(1)(A) (West 2016). Consumer might eventually correlate a QR code with instructions to scan for more information as a proxy for food containing GMOs, but that relies on the correlation existing and people who are actively aware of it.

208. See INDEP., *supra* note 185.

209. Cass R. Sunstein, *Don’t Mandate Labeling of Gene-Altered Foods*, BLOOMBERG VIEW (May 12, 2013), <https://www.bloomberg.com/view/articles/2013-05-12/don-t-mandate-labeling-for-gene-altered-foods> [<https://perma.cc/SE54-NUP3>] (describing how labeling could mislead consumers to thinking that GMOs are unsafe or should be avoided as well as the economic need for GMOs).

based on religious beliefs) to obtain information about the bioengineering nature of the food product. Nobody who looks at a food product and sees a code to scan would initially know that the product is a result of bioengineering. They would have to go to the link to find out that information. People who do care whether they consume non-GMO products would still be able to go online and obtain that information. However, this does not mean that the people who scan a QR code would necessarily have a full, science-based understanding of what bioengineered means. Instead, it shows that they cared enough to scan the QR code before consuming or even purchasing the product.

D. S. 764 BALANCES INFORMED DECISION MAKING AND PROTECTING PEOPLE FROM MISLEADING INFORMATION

Labeling laws have an inherent tradeoff between access to information and avoiding the pitfalls of misleading consumers. When labeling is made explicit, it is also easier for consumers to misunderstand the included information, such as through the rbST-free milk example. However, providing clear labels enhances a consumer's autonomy by facilitating informed decision making. Generally, labels are an effective way for consumers to learn more about products.²¹⁰ However, when consumers might misinterpret what a label means, such as with bioengineered food, that misinformation would work against informed decision making. The indirect electronic labeling might be seen as a paternalistic way for the government to control people's decisions about GMOs, but any consumer who wants to avoid GMOs can still do so by purchasing organic or non-GMO products.

The electronic disclosure provision in the National Bioengineered Food Disclosure Law marks a halfway point between the two competing interests for bioengineered food. Consumers are less informed when they have to scan a code and view product information separately online, but they are also more insulated from making faulty assumptions. Another way to think of this tradeoff is in terms of who has the power to inform. For non-electronic labeling that power is with the government or food manufacturers who choose to disclose information by that method. The electronic disclosure method essentially shifts the power into the hands of the

210. See *National Organic Program*, U.S. DEP'T OF AGRIC., <https://www.ams.usda.gov/about-ams/programs-offices/national-organic-program> [<https://perma.cc/F3JG-WGPL>] (detailing requirements for organic labeling and USDA approval). Compared to the GMO labeling an organic label is much less likely to create misunderstanding, and instead helps customers learn more about the product itself that can be incorporated into decision making.

consumer. They have the ability to learn more about the products they want to buy and collect information themselves. The tradeoff established by electronic disclosure also explains why people on both sides of the fence, one arguing for the right to know and the other arguing the importance of GMO crops and the danger of misinformation, might take issue with S. 764.²¹¹ For the concern of the right to know the labeling is not clear enough to inform consumers. For the concern of misleading consumers there should not be any need to label GMOs in the first place. S. 764 took the middle ground so that it could pass and become law while still emphasizing the concern of not misleading consumers.

IV. CONCLUSION

Ultimately, the federal labeling requirement for food made using biotechnology manages to create a uniform law that strikes an optimal balance in both protecting and informing consumers. Federal preemption prevents increased costs to food producers from different state law requirements. The electronic disclosure prevents consumers from automatically jumping to incorrect conclusions about the safety of bioengineered food. S. 764 is an example of political compromise from two polarized groups that want the uniformity and clarity of a national law, and it effectively accomplishes that goal.

211. See Dan Charles, *Congress Just Passed a GMO Labeling Bill. Nobody's Super Happy About It*, NPR, THE SALT (July 14, 2016), <http://www.npr.org/sections/thesalt/2016/07/14/48606^%s0866/congress-just-passed-a-gmo-labeling-bill-nobodys-super-happy-about-it> [<https://perma.cc/ZAQ4-N353>] (explaining why multiple groups of people do not think that S. 764 accomplishes what it needs to).

TESTING THE BOUNDS OF NET NEUTRALITY WITH ZERO-RATING PRACTICES

Jessica A. Hollis[†]

Sixty-seven percent of adults globally have access to the Internet today.¹ That statistic, however, hides a wide degree of variation. For example, ninety-four percent of adults in South Korea have internet access while only eight percent of Ethiopians do.² In developing countries, several internet content providers have partnered with mobile carriers to provide limited internet access free of mobile data charges, a practice commonly known as zero rating. For example, the Wikimedia Foundation has partnered with sixty-eight mobile carriers to make Wikipedia available free of data charges in fifty-two countries;³ Facebook offers data-free access to a walled-off version of the Internet, including Facebook's own website, in fifty-three countries and municipalities through its Free Basics program;⁴ and both Google and Twitter have engaged in similar partnerships for Gmail and Twitter.⁵

Although internet access among adults in the United States is relatively high, with an estimated 84 percent of adults using the Internet, disparities persist along lines of age, class, race, and community.⁶ In an effort to compete and expand their consumer base, mobile carriers in the United States are experimenting with their own forms of zero rating by offering

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1. Jacob Poushter, *Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies*, PEW RESEARCH CTR. (Feb. 22, 2016), <http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/> [<https://perma.cc/AM36-E9UJ>].

2. *Id.*

3. *Wikipedia Zero*, WIKIMEDIA FOUND., https://wikimediafoundation.org/wiki/Wikipedia_Zero (last updated Oct. 20, 2016) [<https://perma.cc/3DPT-NAKQ>].

4. Josh Constine, *Facebook and 6 Phone Companies Launch Internet.org to Bring Affordable Access to Everyone*, TECHCRUNCH (Aug. 20, 2013), <https://techcrunch.com/2013/08/20/facebook-internet-org/> [<https://perma.cc/5DPY-3KT3>]; *Where We've Launched*, INTERNET.ORG, [<https://perma.cc/992W-BGGF>].

5. Constine, *supra* note 4.

6. Andrew Perrin & Maeve Duggan, *Americans' Internet Access: 2000–2015*, PEW RESEARCH CTR. (June 26, 2015), <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/> [<https://perma.cc/EBX7-WEK7>].

tiered pricing plans that exempt certain content from data caps or charges. For example, T-Mobile offers unlimited video and music streaming from over one hundred applications (apps) with its Binge On and Music Freedom programs,⁷ whereas Sprint's Virgin Mobile and Boost Mobile prepaid brands offer a more limited selection of exempted apps at a slightly lower price point.⁸ Although many consumers of wired internet services have not been subject to data caps in the past, there appears to be a new push to implement or enforce them.⁹ Comcast, for example, is rolling out monthly caps of one terabyte (TB), while also zero rating its own television streaming service.¹⁰

For governments trying to expand internet access while pursuing other policy goals, such as maintaining competitive markets, the question of whether and how to regulate internet service provision is key and one that has been hotly debated over the past several years. The practice of zero rating in particular has been lauded as pro-consumer by some and demonized as market distorting by others.¹¹ A few jurisdictions around the

7. Press Release, T-Mobile, Now, More than 100 Services Stream Free with T-Mobile's Binge On and Music Freedom (Apr. 5, 2016), <https://newsroom.t-mobile.com/news-and-blogs/binge-on-music-freedom-new-services.htm> [<https://perma.cc/U7L3-4TEC>] [hereinafter T-Mobile Service Offers].

8. See Press Release, Boost Mobile, Boost Mobile Adds Unlimited Music Streaming (Dec. 9, 2015), <http://newsroom.boostmobile.com/press-release/products-offers/boost-mobile-adds-unlimited-music-streaming> [<https://perma.cc/5UCQ-A5NY>]; *Individual Plans*, T-MOBILE, [<https://perma.cc/H6NW-7X4Q>]; T-Mobile Service Offers, *supra* note 7; Press Release, Virgin Mobile, Virgin Mobile USA Adds Unlimited Music and More Data (Oct. 7, 2015), <http://newsroom.virginmobileusa.com/press-release/virgin-mobile-usa-adds-unlimited-music-and-more-data> [<https://perma.cc/P2K3-ZWEZ>].

9. See Kate Cox, *Cable Exec: Data Caps for All Are Inevitable, "It's Not If . . . but When and How,"* CONSUMERIST (Dec. 6, 2016, 1:28 PM), <https://consumerist.com/2016/12/06/cable-exec-data-caps-for-all-are-inevitable-its-not-if-but-when-and-how/> [<https://perma.cc/AYA2-L6N8>]; Thomas Gryta & Shalini Ramachandran, *Broadband Data Caps Pressure 'Cord Cutters,'* WALL STREET J. (Apr. 21, 2016, 12:57 PM), <http://www.wsj.com/articles/broadband-data-caps-pressure-cord-cutters-1461257846> [<https://perma.cc/M4AM-SL9C>].

10. See *supra* note 9; Jon Brodtkin, *Comcast Launches Streaming TV Service that Doesn't Count Against Data Caps,* ARS TECHNICA (Nov. 19, 2015, 8:33 AM), <http://arstechnica.com/business/2015/11/comcast-launches-online-tv-service-that-doesnt-count-against-data-caps/> [<https://perma.cc/M4KF-HQM4>].

11. See, e.g., WILLIAM P. ROGERSON, THE ECONOMICS OF DATA CAPS AND FREE DATA SERVICES IN MOBILE BROADBAND (Aug. 17, 2016), <http://www.ctia.org/docs/default-source/default-document-library/081716-rogerson-free-data-white-paper.pdf> [<https://perma.cc/M4CQ-DGGT>]; Jeremy Malcolm et. al., *Zero Rating: What It Is and Why You Should Care,* ELEC. FRONTIER FOUND. (Feb. 18, 2016), <https://www.eff.org/deeplinks/2016/02/zero-rating-what-it-is-why-you-should-care> [<https://perma.cc/U894-3UBH>].

world have banned the practice, such as India, the Netherlands, Chile, and Japan, while others, including the United States, have opted for a wait-and-see approach.¹²

In 2015 when the U.S. Federal Communications Commission (FCC) implemented “net neutrality” rules prohibiting broadband internet access service providers from discriminating among types of internet traffic, it explicitly chose not to ban zero rating because it found that the potential for consumer harm or benefit was not yet clear.¹³ The FCC instead chose to assess zero rating on a case-by-case basis under a general conduct rule that prohibits unreasonable interference with end users’ ability to select content and content providers’ ability to reach end users.¹⁴ In the last days of the Obama administration, FCC Wireless Telecommunications Bureau (WTB) issued a report criticizing select zero-rating practices and offered insight into its interpretation of the general conduct rule.¹⁵ However, the newly appointed Chairman of the FCC under President Trump, Ajit Pai, quickly made clear that the report did not reflect his views on the matter and the report was subsequently rescinded.¹⁶ The question of if and how net neutrality will apply to zero rating remains to be answered.

This Note examines several models of zero rating that companies in the United States have engaged in and analyzes the application of the current net neutrality rules in light of the ongoing debate as to their potential for harm or consumer benefit. It critiques one of the main justifications behind the net neutrality rules, namely that every broadband provider is capable of

12. See Karl Bode, *India Bans Zero Rating as the U.S. Pays the Price for Embracing It*, TECHDIRT (Feb. 8, 2016, 9:34 AM), <https://www.techdirt.com/blog/netneutrality/articles/20160208/06220233547/india-bans-zero-rating-as-us-pays-price-embracing-it.shtml> [<https://perma.cc/JST5-YGNK>].

13. See Protecting and Promoting the Open Internet, 30 FCC Rcd. 5601, 5666–68 paras. 151–52 (2015) (codified at 47 C.F.R. §§ 1, 8, 20 (2015)) [hereinafter 2015 Open Internet Order], *aff’d*, U.S. Telecomm. Ass’n v. FCC, 825 F.3d 674 (D.C. Cir. 2016). Broadband internet access service (broadband) is defined as a mass-market retail service by wire or radio capable of transmitting data from substantially all internet endpoints. 47 C.F.R. § 8.2(a) (2015).

14. 2015 Open Internet Order, *supra* note 13, at 5666–69 paras. 151–53.

15. See FCC, Wireless Telecommunications Bureau Report: Policy Review of Mobile Broadband Operators’ Sponsored Data Offerings for Zero-Rated Content and Services (Jan. 11, 2017), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342987A1.pdf [<https://perma.cc/KCH2-HV7G>] [hereinafter WTB Zero rating Report].

16. See Press Release, Ajit Pai, Commissioner, FCC, On the FCC’s Midnight Regulation of Free Data (Jan. 11, 2017), http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0111/DOC-342990A1.pdf [<https://perma.cc/UY2S-CK45>]; John Eggerton, *FCC’s Wireless Bureau Dumps Zero-Rating Report*, BROAD. & CABLE (Feb. 3, 2017, 02:32 PM), <http://www.broadcastingcable.com/news/washington/fccs-wireless-bureau-dumps-zero-rating-report/163063> [<https://perma.cc/6SYA-F3DP>].

distorting competition through the exercise of a form of monopoly power known as gatekeeper power. Finally, it argues that the interpretation of the general conduct rule in the now rescinded WTB report prematurely assumed harm and would invite the kind of stringent regulations feared by net neutrality opponents.

In Part I, this Note discusses the development of and rationale behind the FCC's net neutrality rules. Part II examines several models of zero rating implemented by broadband providers in the United States. Part III considers various arguments as to how current net neutrality rules might apply to the practice of zero rating. Part IV critiques the FCC's claim that broadband providers inherently exercise a form of monopoly power drawing on principles developed in antitrust law. Finally, Part V concludes, recommending that any enforcement of net neutrality rules against zero rating should require a rigorous analysis of market power and harm in line with antitrust doctrine in order to avoid overly inclusive *per se* bans.

I. HISTORY OF THE FCC AND NET NEUTRALITY

In 2015 the FCC adopted a series of rules enforcing a concept known as net neutrality.¹⁷ These rules prohibit broadband providers, who serve as gatekeepers between internet end users and providers of internet content, applications, and services (edge providers) from discriminating against internet traffic on the basis of its source.¹⁸ Proponents of net neutrality argue that broadband provides a platform for competition among edge providers and that a neutral platform allows for healthy competition with meritocratic results.¹⁹ The FCC further contends that net neutrality promotes a “virtuous cycle,” in which innovation by edge providers increases end-user demand for internet access that in turn drives investment in broadband infrastructure.²⁰ The rationale for government intervention in this market reflects the rationale behind the creation of the FCC itself. This Part highlights the history of FCC regulation in the communications sector and the various attempts by the FCC to apply its authority over broadband provision.

17. See 2015 Open Internet Order, *supra* note 13.

18. See U.S. Telecom. Ass'n v. FCC, 825 F.3d. 674, 690 (D.C. Cir. 2016).

19. See Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 145–47 (2003).

20. See 2015 Open Internet Order, *supra* note 13, at 5604 para. 7.

A. THE FEDERAL COMMUNICATIONS COMMISSION AND NATURAL MONOPOLIES

Congress established the FCC with the 1934 Communications Act for “the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available . . . to all the people of the United States . . . wire and radio communication service.”²¹ The government viewed communication as a utility service,²² and regulation was seen as necessary to “ensure an adequate communications system” for the country.²³ Today the FCC regulates communications by radio, television, wire, satellite, cable, and internet access.²⁴ Telecommunications services, such as telephone service, are considered “common carriers” governed by Title II of the 1934 Act.²⁵ Common carrier status allows the FCC to regulate a privately provided service as a public utility to ensure access to that “essential” service.²⁶

The justification for such regulation traditionally rested on the theory that telecommunications services were natural monopolies. Natural monopolies in this sector are characterized by high fixed costs, decreasing marginal costs, and network effects that create barriers to entry for competitors.²⁷ For example, telephone service provision requires high fixed costs to build out the network, but the marginal costs of providing service decreases for each new unit—household or business—on that network. The first mover to build out a network and capture market share can provide service at a low per unit cost, whereas a new entrant to the market would have to duplicate that network to similarly compete on service and cost. Additionally, each new user increases the value of the entire network—a type of externality known as network effects.²⁸ Without FCC mandated interconnection requirements, a large incumbent telephone network could

21. 47 U.S.C. § 151 (2012).

22. See H.R. Rep. No. 73-1850, at 1 (1934) (quoting President Franklin D. Roosevelt who advocated for the creation of separate commissions to regulate utility services of transportation, power, and communications).

23. See S. Rep. No. 73-781, at 3 (1934).

24. *What We Do*, FCC, <https://www.fcc.gov/about-fcc/what-we-do> [<https://perma.cc/9PNL-DKN3>].

25. See Jonathan E. Nuechterlein & Philip J. Weiser, *Digital Crossroads: Telecommunications Law and Policy in the Internet Age* 17 (2d ed. 2013).

26. *Id.* at 33.

27. See *id.* at 3–14; Christopher S. Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition?*, 3 J. TELECOMM. & HIGH TECH. L. 23, 60–65 (2004).

28. See Yoo, *supra* note 27, at 28.

refuse to connect with new entrants pushing most users to choose the larger more valuable network to the exclusion of other networks.²⁹

Cable television, regulated under Title VI of the Communications Act,³⁰ was similarly viewed as a natural monopoly.³¹ That idea, however, has been challenged as different technologies capable of delivering video content emerged. For example, television programming can also be delivered over satellite, telephone lines, and via over-the-air broadcasts from television stations.³² Despite the existence of satellite television in the early 1990s, competition was slow to emerge and there was a great deal of concern over industry concentration and rising cable rates.³³ In response, Congress passed the Cable Television Consumer Protection and Competition Act of 1992.³⁴ It found that the cable industry was highly concentrated and vertically integrated with the television networks that package content (programmers).³⁵ Congress concluded that this combination had the potential to block entry of both new television programmers and alternatives to the incumbent cable providers.³⁶ Proponents of regulation argued that this created a bottleneck in the distribution of television programming in two ways.³⁷ First, a few dominant cable providers could exert monopsony power over programmers, who require viewer access for revenue, by requiring the programmers deal with them exclusively or offer competitors inferior terms.³⁸ Second, cable providers with ownership interests in programmers had the incentive and ability to favor their own programming.³⁹ Likewise, affiliated programmers had the incentive to discriminate against competing

29. See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 FCC Rcd. 15499, 15508 para. 10 (1996) (codified at 47 C.F.R. pt. 1) (“An incumbent LEC also has the ability to act on its incentive to discourage entry and robust competition by not interconnecting its network with the new entrant’s network or by insisting on supracompetitive prices or other unreasonable conditions . . .”).

30. See 47 U.S.C. § 521 (2012).

31. See NUCHECHTERLEIN & WEISER, *supra* note 25, at 332.

32. *Id.* at 329.

33. See H.R. Rep. No. 102-862, at 1–2 (1992) (Conf. Report); Nicholas Allard, *The 1992 Cable Act: Just the Beginning*, 15 HASTINGS COMM. & ENT. L.J. 305, 347–48 (1993).

34. See Cable Television Consumer Protection and Competition Act, Pub. L. No. 102-385, 106 Stat. 1460, 1460 (1992) (codified at 47 U.S.C. §§ 521–55 (1994)).

35. See *id.*

36. See *id.*

37. See Allard, *supra* note 33, at 312–15.

38. See *id.* Monopsony refers to a market in which there is only a single buyer. *Glossary of Statistical Terms*, OECD, <https://stats.oecd.org/glossary/detail.asp?ID=3265> (last updated Mar. 16, 2002) [<https://perma.cc/V5QM-VGV3>].

39. See Allard, *supra* note 33, at 312–15.

television providers.⁴⁰ The 1992 Act therefore empowered the FCC to prohibit certain anticompetitive behavior that would prevent cable television competitors from accessing programming.⁴¹

B. THE REGULATION OF INTERNET SERVICE PROVISION

The provision of broadband internet service is subject to some of the same attributes that led the FCC to regulate telephone service and cable.⁴² Today broadband Internet, which is high speed Internet that is always on, is provided using several methods: DSL technology over copper phone lines, cable modem over the coaxial cables that deliver television service, over fiber optic cables where they have been installed, wirelessly via a radio link (including mobile broadband), and satellite.⁴³ These networks require high fixed costs to build and benefit from decreasing marginal costs for each new user added. They are also relatively concentrated and often vertically integrated with content providers.⁴⁴

The convergence of different technologies delivering broadband made it difficult for the FCC to classify internet service providers (ISPs) as each technology was traditionally regulated under different regimes of the Communications Act. For example, while telephone service is classified as a Title II “telecommunications service,” cable falls under an entirely different regime in Title IV.⁴⁵ Between the late 1990s and mid-2000s the FCC moved to consolidate the classification of different ISPs as Title I “information services.”⁴⁶ These are defined as providing the means to generate, manipulate, retrieve, or make available information via telecommunications.⁴⁷

40. *See id.*

41. *See* NEUCHTERLEIN & WEISER, *supra* note 25, at 343–44 (explaining that for example, 628 (b) of the Communications Act bans vertically integrated cable companies from engaging in “unfair” acts that have the “purpose or effect” of “hinder[ing] significantly” the ability of rival MVPDs [multichannel video programming distributors] to provide competitive video services”).

42. In fact, in the FCC looked to studies of market foreclosure by vertically integrated cable providers to justify concerns of potential exclusionary conduct by broadband providers. *See* Preserving the Open Internet, 25 FCC Rcd. 17905, 17918 para. 23, n.60 (2010) [hereinafter 2010 Open Internet Order], *vacated in part*, Verizon v. FCC, 740 F.3d 623 (D.C. Cir. 2014).

43. *See Types of Broadband Connections*, FCC, <https://www.fcc.gov/general/types-broadband-connections> (last updated June 23, 2014) [<https://perma.cc/5N3E-9A57>].

44. *See infra* Part IV.

45. *See* NEUCHTERLEIN & WEISER, *supra* note 25, at 21.

46. U.S. Telecomm. Ass’n v. FCC, 825 F.3d 674, 692–93 (D.C. Cir. 2016).

47. *See* 47 U.S.C. § 153(24) (2012).

1. *Prior Attempts to Enforce Network Neutrality Largely Failed Due to the FCC's Lack of Statutory Authority*

The FCC first stated its interest in preserving and promoting the open nature of the Internet—network neutrality—in a 2005 Internet Policy Statement.⁴⁸ In it, the FCC adopted a set of principles declaring that consumers were entitled to access and run internet content, applications, and services of their choosing; to connect devices of their choosing; and to competition among network, application, service, and content providers.⁴⁹ In 2008 the FCC attempted to enforce these principles against Comcast, a cable television and broadband provider, for selectively blocking peer-to-peer connections.⁵⁰ However, the Court of Appeals for the D.C. Circuit vacated the FCC's ruling on the grounds that the FCC's authority over information services did not extend to such network management practices.⁵¹

The FCC renewed its attempt to enforce network neutrality with its 2010 Open Internet Order. This time the FCC claimed authority under Section 706 of the 1996 Act, which tasked the FCC with encouraging the deployment of broadband to all Americans.⁵² The 2010 Order established three rules: (1) requiring disclosure of network management practices, performance, and commercial terms to consumers; (2) prohibiting the blocking of legal content, applications, services, or devices; and (3) prohibiting unreasonable discrimination against lawful network traffic.⁵³ In *Verizon v. FCC*, the Court of Appeals for the D.C. Circuit vacated the anti-blocking and unreasonable discrimination rules for imposing per se common carrier obligations on a service not classified as a common carrier.⁵⁴ Importantly, however, the court acknowledged that the FCC's justification for such regulation—promoting a virtuous cycle of innovation—was reasonable.⁵⁵

48. Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, 20 FCC Rcd. 14986 (2005) [hereinafter 2005 Internet Policy Statement].

49. *Id.* at 14987–88 para. 4.

50. Comcast Corp. v. FCC, 600 F.3d 642, 644 (D.C. Cir. 2010).

51. *See id.*

52. 2010 Open Internet Order, *supra* note 42, at 17968 para. 171.

53. *See id.* at 17906 para. 1.

54. *See Verizon v. FCC*, 740 F.3d 623, 628 (D.C. Cir. 2014).

55. *Id.*

2. *The 2015 Open Internet Order Successfully Extended the FCC's Authority over Broadband Providers by Reclassifying Them as Common Carriers*

In response to the setbacks delivered by the Comcast and Verizon rulings, the FCC issued a notice of proposed rulemaking in 2014⁵⁶ and adopted a second iteration of the Open Internet Order in 2015. This time the FCC reclassified fixed and mobile broadband providers as “telecommunications services” subjecting them to the FCC’s direct authority as Title II common carriers.⁵⁷

The 2015 Order imposes three bright line rules and one general conduct rule. The bright-line rules prohibit: (1) blocking access to legal content, applications, services, or non-harmful devices; (2) throttling, or degrading of internet traffic on the basis of content, applications, services, or non-harmful devices; and (3) paid prioritization, favoring some internet traffic over others in exchange for consideration or prioritizing the ISP’s own or affiliated content or services.⁵⁸ The general conduct rule prohibits conduct that “unreasonably interfere[s] with or unreasonably disadvantage[s] end users’ ability to select, access, and use broadband internet . . . or . . . content, applications, services, or devices of their choice, or edge providers’ ability to make lawful content, applications, services, or devices available to end users.”⁵⁹ The commission will evaluate conduct under this rule on an ex post case-by-case basis.⁶⁰ The 2015 Order, including the reclassification of broadband as a telecommunications service, was upheld in *U.S. Telecom Association v. FCC* by the Court of Appeals for the D.C. Circuit in June 2016.⁶¹

II. THE PRACTICE OF ZERO RATING

The practice of zero rating, also known as sponsored data plans, allows broadband providers to specifically exclude certain internet traffic from end users’ data allowances.⁶² Because many broadband providers limit data, usually on a monthly basis, they can use this practice to improve their service offering or, arguably, to favor their own content. Many mobile data

56. See Protecting and Promoting the Open Internet, 29 FCC Rcd. 5561 (2014) (notice of proposed rulemaking).

57. See 2015 Open Internet Order, *supra* note 13, at 5614–16 paras. 41–50.

58. Protecting and Promoting the Open Internet, 47 C.F.R. §§ 8.5, 8.7, 8.9 (2015).

59. *Id.* § 8.11.

60. 2015 Open Internet Order, *supra* note 13, at 5659 para. 135, 5706 para. 229.

61. See *U.S. Telecomm. Ass’n. v. FCC*, 825 F.3d 674, 674 (D.C. Cir. 2016).

62. 2015 Open Internet Order, *supra* note 13, at 5666–67 para. 151.

plans come with monthly data caps enforced through overage fees or service degradation.⁶³ Fixed-wire broadband plans have typically charged tiered pricing based on speed rather than data, which eliminates any benefit from zero rating. However, there may be a move towards adopting data-based pricing plans. For example, Comcast has begun experimenting with terabyte data limits.⁶⁴

The 2015 Open Internet Order does not per se prohibit zero rating. The Commission expressly opted to analyze the practice on a case-by-case basis under the general conduct rule. The ban on paid prioritization and prioritization of affiliated content refers solely to the speed by which content is delivered.⁶⁵ Zero-rating practices in the United States can generally be classified into three different models: (i) vertically integrated broadband providers that exempt affiliated content; (ii) broadband providers that exempt third-party sponsored unaffiliated content; and (iii) broadband providers that voluntarily exempt select and general categories of unaffiliated content. Distinctions between these models, as well as between the wired and wireless broadband markets, inform any assessment of consumer or competitive harm.

A. MODEL 1: VERTICALLY INTEGRATED BROADBAND PROVIDER
EXEMPTS AFFILIATED CONTENT

The FCC defines an affiliate as one who “owns or controls, is owned or controlled by, or is under common ownership or control, with another [entity].”⁶⁶ Examples include:

- *Comcast — Stream TV*: Comcast exempts its own online video service, Stream TV, from the monthly data caps it imposes on a growing number of its wired broadband XFINITY customers.⁶⁷

63. See e.g., *Verizon Plan*, VERIZON, <https://www.verizonwireless.com/plans/verizon-plan/> [<https://perma.cc/J52H-F3ZM>]. Verizon Mobile enforces its various monthly data plans through its “safety mode” feature whereby consumers’ data drops to lower speeds once they have reached their monthly limit.

64. See *supra* note 9.

65. The record reflects concern with management practices that would benefit particular content through the creation of fast and slow lanes using techniques such as traffic shaping. See 2015 Open Internet Order, *supra* note 13, at 5607–08 paras. 18–19, 5668–69 para. 153.

66. 47 U.S.C. § 153(2) (2012) (stating that to own means to hold an equity interest (or equivalent) greater than 10 percent).

67. *Stream TV FAQs*, COMCAST, <https://customer.xfinity.com/help-and-support/cable-tv/stream-faqs/> [<https://perma.cc/Q7PP-YUB5>]. Comcast claims that Stream TV is delivered over its cable system and not over the internet, although it is only accessible to stream on an internet connected device. See also Jeff Fusco, *Comcast May Have Found a*

- *Verizon — Go90*: Verizon Mobile zero rates its own Go90 platform, which offers customers a variety of video programming, including original content and live sports.⁶⁸
- *AT&T — DirecTV*: AT&T, which purchased DirecTV in July of 2015,⁶⁹ zero rates DirecTV for mobile customers who subscribe to either DirecTV satellite service or the streaming service, DirecTV Now.⁷⁰

B. MODEL 2: BROADBAND PROVIDER EXEMPTS UNAFFILIATED SPONSORED CONTENT

In this model, a wireless broadband provider sells data to unaffiliated content providers who wish to sponsor it for their end users.

- *Verizon — FreeBee Data*: Verizon Mobile offers unaffiliated edge providers the opportunity to sponsor content, including video clips, audio streaming, and app downloads, for Verizon Mobile subscribers through Verizon’s FreeBee program.⁷¹
- *AT&T — Data Perks*: AT&T Mobile also offers unaffiliated edge providers the opportunity to sponsor their data end users’ data.⁷²

Major Net Neutrality Loophole, WIRED (Nov. 20, 2015, 4:33 PM), <https://www.wired.com/2015/11/comcast-may-have-found-a-major-net-neutrality-loophole/> [<https://perma.cc/C5YP-P6KP>].

68. See GO90, [<https://perma.cc/243W-PJE8>].

69. Press Release, AT&T, AT&T Completes Acquisition of DIRECTV (July 24, 2015), http://about.att.com/story/att_completes_acquisition_of_directv.html [<https://perma.cc/WX9L-XUG8>].

70. Letter from Robert Quinn, Senior Exec. Vice President, External & Legislative Affairs, AT&T Services, Inc., to Jon Wilkins, Chief, Wireless Telecomm. Bureau, FCC 1 (Nov. 21, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342940A1.pdf [<https://perma.cc/BE87-2TEV>] [hereinafter AT&T Letter].

71. See Letter from Kathleen Grillo, Senior Vice President, Pub. Pol’y and Gov’t Affairs, Verizon, to Jon Wilkins, Chief, Wireless Telecomm. Bureau, FCC (Dec. 15, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342944A1.pdf [<https://perma.cc/V6XD-HVBU>] [hereinafter Verizon Letter]; *Introducing FreeBee Data*, VERIZON [<https://perma.cc/AWA2-Y8SSL>].

72. AT&T Letter, *supra* note 70, at 2–3; see also Press Release, Aquato, Mobile Users Have Access to New Data Perks, Brought to You by AT&T and Aquato (Oct. 26, 2015), <http://www.aquato.com/company/press-releases/mobile-users-have-access-new-data-perks-brought-you-att-and-aquato> [<https://perma.cc/7BZH-3FB6>].

C. MODEL 3: BROADBAND PROVIDER VOLUNTARILY EXEMPTS UNAFFILIATED CONTENT

Finally, a wireless broadband provider may voluntarily exempt unaffiliated content from its data caps. This means no payment or other consideration is made in exchange for the content to be zero-rated. This Note assumes the following are examples of voluntary zero rating:

- *T-Mobile — Binge On and Music Freedom*: With Binge On, T-Mobile exempts video streaming applications that meet certain technical requirements from its monthly data caps.⁷³ Music Freedom does the same for streaming music streaming.⁷⁴
- *T-Mobile — Pokémon Go*: In July 2016 T-Mobile announced that it would exempt Pokémon Go from data limits for a year.⁷⁵
- *Sprint — Data-Free Music*: Sprint’s Virgin Mobile and Boost Mobile prepaid brands zero-rate several music streaming apps.⁷⁶

III. ZERO RATING AND THE 2015 OPEN INTERNET ORDER

The FCC adopted the 2015 Open Internet rules to “protect and promote the ‘virtuous cycle’ that drives innovation and investment on the internet.”⁷⁷ The record developed by the FCC during the comment period reflects a variety of opinions on whether zero rating disturbs this cycle or promotes it. Some commenters noted that the practice increases consumer choice, lowers cost, and helps edge providers distinguish themselves in the marketplace.⁷⁸ Others believe it to be a harmful form of discrimination that gives broadband providers the ability to select winners and losers while

73. BARBARA VAN SCHEWICK, T-MOBILE’S BINGE ON VIOLATES KEY NET NEUTRALITY PRINCIPLES 3 (2016), <http://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf> [<https://perma.cc/JV8S-55EL>]; *Binge On*, T-MOBILE, <https://www.t-mobile.com/offer/binge-on-streaming-video.html> [<https://perma.cc/6ZZS-CF5T>].

74. See VAN SCHEWICK, *supra* note 73, at 4; *Music Freedom Streaming*, T-MOBILE, <https://support.t-mobile.com/docs/DOC-10969> [<https://perma.cc/64TM-H7M3>].

75. See Press Release, T-Mobile, Pokémon Go Mania Sweeps the Country (July 14, 2016), <https://newsroom.t-mobile.com/news-and-blogs/free-pokemon.htm> [<https://perma.cc/WX7Z-5WEB>].

76. See Press Release, Boost Mobile, Boost Mobile Adds Unlimited Music Streaming (Dec. 9, 2015, 12:00 PM), <http://newsroom.boostmobile.com/press-release/products-offers/boost-mobile-adds-unlimited-music-streaming> [<https://perma.cc/6SAL-D4Q2>]; Press Release, Virgin Mobile, Virgin Mobile USA Adds Unlimited Music and More Data (Oct. 7, 2015, 10:00 AM), <http://newsroom.virginmobileusa.com/press-release/virgin-mobile-usa-adds-unlimited-music-and-more-data> [<https://perma.cc/5CHV-LB52>].

77. 2015 Open Internet Order, *supra* note 13, at 5603 para. 2.

78. See *id.* at 5666–67 para. 151.

harming competition and free expression.⁷⁹ Organizations such as the Electronic Frontier Foundation and Public Knowledge, scholars like Barbara van Schewick and Susan Crawford of Stanford and Harvard Law Schools, and various companies, including Mozilla and Yelp, have all expressed concern about the practice.⁸⁰

During the final months of the Obama administration the FCC turned its attention to zero rating. In late 2016, the FCC's Wireless Telecommunications Bureau (WTB) publically communicated its concerns with the AT&T and Verizon sponsored data programs.⁸¹ Both companies are vertically integrated wireless broadband providers that zero rate their own affiliated programming and allow unaffiliated content providers to sponsor their end users' data. In January 2017, a week before the inauguration of President Trump, the Bureau released a report on mobile zero-rating practices.⁸² The report offered a framework with which to evaluate zero rating and concluded that vertically integrated broadband providers that zero rate affiliated content most likely do so in violation of the general conduct rule.⁸³

The FCC, however, abruptly reversed its position following the change in administration. President Trump voiced hostility to net neutrality rules early on,⁸⁴ and several advisors on his FCC transition team spoke out against

79. *See id.*

80. *See* VAN SCHEWICK, *supra* note 73; Malcolm et al., *supra* note 11; Petition, Public Knowledge, Petition for the Federal Communications Commission to Enforce Merger Conditions and Its Policies 3–4 (March 2, 2016), <https://ecfsapi.fcc.gov/file/60001526812.pdf> [<https://perma.cc/EH8G-GYAM>]; Letter from 18MillionRising.org et al., to Tom Wheeler, Chairman, FCC et al. (May 24, 2016), <https://ecfsapi.fcc.gov/file/60002020568.pdf> [<https://perma.cc/JLB3-FZZK>]; Susan Crawford, *The Limits of Net Neutrality*, BACKCHANNEL (Aug. 1, 2016), <https://backchannel.com/net-neutrality-is-only-a-start-f2f539dd6e5a> [<https://perma.cc/J9D5-6JB8>].

81. The Bureau first notified AT&T and Verizon of its concerns with their zero-rating practices on November 9, 2016 and December 1, 2016, respectively. *See* Letter from Jon Wilkins, Chief, Wireless Telecomm. Bureau, FCC, to Robert Quinn, Jr., Senior Exec. Vice President, External and Legislative Affairs, AT&T (Nov. 9, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342939A1.txt [<https://perma.cc/375L-4PVL>]; Letter from Jon Wilkins, Chief, Wireless Telecomm. Bureau, FCC, to Kathleen Grillo, Senior Vice President & Deputy Gen. Counsel, Pub. Pol'y & Gov't Affairs, Verizon (Dec. 1, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342943A1.pdf [<https://perma.cc/GMJ3-NQBT>].

82. *See* FCC ZERO-RATING REPORT, *supra* note 15.

83. *See id.* at 1.

84. *See* Donald Trump (@realDonaldTrump), TWITTER (Nov. 12, 2014, 10:58 AM), <https://twitter.com/realdonaldtrump/status/532608358508167168> [<https://perma.cc/5JW4-AJYP>].

the Open Internet Order and in favor of zero rating.⁸⁵ Not surprisingly, Trump appointed a critic of the net neutrality rules, Ajit Pai, as the new Chairman of the FCC.⁸⁶ Pai, as a Commissioner, wrote a long dissent to the 2015 Order.⁸⁷ Pai quickly rebuked the WTB report on zero rating as a “regulatory spasm”⁸⁸ and soon after as Chairman announced that the Bureau had closed its investigation into free-data offerings.⁸⁹

It is unlikely that the FCC will resume any investigation into zero rating under the current administration. In fact, some have speculated that the FCC under Pai may seek to repeal the 2015 Order altogether.⁹⁰ Alternatively, a Republican-controlled Congress may seek to overturn the 2015 Order with legislation. For example, Representative Marsha Blackburn (R-TN) has introduced several bills throughout the past decade seeking to strip the FCC of authority over internet provision and to nullify net neutrality rules,⁹¹ while Senator John Thune (R-SD) has advocated for a pared down version

85. Jeffrey Eisenach, Mark Jamison, and Roslyn Layton, all outspoken critics of the FCC’s net neutrality rules, were members the Trump transition team. See JEFFREY A. EISENACH, NAT’L ECON. RESEARCH CTR., *THE ECONOMICS OF ZERO RATING 1* (2015), <http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf> [<https://perma.cc/5GLA-AE32>]; Jon Brodtkin, *Trump’s Latest FCC Advisor Opposes Title II, Supports Data Cap Exemptions*, ARS TECHNICA (Nov. 30, 2016, 9:27 AM), <http://arstechnica.com/tech-policy/2016/11/trump-appoints-another-net-neutrality-opponent-to-oversee-fcc/> [<https://perma.cc/U253-6CJ3>].

86. See *Ajit Pai Bio*, FCC, <https://www.fcc.gov/about/leadership/ajit-pai> [<https://perma.cc/BV2Q-64BB>]. As of this writing, only three of the five Commissioner positions are filled. President Trump will have the opportunity to nominate two more appointees although only a total of three of the appointees can come from the same party. See 47 U.S.C. § 154(a) (2012); *Leadership*, FCC, <https://www.fcc.gov/about/leadership> [<https://perma.cc/U6FD-ZAQB>].

87. Ajit Pai, FCC, *Dissenting Statement of Commissioner Ajit Pai Re: Protecting and Promoting the Open Internet* (2015), https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A5.pdf [<https://perma.cc/L8B7-BYUN>] [hereinafter *Pai dissent*].

88. Pai, *supra* note 16.

89. See Press Release, Ajit Pai, Chairman, FCC, *On Free Data Programs* (Feb. 3, 2017), http://web.archive.org/web/20170203230709/http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0203/DOC-343345A1.pdf [<https://perma.cc/5WEX-K3BH>].

90. See, e.g., Grant Gross, *Net Neutrality Policy Still up in the Air Under Trump*, PCWORLD, (Feb. 1, 2017, 9:24 AM), <http://www.pcworld.com/article/3164257/internet/net-neutrality-policy-still-up-in-the-air-under-trump.html> [<https://perma.cc/F5KX-73SN>]; Letter from Ajit Pai, Commissioner, FCC, and Michael O’Rielly, Commissioner, FCC, to Meredith Attwell Baker, President & CEO, CTIA, et al. (Dec. 19, 2016), https://apps.fcc.gov/edocs_public/attachmatch/DOC-342677A1.pdf [<https://perma.cc/3KFP-D5YM>].

91. See Kerry Sheehan, *Trump and His Advisors on Net Neutrality*, ELEC. FRONTIER FOUND. (Dec. 19, 2016), <https://www.eff.org/deeplinks/2016/12/trump-and-his-advisers-net-neutrality> [<https://perma.cc/FC5Y-U3WM>].

of net neutrality rules authorized by new legislation, rather than under Title II.⁹²

Despite the bleak outlook for the current net neutrality rules, future administrations or legislation may seek to revive their enforcement. This Part of the Note examines the applicability of the general conduct rule to zero rating, informed by the 2015 Open Internet Order, the now rescinded WTB report, and the public comments of various critics and proponents of the practice.

A. ZERO RATING UNDER THE GENERAL CONDUCT RULE

The general conduct rule is intended to “balance the benefits of innovation against the harm to end users and edge providers.”⁹³ Additionally, it is a means to protect free expression on the Internet, a task given to the FCC by Congress.⁹⁴ The rule states the following:

Any person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not unreasonably interfere with or unreasonably disadvantage end users’ ability to select, access, and use broadband Internet access service or the lawful Internet content, applications, services, or devices of their choice, or edge providers’ ability to make lawful content, applications, services, or devices available to end users.⁹⁵

The FCC chose to enforce the general conduct rule on a case-by-case basis in light of the “totality of the circumstances.”⁹⁶ It offered the following non-exhaustive list of factors to guide the rules application: (1) end-user control; (2) competitive effects; (3) consumer protection; (4) effect on innovation, investment, or broadband deployment; (5) free expression; (6) the extent to which it is application agnostic; and (7) a standard practice.⁹⁷ The most relevant factors to zero rating are discussed below.

92. See Amir Nasr, *Thune: Net Neutrality Repeal Threat Could Bring Democrats to Compromise*, MORNING CONSULT (Jan. 23, 2017), <https://morningconsult.com/2017/01/23/thune-net-neutrality-repeal-threat-bring-democrats-compromise/> [https://perma.cc/K5EP-KVG6].

93. See 2015 Open Internet Order, *supra* note 13, at 5659–61 paras. 136–38.

94. See *id.* at 5660 para. 137.

95. Protecting and Promoting the Open Internet, 47 C.F.R. § 8.11 (2015).

96. 2015 Open Internet Order, *supra* note 13, at 5661 para. 138.

97. See *id.* at 5661–64 paras. 139–45.

1. *End-user Control and Choice are Negatively Affected if Zero Rating Effectively Pushes Consumers away from Their Preferred Content Providers*

The first and sixth factors speak to similar concerns regarding end-user control and choice. The 2015 Open Internet Order posits that practices allowing for end-user control, including choices about which content, applications, services, or devices to use, are consistent with promoting consumer choice and are “less likely to unreasonably interfere with . . . the end user’s ability to use the Internet.”⁹⁸ The WTB report posed three questions to assess this issue: (1) are data caps sufficiently high such that the consumer is not forced to face a real choice between zero-rated and non-zero-rated content; (2) can consumers opt into and out of the zero-rated plan; and (3) can consumers easily switch to alternative ISPs.⁹⁹

Opponents and proponents of zero rating tend to describe end-user control and choice at different levels. Opponents look at the control and choice consumers have within their data plan. This view assumes each individual ISP functions as a gatekeeper with the power to control the flow of data between end users and edge providers, even absent significant power in the broader market for broadband provision.¹⁰⁰ Van Schewick, for example, argues that zero-rated video streaming effectively limits user choice to the particular apps included in the program and pushes users away from other uses of the Internet.¹⁰¹

Proponents of zero rating, meanwhile, look more to the control and choice users have between types of data plans and broadband providers. Despite a trend towards concentration over the past decade, four major national mobile wireless providers that compete head-to-head remain in the market: Verizon, AT&T, Sprint, and T-Mobile.¹⁰² Some also argue that allowing for price discrimination based on data consumption helps bring more users online who would find unlimited plans too expensive and benefit

98. *See id.* at 5661–62 para. 139, 5663–64 para. 144.

99. *See* FCC ZERO-RATING REPORT, *supra* note 15, at 4–5.

100. *See id.* at 7; Tejas N. Narechania, *Network Nepotism and the Market for Content Delivery*, 67 STAN. L. REV. ONLINE 27, 29–30 (2014).

101. *See* VAN SCHEWICK, *supra* note 73, at 1.

102. 19TH MOBILE WIRELESS COMPETITION REPORT, 31 FCC Rcd. 10534, 10538–39 para. 7 (2016), https://apps.fcc.gov/edocs_public/attachmatch/DA-16-1061A1_Rcd.pdf [<https://perma.cc/K8VF-E92J>] [hereinafter WIRELESS COMPETITION REPORT]. Former FCC Chief Economist William Rogerson has argued that high churn rates among mobile providers, or disconnection rates, are indicative of this competition, resulting from various price and non-price promotions as well as low switching costs for end users. ROGERSON, *supra* note 11, at 11–14.

from free data offerings.¹⁰³ Competition is admittedly less available in wired broadband. As of 2013 only 37 percent of Americans had access to two or more wired broadband providers offering speeds of twenty-five Mbps or greater.¹⁰⁴

The WTB did not address the questions it posed regarding end-user control and choice in its report.¹⁰⁵ Assuming broadband providers do exercise gatekeeper power, a view which the FCC adopted in its Open Internet Order,¹⁰⁶ any practice that zero rates a nontrivial amount of data would have the effect of limiting user choice. Under this assumption: Model One vertically integrated broadband providers that zero rate high data consuming video streaming likely alter end-user control and choice; Model Two broadband providers that zero rate unaffiliated but sponsored content likely impact end-user control and choice relative to the amount of data their content consumes with low-data consuming ads and downloads having minimal impact; and Model Three broadband providers that voluntarily exempt unaffiliated content may also impact end-user control and choice as their programs often include high-data consuming video and music streaming apps. Although, this impact may be lessened where their zero-rating programs are open to competing content providers. If one assumes instead that gatekeeper power cannot be exercised except where broadband providers have market power, most of the examples appear less problematic, except perhaps for Model One programs implemented by wired broadband providers, which exist in a much more concentrated market.

2. *Competitive Effects on Non-participating Content Providers Are Harmful Where ISPs Are Able to Effectively Block Access to Subscribers*

This factor looks at how broadband providers could impair the ability for edge providers to reach end users.¹⁰⁷ In particular, it focuses on the

103. See Rogerson, *supra* note 11, at 22–25; Multicultural Media Telecomm. & Internet Council, Understanding and Appreciating Zero-Rating: The Use and Impact of Free Data in the Mobile Broadband Sector 9–10 (2016), http://mmtconline.org/WhitePapers/MMTC_Zero_Rating_Impact_on_Consumers_May2016.pdf [<https://perma.cc/3FKH-RJE4>].

104. DAVID N. BEEDE, U.S. DEP'T OF COMMERCE, ECON. & STATISTICS ADMIN., COMPETITION AMONG U.S. BROADBAND SERVICE PROVIDERS 4 fig. 2 (2014), <http://www.esa.doc.gov/sites/default/files/competition-among-us-broadband-service-providers.pdf> [<https://perma.cc/4WWG-UPA8>].

105. See FCC ZERO-RATING REPORT, *supra* note 15.

106. See 2015 Open Internet Order, *supra* note 13, at 5632 para. 84.

107. See *id.* at 5662 para. 140.

incentives vertically integrated broadband providers would have to disadvantage third parties that compete with their own services.¹⁰⁸ The WTB found that this factor had the most direct bearing on an evaluation of zero-rating practices.¹⁰⁹ The Bureau asked: (1) if the zero-rating program was exclusive, or effectively exclusive, to an affiliated content provider; (2) if it created an exclusionary arrangement with an unaffiliated content provider; and (3) if affiliated and unaffiliated content providers were charged different rates.

Opponents of zero rating argue that the practice allows broadband providers to pick winners, thereby making the non-participating content providers losers. The Electronic Frontier Foundation warns that zero rating consolidates power in broadband providers as gatekeepers, and even where sponsored content is unaffiliated, the zero rating programs may steer content providers to use their technical requirements, essentially seeking permission to innovate.¹¹⁰ Perhaps the strongest argument against zero rating, however, is that vertically integrated broadband providers have both the *ability* to restrict content providers' access to end users and the *incentive* to do so.¹¹¹ Although, under the assumption of gatekeeper power, any broadband provider has the ability to restrict access, if it does not compete downstream in the market for content provision, it would have little incentive to favor particular content providers. A vertically integrated broadband provider, however, has the incentive to use that gatekeeper power to disadvantage its own competitors in the downstream market.¹¹²

Proponents of zero rating, such as Trump transition team member Jeffrey Eisenach and former FCC Chief Economist William Rogerson, claim that anticompetitive harm is only possible where the broadband provider has significant market power.¹¹³ Where the market is competitive, broadband providers could not effectively foreclose competing content providers from end users.¹¹⁴ AT&T, in fact, claims that zero rating satellite-based DirecTV enables them to more effectively compete in the television market, which is dominated by incumbent cable providers.¹¹⁵ Finally, where

108. *See id.*

109. *See* FCC ZERO-RATING REPORT, *supra* note 15, at 10.

110. Malcolm et. al., *supra* note 11.

111. *See* FCC ZERO-RATING REPORT, *supra* note 15, at 16.

112. *See* Narechania, *supra* note 100, at 29–30.

113. *See* EISENACH, *supra* note 85, at 8 (explaining that exclusive arrangements must be sufficiently widespread to effectively foreclose entry by a competitor); ROGERSON, *supra* note 11, at 30.

114. *See* ROGERSON, *supra* note 11, at 27–30.

115. *See* AT&T Letter, *supra* note 70, at 1–2.

content providers cannot afford sponsored data, or choose not to buy it, they can design their offerings to efficiently use the broadband capacity available to the audience they seek.¹¹⁶

The WTB report concluded that vertically integrated broadband providers' zero-rating programs were likely to cause anticompetitive harm in violation of the general conduct rule.¹¹⁷ It specifically criticized AT&T's exemption of DirecTV and Verizon's exemption of its Go90 platform, both Model One programs.¹¹⁸ Both companies claim to offer sponsored data to competing content providers on equal terms.¹¹⁹ However, the WTB was skeptical of these claims, stating that the companies offered no supporting evidence.¹²⁰ Furthermore, there are no statutory safeguards in place to protect against discrimination, such as a requirement for structural separation of the network service provider and downstream affiliate or cost allocation rules.¹²¹ Although the WTB's report did not cover practices of vertically integrated wired broadband providers, such as Comcast, it can be assumed that the same logic would apply. The WTB's report did not find the zero rating of unaffiliated entities under Models Two and Three, such as AT&T's Data Perks and T-Mobile's Binge On, to be discriminatory.¹²²

3. *Effect on Innovation, Investment, or Broadband Deployment Is Assumed to be Inherent in the Harms Caused by the Other Factors, but Is Not Well Analyzed as an Independent Factor*

The network neutrality rules are rooted in the theory of a "virtuous cycle," in which the growth of infrastructure spurs the growth of internet-based services and apps, which in turn further spurs the growth of infrastructure.¹²³ Concerns regarding discriminatory conduct should therefore be rooted in its potential to stifle innovation among content providers and investment in broadband infrastructure. The WTB report did not, however, include this factor in its analysis. It assumed harm to innovation via the harm to downstream competitors, but it made no attempt to articulate the type of innovation likely to be harmed or to calculate harm to investment or broadband deployment.

116. See ROGERSON, *supra* note 11, at 25.

117. See FCC ZERO-RATING REPORT, *supra* note 15, at 17.

118. See *id.* at 12–17.

119. See AT&T Letter, *supra* note 70, at 4; Verizon Letter, *supra* note 71, at 1–2.

120. See FCC ZERO-RATING REPORT, *supra* note 15, at 12–13, 16.

121. See *id.* at 13–14.

122. See *id.* at 11–12.

123. 2015 Open Internet Order, *supra* note 13, at 5604 para. 7.

B. TAKEAWAYS FROM THE WIRELESS TELECOMMUNICATIONS BUREAU REPORT ON ZERO RATING

The various commentaries, the WTB report, and the ensuing pushback from the new FCC Chairman all provide insight into how the general conduct rule may or may not apply to zero rating in the future. It is clear from the WTB report that competitive effects are viewed as the most important factor and vertical integration as the greatest risk of harm.¹²⁴ On the one hand, the report indicates that vertically integrated broadband providers are not completely prohibited from engaging in zero rating, for example, where they zero rate unaffiliated content.¹²⁵ However, where a vertically integrated broadband provider zero rates its own content, the WTB believes there is a high likelihood that the general conduct rule is being violated.

To alleviate its concerns, the WTB demands proof of equal terms for affiliated and unaffiliated participants and alludes to the need for additional statutory protections.¹²⁶ The effect of such an interpretation is to shift the burden of proof onto vertically integrated broadband providers. Furthermore, these references to heavy handed regulations play into what many critics feared when broadband was reclassified as a Title II common carrier and seem to contradict the Commission's approach of "permission-less innovation."¹²⁷ Although the argument that the combination of ability and incentive to disadvantage downstream competitors may be strong, the evidence used to come to that conclusion in the WTB's report is weak. Chairman Pai made clear that this Report will not guide FCC enforcement during his tenure and instead seeks to focus on broadband investment and deployment.¹²⁸

IV. MONOPOLY POWER ASSUMPTIONS AND ANTITRUST LAW

Since the passage of the Sherman Act in the late nineteenth century, antitrust law has been the government's main tool to address

124. See FCC ZERO-RATING REPORT, *supra* note 15, at 10, 17.

125. See *id.* at 12 (explaining that, for example, the Bureau did not find AT&T's Data Perks program to run afoul of the general conduct rule as it is mainly used by marketers and advertisers, who have other avenues to reach consumers, and for small amounts of data).

126. See *id.* at 14–17 (discussing safeguards used in other contexts such as cost allocation rules and obligations to offer service on nondiscriminatory terms).

127. See *id.* at 4.

128. See Pai, *supra* note 16.; Pai, *supra* note 89.

anticompetitive harm across all sectors of the economy. In general terms, antitrust law outlaws not only collusion among competitors but also illegal maintenance of or attempts to acquire monopoly power through anticompetitive means.¹²⁹ In this sense, monopoly power is an assessment of market power. The 2015 Open Internet Order, however, does not claim to assess market power but rather claims to address the gatekeeper power that broadband providers exercise over access to their subscribers. It argues that once an end user selects a particular broadband provider, that provider possesses a monopoly on access to that end user.¹³⁰ The court in *Verizon v. FCC*, referred to this as a “terminating monopol[y].”¹³¹ The 2015 Order paints the net neutrality rules as complementary to antitrust enforcement and disclaims any need to assess market power in relation to competing providers.¹³² At the same time, the WTB report draws support for its conclusions in antitrust case law that is premised on exactly that finding of market power.¹³³

This Part critiques the 2015 Order’s claim that all broadband providers, regardless of the competitive market, possess a form of monopoly power and distinguishes the antitrust case law cited in the WTB report from the conclusions of the WTB. It then assesses zero rating in the framework of antitrust law.

A. THE RELATION BETWEEN GATEKEEPER POWER AND MARKET POWER

Gatekeeper power is not wholly distinct from market power as the 2015 Order claims. The FCC’s concern lies in the control broadband providers have over access to the Internet and end users. Yet, this control is limited to the extent that end users can choose alternative broadband providers and conversely to the extent that content providers can access end users through alternative broadband providers.

1. *The 2015 Order and the 2014 Verizon Decision on Which the Order Draws Support, Both Allude to Market Power to Bolster Their Findings of Gatekeeper Power*

In the 2014 *Verizon* decision striking down the 2010 Open Internet Order, the majority accepted FCC’s contention that broadband providers

129. See 15 U.S.C. §§ 1–2 (2012).

130. See 2015 Open Internet Order, *supra* note 13, at 5629-5630 para. 80.

131. 740 F.3d 623, 646 (D.C. Cir. 2014).

132. See 2015 Open Internet Order, *supra* note 13, at 5606 n.12.

133. FCC ZERO-RATING REPORT, *supra* note 15, at 7.

had the ability to act as gatekeepers. The court reasoned that this power over access to subscribers existed because “all end users generally access the Internet through a single broadband provider.”¹³⁴ It added that “if end users could immediately respond to any given broadband provider’s attempt to impose restrictions on edge providers by switching broadband providers, this gatekeeper power might well disappear.”¹³⁵ The 2015 Order relied on the same arguments to justify its claim that broadband providers exert gatekeeper power, namely, that consumers access the Internet through a single point and that they do not or cannot respond by switching when restrictions are imposed by their broadband provider.¹³⁶ The Order claimed that gatekeeper power could be mitigated if consumers multi-homed, meaning that they bought broadband service from more than one provider.¹³⁷ However, it quickly concluded that this is not widely practiced and would impose significant additional costs on end users.¹³⁸ The Order also found that gatekeeper power is strengthened by high switching costs that consumers face when seeking a new broadband provider and that high switching costs were “significant factor in enabling the ability of mobile broadband providers to act as gatekeepers.”¹³⁹ The 2015 Order even cites the *Verizon* court’s claim that the “ability [of broadband providers] to impose restrictions on edge providers simply depends on end users not being fully responsive to the imposition of such restrictions.”¹⁴⁰

Claims regarding lack of consumer responsiveness, high costs of multi-homing, and high costs of switching networks inherently allude to market power. In the *Verizon* decision, Judge Silberman, dissenting in part, stated that the terms “gatekeepers” and “terminating monopoly” were “largely invented.”¹⁴¹ Their meaning derives from the leverage “gatekeepers” have over edge providers due to their “powerful economic position vis-à-vis [end users].”¹⁴² Judge Silberman noted that the Commission did not present evidence establishing that all broadband providers possess such economic power against all edge providers.¹⁴³ FCC Commissioners, O’Rielly and Pai,

134. *Verizon*, 740 F.3d at 646.

135. *Id.*

136. 2015 Open Internet Order, *supra* note 13, at 5631 para. 81.

137. *Id.* at 5630 para. 80.

138. *Id.*

139. *Id.* at 5631 para. 81, 5640 para. 97.

140. *Id.* at 5633 para. 84.

141. *Verizon v. FCC*, 740 F.3d 623, 663 (D.C. Cir. 2014) (Silberman, J., concurring in part and dissenting in part).

142. *Id.* at 663–64.

143. *Id.* at 664.

who dissented in the 2015 Open Internet Order, as well as Judge Williams, who dissented in part in the *U.S. Telecom* decision, all critiqued the lack of economic analysis conducted by the FCC.¹⁴⁴ Commissioner O’Rielly called the virtuous cycle “mythical” and claimed the Commission had proven no actual harm to consumers or content providers.¹⁴⁵ Consumers arguably do multi-home. The FCC acknowledges that many consumers subscribe to both mobile and fixed services, yet claims this does not constitute multi-homing as they are distinct product offerings.¹⁴⁶ At the same time, the FCC makes blanket statements about the high switching costs consumers face between broadband providers regardless of any differences in the mobile and fixed marketplaces.¹⁴⁷ To come to these conclusions the FCC relies on the comments received in response to its Notice of Proposed Rule Making and what it argues are low churn rates (that is switching) among mobile providers despite the presence of competition.¹⁴⁸ The FCC does not, however, conduct its own analysis to determine to what extent consumers may or may not view fixed and mobile broadband as a single or separate markets or what effect the presence of competition has on the leverage ISPs can exert over edge providers.

2. *The Antitrust Case Law in Which the WTB Report Claims to Find Support Requires Findings of Market Power.*

The WTB report concluded that zero-rating affiliated content may cause harm by discriminating against non-affiliated edge providers.¹⁴⁹ The WTB opined that these firms could “foreclose[e] their downstream competitors’ use of the critical upstream platform inputs . . . in order to enhance their downstream affiliates’ competitive position.”¹⁵⁰ In support of this conclusion, the report cites several antitrust cases where the government

144. See generally *U.S. Telecomm. Assoc. v. FCC*, 825 F.3d 674, 750 (D.C. Cir. 2016) (Williams, J., concurring in part and dissenting in part); O’Rielly, FCC, Dissenting Statement of Commissioner Re: Protecting and Promoting the Open Internet (2015), https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A6.pdf [<https://perma.cc/YGD9-5XZW>] [hereinafter O’Rielly dissent]; Pai Dissent, *supra* note 87.

145. See O’Rielly Dissent, *supra* note 144, at 1. The 2015 Open Internet Order did in fact cite several examples of broadband providers limiting what it described as Internet openness, including the blocking of Voice over Internet Protocol (VOIP) calls by Madison River, a DSL service provider, and interference with peer-to-peer file sharing by Comcast, a cable internet service provider. 2015 Open Internet Order, *supra* note 13, at 5628 para. 79 & n.123 (citing 2010 Open Internet Order, *supra* note 42, at 17915–26, paras. 20–37).

146. 2015 Open Internet Order, *supra* note 13, at 5630 n.131.

147. *Id.* at 5630 n.130, 5631 para. 81.

148. See e.g., *id.* at 5641 para. 98.

149. FCC ZERO-RATING REPORT, *supra* note 15, at 17.

150. *Id.* at 6–7.

successfully brought suit against such exclusionary behavior.¹⁵¹ These cases fall along two related lines of antitrust doctrine: (1) exclusion and foreclosure and (2) essential facilities. Both doctrines unequivocally require market power to demonstrate potential harm.

The terms exclusion and foreclosure both describe conduct intended to keep rivals or potential entrants wholly out of a market or at a disadvantage by excluding them from a needed input.¹⁵² Where the threat of successful exclusion or foreclosure is legitimate, such exclusionary behavior may be unlawful. The Bureau cited several antitrust cases that invoke exclusion and foreclosure arguments. In *United States v. Aluminum Company of America (Alcoa)* from 1945, the Court found that Alcoa, which had 90 percent market share in the sale of aluminum ingot, illegally priced their ingot high while pricing aluminum sheet material low, to the exclusion of downstream competitors in sheet production.¹⁵³ More recently in *United States v. Microsoft* in 2001, the D.C. Circuit Court found that Microsoft used its 95 percent market share in operating systems to suppress a nascent threat in cross-platform applications through exclusionary agreements, deceptive practices, and threats.¹⁵⁴ Finally, in both *United States v. AT&T* and *CCIA v. FCC* in 1982, claims that AT&T was able to engage in anticompetitive conduct were premised on AT&T's market power.¹⁵⁵

The essential facilities doctrine, where invoked, imposes a duty upon a firm to deal with its rivals where that firm exercises monopoly power over a key input that the rivals require to participate in the market.¹⁵⁶ The WTB report cited two cases to support its findings that invoke the essential facilities doctrine. In *United States v. Terminal Railroad Association* from 1912, a group of railroad companies jointly purchased the previously independent terminating facilities that provided access to the sole means of crossing the Mississippi River.¹⁵⁷ The geography of the city of St. Louis made it impossible to even enter the city, let alone pass through, without using one of these terminating facilities and the cost of building additional

151. *See id.* at 6–7 nn.23 & 26. (citing several antitrust cases that address conduct by vertically integrated firms aimed at foreclosing market access to their downstream rivals).

152. *See* Jonathan B. Baker, *Exclusion as a core Competition Concern*, 78 ANTITRUST L.J. No. 3, 527, 527 n.1 (2013).

153. *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 425, 437–38 (2d Cir. 1945).

154. *United States v. Microsoft Corp.*, 253 F.3d 34, 51, 75–77 (D.C. Cir. 2001).

155. *See* U.S. v. Am. Tel. & Tel. Co., 552 F. Supp. 131, 165 (D.D.C. 1982); *Comput. & Comm'n Indus. Assoc. v. FCC*, 693 F.2d 198, 218 (D.C. Cir. 1982).

156. *See e.g.*, *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 599, 610–11 (1985).

157. 224 U.S. 383, 391–98 (1912).

railroad bridges was impractical.¹⁵⁸ The Court held the combination of every “essential” connection under the exclusive control of the TRA was a violation of antitrust law and required the TRA to open access to all railroads on equal terms.”¹⁵⁹ Following in this line of reasoning, the Court in *Otter Tail Power Co. v. United States* in 1973, held that a power company with exclusive franchisee rights in numerous municipalities illegally suppressed the formation of competing municipal power systems by refusing to sell them wholesale power or transfer power from other sources over its facilities.¹⁶⁰ The market was considered a “natural monopoly” because demand in each municipality did not justify more than one power supplier.¹⁶¹ The Court concluded that Otter Tail used its “monopoly power” to foreclose competition.¹⁶² In both cases the essential facility was one that could not be reproduced and one over which the defendant had complete control.

B. ZERO RATING UNDER THE FRAMEWORK OF ANTITRUST LAW

With the prospect of the 2015 Open Internet Order being repealed or overturned by legislation, the question of whether and to what extent zero rating causes anticompetitive harm may fall to antitrust law. However, even if the 2015 Order remains in effect, any future attempts to enforce it against the practice of zero rating will surely be countered with an antitrust style analysis disputing market power. In antitrust law, unilateral, that is single firm, exclusionary conduct is enforced under section 2 of the Sherman Act.¹⁶³ The Supreme Court has defined a violation of section 2 as “the willful acquisition or maintenance of [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”¹⁶⁴ As the D.C. Circuit in *Microsoft* explained, it is not a violation of the law to simply have a monopoly, but rather when one acquires or maintains that monopoly through exclusionary

158. *See id.* at 395, 397-98.

159. *See id.* at 392, 409-412.

160. 410 U.S. 366, 368-69 (1973).

161. *See id.* at 369-70.

162. *Id.* at 377.

163. *See* U.S. Dep’t of Justice, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act (2008), <http://www.usdoj.gov/atr/public/reports/236681.pdf> [hereinafter Single-Firm Conduct Under Section 2 of the Sherman Act], *withdrawn*, Press Release, U.S. Dep’t of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law (May 11, 2009), <https://www.justice.gov/opa/pr/justice-department-withdraws-report-antitrust-monopoly-law> [<https://perma.cc/T9ZE-YY7L>].

164. *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).

conduct.¹⁶⁵ Exclusionary conduct typically either raises rivals' costs (input foreclosure) or reduces rivals' access to end customers (customer foreclosure).¹⁶⁶ Successful claims may demonstrate harm by showing that all significant rivals are in fact foreclosed from the market by the exclusionary act or with a rigorous analysis of the actual or probable effect of the conduct.¹⁶⁷ Identifying the relevant market, known as market definition, contributes to an understanding of who the excluded rivals are, the area of commerce concerned, and helps demonstrate the likelihood of anticompetitive effects through indirect evidence such as market share and concentration.¹⁶⁸ Even where the actual effects of exclusionary behavior have been demonstrated, courts are still likely to require rough market definition and a showing of market share.¹⁶⁹ Here, an analysis of the potential harmful effects of zero rating would look to market definition and either demonstrated market foreclosure by a monopolist or the likelihood of effective market foreclosure by a competitor with market power.

1. *Wired and Mobile Broadband Provision Are Likely Considered Distinct Markets, Although the Possibility of Future Convergence Should Not Be Discounted*

The FCC recognized mobile and wired broadband as distinct product offerings in both the 2015 Broadband Progress Report and the 2015 Open Internet Order.¹⁷⁰ The 2015 Open Internet Order also incorporated public comments it received from outside groups like Public Knowledge expressing their belief that fixed and mobile broadband were not substitutes.¹⁷¹ At the same time the FCC declared that the mobile broadband market had matured, leading it to apply the net neutrality rules equally to both wired and mobile.¹⁷² Many consumers rely solely on mobile for

165. United States v. Microsoft Corp., 253 F.3d 34, 58 (D.C. Cir. 2001).

166. Baker, *supra* note 152, at 538 n.54.

167. *See id.* at 548.

168. *See id.*; U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES, sec. 4 (2010), <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf> [<https://perma.cc/YHM9-2NSK>].

169. *See* Baker, *supra* note 152, at 545 n.86 (citing Republic Tobacco Co. v. N. Atl. Trading Co., 381 F. 3d 717, 737 (7th Cir. 2004)).

170. Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, 30 FCC Rcd. 1375, para. 120 (2015), https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-10A1.pdf [<https://perma.cc/FZM8-6LY2>] [hereinafter 2015 Broadband Progress Report]; 2015 Open Internet Order, *supra* note 13, at 5605 para. 9.

171. *See* 2015 Open Internet Order, *supra* note 13, at 5629 n.126.

172. *Id.* at 5635-36 paras. 88-89. (noting increasing data speeds and market penetration by mobile broadband providers).

internet access and mobile content has become critical for many edge providers.¹⁷³ Proper market definition would require an inquiry into how users on both sides, that is end users and edge providers, view the substitutability of wired and mobile broadband. This Note assumes the FCC correctly considered them as distinct product markets, with the caveat that as mobile speeds and capacity increase, these markets may converge in the future. Furthermore, even where the product markets are distinct, wired and mobile broadband providers may still exert a degree of competitive pressure on one another.

2. *No Broadband Provider Exerts Monopolistic Control over All Means of Access to Consumers Such that the Essential Facilities Doctrine Could Be Invoked.*

The essential facilities doctrine rests on the same type of natural monopoly arguments that justify much of FCC regulation.¹⁷⁴ Given the current state of the market, it is unlikely that any one broadband provider could be said to have a monopoly over access to the Internet or access to consumers of the Internet. In *Verizon v. Trinko*, Justice Scalia stated that in order to invoke the essential facilities doctrine, the essential facility must be inaccessible.¹⁷⁵ Therefore, where access exists, the doctrine serves no purpose. Unlike *Terminal Railroad Association* where the defendant exclusively controlled all access to river crossing points, or *Otter Tail*, where the defendant exerted a monopoly over sources and conduits of electric power,¹⁷⁶ no broadband provider exclusively controls all access to the Internet or to end users. Furthermore, no individual broadband provider can exclude any content provider from access to their subscribers due to the ban on blocking. The FCC's gatekeeper power argument seems unlikely to meet the standard set forth by Scalia in *Trinko*.

3. *The Likelihood of Effective Market Foreclosure Is Greater in Among Wired Broadband Providers than Wireless Providers.*

Exclusionary conduct through vertical arrangements is a concern if it can foreclose competition from actual or potential rivals without any plausible efficiency justifications.¹⁷⁷ To effectively foreclose rivals from the

173. *Id.*, at 5636-37 para. 90.

174. *See supra* Sections I.A, IV.A.2.

175. *Verizon v. Trinko, LLP.*, 540 U.S. 398, 410–11 (2004).

176. *See supra* Section IV.A.2.

177. *See Baker, supra* note 152, at 548. Efficiency justifications include lowering costs or increasing output. *See SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT, supra* note 163, at 85–86.

market, an excluding firm must (1) identify a practical method of exclusion; (2) exclude rivals sufficient to ensure competition is harmed; and (3) ensure the strategy will be profitable.¹⁷⁸ The WTB report correctly identified that vertically integrated providers that zero rate their affiliated content, the first model of zero rating discussed in Part II, are most likely to engage in such a strategy. However, success in excluding rivals requires some degree of market power, often inferred by the courts from market share.¹⁷⁹ Here, the FCC argues that the gatekeeper power each broadband provider exerts over access to each subscriber constitutes this requisite power without having to analyze the overall market. However, as discussed in Section IV.A.1, the FCC supports this claim with arguments relevant to the competitive landscape of wired and mobile broadband.

It may be most difficult to demonstrate that mobile carriers exercise a terminating monopoly over access to subscribers. Subscribers can and do switch carriers. In 2015 the annual churn rate, the rate of switching carriers, was calculated to be 23.6 percent.¹⁸⁰ Furthermore, the largest mobile wireless provider, Verizon, only has 38 percent market share and competes with the next three largest mobile providers in almost all markets.¹⁸¹ Wired broadband networks are generally less competitive: 88 percent of Americans have access to at least two providers of wired broadband at speeds of three Mbps or more, 74 percent at speeds of ten Mbps or more, but only 39 percent at speeds of twenty-five Mbps or more.¹⁸² However, as Judge Williams noted in his dissent in *U.S. Telecom Association v. FCC*, an inquiry should be done into competition between wireless and wired broadband.¹⁸³ Even where wired broadband competition is limited, so may be the ability of wired broadband providers to effectively foreclose edge providers when an increasing number of Americans use mobile to access the Internet.

This is not to say the conclusions of the WTB report are necessarily wrong and that a more thorough analysis would come to the opposite conclusion. In fact, in 2011 the Department of Justice (DOJ) conditioned its

178. Baker, *supra* note 152, at 562–63.

179. *See supra* Part IV.A.2. Some argue that without market power, discriminatory conduct by vertically integrated entities is more likely to be efficient than anticompetitive. *See e.g.*, Thomas W. Hazlett & Joshua D. Wright, *The Law and Economics of Network Neutrality*, 45 INDIANA L.R. 767, 808 (2012).

180. *See* WIRELESS COMPETITION REPORT, *supra* note 102, at 10546 para. 18.

181. *See id.* at 10548 tbl.II.C.2.

182. *See* 2015 BROADBAND PROGRESS REPORT, *supra* note 170, at 48 chart 2.

183. 825 F.3d 674, 753 (D.C. Cir. 2016) (Williams, J., concurring in part and dissenting in part).

approval of Comcast's joint venture with NBC Universal Inc. on a seven-year agreement to license programming to online competitors of Comcast's cable TV service and to adhere to Open Internet requirements.¹⁸⁴ The DOJ feared that Comcast would have the incentive and ability to harm online video distributors who competed with Comcast's cable TV service by denying them access to NBC's programming.¹⁸⁵ Many would argue, however, that antitrust doctrine does not go far enough to protect consumers, competition, and the open nature of the Internet, instead focusing too much on economic efficiency and price effects and potentially undervaluing other behaviors designed to harm competition.¹⁸⁶ The DOJ, for example, did not impose any conditions on AT&T's acquisition of DirecTV,¹⁸⁷ while the FCC after an analysis of the competitive effects found the need for several remedies, including a ban on discriminatory usage-based allowance practices for its fixed broadband that would favor affiliated online video content.¹⁸⁸

The WTB report specifically found Verizon's and AT&T's practices of zero rating affiliated content likely to cause anticompetitive harm in violation of the general conduct rule, but their analysis would likely extend broadly to any firm engaged in the first model of zero rating discussed in Part II. Instead of drawing their conclusions based on a thorough analysis of the market, the WTB, in line with the 2015 Open Internet Order, assumes all broadband providers possess equivalent monopolies over access to their subscribers. This assumption, however, can lead to effective bans on otherwise legal firm conduct without evidence of harm or potential harm to the market as exemplified by the finds of the WTB report.

V. CONCLUSION

When the FCC created the net neutrality rules, they intentionally crafted the general conduct rule to allow them to adapt to the evolving practices of

184. Press Release, Dep't of Justice, Justice Department Allows Comcast-NBCU Joint Venture to Proceed with Conditions (Jan. 18, 2011), <https://www.justice.gov/opa/pr/justice-department-allows-comcast-nbcu-joint-venture-proceed-conditions> [<https://perma.cc/2VGM-RWTD>].

185. See Competitive Impact Statement at 23–27, *U.S. v. Comcast Corp.*, 18 F. Supp. 2d 145 (2011) (No. 11–106).

186. See e.g., Jon Sallet, Antitrust Policy and Communications Regulation: May the Twain Meet, 14 *COLO. TECH. L.J.* 59, 62 (2015).

187. Press Release, Dep't of Justice, Justice Department Will Not Challenge AT&T's Acquisition of DirecTV (July 21, 2015), <https://www.justice.gov/opa/pr/justice-department-will-not-challenge-atts-acquisition-directv> [<https://perma.cc/83J5-MHN9>].

188. Applications of AT&T Inc. and DirecTV For Consent to Assign or Transfer Control of Licenses and Authorizations, 30 FCC Rcd. 9131, 9278 para. 395.

the industry. The 2015 Order provided a list of seven factors to guide the interpretation of the general conduct rule to avoid problems of ambiguity. Prior to the change in administration, zero rating almost became the first test case of their application. Zero-rating practices vary and can be categorized into distinct models. Furthermore, those models operate in the differing competitive landscapes of fixed and mobile broadband markets. The WTB report, which focused almost exclusively on competitive effects in its application of the rule, considered differences in zero-rating practices, but did not consider differences in market competition. The Bureau relied on the theories of the virtuous cycle and gatekeeper power to reach its conclusion condemning the zero rating of affiliated content. However, reliance on these theories without requiring an individualized market analysis, enables the FCC to shift the burden of proof onto broadband providers to demonstrate their compliance with the rule. This is an overly-inclusive fix to a problem that can largely be addressed through the DOJ's and FCC's authority to review mergers. Zero rating is unlikely to cause harm where broadband markets are competitive and a focus on broadband infrastructure investment rather than regulation is likely a better long-term solution for consumer welfare.

PAPERWEIGHTS: FAA REGULATION AND THE BANISHMENT OF COMMERCIAL DRONES

Robert Glenn Olsen[†]

On Sunday, December 1, 2013, Charlie Rose and 60 Minutes revealed Amazon’s ambitious vision of the future: drones. CEO Jeff Bezos described fleets of autonomous drones crossing the skies carrying consumer goods. The goal? Thirty minutes from clicking “buy” in your Amazon shopping cart to finding the item on your front porch. Bezos’s vision was only outdone by his timeline for implementation, four to five years.¹

As ambitious as the plan was, it was not mere fantasy. A year before, Congress had addressed the idea of drones in the national airspace.² The 2012 FAA Modernization and Reform Act addressed three classes of drones: (1) public drones; (2) recreational drones; and (3) civil drones.³ First, Congress ordered the Federal Aviation Administration (FAA) to work with government agencies to provide for the use of public drones.⁴ Second, Congress removed recreational drones from the FAA’s purview.⁵ Third, Congress directed the FAA to regulate and “integrate” civil drones into the national airspace by September 30, 2015.⁶ Given that Congress explicitly dealt with recreational civil drones,⁷ the general order to regulate civil drones applies to commercial drones, laying the foundation for Bezos’ optimism.

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1. CBS News, *Amazon Unveils Futuristic Plan: Delivery by Drone*, CBS NEWS:60 MINUTES OVERTIME (Dec. 1, 2013), <http://www.cbsnews.com/news/amazon-unveils-futuristic-plan-delivery-by-drone/> [<https://perma.cc/98MF-8246>].

2. See FAA Modernization and Reform Act of 2012 (FAA Reform Act), Pub. L. 112-95, § 331-336, 126 Stat. 72, 72-78 (2012).

3. *Id.* §§ 332, 334, 336. Note that the FAA Reform Act first discusses civil drones, § 332, then public drone, § 334, and recreational drones last, § 336.

4. *Id.* § 334.

5. *Id.* § 336.

6. *Id.* § 332.

7. Civil means not public—these drones are privately owned. See 49 U.S.C. § 40102(a)(16) (2012). Section 332 of the FAA Reform Act addresses private, non-recreational drones. FAA Reform Act, Pub. L. 112-95, §§ 332, 336. This tends to include drones operated for commercial purposes.

On August 29, 2016, the awaited FAA regulation for civil unmanned aircraft, 14 CFR Part 107, took effect.⁸ The results were underwhelming. Drones remain recreational craft and tools for expensive photography.⁹ Commercial drone operations are novelties.¹⁰ The prohibitions swallow the allowances.¹¹ Drones may not operate in populated areas, cargo operations are all but prohibited, and drones are virtually tethered to their operators.¹² Drones are thus relegated to the fringes of the national airspace.¹³

At first glance the FAA's strict limitations appear sound.¹⁴ Scholars argue that drones do not fit the regulatory framework that the FAA has developed since the inception of aviation oversight.¹⁵ These reservations, while applicable to small-scale operators, fail when applied to large-scale operators such as Amazon.¹⁶ Large-scale commercial drone operations are consonant with key aspects of the FAA's framework.¹⁷ The Administration can, and should, provide a regulatory framework that supports the use of commercial drones in the national airspace.

Part I of this Note examines the history of aviation safety oversight in the United States. It tracks important legislative and regulatory developments and concludes with a formulation of three principal lessons from the Administration's history. Part II introduces Congress's driving legislation, discusses the FAA's regulatory response, surveys FAA rationale for various drone rules, and briefly describes the drone waiver scheme. This Part concludes with a summary of various permitted and

8. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, 91, 101, 107, 119, 133, and 183).

9. See Erik Olsen, *Gentlemen, Start Your Drones*, N.Y. TIMES (Nov. 11, 2015), https://www.nytimes.com/2015/11/12/sports/drone-racing-competition.html?_r=3 [<https://perma.cc/K8RQ-YTA2>] (documenting the rise of the new sport of drone racing); *Phantom Series*, DJI (last visited Feb. 5, 2017), <http://www.dji.com/phantom-4> [<https://perma.cc/4XMF-24S7>] (marketing the drone as a photography platform).

10. See, e.g., Daniel White, *Google and Chipotle Are Testing Drone Burrito Delivery at Virginia Tech*, TIME (Sept. 14, 2016), <http://time.com/4493291/google-tests-drone-deliveries-virginia-tech/> [<https://perma.cc/S76W-WEQA>].

11. See Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,066–67.

12. *Id.*

13. See *id.* As will be discussed, *infra* Section II.C, the new drone regulations permit little meaningful commercial use.

14. *Infra*, Section III.C.2.

15. See e.g., Henry H. Perritt, Jr. & Eliot O. Sprague, *Law Abiding Drones*, 16 COLUM. SCI. & TECH. L. REV. 385, 390 (2015).

16. *Infra*, Section III.C.2.

17. *Id.*

prohibited drone uses. Part III of this Note evaluates the regulatory prospects for commercial drones use and addresses various concerns to large-scale drone operations. This Part concludes that large-scale commercial drone operations fit within the historical framework of the FAA's aviation oversight. Part IV concludes and provides recommendations for implementing regulations in support of commercial drone operations.

I. AIRPLANES AND THE U.S. GOVERNMENT

A. CHAOTIC SKIES AND THE PROSPECT OF REGULATION

In the beginning, American skies were unregulated. Aviation's utility had been established "even before" the First World War.¹⁸ Yet by 1925, aviation still scarcely played a role in the nation's economy.¹⁹ The national image was one of "gypsy fliers" and outrageous stuntmen, not of safe and reliable transportation.²⁰ Even if passengers could be found, funding could not be. Financial investment and reasonable insurance rates were nearly impossible to procure in the absence of federal regulation.²¹

On one hand, aviation presented little public threat. From 1921 through 1925, an average of 71 people were killed in aviation-related accidents annually.²² On the other hand, aviation had its fair share of spectacular crashes. During one week in July of 1922, New York City was treated to three aviation incidents, including a stunt plane crashing into a populated beach.²³

There was one success story: airmail. The service began in May of 1918 with equipment loaned from the U.S. Army and, by 1920, established a transcontinental route.²⁴ The service's safety record was unmatched.²⁵ In 1924, American commercial aviation suffered one fatality for every 13,500 miles flown—the airmail had just one for every 463,000 miles.²⁶ This record was not born of luck. The Air Mail Service employed

18. NICK A. KOMONS, *BONFIRES TO BEACONS* 13 (1978).

19. *Id.* at 15. Indeed, it was largely a commercial failure, for the most organized private use of airplanes was the transportation of bootleg alcohol, while airlines rarely survived to their second birthday. *Id.* at 14–15, 17.

20. *Id.* at 28–29.

21. *Id.* at 29.

22. *Id.* at 23.

23. *Id.* at 25. That same week, a pilot with a record of reckless flying crashed in Washington, D.C., killing a passenger. *Id.*

24. *Id.* at 18–19.

25. *Id.* at 21 (noting that from 1922 to 1925 the service suffered only ten fatalities).

26. *Id.* at 25.

numerous mechanics for stringent aircraft inspections and mandated regular pilot examinations.²⁷

The lesson was clear to Secretary of Commerce Hoover, “that [aviation] is the only industry that favors having itself regulated by the government.”²⁸ Per the Air Commerce Act of 1926, the new Aeronautics Branch of the Department of Commerce would oversee air traffic rules, aircrew and mechanic certification, and aircraft airworthiness.²⁹ This included evaluation of aircraft design, construction, and manufacturing.³⁰ The branch was given considerable leeway to devise detailed regulations, a practice that remains to this day.³¹

B. THE CIVIL AERONAUTICS ACT OF 1938

Federal regulation was a resounding success. Prior to 1926, only one airline survived longer than two years. By 1930, the Big Four, United, Eastern, American, and TWA, were born.³² Though airmail contracts and government subsidies still propped them up, airline consolidation meant capital consolidation. Now airlines could sponsor aircraft development.³³ American Airlines introduced the iconic Douglas DC-3 in June of 1936.³⁴ 1940 brought the Boeing 307, the first pressurized airliner.³⁵ Further, safety regulation appeared effective. From 1930 to 1932, scheduled domestic airlines in the United States suffered one passenger fatality for

27. *Id.* at 20–21. In 1925, 94% of employees were ground personnel. Aircraft underwent a 180-item inspection after every flight. Engines were overhauled every 100 hours, airframes every 750. *Id.*

28. *Id.* at 22.

29. Air Commerce Act of 1926, Pub. Res. No. 69-27, 44 Stat. 568, § 3; DEP’T OF TRANSP. FED. AVIATION ADMIN., HISTORY OF AVIATION SAFETY OVERSIGHT IN THE UNITED STATES 2 (2008) [hereinafter *FAA History*]; ROBERT M. HARDAWAY, AIRPORT REGULATION, LAW, AND PUBLIC POLICY 9 (1991) (describing the creation of the Aeronautics Branch in the Department of Commerce).

30. Air Commerce Act, § 3(b)(1).

31. *FAA History*, *supra* note 29, at 2. In 1928, Aeronautics Bulletin No. 14 was issued detailing the requirements for aircraft design certification, known as type certification, as well as Aeronautics Branch recommended practices. *See* Aeronautics Bulletin No. 14, Dept. of Comm., Aero. Branch (1928); *see generally*, 14 C.F.R. § 25 (FAA regulation of transport aircraft design).

32. Most of the credit for the consolidation goes to the economic regulation regime of Postmaster General Walter Folger Brown, a topic beyond the scope of this Note. R.E.G. DAVIES, A HISTORY OF THE WORLD’S AIRLINES 123–28 (1964) (documenting Brown’s regime under Hoover to provide for airline consolidation and stability).

33. *Id.* at 133.

34. *Id.* at 134.

35. *Id.* (noting the implementation of pressurized aircraft with the Boeing Model 307).

every 4.8 million passenger-miles flown.³⁶ From 1933 to 1935 this count dropped to one in 18 million.³⁷

Yet even this record offered little protection against well-publicized disasters.³⁸ On May 6, 1935, a TWA DC-2 crashed outside of Kansas City, Missouri.³⁹ Killed in the crash was Senator Bronson Cutting of New Mexico.⁴⁰ Though the Bureau of Air Commerce found TWA at fault,⁴¹ the loss of a colleague galvanized Congress into action.⁴²

The Civil Aeronautics Act was passed the following June of 1938. The new Civil Aeronautics Authority, headed by an administrator and a five-member board,⁴³ was tasked with aviation infrastructure, economic regulation, and safety regulation.⁴⁴ For infrastructure, the authority was to establish and oversee civil airway and provide the necessary ground facilities, airfields, and navigational aids.⁴⁵ On the safety front, the authority registered aircraft, certified aircrews, and certified airworthiness.⁴⁶ Where the Air Commerce Act had simply directed the Aeronautics Branch to evaluate aircraft design and manufacture, the 1938 Act enumerated the three-part system in use to this day: type certification for qualified designs; production certification for acceptable manufacturing; and airworthiness certification for every aircraft fit to fly.⁴⁷

36. KOMONS, *supra* note 18, at 277.

37. *Id.*

38. DONALD. R. WHITNAH, SAFER SKYWAYS 118–19 (1966). On October 7, 1935 a Boeing 247-D crashed into the ground a thousand feet short of the airfield, killing all twelve aboard. The following January 14, an American Airlines DC-2 was lost along with all seventeen aboard. Then in April, apparent pilot error brought down a TWA DC-2 near Uniontown, Pennsylvania, and in September, ten were killed when a Stinson SM-6000-B crashed near Pittsburgh after the fuel select valve was accidentally set to “off.” *Id.*

39. KOMONS, *supra* note 18, at 278; S. Rep. No.74- 2455, at 2 (1936).

40. KOMONS, *supra* note 18, at 278; S. Rep. No.74- 2455, at 1.

41. KOMONS, *supra* note 18, at 282.

42. In fact, in what Komons describes as “disdain for facts” and “gross distortions,” the congressional investigation lay most of the blame upon weather and the bureau. *Id.* at 283–85, 296–97; *see generally* S. Rep. No.74- 2455.

43. Civil Aeronautics Act of 1938, Pub. L. No. 75-706, 52 Stat. 973, § 201(a)–(b).

44. *See generally* Civil Aeronautics Act, §§ 301–416.

45. Civil Aeronautics Act, § 302(a)–(c).

46. *See generally* Civil Aeronautics Act, §§ 501–610.

47. *See* Air Commerce Act § 2(b); Civil Aeronautics Act, § 603. Designs for aircraft, aircraft engines, and propellers would be evaluated per the Authority’s requirements. Civil Aeronautics Act, § 603. Inspection included tests of materials and full-scale flight trails. *Id.* § 603(a). Once a type certificate was issued, a manufacturer had to undergo a second evaluation, proof that subsequent products would conform to the type certificate. *Id.* § 603(b). Even after the grant of a type certificate for the airframe, engine, and propeller, the entire aircraft itself underwent inspection for an airworthiness

C. THE FEDERAL AVIATION ACT OF 1958 AND THE MODERN ERA

Starting in 1937, aviation safety was dictated by the Civil Air Regulations. As before, Congress delegated to the Civil Aeronautics Board to promulgate and regularly update the regulations.⁴⁸ The safety regulations—along with advances in navigation, air traffic, and even air carrier policy—aided the steady decline of air carrier fatalities over the next two decades.⁴⁹ However, the growth of commercial aviation, faster aircraft, and the anticipation of jet air travel raised serious concerns.

On June 30, 1956 a TWA Super Constellation and United Airlines DC-7 collided in open skies.⁵⁰ The planes fell 21,000 feet into the Grand Canyon, killing the combined 128 passengers and crew.⁵¹ In the crash report, the agency admitted that it did not know why the aircraft had not seen each other.⁵² More troubling, the crew of Super Constellation had been alerted to the presence of the DC-7 in their vicinity.⁵³

The spring of 1958 brought two more disasters. On April 21, an Air Force fighter jet collided with a United Airlines DC-7 near Las Vegas, Nevada.⁵⁴ The following May 20, a military T-33 trainer collided with a Capital Airlines Vickers Viscount over Brunswick, Maryland.⁵⁵ The situation was dire. President Eisenhower wrote to Congress weeks later to

certificate, which would remain visible on the aircraft throughout its airworthy life. *Id.* § 603(c).

48. *Id.* § 601(a).

49. *FAA History*, *supra* note 29, at 10–11.

50. CIVIL AERONAUTICS BD., ACCIDENT INVESTIGATION REPORT, SA-320, File No. 1-0090, 1 (1957) [hereinafter *Grand Canyon Report*].

51. *Id.*

52. *Id.* at 24. Though there were scattered clouds, both planes were justified in flying under visual rules. *Id.*

53. *Id.* This crash was not an isolated incident. *Id.* at 19. President Eisenhower had already begun investigating the larger issue. *See generally* EDWARD P. CURTIS, AVIATION FACILITIES PLANNING, FINAL REPORT BY THE PRESIDENT'S SPECIAL ASSISTANT (1957) [hereinafter *Curtis Report*]. At the president's request, the Curtis Report proposed a significant overhaul of air traffic control and management. Congress responded with the Airways Modernization Act of 1957. The Airways Modernization Board, though only a temporary solution, would be tasked with evaluating the current air traffic control regime, researching new methods, and putting forth a plan for implementation. MESSAGE FROM THE PRESIDENT OF THE UNITED STATES, H.R. DOC. NO. 85-406, 2; Airways Modernization Act of 1957, Pub. L. 85-133, 71 Stat. 349, § 2(b). The board would terminate on June 30, 1960 when its task was to be complete. Airways Modernization Act § 5.

54. *FAA Historical Chronology, 1926–1996*, FED. AVIATION ADMIN. (May 5, 2016), https://www.faa.gov/about/history/chronolog_history/media/b-chron.pdf.

55. *Id.*; *see also* ARNOLD E. BRIDDON, FAA HISTORICAL FACT BOOK, A CHRONOLOGY 68 (1974).

call for comprehensive aviation reform.⁵⁶

The Federal Aviation Act of 1958 tasked the Federal Aviation Agency, newly freed from the Department of Commerce,⁵⁷ with consolidated oversight of the nation's aviation and the integrated civil and military airspace.⁵⁸ The new regime also worked to modernize air traffic control.⁵⁹ Radar was required on most new aircraft.⁶⁰ The agency updated the nation's radar infrastructure, implemented aircraft identification transponders, and commissioned the first computers for air traffic control.⁶¹ The following January 1, 1959, the Agency began migrating the Civil Air Regulations into Title 14 of the Code of Federal Regulations, where they remain.⁶²

D. TAKEAWAYS FROM FAA HISTORY

The FAA's history teaches three lessons that may be applied to drones: (1) safety regulation promotes commerce, (2) air traffic management must be consolidated and include more than just visual collision avoidance, and (3) public perception matters.

First, safety regulation promotes commerce. The Air Commerce Act provided for the feasibility of commercial aviation. Evaluation of aircraft, engines, pilots, and ground crews made the early airlines safer and more reliable. This allowed airlines to profit under the airmail contracts and become effective means of passenger transport. In the fifteen years following regulation, Boeing, Douglas, and Lockheed matured into formidable aircraft manufacturers. The rickety airplanes of the 1920s gave way to the Boeing 307, the Douglas DC-4, and the Lockheed Constellation.⁶³ Far from inhibiting aeronautics, safety regulation helped the aviation industry thrive.

Second, air traffic management must be consolidated and include more than just visual collision avoidance. In the 1950s, multiple Air Force jets

56. H.R. Doc. No. 85-406.

57. Federal Aviation Act of 1958, Pub. L. 85-726, 72 Stat. 731, § 301.

58. *Id.* § 102-03, § 307.

59. HARRY P. WOLFE & DAVID A. NEWMYER, AVIATION INDUSTRY REGULATION 27 (1985). (citing WHITNAH, *supra* note 38, at 281-83); Elwood "Pete" Quesada: *The Right Man for the Right Job*, FED. AVIATION ADMIN. (last visited Dec. 21, 2016), https://www.faa.gov/about/history/people/media/Elwood_Quesada.pdf [<https://perma.cc/YDV7-W7AB>] [hereinafter *Quesada*].

60. WOLFE & NEWMYER, *supra* note 59, at 27.

61. *Quesada*, *supra* note 59.

62. See Changes in Civil Air Regulations to Conform with Federal Aviation Act of 1958, 24 Fed. Reg. 4 (Jan. 1, 1959).

63. DAVIES, *supra* note 32, 138-39.

collided with civilian airlines due to the chasm between military and civil air traffic control.⁶⁴ These collisions, along with the Grand Canyon incident, demonstrated that, even in wide-open skies, pilot eyesight was not enough to prevent disaster.⁶⁵ Today, all commercial aircraft are equipped with radar and commercial air traffic is tracked across the nation.⁶⁶

Third, the public perception of safety is significant. Even as aviation safety improved, significant regulation was driven by high profile crashes. The death of Senator Bronson Cutting drove the Civil Aeronautics Act. The string of air-to-air collisions in the 1950s scared Congress, once again, into action. The public does not see the day-to-day success and high safety of aviation. Instead, it reacts to the spectacular nature of aviation disasters.⁶⁷

II. THE FAA AND DRONES

This Part summarizes FAA drone regulation. Section A introduces drones and the legislation that brought about their regulation. Section B briefly summarizes the FAA's rules in 14 CFR Part 107, reviews relevant commentary and rationale from the Administration, and touches upon the drone waiver program. Section C provides a functional synopsis of the permissibility of various potential drone uses following the enactment of Part 107.

A. DRONES FINALLY GET ATTENTION

In 2012, Congress passed the comprehensive FAA Modernization and Reform Act. The Reform Act funded the FAA from 2012 to 2015 and provided for, among others, airport improvement, next generation air traffic control, and new noise and environmental regulations.⁶⁸ Notably, the act directed the FAA to address the issue, somewhat overdue, of drones in the national airspace.⁶⁹

64. The worst was in Las Vegas, where civilian and military towers just six miles apart cleared aircraft for flight. See H.R. Doc. No. 85-406.

65. See H.R. Doc. No. 85-406; see also *Grand Canyon Report*, *supra* note 50, at 17.

66. 14 C.F.R. § 135.175; see, e.g., FLIGHT AWARE, <https://flightaware.com/> [<https://perma.cc/LVV9-CRPM>] (providing real-time commercial airline flight tracking) (last visited Feb. 26, 2017).

67. See *FAA History*, *supra* note 29, at 4.

68. FAA Reform Act, Titles I.D, II, and V.

69. *Id.*; see M. Ryan Calo, *The Drone as Privacy Catalyst*, 64 Stan. L. Rev. Online 31 (2011) ("The FAA faces increasing pressure to relax its restrictions and is considering rule-making to reexamine drone use in domestic airspace.") .

“Drone” is the colloquial term for an aircraft that is not operated by a pilot located on or within the aircraft.⁷⁰ The term spans broadly from Elmer Sperry’s gyrostabilized biplanes⁷¹ to Lockheed’s ramjet powered GRD-21.⁷² Though often serving military functions in the past, from reconnaissance⁷³ to ordinance delivery,⁷⁴ drones have recently been popularized as the quad-copter photography platform,⁷⁵ the surveillance swarm,⁷⁶ and even collegiate burrito delivery.⁷⁷

Title III, Subtitle B, Unmanned Aircraft Systems, directs the FAA in two broad categories, research and regulation. The FAA is to set up six test ranges for the development of drone flight operating standards and best practices.⁷⁸ These flight operations standards must integrate with the FAA’s next-generation air transportation system, NextGen.⁷⁹

Regulation falls into three categories: civil, public, and recreational. The FAA is to develop rules and regulations for the operation and certification of public drones by federal, state, or local governments.⁸⁰ These drones may be permitted to fly either by certificate of authorization or by certificate of waiver granted by the FAA.⁸¹ Recreational drones, on the other hand, are generally exempt from FAA regulation.⁸² FAA

70. BART ELIAS, CONG. RESEARCH SERV., R42781, FEDERAL CIVIL AVIATION PROGRAMS: AN OVERVIEW 11 (2012); FAA Reform Act, §331(2).

71. LAURENCE R. NEWCOME, UNMANNED AVIATION: A BRIEF HISTORY OF UNMANNED AERIAL VEHICLES 16–20 (2004) (“Sperry’s work with gyroscopes for maritime applications led him to attempt to develop a gyrostabilizer for airplanes in 1909. . . . On 6 March 1918, a Curtiss-Sperry Aerial Torpedo catapulted cleanly into the air, flew its planned 1000-yd flight, then dived at its preset distance into the water off Copiague, Long Island.”).

72. *Id.* at 88–89 (“Designed as an unmanned complement to the Mach 3 A-12 Blackbird reconnaissance aircraft, [the GRD-21] was intended to penetrate those environments over hostile territory too dirty (radiation) or too dangerous (SAMs) over which to risk the manned SR-71.”).

73. *Id.* at 88 (describing the “GRD-21 reconnaissance drone”).

74. *Id.* at 20 (documenting the “potential of Sperry’s device as . . . pilotless flying bomb”). *See also id.* at 110 (describing U.S. Air Force operation of General Atomics RQ-1 Predator drones equipped with AGM-114 Hellfire missiles over Afghanistan in October 2001).

75. *See Phantom Series*, *supra* note 9 (emphasizing the Phantom 4 consumer drone as a photography platform).

76. *See Calo*, *supra* note 69, at 29 (noting “the widespread domestic use of drones for surveillance seems inevitable”).

77. White, *supra* note 10.

78. FAA Reform Act §§ 332(a)(2)(G)–(H), 332(b).

79. *Id.*

80. *Id.* §§ 334, 331(4).

81. *Id.* § 334(c).

82. *Id.* § 336(a).

regulation of civil drones therefore applies generally to drones with a commercial purpose.⁸³

By order of Congress, the FAA is to “develop a comprehensive plan to safely accelerate the integration of civil unmanned aircraft systems into the national airspace system.”⁸⁴ Aside from the research mentioned previously, the FAA is given regulatory responsibility over the certification and operation of drones as well as the registration and licensing of both drones and pilots.⁸⁵ The Administration has broad discretion. The FAA will determine which classes of drones, if any, do not pose a threat to public safety or national security and whose allowed operation may be expedited.⁸⁶ Flight permission for these classes of drones is based upon the FAA’s choice of airworthiness certification, certificate of authorization, or certificate of waiver.⁸⁷ For drones that do not fall into this expedited category, the FAA is to issue a rule to allow for operation of these civil, including commercial, drones in the national airspace.⁸⁸

B. THE FAA TAKEOVER OF DRONES

1. *FAA Drone Regulations*

On June 28, 2016, 14 C.F.R. Part 107—Small Unmanned Aircraft Systems, was published to the Federal Register.⁸⁹ As dictated in the FAA Reform Act, Part 107 exempts recreational drones from regulation.⁹⁰ The regulations place significant restrictions upon civil drones, however. Though drones may transport cargo for hire, the combined weight of the aircraft and payload may not exceed fifty-five pounds. Further, interstate drone commerce is prohibited. The regulations prohibit commercial drone operation across state lines, in the District of Columbia, or in U.S. territories. Drones may only be operated during daylight and may not exceed unaided visual range of the remote pilot.⁹¹ They may not fly faster than 100 miles per hour, nor may they operate above an altitude of 400

83. 42 U.S.C. § 40102(a)(16) (2012).

84. FAA Reform Act, § 332(a)(1).

85. *Id.* § 332(a)(2)(A)–(B).

86. FAA Reform Act § 333(a)–(b)(1).

87. *Id.* § 333(b)(2).

88. *Id.* § 332(b)(1).

89. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,209 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, 91, 101, 107, 119, 133, and 183).

90. *See id.*

91. Pilots are, however, allowed to wear standard corrective lenses. *Id.* at 42066 (Table 1—Summary of the Major Provisions of Part 107).

feet above ground level. A curious exception, though, allows for operation from a structure as long as the drone remains within 400 feet of the structure. Drones may not be operated from aircraft, nor may they be operated from a moving vehicle except in sparsely populated areas. Of course, reckless and dangerous operations are prohibited. Last, and perhaps most important, are two points: (1) no airworthiness certification is required for a drone, though it is the pilot's responsibility to inspect the drone prior to flight; and (2) drones may only operate over people directly involved with operation of the drone.⁹²

2. *FAA Commentary in the Federal Register*

The FAA offers extensive commentary in the Federal Register about nearly every aspect of the final rules for drones. Four aspects of the regulation frame commercial drone operation: the visual line of sight requirement, the cargo operation allowance, lack of airworthiness standards, and flight over people.⁹³

a) Flight Within Visual Range

The see-and-avoid requirement is fundamental to the avoidance of midair collision.⁹⁴ Drone pilots do not have the same perspective as a manned aircraft pilot.⁹⁵ Wherever a manned aircraft is, so too are the pilot's eyes. When a drone flies away, the remote pilot remains in place.

This difference is the basis for the visual line-of-sight requirement. The remote pilot, or visual observer, must be able to: (1) know the drone's location; (2) determine the drone's attitude, altitude, and direction of flight; (3) observe the surrounding air traffic; and (4) ensure that the drone does not endanger others.⁹⁶ These qualitative requirements supplement the primary collision avoidance mechanism, separation of air traffic.⁹⁷ The line-of-sight requirement, taken as a whole, is a condition-specific

92. *Id.*

93. *See infra*, Section II.C.

94. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,092. Recall the air traffic crisis of the 1950s, Airways Modernization Act of 1957, and the Federal Aviation Act of 1958. Midair collision, as applied to drones, is broader than collision with aircraft. Indeed, segregation of drone and manned aircraft airspace should prevent that occurrence. *See id.* at 42,093. For the purposes of this Note, drone collision is taken to mean collision with other drones, structures, birds, or other low-altitude collision risks.

95. *Id.*

96. *Id.* at 42,093.

97. *Id.* The FAA notes that drones are unlikely to come into contact with higher-speed manned aircraft due to airspace restrictions and altitude limitations of the drones themselves. *Id.*

precaution.⁹⁸ Remote pilots must operate with reasonable safety based upon weather, visual obstructions, and visual ability of the observer.⁹⁹ The goal is for the remote pilot to see and avoid obstacles so as to not endanger people, property, or other aircraft.¹⁰⁰

However, this requirement must be accomplished with the naked eye.¹⁰¹ Commentators requested permission to use first-person video (FPV) or light-detection-and-ranging (LIDAR) to satisfy the line-of-sight requirement.¹⁰² While FPV would allow a remote pilot to view airspace as though within the drone, the FAA found the camera view distortions and the possibility of image transmission failure to negate any benefits.¹⁰³ The Administration conceded that both FPV and LIDAR showed promise, but cited a lack of data for each method as an obstacle to sound rulemaking.¹⁰⁴

b) Cargo Operations

The proposed drone regulations did not allow for the transport of cargo for hire.¹⁰⁵ Comments submitted by companies such as Google and Amazon convinced the FAA to relax this prohibition.¹⁰⁶ While transport of cargo for compensation is permitted under the final rule, its scope is severely “limited.”¹⁰⁷

The FAA explains that commercial drone traffic rising to the levels of “air carriers” and “air transportation” as defined in 49 U.S.C. § 40102¹⁰⁸ would require the Department of Transportation to develop new economic and safety regimes for drone “air carriers.”¹⁰⁹ Four limitations on drone operations prevent that result.¹¹⁰ First, drone cargo operations may not cross state boundaries, the District of Columbia, or U.S. territories. Second, the visual line-of-sight requirement cannot be waived for cargo drone operations. This is intended to strictly limit the amount and

98. *Id.* at 42,096.

99. *Id.* The remote pilot may even lose visual sight briefly as the drone passes an obstacle. *Id.* at 42,095.

100. *Id.* at 42,095.

101. *Id.* at 42,093. Recall, however, remote pilots are allowed to wear standard corrective lenses. *Id.*

102. *Id.* at 42,094.

103. *Id.*

104. *Id.*

105. *Id.* at 42,074.

106. *Id.* at 42,075.

107. *Id.*

108. *Id.* at 42,076.

109. *Id.* at 42,077.

110. *Id.* at 42,076.

usefulness of drone cargo traffic.¹¹¹ Third, the weight restriction of fifty-five pounds plus the air traffic limitations should keep drone traffic from interfering with manned commercial traffic. Fourth, drones may not transport hazardous materials.¹¹² Under these rules, only nominal drone cargo commerce is allowed.

c) Lack of Airworthiness Standards

There is no drone airworthiness certification. Drones operating under Part 107 will not exceed fifty-five pounds, not carry passengers, and are restricted to visual line-of-sight flight. Thus, drones pose a far lesser threat to people and property on the ground than manned aircraft.¹¹³

Instead of an airworthiness regime, the pilot in command of a drone is required to inspect the drone prior to every flight. This includes the control surfaces, wiring, mechanical linkages, hydraulic lines, and radio transmissions—but does not include a flight test.¹¹⁴ Pilots may not simply rely upon drone self-diagnostic software. Nor may the inspection interval be relaxed.¹¹⁵ In the absence of airworthiness regulations, the FAA recommends that pilots inspect drones in compliance with manufacturer manuals and checklists.¹¹⁶

d) Flight over People

Under Part 107, drones are not allowed to operate over people unless those people are under stationary cover or in a stationary, covered vehicle.¹¹⁷ Manned aircraft are allowed to fly over people because of their airworthiness certifications. Drones, on the other hand, do not have airworthiness certifications.¹¹⁸ This prohibition is not a matter of pilot competence but of drone electro-mechanical failure. The preflight inspection is meaningful, but it does not establish the requisite reliability

111. *Id.*

112. *Id.*

113. *Id.* at 42,151.

114. *Id.* at 42,150.

115. *Id.*

116. *Id.* The commentary does not address the possibility of manufacturer manuals being errant or inadequate. *See id.*

117. 14 C.F.R. § 107.39. The FAA clarified that this is not a ban on flight over locations occupied by people. Flights over structures or stationary vehicles containing occupants are perfectly acceptable. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,123, 42,127. However, flight over moving vehicles is not permitted due to the dangers of dynamic motion. Realistically, the FAA anticipates that drones crashing into roadways will cause traffic accidents. *Id.* at 42,127.

118. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42, 124.

to permit flight over humans.¹¹⁹

The FAA considered two possibilities to permit of flight over people. First, the FAA did not reject outright the idea that drone operators obtain insurance to permit flight over people. However, this proposal was rejected for rule addition because the FAA lacks the power to require insurance.¹²⁰ The second proposal was for an airworthiness certification regime. The FAA acknowledged that such a certificate would be a useful indication of reliability, but declined to create a regime for drones. Instead, the FAA appeared to direct pilots to the experimental airworthiness certificate in 14 C.F.R. Part 21.¹²¹ For both proposals, the FAA noted that the prohibition of flight over people might be waived.¹²²

The FAA also clarified the meaning of direct participant.¹²³ Drones are allowed to operate near and above direct participants. However, only those people involved in operating or ensuring the safety of the drone flight are direct participants.¹²⁴ Consent is not enough to make a person a direct participant.¹²⁵ Operation over people may be permitted on a case-by-case basis via the waiver process.¹²⁶

3. *Waivers Under 14 C.F.R. § 107.200*

Though the regulations are stringent, many requirements and limitations may be waived. These include prohibitions against operation from moving vehicle or aircraft,¹²⁷ operation of multiple drones,¹²⁸ operation over people,¹²⁹ and operations in certain manned airspace.¹³⁰ Limitations¹³¹ subject to waiver include daylight operations,¹³² visual line

119. *Id.* at 42,124–25.

120. *Id.* at 42,127.

121. *Id.* at 42,126.

122. *Id.* at 42,125–26.

123. Drones may not operate over people not “directly participating” in the drone operation. 14 C.F.R. § 107.39.

124. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,128.

125. *Id.* The FAA believes a consenting non-direct participant lacks the necessary situational awareness to be present beneath drone operations. *Id.*

126. *Id.* at 42,138.

127. 14 C.F.R. § 107.25.

128. *Id.* § 107.35.

129. *Id.* § 107.39.

130. *Id.* § 107.41.

131. The categorization of “prohibition” or “limitation” is not a substantive distinction between the regulations. Some regulations are drafted as prohibitions against certain activity, while others are drafted as limitations to certain permitted activity.

132. *Id.* § 107.29.

of sight operations,¹³³ visual observer restrictions,¹³⁴ yielding the right of way,¹³⁵ and the drone operating limitations.¹³⁶ As discussed above, the FAA has prohibited two waivers for the purposes of drone cargo transport: operation from a moving vehicle or aircraft, and visual line of sight operations.¹³⁷

Three waivers are notable for commercial drone operations.¹³⁸ The FAA granted Cable News Network (CNN) a waiver to operate over people, and two companies, PrecisionHawk, Inc. and BNSF Railway (BNSF), received waivers for the visual line of sight requirement.

CNN is permitted to fly drones over people, barely. Waiver conditions limit the drone to 1.37 pounds at five miles per hour up to twenty-one feet above ground level.¹³⁹ Further, CNN may only operate drones over people within private or controlled-access property¹⁴⁰ and may not operate over an open-air assembly of people. Finally, CNN must provide notice to all present that drone operations may occur overhead.¹⁴¹

Both PrecisionHawk and BNSF are permitted to fly drones beyond the visual range of a remote pilot.¹⁴² However, the drone must still be within visual range of a designated observer. Communication between the pilot and observers must be efficient enough to allow safe operation.¹⁴³ BNSF must keep its drones within 200 feet of the ground or within 200 feet of a structure.¹⁴⁴ PrecisionHawk may not operate drones around people, obstacles, or structures.¹⁴⁵ Last, both companies' drones must be equipped

133. *Id.* § 107.31.

134. *Id.* § 107.33.

135. *Id.* § 107.37(a).

136. *Id.* § 107.51.

137. *Id.* § 107.205(a), (c).

138. Currently, only CNN has received a waiver for operation over humans. The PrecisionHawk and BNSF waivers are representative of the waivers for the visual line of sight requirement. *See* U.S.DEP'T OF TRANSP. FED. AVIATION ADMIN, CERTIFICATE OF WAIVER NO. 107W-2016-00001, Issued to Cable News Network, 3–4 (2016) [hereinafter *CNN Waiver*].

139. *Id.* No explanation is given for the height restriction. *See id.*

140. Of course, landowner authorization is required. *Id.* at 3.

141. *Id.* at 4.

142. U.S.DEP'T OF TRANSP. FED. AVIATION ADMIN., CERTIFICATE OF WAIVER NO. 107W-2016-00002, Issued to PrecisionHawk, 3 (2016) [hereinafter *PrecisionHawk Waiver*]; U.S.DEP'T OF TRANSP. FED. AVIATION ADMIN, CERTIFICATE OF WAIVER NO. 107W-2016-00003, Issued to BNSF, 3 (2016) [hereinafter *BNSF Waiver*].

143. *Id.*

144. *BNSF Waiver*, *supra* note 142 at 4.

145. *PrecisionHawk Waiver*, *supra* note 142 at 3.

with high visibility markings.¹⁴⁶

C. PUTTING IT ALL TOGETHER

Based upon the restrictions of Part 107, what drone operations are permitted? While newsgathering drones are severely restricted,¹⁴⁷ personal filming and photography drones are generally permitted. Alas, for those anticipating food or Amazon Prime delivery via drone, useful cargo operations are effectively prohibited. However, agricultural and environmental uses, such as examining livestock, crops, or wildlife, are allowed.

1. *Agricultural and Environmental Uses*

Some of the least restricted drone uses under Part 107 are agricultural or environmental.¹⁴⁸ They include crop dusting, livestock or wildlife tracking, and the inspection of crops, forests, or foliage. Environmental or agricultural drones are unlikely to encounter non-participating people. The line of sight restriction is not so burdensome.¹⁴⁹ Nor should the 55-pound weight limit restrict operation.¹⁵⁰ In sum, agricultural and environmental

146. *Id.* at 4; *BNSF Waiver*, *supra* note 142 at 5. “High visibility” markings include fluorescent or neon color schemes and patterns to distinguish a drone from the surroundings. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,114 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, 91, 101, 107, 119, 133, and 183). The FAA does not have data about the efficacy of various “high visibility” color schemes and will not require specific markings. *Id.* However, the FAA will consider “high visibility” markings in evaluating drone operation waivers. *Id.* See also *PrecisionHawk Waiver*, *supra* note 142 at 4; *BNSF Waiver*, *supra* note 142 at 5.

147. See *CNN Waiver*, *supra* note 138.

148. See Margi Murphy & Christina Mercer, *19 companies using drones right now: Amazon, Asda, the BBC and more*, TECH WORLD (Dec. 14, 2016), <http://www.techworld.com/picture-gallery/personal-tech/6-best-uses-of-drones-in-business-3605145/> [<https://perma.cc/Z56H-XRBS>]; see also *Top 12 Non Military Uses for Drones*, AIR DRONE CRAZE (last visited Dec. 22, 2016), <http://www.airdronecraze.com/drones-action-top-12-non-military-uses/> [<https://perma.cc/7TLA-ZW6K>]; see also Adam C. Uzialko, *7 Cool Commercial Drone Uses Coming to a Sky Near You*, BUS. NEWS DAILY (July 27, 2016), <http://www.businessnewsdaily.com/9276-commercial-drones-business-uses.html> [<https://perma.cc/ACB7-LEGQ>].

149. See Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,076. The FAA believes that visibility will usually be limited to one mile. This allows for a stationary pilot to survey more than three square miles. Additionally, while the pilot vision is limited to one mile, the drone may certainly see further.

150. Perritt & Sprague, *supra* note 15, at 427 (explaining that for all but Hollywood or newsgathering camera crews, the fifty-five pound limit is not a barrier to drone film or photography). Theoretically, a container of fertilizer or pesticides can be of whatever size is necessary to keep the drone and payload under fifty-five pounds.

drone uses are generally permitted by Part 107.¹⁵¹

2. *Film and Photography Drones*

As discussed, newsgathering drones are subject to substantial limitations¹⁵² not easily waived.¹⁵³ The FAA notes that drone operations on a film set will be subject to waiver procedures under 14 C.F.R. §107.200.¹⁵⁴ However, uses by the general public, including filming an event such as a wedding, seem to be permitted without a waiver for three reasons.

First, the visual line of sight requirements should not inhibit camera drone operations. Drone operators will almost certainly wish to remain within visual range of the film subjects. Second, the drone need not fly over people but may film the event from an angle such that the drone is offset at a safe distance.¹⁵⁵ Third, the first two points assume an outdoor event. At indoor events, FAA regulations do not apply.¹⁵⁶ Therefore, it appears Part 107 will not significantly inhibit drone filming and photographic operations.

3. *Cargo Drones*

Cargo drone operations are generally prohibited for two reasons: the prohibition of flight over people, and the visual line of sight restriction.

First, the prohibition against flight “over” people is broad. As with prior regulations, it is a safety standard, not a bright-line rule.¹⁵⁷ The prohibition prevents harm to people on the ground in case of drone failure. The regulation effectively has two parts. First, does the flight path take the drone “directly over” uncovered people?¹⁵⁸ “Over” should be read liberally, as objects rarely fall straight down out of the sky.¹⁵⁹ Second,

151. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,066–67 (Table 1).

152. Primarily the restriction of flight over people. 14 C.F.R. § 107.39.

153. See generally *CNN Waiver*, *supra* note 138.

154. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,128.

155. *Id.* at 42,130. Given the significant height and weight restrictions on CNN’s waiver to operate over people, filming from an angle appears to be the better option for the filmmaker. See *CNN Waiver*, *supra* note 138.

156. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,096.

157. *Id.* at 42,129–30.

158. *Id.* at 42,129.

159. *Id.* at 42,131 (“This is a performance standard: It is up to the remote pilot in command to choose the best way to structure his or her small UAS operation to ensure that prohibited flight over a person does not occur and that the small aircraft will not

even if the flight path is clear, will the trajectory of the drone, upon failure at any point along the flight path, carry it into the vicinity of a person? It is important to recall, when a drone fails in flight it retains its forward motion as it falls.¹⁶⁰ If the drone fails while engaged in a turn, it may depart from the flight path. People under shelter may be in danger from the drone impacting at an angle. Further, civil drones are often quadcopters. If the engines do not fail in unison the drone may depart from even a straight flight path. In sum, the term “over” includes large swathes on either side of a drone’s flight path that must be clear of people.

The prohibition on flight over people includes a ban on operation over moving cars. Anywhere the drone can lose control and hit a person or moving car is off-limits.¹⁶¹ Urban communities and city centers are thus barred. Suburban communities present little greater possibility. Drones would need to hopscotch between various structures to avoid people and cars. Realistically, everyone around must be inside and cars must be parked for a drone to deliver to a doorstep.

Nor does a waiver present a meaningful alternative at this time. CNN’s waiver limits the drone to twenty-one feet above the ground.¹⁶² Houses, trees, and telephone lines easily reach twenty-one feet in height. The height restriction thus negates drones’ ability to fly safely above obstructions before descending vertically onto a safe patch of doorstep or backyard.¹⁶³ In addition, the 1.38-pound weight restriction makes drone delivery unviable.¹⁶⁴

impact a person if it should fall during flight.”).

160. *Id.* at 42,129.

161. *See id.* at 42,130.

162. *See CNN waiver, supra* note 138. Amazon’s proposed air traffic for Prime Air sets high-speed ingress and egress from 200 to 400 feet, with slower approach below 200 feet. *See Amazon, Revising the Airspace Model for the Safe Integration of sUAS*, (July 2015), https://utm.arc.nasa.gov/docs/Amazon_Revising%20the%20Airspace%20Model%20for%20the%20Safe%20Integration%20of%20sUAS%5B6%5D.pdf; *see also* Press Release, DHL, Successful Trial Integration of DHL Parcelcopter into Logistics Chain, (May 9, 2016) http://www.dhl.com/en/press/releases/releases_2016/all/parcel_ecommerce/successful_trial_integration_dhl_parcelcopter_logistics_chain.html [<https://perma.cc/P3MQ-ZQ29>].

163. Indeed, vertical ascent and descent are among the primary benefits of helicopters and helicopter type drones.

164. Amazon would certainly be limited in products deliverable by drone. Chipotle burritos, themselves approaching 1.38 pounds would be generally impermissible. On Dec. 23, 2016, the Author purchased a burrito and a burrito bowl at the Chipotle located at 7020 Amador Plaza Rd., Dublin, CA 94568. The burrito, comprising white rice, chicken, pico de gallo, guacamole, and lettuce, weighed 1.26 lbs. The burrito bowl, comprising brown rice, black beans, chicken, pico de gallo, hot salsa, sour cream, cheese, guacamole, and lettuce, weighed 1.63 lbs.

Second, the visual line of sight restriction may not be waived for drone cargo operations.¹⁶⁵ The FAA anticipates that this restriction limits the operation of the drone to about one mile around the remote pilot.¹⁶⁶ In urban and suburban environments, this visual range is further diminished. At such distance, the consumer may be better served on foot or via car. Over open ground, weight restrictions make a pickup truck a more effective means of cargo transport. In effect, drone cargo operations are prohibited.

III. WHAT ARE THE PROSPECTS OF DRONE COMMERCE?

Realistically, FAA regulations provide for minimal drone use. Drones are tethered to their operators. They are subject to numerous weather and daylight restrictions. Drones are virtually prohibited from operation in urban or suburban locations. While the FAA provides for waivers, such waivers are limited in their allowances. Cargo drones are all but forbidden. The only viable uses of drones appear to be agricultural, environmental, and photographic.

This Part considers the potential of commercial drone operation in the future. Section A briefly examines Congressional guidance in the 2012 FAA Reform Act. Section B assesses the regulatory barriers to expanded drone commerce. Section C evaluates whether or not drone commerce may fit within the FAA's regulatory sphere.

A. THE 2012 FAA REFORM ACT PROVIDES LITTLE GUIDANCE TO THE FAA.

Congress's drone guidance is found in Section 332 of the FAA Modernization and Reform Act, entitled "Integration of Civil Unmanned Aircraft Systems into National Airspace System."¹⁶⁷ Subsection (a)(1) requires the FAA to develop a plan to "safely accelerate the integration of civil" drones into the national airspace. Subsection (a)(3) mandates that the FAA "provide for the safe integration of civil" drones into the national airspace by September 30, 2015.¹⁶⁸

"Integrate" is the focal point. The term, however, is not defined. It does not appear in any of the prior aviation-related legislation.¹⁶⁹ Nor is it

165. 14 C.F.R. §107.205(c).

166. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,076.

167. FAA Reform Act § 332.

168. *Id.*

169. Per the Adobe Reader Search Function, the root "integrat" does not appear in

defined in the aviation-specific section of the U.S. Code.¹⁷⁰ The term is used only once in the FAA Modernization and Reform Act to describe “integrated airport system planning,” again without further definition.¹⁷¹

Turning to the dictionary, “integrate” is defined as: to combine (parts) into a whole.¹⁷² The term “integrate” unifies multiple parts; in this case, drones and pre-existing air-traffic. However, what Congress intended by “integration” is uncertain. Realistically, the FAA Reform Act provides little guidance and no measure for compliance with its direction.¹⁷³ Thus, the FAA cannot be faulted for ignoring a Congressional mandate to put Amazon delivery drones on every street.

B. THE CURRENT REGULATORY SCHEME DOES NOT SUPPORT DEVELOPMENT TOWARD MEANINGFUL DRONE COMMERCE.

Drone operations are not yet normal. They engage in no noticeable level of air commerce. Cargo transport via drone is a novelty for a lucky few¹⁷⁴ and non-existent for most.¹⁷⁵ Commercial film and photography by drone is severely limited.¹⁷⁶ Operation without a waiver requires strict segregation of film subjects and drones. Ultimately, Part 107 communicates a message contrary to widespread drone commerce: drones may be used in the national airspace, but nowhere near the American populace.

1. *The Commentary to Part 107 Does Not Support Developments in Favor of Drone Commerce.*

FAA commentary to the drone final rule indicates a resistance to the integration of drones into the national airspace. First, drones will not be subject to airworthiness certification. However, lack of certification is the rationale for further operation restrictions. Second, the Administration has

any of the following legislation: Air Mail Act of 1925, Pub. L. No. 68-359, 43 Stat. 805; Air Commerce Act of 1926, Pub. Res. No. 69-27, 44 Stat. 568; Air Mail Amendment of 1926, Pub. L. No. 69-331, 44 Stat. 692; Civil Aeronautics Act of 1938, Pub. L. No. 75-706, 52 Stat. 973; Airways Modernization Act of 1957, Pub. L. 85-133, 71 Stat. 349; Federal Aviation Act of 1958, Pub. L. 85-726, 72 Stat. 731.

170. See 49 U.S.C. § 40102 (2012).

171. FAA Reform Act § 132(b).

172. *Integrate*, OXFORD ENCYCLOPEDIA ENGLISH DICTIONARY (3d ed. 1996).

173. See FAA Reform Act §§ 332, 333.

174. See White, *supra* note 10.

175. Amazon Prime Air is not operating; they are waiting for “regulatory support.” See Amazon Prime Air, *Frequently Asked Questions*, AMAZON (last visited Dec. 21, 2016) <https://www.amazon.com/Amazon-Prime-Air/b?ie=UTF8&node=8037720011> [<https://perma.cc/J3ZQ-2K9V>].

176. See CNN Waiver, *supra* note 138.

resisted new technology to aid the drone visual line-of-sight requirement. Third and last, the FAA is reluctant to permit and regulate drone cargo transportation.

First, there is no airworthiness certification for drones. In place of airworthiness, drone operators are required to inspect drones before flight. Pilots must inspect for visible defects, broken linkages, severed hydraulic or electrical lines, and general wear and tear.¹⁷⁷ This requirement has multiple flaws. To start, it conflates two different jobs, which the Air Mail Service separated nearly ninety years ago: pilot and mechanic.¹⁷⁸ This is not to say that pilots lack mechanical competence. But the efficacy of the drone inspection assumes competence outside a pilot's area of expertise.¹⁷⁹ Following that reasoning, the FAA finds the pre-flight inspection an inadequate assurance of safety. They note that, while the remote pilot may observe maintenance issues during the pre-flight inspection, assessment of the system reliability and fatigue strength¹⁸⁰ of the drone remains difficult to assess.¹⁸¹ Therefore, safety concerns about mechanical or system failure during flight over people remain.¹⁸²

Additionally, the lack of an airworthiness standard rests upon circular reasoning. Drones pose a lower risk to people on the ground than do manned aircraft, so no airworthiness certification is needed.¹⁸³ Yet manned aircraft are allowed to fly over people because their reliability is assured by airworthiness certification.¹⁸⁴ Drones, lacking airworthiness certification, will suffer lower reliability, and the preflight inspection does not remedy this higher failure rate.¹⁸⁵ Therefore, drones may not fly over

177. *See* Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, 42,150 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 91, 101, 107, 119, 133, and 183).

178. KOMONS, *supra* note 18, at 21–22.

179. Whether or not this is true, the barriers to entry in the drone market are low. Perritt & Sprague, *supra* note 15, at 417. Then again, large operators such as DHL and Amazon may have the expertise to make the self-inspection process effective. The FAA has a long history of designating industry representatives for regulatory examination. *See* Air Commerce Act § 2(b)(3).

180. Fatigue strength measures how a material withstands cyclic, as opposed to constant (static), loading. RICHARD G. BUDYNAS & J. KEITH NISBETT, SHIGLEY'S MECHANICAL ENGINEERING DESIGN 266 (9th ed. 2012). A common example is bending a paperclip back and forth until it snaps into two pieces.

181. *See* Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,124.

182. *See id.*

183. *See id.* at 42,151.

184. *See id.* at 42,124.

185. *See id.*

people, which sufficiently mitigates the risks.¹⁸⁶ If drone operation is prohibited, then drones pose no safety threat.

Numerous commentators applauded the lack of airworthiness certification.¹⁸⁷ They believed the airworthiness examination would be costly and a time-consuming, stifling progress. Modovolate Aviation stated that airworthiness certification would impose unwarranted costs on drone manufacturers and operators, discouraging commercial operation.¹⁸⁸ In reality, the lack of certification has done the opposite. The FAA has used the decision as a rationale to prevent drones from operating over people. This, in turn, effectively prohibits a large portion of potential commercial drone uses.

Second, the visual line of sight restrictions show an unwillingness to accommodate new drone technology. Facially, the requirements make sense. In order to see and avoid obstacles, remote pilots must have a view of the sky around the drone.¹⁸⁹ In an effort to make the rules flexible and based upon good judgment, the rules have few quantitative requirements.¹⁹⁰ The visual line of sight requirement favors compliance with the purpose, air traffic safety and avoidance of obstacles, rather than a bright-line rule.¹⁹¹

However, at the expected one-mile range limit,¹⁹² is the remote pilot's vision, including depth and motion perception, acute enough to avoid unexpected obstacles or other drones? The rule also allows for drones to briefly pass out of visual sight of the operator. While this flexibility is necessary, the air-to-air collisions of aircraft of the 1950s¹⁹³ pose the question: is any lack of visibility safe? The air traffic control agenda of the Airways Modernization and Federal Aviation Acts indicate that air traffic safety is a product of more than just pilots' visual acuity.

Commentators asked the FAA to allow first-person cameras, LIDAR, or traffic collision and avoidance systems (TCA-S) to satisfy the "see-and-

186. *See id.* at 42,182 (explaining that the prohibition of flight over people, among others, "significantly reduce[s] the risk of a mid-air collision or the likelihood that the unmanned aircraft will fall on top of a person standing underneath it.").

187. *See id.* at 42,181.

188. *Id.* at 42,181–82; Henry H. Perritt, Jr., Comment by Modovolate Aviation, LLC on Proposed Rule to Operation and Certification of Small Unmanned Aircraft Systems (Feb. 23, 2015) Docket no. FAA-2015-0150-017, 4.

189. *See* Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,093.

190. *See id.* at 42,066 (Table 1).

191. *See id.* at 42,093, 42,096.

192. *See id.* at 42,076.

193. *See* Part I.C, *supra*

avoid” requirement. The FAA declined each alternative due to a lack of data to support rulemaking.¹⁹⁴ Yet the FAA Modernization and Reform Act directed the FAA to create six test ranges for the purpose of researching drone operation and traffic management.¹⁹⁵ These systems might receive waivers.¹⁹⁶ However, the waiver system presents industry with no criteria for development. It is a cursory dismissal of alternative see-and-avoid systems.

Third, the FAA has expressed reluctance to allow drone commerce. Although the FAA allowed limited commercial operation after industry outcry,¹⁹⁷ the FAA remains clear that they do not want drone commerce to attain the level of “air transportation” by “air carriers” as defined in 49 U.S.C. § 40102. To allow that level of commerce would require the administration to develop new infrastructure for drone air traffic.¹⁹⁸

As a result, drone cargo transport is permitted, but only within visual line of sight, at less than fifty-five pounds, and away from people. Realistically, this prohibits drone cargo transportation. The line-of-sight requirement means the drone pilot must be able to see both the departure and delivery points. In transporting cargo less than fifty-five pounds over a distance of two miles, the drone’s only advantage over a pickup truck is novelty.¹⁹⁹ Drone cargo is the exception, not an integrated norm. The commentary to Part 107 demonstrates the FAA’s reluctance to integrate civil drones into the national airspace.

2. *The Drone Waiver Regime Shows No Greater Support of Drone Commerce.*

A survey of drone waivers does not indicate any greater promise for drone commerce. First, CNN’s drone waiver conditions are prohibitive.²⁰⁰ A reasonable speculation²⁰¹ is that CNN wants to use drones to provide elevated perspective or to capture events too dangerous for film crews to

194. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,094.

195. See FAA Reform Act, § 332(a)(2)(G)–(H).

196. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,094.

197. See *id.* at 42,075.

198. See *id.* at 42,077.

199. It is conceivable that drones would be used to transport cargo across intrastate rivers.

200. Recall that drones operating over people under CNN’s waiver are limited to 1.37 lbs., 21 ft. above ground, at 5 mph. See *CNN Waiver*, *supra* note 138.

201. Based upon the fact that CNN is a news reporting company.

enter. A height limit of twenty-one feet allows minimal perspective,²⁰² and CNN may not operate drones over public protests or gatherings.²⁰³ Even with the waiver, FAA regulations severely inhibit CNN's ability to exploit the benefits of gathering news via drone.

Second, PrecisionHawk and BNSF's waivers of visual range restrictions are a misnomer. Even if not the pilot's visual range, the drones must be operated within someone's visual range.²⁰⁴ It is permission to daisy-chain²⁰⁵ visual observers. Currently, these are the only waivers of the visual range requirement.²⁰⁶ Yet these waivers indicate no willingness to allow alternative see-and-avoid technology be used.

Three conclusions have been drawn up to this point. First, commercial drones are not yet in wide use. Second, the FAA commentary indicates resistance to widespread drone operation. Third, the FAA waiver procedure shows no greater willingness to deviate from the restrictions on drone use. In sum, current regulations do not support commercial drone operation.

C. DRONE COMMERCE MAY FIT WITHIN THE FAA'S REGULATORY SPHERE.

On the surface, the FAA's apparent reluctance to permit drone commerce appears justified. Commentators applauded the regulation, arguing that drones are incompatible with the regulatory framework developed over the past ninety years. These arguments are rational in application to small-scale and private drone operations. However, analysis of the Administration's history indicates that large-scale commercial drone operations fit within the FAA regulatory framework.

1. *Drone Commerce Faces Challenges.*

At first glance, drones may not appear to fit within the existing regulatory scheme. Drones have different flight characteristics than manned aircraft. Scholars argue that drones may be difficult to regulate for sociological reasons. The FAA's experience in safety regulation, air traffic control, and public perception management may teach against the

202. An elevation of twenty-one feet is also unlikely to be beyond the reach of an unruly crowd's throwing arm.

203. See *CNN Waiver*, *supra* note 138.

204. See *id.*; *PrecisionHawk Waiver*, *supra* note 142; *BNSF Waiver*, *supra* note 142.

205. The waiver permits the pilot to be outside visual range, with a visual observer reporting the drone operation back to the pilot in real time. See *PrecisionHawk Waiver*, *supra* note 142; *BNSF Waiver*, *supra* note 142.

206. As of Dec. 21, 2016.

integration of drones into the national airspace.

Drones, specifically the ubiquitous quad-copters,²⁰⁷ lack two characteristics enjoyed by standard manned aircraft. First, drones are not stable. Standard commercial aircraft are statically stable. When the aircraft is disturbed from level flight the aerodynamic characteristics of the aircraft tend to return the aircraft to level flight.²⁰⁸ A quad-copter drone disturbed from level flight will not naturally return to level flight, but will require complex flight control inputs.²⁰⁹ Second, quad-copters cannot glide. When commercial airliners lose power they can glide for considerable distances.²¹⁰ Quad-copter drones, without fixed wings, cannot glide to safety. Instead they crash into the ground below.²¹¹ Drone's lack of safety contingencies undermines the safety required for air carrier success.²¹²

Professor Henry H. Perritt, Jr. has argued that stringent FAA drone regulation lacks a stable sociological foundation. Aircraft pilots enjoy a robust culture of safety and are agreeable to FAA regulation.²¹³ Such safety and compliance protect aircraft investment costs—and lives.²¹⁴ Further regulatory violations are easy to detect for manned aircraft due to their size, noise, and need to operate from an airport.²¹⁵ On the other hand, drone pilots do not have a pre-existing mutual relationship with the FAA. There is no culture of safety or compliance for the FAA to found rules upon.²¹⁶ Safety is not paramount because drones are inexpensive²¹⁷ and the

207. See *Drone Reviews*, CNET (last visited Dec. 21, 2016), <https://www.cnet.com/topics/drones/products/> [<https://perma.cc/9BFP-DSBV>] (reviewing primarily the four-engine “quadcopter” and variants of that type, including the tri-copter and octo-copter).

208. See generally ROBERT C. NELSON, *FLIGHT STABILITY AND AUTOMATIC CONTROL*, 40–85 (2d ed. 2007) (detailing the theory and calculations of aircraft static stability).

209. See Perritt & Sprague, *supra* note 15, at 421.

210. See Richard Witkin, *Jet's Fuel Ran Out After Metric Conversion Errors*, N.Y. TIMES (July 30, 1983), <http://www.nytimes.com/1983/07/30/us/jet-s-fuel-ran-out-after-metric-conversion-errors.html> [<https://perma.cc/CD5R-RPL3>] (documenting an Air Canada operated Boeing 767's unpowered glide sixty miles to safety after the aircraft ran out of fuel).

211. Perritt & Sprague, *supra* note 15, at 433 (“When microdrones experience a loss of power . . . they just fall out of the sky.”).

212. Note that “air carrier” refers generally to the transportation of either goods or passengers. See 42 U.S.C. § 40102 (2012). Even though commercial drones would carry cargo instead of passengers, they still pose a threat to people on the ground in the event of failure.

213. Perritt & Sprague, *supra* note 15, at 412–417.

214. *Id.* at 405, 413.

215. *Id.* at 405.

216. *Id.* at 412–417.

217. *Id.* at 416.

drone failure does not harm the pilot.²¹⁸ Detection of regulatory breach is also difficult as drones are small, may operate anywhere, and are aloft for short times.²¹⁹ In this light, drones appear incompatible with current FAA manned aircraft regulation.

This banishment of drones from common use may simply be the lesser of two evils. Were the FAA to permit greater drone operation, the lack of safety contingencies and the inability to enforce regulation might lead to a negative public reaction. Self-help proposals are not hard to find on the Internet.²²⁰ Even scholars have addressed the issue of reasonable drone self-defense.²²¹ These arguments seem to provide a rational foundation for the FAA's current restrictions on widespread drone commerce.

2. *Drone Commerce Does Fit the FAA's Regulatory Mold.*

The above safety and sociological arguments fail, however, when directed toward large-scale drone operators. Commercial drone operations follow the lessons of the FAA's history. First, aviation safety promotes commerce. The FAA can regulate and promote large-scale drone manufacturers and operators just as they manage and regulate the manned aviation industry. Second, air traffic management must be consolidated and include more than visual avoidance. The FAA provides the platform for consolidated drone traffic regulation, and the early success of autonomous cars shows that autonomous drones can be integrated into the current airspace infrastructure. Third, public perception of safety is significant. Commercial drone operators depend upon public confidence as do airlines and the FAA.

First, the FAA's history teaches that safety regulation promotes aviation commerce. Prior to the regulation of civil aircraft, the heavily regulated Air Mail Service was the safest aviation enterprise.²²² The regulation of civil aviation in 1926 aided the rise of lasting airlines as safe

218. *See id.* at 416–17 (noting that pilot harm in a drone crash is pecuniary, and generally not physical).

219. *Id.* at 406–07.

220. *See, e.g.,* Max Slowik, *Tacnition's New 12-Gauge Depleted Uranium Anti-Drone Loads*, GUNS.COM (April 1, 2013), <http://www.guns.com/2013/04/01/tacnitions-new-12-gauge-depleted-uranium-drone-loads/> [<https://perma.cc/UK6K-ZZZZ>]; *Johnny Dronehunter: Defender of Privacy*, YOUTUBE (July 29, 2014), <https://www.youtube.com/watch?v=jlXwQVFt8Ho> [<https://perma.cc/S3YD-CD8A>].

221. *See, e.g.,* A. Michael Froomkin & P. Zak Colangelo, *Self-Defense Against Robots and Drones*, 48 CONN. L. REV. 1, 3 (2015) (addressing the question of whether a landowner may shoot down a trespassing drone).

222. *See* KOMONS, *supra* note 18, at 21 (noting the excellent safety record of the airmail service); *id.* at 23 (noting the lower safety record of civil aviation).

and effective modes of transportation.²²³ Drones can enjoy the same result.

FAA oversight of large-scale drone operators can mimic oversight of aircraft manufacturers. The FAA no longer employs an army of inspectors to oversee aircraft manufacturing.²²⁴ Today, the FAA relies upon thousands of designated engineering representatives (DERs) across the country.²²⁵ Thus, the aviation industry regulates itself and the FAA spot checks.²²⁶ This arrangement has proven successful, with American commercial aviation as safe as ever before.²²⁷ Though many of these DERs are employees of aerospace companies, the directory of independent consultant DERs is extensive.²²⁸ These regulatory consultants can be harnessed for a drone airworthiness regime.

Different flight characteristics and contingencies need not relegate drones to the fringes. FAA regulations generally specify the ends, a level of reliability or safety required, but not the means.²²⁹ The Administration looks to the creativity of industry to develop compliant designs.²³⁰ Following the Air Commerce Act, safety regulation did not stifle innovation.²³¹ On the contrary, that era gave birth to many iconic aircraft,

223. See DAVIES, *supra* note 32, at 123–28, 133 (discussing the creation of the Big Four airlines and the growth of the airlines to financial maturity); see also KOMONS, *supra* note 18, at 277.

224. See *FAA History*, *supra* note 29, at 2–3.

225. FED. AVIATION ADMIN., FAA CONSULTANT DER DIRECTORY (2017), https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/media/DERDirectory.pdf.

226. See *FAA History*, *supra* note 29, at 35.

227. See *Accidents Involving Passenger Fatalities: U.S. Airlines (Part 121) 1982–Present*, NAT. TRANSP. SAFETY BD. (last visited Dec. 22, 2016), <https://www.nts.gov/investigations/data/Pages/paxfatal.aspx> [<https://perma.cc/M6VH-EWCL>]. From Jan. 13, 1982 to Dec. 27, 1989, U.S. commercial airlines suffered 1,191 passenger fatalities, not including the 243 killed in the bombing of Pan Am Flight 103 over Lockerbie, Scotland on Dec. 21, 1988. From October 3, 1990 to June 6, 1999, U.S. commercial airlines suffered 774 passenger fatalities. From Jan. 31, 2000 to Feb. 12, 2009, U.S. commercial airlines suffered 474 passenger fatalities, not including those killed on Sept. 11, 2001. *Id.* While fatalities have substantially decreased, the NTSB notes that air travel activity has nearly doubled since 1982. *Id.* See also Flight Safety Foundation, *Worldwide Airliner Accident Fatalities*, AVIATION SAFETY NETWORK (last visited Dec. 22, 2016), https://aviation-safety.net/graphics/infographics/1945-2015_Airliner_accident_fatalities.jpg [<https://perma.cc/YHX4-QHWY>] (depicting a downward trend in airliner accident fatalities across the world since the early 1990s).

228. FAA Consultant DER Directory, *supra* note 225.

229. See e.g., 14 C.F.R. 25.561–562.

230. For example, the Boeing 737 is designed and manufactured by Boeing, not by the FAA. The FAA merely reviews and approves the design, manufacture, and test data.

231. See DAVIES, *supra* note 32, at 138–39.

such as the Douglas DC-3.²³² Indeed, drones hold an advantage over early aircraft. While the ability of airlines to sponsor aircraft development was a significant achievement in the 1930s,²³³ Amazon and DHL already have the ability²³⁴ to invest in drone technology in order to comply with FAA regulation.

Second, drone traffic management must be consolidated and include more than visual avoidance. By the 1950s, it was clear that pilot line of sight was often insufficient to prevent air-to-air collision.²³⁵ Following the 1958 Federal Aviation Act, FAA air traffic management grew to include radar, transponders, and computers to manage air traffic more effectively.²³⁶ Reliance solely upon pilot vision is even less sound for drones than aircraft, as remote pilots must view at distance.²³⁷ Further, the FAA opted not to allow first-person video or LIDAR to satisfy the line-of-sight requirement because of view distortion and transmission failure.²³⁸ But the safest and most acute drone pilot may be the autonomous drone.

Autonomous road vehicles are a proof of concept for the autonomous drone. In 2016, Waymo, Alphabet's autonomous car program, reached two million autonomously driven miles.²³⁹ Most of these miles were driven on city roads, meaning that these autonomous vehicles were designed to operate within a pre-defined framework, regular roads.²⁴⁰

232. *See id.* at 133–34.

233. *See id.* at 133.

234. Besides prior discussions of Amazon and DHL drone tests, both corporations are generally profitable. *See* David Goldman, *Amazon Shares Soar on Fourth Straight Profitable Quarter*, CNN TECH (Apr. 28, 2016), <http://money.cnn.com/2016/04/28/technology/amazon-earnings/> [<https://perma.cc/Y2TE-5AMW>]; *see also* Press Release, DHL, Deutsche Post DHL Group delivers strong earnings performance in Q1 2016 (May 11, 2016), http://www.dhl.com/en/press/releases/releases_2016/all/dpdhl_delivers_strong_earnings_performance_in_q1_2016.html [<https://perma.cc/E9CV-4T2D>].

235. *See Grand Canyon Report, supra* note 50, at 19, 24 (noting there was no evidence the ill-fated aircraft “were not being operated in accordance with . . . visual flight rules” yet admitting “[i]t is not possible to determine why the pilots did not see each other”); *see also* H.R. Doc. No. 85-406 (calling for an Airways Modernization Board to revolutionize air traffic management in the U.S.).

236. *See* WOLFE & NEWMYER, *supra* note 59, at 27; *see also Quesada, supra* note 59.

237. *See* Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. 42,064, at 42,092 (June 28, 2016) (to be codified at 14 C.F.R. pts. 21, 43, 61, 91, 101, 107, 119, 133, and 183).

238. *See id.* at 42,094.

239. *On the Road*, WAYMO (last visited Dec. 22, 2016), <https://waymo.com/ontheroad/> [<https://perma.cc/HL5X-4963>].

240. *See id.*

Drones require complex computer flight systems²⁴¹ and can be programmed to operate within FAA-defined airspace.²⁴² Indeed, drones have an advantage over autonomous cars. Drone traffic infrastructure may be tailored from scratch; autonomous cars face numerous regulatory hurdles as they integrate with roads designed for human drivers.²⁴³ Autonomous cars show, however, that the human pilot may be removed.²⁴⁴ Autonomous see-and-avoid systems such as LIDAR and drone interconnectivity provide for effective management.²⁴⁵ Thus, autonomous drones, programmed to operate within a defined airspace, are compatible with the FAA's regulation.

Third, commercial drone operators depend upon public perception just as the FAA does.²⁴⁶ Lack of public confidence in aviation was partly responsible for airline failure in the early 1920s.²⁴⁷ Safety regulation preceded airlines becoming financially independent in the 1930s.²⁴⁸ Public confidence in airline safety and reliability thus benefits airlines.²⁴⁹ The same holds for drone cargo operators. Aside from any safety concerns, consumers decide whether or not to ship via drone based upon the perception of delivery reliability.²⁵⁰ Therefore, commercial drone operators and the FAA have similar interests in the public's perception.

Drones are consonant with these three lessons from FAA history. Though critics argue that drones are unfit for the same regulatory scheme

241. Perritt & Sprague, *supra* note 15, at 421.

242. *See id.* at 423–24. Professor Perritt envisioned these built-in law abiding features to limit regulatory deviations commanded by drone pilots. *Id.* at 423–24.

243. Drones may have an easier time, given the regulatory hurdles autonomous vehicles face. *See* Jessica S. Brodsky, Note, *Autonomous Vehicle Regulation: How an Uncertain Legal Landscape May Hit the Brakes on Self-Driving Cars*, 81 BERKELEY TECH. L.J. 851, 853 (2016) (“it remains unclear how [autonomous cars] fit into existing legal and regulatory frameworks”).

244. *See On the Road, supra* note 239.

245. Operation and Certification of Small Unmanned Aircraft Systems, 81 Fed. Reg. at 42,094; Perritt & Sprague, *supra* note 15, at 435–36.

246. *See* KOMONS, *supra* note 18, at 283–85, 296–97; S. Rep. No. 75-2455. Though, it is true that industry and FAA blame are not always equally, or fairly given. TWA involvement in the Cutting Crash report almost certainly influenced Congress's decision to blame the Bureau of Air Commerce rather than the airline. *Id.* at 283–85 (describing TWA's involvement in the Congressional investigation).

247. *See* KOMONS, *supra* note 18, at 28–29.

248. *See id.* at 277; DAVIES, *supra* note 32, at 133.

249. Tim A. Becker, *Passenger Perceptions of Airline Safety: Marketing Safety Records*, FLIGHT SAFETY DIGEST, Oct. 1992, at 1.

250. Even if companies like Amazon insist upon shipping via drone, against consumer wishes, the shipper will bear the cost of drone failure in replacement and re-shipment of goods.

as manned aircraft, their arguments are primarily directed at small-scale drone operations. Large-scale operations do fit within the FAA framework. First, larger drone manufacturers and drone carriers can be overseen as the aviation industry is. Second, autonomous road vehicles and current air traffic control methods have laid the foundations for drone traffic management. Third, the public-image interests of the FAA align with those of drone operators. In the FAA's favor, some safety concerns about drones have not been ameliorated. However, these concerns are not enough to support the continued banishment of drones from the national airspace. Large-scale commercial drone operations' compatibility with FAA regulation warrants aggressive regulation for the promotion of drones in air commerce.

IV. CONCLUSION

On August 31, 2016, FAA drone regulations, 14 C.F.R. Part 107, went into effect. Yet instead of permitting widespread commercial drone operations, drones remain relegated to the fringes of our airspace. Perhaps Jeff Bezos was too optimistic in planning for drone delivery by the end of 2018. Scarcely two years remain to achieve his goal and a revolution in the FAA's drone regulation is unlikely during that time. However, the vision of commercial delivery drones is feasible.

Among others, three courses of action will help to enable commercial drone operations in American airspace. First, Congress should amend the 2012 Reform Act to give the FAA a clearer directive. The current direction to "integrate" civil drones is vague. Instead, Congress should provide more specific metrics for the FAA to meet, such as outlining an airworthiness certification regime for drones.²⁵¹ Further, Congress can clarify whether they simply want the FAA to contemplate drones or whether Congress wants a concerted effort to implement and normalize commercial drone operations.

Second, the FAA needs to provide regulations in terms of levels of safety, rather than simple prohibitions, for at least the pilot and line-of-sight requirements and the prohibition on flight over humans. Nothing is perfectly safe.²⁵² Prohibiting flight over humans does not address the

251. See Civil Aeronautics Act, § 603 (outlining the airworthiness certification process for civil aircraft).

252. For example, the passenger seat requirements for commercial aircraft are written in terms of a particular level of safety. Occupied passenger seats must withstand 9g-static and 16g-dynamic loads. 14 C.F.R. §§ 25.561–62. These numbers are not a perfect level of safety. When a commercial airliner plunges into the side of a mountain, passengers

technological issues causing the safety concern. Instead of prohibition, the FAA should specify a minimum level of electrical and mechanical reliability required for drone automation, flight beyond visual range, and flight over humans. Even if no current drone meets the requirements, the safety regulation will either drive innovation or companies will decide that current ground delivery is safer and more cost effective. Requiring a level of safety, rather than prohibiting potentially dangerous activity, gives commercial drones the opportunity to develop instead of flatly barring their use.

Third, drone manufacturers can take the initiative and prove their safety records to the FAA. Amazon and DHL have both successfully tested drone delivery systems.²⁵³ Amazon and DHL should test the reliability of their drones the way Waymo has been testing autonomous cars on public roads.²⁵⁴ Commercial drone testing would need to be performed in secluded airspace, perhaps at one of the FAA's six drone flight test areas.²⁵⁵ Just as Boeing's first jet airliner²⁵⁶ helped instigate aviation regulation reform in 1957 and 1958,²⁵⁷ Amazon can prove the drone's safety and reliability in commerce as a means of instigating regulatory reform.

In sum, commercial drones delivering packages to consumers' doorsteps is a feasible goal, but Amazon simply needs regulatory support from the FAA. The current regulations stifle drone commerce and innovation rather than promoting it. Large-scale drone commerce fits within the FAA's historic regulatory scheme, and the FAA should pursue more aggressive drone regulation to enable drone commerce. We may be behind schedule, but drones are on the horizon.

cannot well look to the seat engineer to save their lives. Those are the freak accidents, though. Instead the passenger seats are designed to keep passengers safe in instances where the aircraft is not instantaneously destroyed, such as crash landings. See Ruby Cazalda, *Controlled Impact Demonstration (CID)*, NAT. AERONAUTICS & SPACE ADMIN. (Aug. 20, 2015), https://www.nasa.gov/centers/dryden/multimedia/imagegallery/CID/CID_proj_desc.html [<https://perma.cc/2KK7-792K>].

253. See Amazon, *Revising the Airspace Model for the Safe Integration of sUAS*, *supra* note 162; Press Release, DHL, *supra* note 162.

254. See *On the Road*, *supra* note 239.

255. See FAA Reform Act, § 332(b)(1).

256. Boeing flew their prototype at Seafair in Seattle during August of 1955. See SAM HOWE VERHOVEK, *JET AGE* 25, 35 (2010).

257. See H.R. Doc. No. 85-406.

FOLLOWING *CLEARCORRECT*: A GUIDELINE FOR REGULATING DIGITAL TRADE

Barclay Oudersluys[†]

The Federal Circuit's *ClearCorrect* decision made waves in the worlds of 3D printing technology and international trade. After the International Trade Commission (ITC) asserted its authority over digital imports to the United States, *ClearCorrect* severely limited that authority. This Note will explore a brief history of the ITC and some decisions showing different areas where the ITC has claimed authority. Next, this Note will detail the *ClearCorrect* decision, which placed new restrictions on the ITC's authority. Finally, this Note will discuss the uncertainty over where the limit on the ITC's authority lies.

To help the ITC cope with the uncertainty around the borders of its jurisdiction, this Note proposes three tests for the ITC's scope of authority. This Note compares the tests to one another with a focus on the policy implications of each and considers how some decisions over emerging technologies would be resolved under each test. Finally, this Note suggests that the ITC adopt the exclusive ownership test—whether or not an individual can have sole possession of the item under consideration—due to the simplicity it provides in decision making, the ease in enforcing decisions, and the low likelihood of the Federal Circuit overturning future ITC decisions.

I. WHY THE INTERNATIONAL TRADE COMMISSION CLAIMED AUTHORITY

This Part first considers the rise and expansion of the ITC and how the Federal Circuit regulates it. It then discusses how the ITC established its authority over digital trade in *Certain Hardware Logic* and *Suprema*. Finally, this Part examines the *ClearCorrect* decision, including the ITC's ruling and the Federal Circuit decision overturning that ruling.

A. INTERNATIONAL TRADE COMMISSION HISTORY

The history of the International Trade Commission provides important context for this discussion.

1. *Creation and Charge of the ITC*

The International Trade Commission was created in 1916.¹ The main purpose of the Commission at that point was to use scientific means to study and regulate the nation's tariff levels, which had been fluctuating greatly throughout the 19th century.² The newly created Commission was also tasked with regulating unfair practices in import trade, although this was mostly an advisory role with no real associated powers.³ With the Tariff Act of 1930, Congress implemented the current basis for the ITC's powers regarding import trade. In the Tariff Act of 1930, Congress gave the Commission the duty of dealing with the importation into the United States of "articles that infringe" on valid U.S. patents, copyrights, and trademarks.⁴ Despite receiving these duties in 1930, the ITC did not get its current name and ability to fully perform these duties until 1974.⁵ The Trade Act of 1974 made the ITC's decisions on import trade final rather than merely advisory.⁶ This statute also gave the ITC the ability to issue cease and desist orders along with exclusion orders to prevent infringing articles from entering the United States.⁷

Section 337 investigations are the primary means the ITC uses to regulate the importation of infringing articles.⁸ The owner of any valid U.S. intellectual property may assert that another entity is importing infringing articles, triggering an investigation.⁹ The ITC then investigates whether the alleged infringing articles are truly infringing and whether they are truly being imported, both of which must be happening in order for the ITC to intervene.¹⁰ After trial proceedings before administrative law judges and an ITC review of the proceedings, the ITC has the power to issue temporary

1. Pub. L. No. 64-271, § 700, 39 Stat. 795 (1916).

2. *U.S. Tariffs and Trade: A Timeline*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/flash/dynamic_timeline.htm [<https://perma.cc/QM85-CGG7>].

3. See *id.*

4. 19 U.S.C. § 1337 (2012).

5. *U.S. Tariffs and Trade*, *supra* note 2.

6. *Id.* (explaining that section 337 determinations were made final but remained subject to presidential approval for policy reasons).

7. 19 U.S.C. § 1337.

8. *Intellectual Property*, U.S. INT'L TRADE COMM'N, www.usitc.gov/intellectual_property.htm [<https://perma.cc/33EG-G4QW>].

9. *Id.*

10. *Id.*

exclusion orders preventing the infringing articles from entering the country.¹¹ In exceptional circumstances, the ITC also has the power to issue cease and desist orders against specific importers engaged in the unfair importation acts.¹² U.S. Customs and Border Patrol enforces these decisions using its presence at all U.S. border ports and its ability to intercept and exclude products when necessary.¹³ Many intellectual property owners threatened by international competition go to the ITC rather than more standard remedy routes because of these harsh penalties and the ITC's quick decision-making process.

Along with regulating unfair trade practices, the ITC also has a wide range of other trade-related duties.¹⁴ Headed by six appointed commissioners, the ITC has duties to maintain the Harmonized Tariff Schedule of the United States and to regulate international trade unrelated to intellectual property.¹⁵ The ITC also conducts economic analyses and provides information and policy support on tariffs and international trade to elected officials.¹⁶ This varied range of responsibilities leaves the ITC without the sophisticated knowledge necessary to make decisions on difficult technological issues.

2. *How Courts Use the Chevron Test to Rule on an Agency's Interpretation*

As an agency created by Congress, the ITC has the duty to interpret the charges Congress lays down.¹⁷ When the wording in a statute governing an agency's duties is ambiguous, in order for the agency to remain self-sufficient apart from Congress, the agency must interpret the statute to best resolve the ambiguity.¹⁸ *Chevron* developed the framework for this interpretation. *Chevron* challenged the Environmental Protection Agency's (EPA) interpretation that the term "stationary source" applied to pollution emitting devices within the same industrial grouping.¹⁹ The Supreme Court laid out a two-step plan for courts to judge an administration's interpretation.²⁰ The first step is to determine "whether Congress has

11. *Id.*

12. *Id.*

13. *Id.*

14. *USITC Facts*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/employment/usitc_facts.htm [<https://perma.cc/53BA-F4AZ>].

15. *Intellectual Property*, *supra* note 8.

16. *Id.*

17. *Chevron, U.S.A., Inc. v. NRDC, Inc.*, 467 U.S. 837, 843–44 (1984).

18. *Id.*

19. *Id.* at 840.

20. *Id.* at 842.

directly spoken to the precise question at issue.”²¹ If so, then whatever Congress has said will control.²² If Congress has not directly addressed the issue, then the court must determine if the agency’s interpretation is “based on a permissible construction of the statute.”²³ If the agency’s interpretation is reasonable, it is “entitled to appropriate deference to its interpretation.”²⁴ Later, in *United States v. Mead Corp.*, the Supreme Court added a step zero to the *Chevron* test. This step is to determine whether Congress intended the agency to have authority over this issue and is thus entitled to any deference at all.²⁵

3. *In the Matter of Certain Hardware Logic*

In the past, the ITC has generally classified digital files as a good rather than a service, placing them under ITC authority. In *Certain Hardware Logic Emulation Systems and Components Thereof (Certain Hardware Logic)*,²⁶ Quickturn sought to exclude from importation logic emulation systems that infringed their patents.²⁷ The emulators were used to test electronic circuits in semiconductor devices and included software that could be sent on a physical device or electronically into the United States.²⁸ The ITC held that a cease and desist order could be granted against such software because the software could be combined with the physical emulators to infringe Quickturn’s patents.²⁹ The ITC concluded that electronic transmission of the software must be prevented because it is not substantially different from storing the software on a physical medium and shipping that into the United States.³⁰

4. *Suprema v. ITC*

In 2015, the Federal Circuit issued a decision on a similar case, *Suprema, Inc. v. ITC*, in which it affirmed the ITC’s decision to exclude fingerprint scanners that only infringed on a patent when combined with

21. *Id.*

22. *Id.* at 842–43.

23. *Id.* at 843.

24. *Enercon GmbH v. ITC*, 151 F.3d 1376 (Fed. Cir. 1998).

25. *United States v. Mead Corp.*, 533 U.S. 218 (2001) (involving a U.S. Customs Service interpretation of “bound diaries”).

26. *In the Matter of Certain Hardware Logic Emulation Sys. & Components Thereof*, Inv. No. 337-TA-383, USITC Pub. 3089 (Mar. 1998) (Final).

27. Daniel T. Kane, *Printing a War in Three Dimensions: Expanding “Article” to Include Electronic Transmissions Before the ITC*, 27 *COMMLAW CONSPPECTUS* 427, 439 (2015).

28. *Id.*

29. *Id.* at 440.

30. *Certain Hardware Logic*, 1998 ITC LEXIS at 138.

software after entering the United States.³¹ Applying *Chevron*, the Federal Circuit first found that the term “articles that infringe” did not unambiguously state that the articles had to be infringing at the border.³² Proceeding to step two of the *Chevron* analysis, the court found that the ITC’s interpretation was permissible, despite the fact that the scanners had to go through a step after entering the country to make them infringing.³³

5. *Other Approaches*

Courts other than the Federal Circuit have contested the distinction between a good and a service. In *Former Employees of Computer Sciences Corp. v. U.S. Secretary of Labor*, the U.S. Court of International Trade (CIT) held that electronic software is an article.³⁴ The CIT has jurisdiction over civil actions arising out of international trade laws,³⁵ using the Harmonized Tariff Schedule to govern.³⁶ The harmonized tariff schedule includes telecommunications transmissions as a category of articles that encompasses electronic software.³⁷ The World Trade Organization (WTO) has also established guidelines for dealing with electronic software.³⁸ The WTO distinguishes between goods and services, with the more liberal General Agreement on Tariffs and Trade (GATT) governing goods and the stricter General Agreement on Trades in Services governing services.³⁹ Among its guidelines for what to consider when distinguishing goods and services, the WTO lists the statutory constructions, the common meanings of the terms, the stated goals of each agreement, and the functionality of the product.⁴⁰ The European Commission has applied these guidelines to treat digital products as services, but the U.S. has stated that the more liberal GATT may be more beneficial for these types of products.⁴¹

31. *Suprema, Inc. v. ITC*, 796 F.3d 1338 (Fed. Cir. 2015).

32. *Id.* at 1346.

33. *Id.* at 1346–49.

34. *Former Emps. of Comput. Scis. Corp. v. U.S. Sec’y of Labor*, 414 F. Supp. 2d 1334, 1336 (Ct. Int’l Trade 2006).

35. *About the Court*, U.S. COURT OF INT’L TRADE, <http://www.cit.uscourts.gov/AboutTheCourt.html> [<https://perma.cc/ZLR4-4A7V>].

36. Sapna Kumar, *Regulating Digital Trade*, 67 FLA. L. REV. 1909, 1928 (2016).

37. *Id.*

38. See Sam Fleuter, *The Role of Digital Products Under the WTO: A New Framework for GATT and GATS Classification*, 17 CHI. J. INT’L L. 153, 167 (2016).

39. *Id.* at 156.

40. *Id.* at 162–74.

41. *Id.* at 162.

6. *Expanding the ITC's Jurisdiction*

Over the last few years there have been several attempts made to create legislation that would allow the ITC to give stronger protection at the U.S.'s digital borders instead of leaving border protection to an assembly of different agencies.⁴² The Stop Online Piracy Act (SOPA)⁴³ and Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act (PIPA)⁴⁴ were drafted in order to prevent copyright infringement from foreign websites.⁴⁵ These acts would have given copyright holding entities the ability to block access to foreign infringing websites.⁴⁶ But largely due to concerns about suppressing free speech along with unprecedented amounts of online resistance, both of these acts failed to pass.⁴⁷ Despite these initial failures, Congress tried again with the Online Protection and Enforcement of Digital Trade Act (OPEN).⁴⁸ This act would have explicitly given the ITC authority over digital trade entering the United States and mooted the *ClearCorrect* decision.⁴⁹ While OPEN was targeted at preventing copyright infringement by digital files, its reach would likely have been expanded to include patent infringement as well.⁵⁰ Unfortunately for the ITC and U.S. IP owners, OPEN failed to pass as well, leaving the protection responsibilities in its previous patchwork state.⁵¹

B. *CLEARCORRECT V. ITC*

Align Technology (Align) is a company that makes orthodontic aligners, owning numerous patents for the manufacture and design of these aligners.⁵² The aligners are designed to be placed on a patient's teeth to reposition the teeth into a more desirable arrangement.⁵³ As of 2014, Align owned 11 percent of the global orthodontic market and has plans to expand

42. Tabrez Y. Ebrahim, *3D Printing; Digital Infringement & Digital Regulation*, 14 NW. J. TECH. & INTELL. PROP. 37, 71 (2016).

43. Stop Online Piracy Act, H.R. 3261, 112th Cong. (2011).

44. Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011, S. 968, 112th Cong. (2011).

45. Peter S. Menell, *This American Copyright Life: Reflections on Re-Equilibrating Copyright for the Internet Age*, 61 J. COPYRIGHT SOC'Y 235, 269 (2014).

46. *Id.* at 317–19.

47. *Id.* at 311.

48. *See* Ebrahim, *supra* note 42, at 72–74.

49. *Id.*

50. *Id.*

51. *ClearCorrect Operating, LLC v. ITC*, 810 F.3d 1283, 1287 (Fed. Cir. 2015).

52. *Id.*

53. *Id.*

this market share even further.⁵⁴ ClearCorrect Operating, LLC (ClearCorrect) is a competitor to Align and attempted to impinge on this market.⁵⁵

ClearCorrect conducted its business as follows. A patient looking for orthodontic help would have their teeth scanned by ClearCorrect in the United States, creating a digital model of the patient's teeth.⁵⁶ The digital file containing the model would then be sent electronically to ClearCorrect's Pakistan entity.⁵⁷ ClearCorrect Pakistan would then reshape the model to create the final desired teeth arrangement.⁵⁸ ClearCorrect Pakistan would then electronically send back the reshaped model, still in a digital file, into the United States.⁵⁹ ClearCorrect would then 3D print the aligner to give to the patient.⁶⁰

Threatened by the competing company, Align looked for options to prevent ClearCorrect's business. Because of the harsh penalties available—cease and desist and exclusion orders and the possibility of a quicker decision—Align chose to pursue remedy from the ITC rather than from district court.⁶¹ Align asserted infringement of seven of their aligner patents with claims covering the forming of dental appliances, the production of digital data sets, the production of the orthodontic appliances, and the associated treatment methods.⁶²

1. *The ITC's Decision*

The ITC laid down its decision on Align's complaint in *In the Matter of Certain Digital Models, Digital Data, and Treatment Plans for Use in Making Incremental Dental Positioning Adjustment Appliances, the Appliances Made Therefrom, and Methods of Making the Same (Certain Digital Models)*.⁶³ The ITC issued a cease and desist order against ClearCorrect, preventing ClearCorrect from electronically importing or

54. *Strategic Growth Drivers*, ALIGN TECH., INC., http://investor.aligntech.com/alignar_final_7-8-14/strategic-growth-drivers.html [<https://perma.cc/CG9D-WKSB>].

55. *See ClearCorrect*, 810 F.3d at 1287.

56. *Id.*

57. *Id.*

58. *Id.*

59. *Id.*

60. *Id.*

61. *See id.* at 1283.

62. *Id.* at 1287–88.

63. *In the Matter of Certain Digital Models, Digital Data, & Treatment Plans for Use in Making Incremental Dental Positioning Adjustment Appliances, the Appliances Made Therefrom, & Methods of Making the Same*, Inv. No. 337-TA-833, 2014 ITC LEXIS 337 (Apr. 3, 2014) (Final).

selling the orthodontic appliances covered by Align's patents.⁶⁴ The ITC found that ClearCorrect infringed the patents with its methods of forming dental appliances and with its production of digital data sets.⁶⁵ The ITC based this decision on an interpretation of the term "articles," which the ITC has the power to regulate under section 337.⁶⁶

In making their decision, the ITC relied on the 1924 edition of *Webster's Dictionary* that reads, in part, "a thing of a particular class or kind; as an article of merchandise."⁶⁷ The ITC chose this dictionary as a standard from the time that the Tariff Act of 1930 was written.⁶⁸ The ITC took this definition to mean an article is an identifiable unit that may be traded in commerce or used by consumers and therefore included digital files.⁶⁹ The use of the terms "importation" and "sale" in Section 337 corroborated this decision, leading the ITC to conclude that an article is any imported item that is bought or sold.⁷⁰ Because ClearCorrect printed and sold the digital files to their patients, the ITC held that the files were included in this definition of articles.

Finally, the ITC looked to its strengthened powers from 1974 to reason that it should protect against unfairly traded imports and must adopt a broad definition of articles.⁷¹ To prevent ClearCorrect's unfair importation, the ITC included digital files in its definition of articles so that the enhanced remedies could be used to protect Align.

2. *The Federal Circuit's Decision*

ClearCorrect challenged the ITC's decision that its jurisdiction included digital files, appealing to the Federal Circuit.⁷² In applying *Chevron*, the Federal Circuit focused on step one: whether Congress had spoken directly to this precise question.⁷³ Section 337 contains no definition of "articles," so the Federal Circuit construed the term from its ordinary meaning.⁷⁴ The Federal Circuit looked to the predecessor Act of 1922 along with contemporary dictionaries from that time.⁷⁵ The Federal Circuit disagreed

64. *Id.* at *6.

65. *Id.* at *5–7.

66. *ClearCorrect*, 810 F.3d at 1289–90.

67. *Id.* at 1291–92.

68. *Id.*

69. *Id.*

70. *Id.* at 1294.

71. *Id.* at 1296.

72. *Id.* at 1287–89.

73. *Id.* at 1290.

74. *Id.* at 1290–91.

75. *Id.* at 1291–93.

with the ITC's use of the 1924 edition of *Webster's*, calling it imprecise and vague, instead choosing a more holistic approach.⁷⁶ The Federal Circuit cited *Funk & Wagnall's New Standard Dictionary of the English Language* (1931), *The Century Dictionary and Cyclopaedia* (1911), *Webster's New Modern English Dictionary* (1922), and *Black's Law Dictionary* (1933).⁷⁷ Each of these dictionaries uses the term "material things" in its definition of "article."⁷⁸ The Federal Circuit also cited two modern dictionaries, *Webster's Third New International Dictionary* (2002) and *Random House Webster's Unabridged Dictionary* (2001), which define articles as material things as well.⁷⁹ Finally, the Federal Circuit cited the ITC's own *Dictionary of Tariff Information* (1924) which, at its broadest, defines articles as "material items that are fully manufactured, material items that are altered in some way, or raw materials."⁸⁰ The requirement of materiality in all of these definitions played into the Federal Circuit's decision that articles did not include digital files.

The Federal Circuit next turned to the ITC's reasoning on the use of articles in section 337.⁸¹ The Federal Circuit reasoned that if articles were held to mean intangibles, numerous other subsections of Section 337 would become meaningless.⁸² One example of this is the subsection on forfeitures and seizures.⁸³ Electronic transmissions do not cross U.S. border points and therefore cannot be forfeited or seized.⁸⁴ The Federal Circuit also reasoned that subsections about ports of entry would be void because there could be no "attempted entry" of digital files.⁸⁵ There would be tremendous difficulty in enforcing decisions on these files if the ITC expanded the definition of articles to include digital files.⁸⁶ The Federal Circuit also looked at the full Tariff Schedule and concluded that it limited articles to tangible items only.⁸⁷

Finally, the Federal Circuit looked at the ITC's argument that its enhanced remedies required a broad definition.⁸⁸ The ITC argued that cease

76. *Id.* at 1293–94.

77. *Id.* at 1291–93.

78. *Id.* at 1292–93.

79. *Id.* at 1292.

80. *Id.* at 1292–93.

81. *Id.* at 1294.

82. *Id.* at 1295.

83. *Id.*

84. *Id.*

85. *Id.*

86. *See id.*

87. *Id.* at 1297–98.

88. *Id.* at 1296.

and desist orders could be used in cases where exclusion orders could not, such as with digital files.⁸⁹ The Federal Circuit rejected this argument, holding that cease and desist orders were meant to be a lesser punishment when exclusion orders were too harsh, not the exclusive remedy if an exclusion order was unavailable.⁹⁰ The Federal Circuit claimed that there is no logical connection between the additional remedy and an expanded definition of articles.⁹¹

Because the Federal Circuit determined that Congress had directly spoken on this particular issue, it held that Congress's intention would control and it was not necessary to address step two of the *Chevron* test in depth.⁹² The Federal Circuit briefly criticized the ITC's decision not to adopt any of its cited dictionary definitions.⁹³ It also criticized the ITC's analysis of the legislative history regarding the definition.⁹⁴ The Federal Circuit also never addressed *Chevron*'s step zero, questioning whether the ITC had any authority over this area in the first place.

Judge O'Malley offered a concurring opinion, which included an analysis of step zero.⁹⁵ She argued that Congress never intended to grant the ITC authority over incoming internet data transmissions.⁹⁶ The ITC has never regulated the Internet in the past and Congress must "speak clearly if it wishes to assign to an agency decisions of vast 'economic and political significance,'" as the Internet would be.⁹⁷ Congress never granted this authority, specifically failing to pass SOPA, PIPA, and OPEN, and so Judge O'Malley argued that the inquiry should not even reach step one of the *Chevron* test.⁹⁸

II. WHY THE ITC SHOULD ADOPT THE EXCLUSIVE OWNERSHIP TEST

This Part will first discuss the differences between the *ClearCorrect* and *Suprema* decisions. It will then provide a list of terms similar to articles that have been used interchangeably. This Part will then distinguish these terms from services by way of three different tests that different entities use.

89. *Id.*

90. *Id.*

91. *Id.* at 1296-97.

92. *Id.* at 1299-1300.

93. *Id.* at 1300.

94. *Id.*

95. *Id.* at 1302-03.

96. *Id.*

97. *Id.*

98. *Id.* at 1303-04.

Finally, this Part will suggest which test the ITC should be using in future cases that present similar issues.

A. DISTINGUISHING *CLEARCORRECT* FROM *SUPREMA*

On a cursory glance, the Federal Circuit’s decisions in *ClearCorrect* and *Suprema* may appear to present similar issues. Thus, one may wonder how the Federal Circuit could give two very different opinions on the two cases. But, with a more in-depth examination, it becomes apparent that the two cases are not that closely related. In *Suprema*, the court decided on the interpretation of an article that infringed, while in *ClearCorrect*, the court decided on the interpretation of articles.⁹⁹

Despite appearances, the overlap between the analysis of “article” in *ClearCorrect* and “article that infringed” in *Suprema* is minimal. In *Suprema*, there was no question that the imported fingerprint scanners were articles.¹⁰⁰ The controversy was over whether the ITC could exclude scanners at the border when they only infringed when combined with some software inside the United States but did not infringe at the border itself.¹⁰¹ And in *ClearCorrect*, neither party disputed that the digital files infringed Align’s patents when the files were sent into the United States.¹⁰² The parties disputed whether the files counted as articles and fell under the ITC’s authority.¹⁰³ The major similarity between the two cases is that each one considered whether the court should give deference to the ITC’s interpretation of a statute.¹⁰⁴ But each decision appropriately applied the *Chevron* test, and the fact that the two applications of the test came out differently does not mean that the test was applied wrongly in either instance.

While the Federal Circuit’s *ClearCorrect* decision limits the ITC’s jurisdiction, the holding might be narrower than it appears to be. Even though the Federal Circuit declared that the ITC does not have authority over electronically transmitted digital files, the ITC may still have authority under slightly different circumstances. The answer may depend on the similarities between “articles,” “goods,” and “components” and the distinction between these and “services.” The *ClearCorrect* decision completely eliminates uniquely designed digital files from the ITC’s

99. Compare *Suprema, Inc. v. ITC*, 796 F.3d 1338 (Fed. Cir. 2015), with *ClearCorrect*, 810 F.3d at 1283 (Fed. Cir. 2015).

100. See *Suprema*, 796 F.3d at 1342.

101. See *id.*

102. See *ClearCorrect*, 810 F.3d at 1288–89.

103. See *id.* at 1289.

104. Compare *Suprema*, 796 F.3d at 1345–46, with *ClearCorrect*, 810 F.3d at 1290.

jurisdiction, including computer-aided design (CAD) files for individual aligners, customized software, unique blueprints, and other similar files.¹⁰⁵ But digital files that are mass marketed, such as CAD files for a widely-used product, digital software, or digital copies of movies, books, and music, could be something that the ITC still has control over.

Because the Federal Circuit did not lay a framework for how the ITC should decide what is and is not an article, a test must be devised to help the ITC make these decisions. This requires examining other related statutory terms and distinguishing goods from services—which the ITC does not have jurisdiction over.

B. OTHER RELATED TERMS

The *ClearCorrect* decision only focused on the ITC's interpretation of the term "articles."¹⁰⁶ But it is worth considering other statutory terms which have been used in very similar situations with similar meanings to determine if this is the correct approach. The most prevalent synonym for "articles" is "goods." In *Suprema*, the Federal Circuit used "goods" and "articles" interchangeably, indicating that they are very closely related.¹⁰⁷ In *Certain Digital Models*, the ITC followed this approach, stating that "articles" is "synonymous with goods, commodities, and merchandise."¹⁰⁸ The 1929 House Report substituted "products" for "articles" throughout the text.¹⁰⁹ For contributory infringement, "component" is used to identify the parts of a patented invention.¹¹⁰

Another term that has been used in place of "article" or "good" is "component." When looking for contributory infringement, the court considers whether a "component" has been sold or offered for sale.¹¹¹ A "component" is usually a physical piece of a system.¹¹² But something may also be considered a "component" if it is sufficiently representative of the end product.¹¹³ And digital files are not precluded from being considered

105. See *ClearCorrect*, 810 F.3d at 1301-02.

106. *Id.* at 1290-1301.

107. See generally *Suprema*, 796 F.3d 1338.

108. In the Matter of Certain Digital Models, Digital Data, & Treatment Plans for Use in Making Incremental Dental Positioning Adjustment Appliances, the Appliances Made Therefrom, & Methods of Making the Same, Inv. No. 337-TA-833, 2014 ITC LEXIS 1234, *65 (Apr. 9, 2014) (Final).

109. See, e.g., H.R. REP. No. 71-7, at 3 (1929).

110. See Ebrahim, *supra* note 42, at 63.

111. *Id.*

112. *Id.*

113. *Id.*

components.¹¹⁴ In *Microsoft v. AT&T*, the court held that digital software can be a component if it is encoded in memory.¹¹⁵

Additionally, computer icons and computationally designed chemical structures have been labeled components.¹¹⁶ It has been argued that, because a CAD file is not involved in the final product, it cannot be a component; simply being a precursor is insufficient.¹¹⁷ This argument is based on the logic that the tools used to make a physical product would not be considered components and a CAD file is simply a tool used to make a 3D printed physical product.¹¹⁸ This argument fails, though, because the CAD file may itself be the end product.¹¹⁹ The CAD files could be, and would necessarily be, “components” if the CAD files were the products being sold. All of these terms are used widely throughout different legislation, but each of them is essentially used to refer to something that is infringing on a patent or copyright. This shows that despite the variety of terms used, Congress treats each of them essentially the same. In other words, articles are the same as goods, which are the same as components, and so on. This is important because each of these is distinct from services, which the ITC does not have authority over.

C. GOODS AND SERVICES

In international trade, a “good” is distinguished from a “service” to determine who should be in charge of regulating a specific product.¹²⁰ The standard test used to distinguish “goods” and “services is the “tangibility test.” In addition to this test, there are three major approaches that various other bodies use to make this distinction.¹²¹ The first this Note will call the predominant purpose test: essentially, whether the “service” aspect of creating the product dominates over the “good” aspect involved in selling the product. The next test this Note will call the equivalent end use test: if a digital file can be used for the same end use as a physical equivalent, the digital file is likely a “good.” The third test is the exclusive ownership test: an “article” must have the potential to be exclusively owned to qualify under this test.

114. *Id.*

115. *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437 (2007).

116. *See* Ebrahim, *supra* note 42, at 63–64.

117. *Id.*

118. *Id.*

119. *Id.*

120. Lucas S. Osborn, *Regulating Three-Dimensional Printing: The Converging Worlds of Bits and Atoms*, 51 *SAN DIEGO L. REV.* 553, 567 (2014).

121. Fleuter, *supra* note 38, at 162–73.

1. *The Predominant Purpose Test*

The predominant purpose test is favored by courts to determine if the Uniform Commercial Code (UCC) should apply to a certain case.¹²² Goods are defined under the UCC as “all things . . . movable at the time of identification to the contract for sale.”¹²³ Software can often have both a good and a service aspect. Courts have traditionally drawn the line between mass-marketed software and custom-built software.¹²⁴ For custom-built software, the service of creating the software dominates over the good aspect of selling one copy, and thus, it is a service.¹²⁵ For mass-marketed software, on the other hand, the good aspect of selling many copies dominates.¹²⁶ Going along with this, files that are fully produced and then sold are considered goods, but files that have an ongoing upkeep or modification plan after being sold are services.¹²⁷

This fits with the *ClearCorrect* decision, where the court did not treat digital files for aligners as articles.¹²⁸ The service aspect—the work that goes into creating the CAD files for the aligners—clearly dominates over the good aspect—the sale of the product to one customer. Further, the CAD files can be tweaked after importation, an ongoing service. But, mass-marketed CAD files are a different case. For these, the good aspect of selling the file for many different 3D printings dominates over the service aspect of creating the file one time. CAD files that are imported for mass distribution also would have no post-importation individualized alterations. These files may be tougher to distinguish from a traditional article to take them out of the ITC’s jurisdiction.

1. *The Equivalent End Use Test*

The WTO uses the equivalent end use test to decide how to treat products in international trade.¹²⁹ Under the WTO’s likeness principle, countries should give like treatment to like goods and services.¹³⁰ In deciding the likeness of two products, countries should consider whether

122. Osborn, *supra* note 120, at 572.

123. *Id.* at 571.

124. *Id.* at 572.

125. *See id.* at 568.

126. *See id.*

127. *See* Fleuter, *supra* note 38, at 160–61.

128. *ClearCorrect Operating, LLC v. ITC*, 810 F.3d 1283 (Fed. Cir. 2015).

129. *See* Fleuter, *supra* note 38, at 166 (noting that one of the WTO’s fundamental principles is the “likeness principle,” which espouses “like treatment to like goods and services”).

130. *Id.*

two products are capable of achieving the same result, as well as the extent to which customers treat the two products as alternative means to satisfy the same need.¹³¹ In other words, if a digital file can serve the same end use as a physical product, countries should treat it like the physical product in international trade. This principle is easily applicable to E-products such as digital copies of books, movies, or music. Because both the digital file and the physical copy can be used to read the book, watch the movie, or listen to the music, the two should be treated the same. The fact that customers are increasing their consumption of digital media to replace physical copies further strengthens this argument. A CAD file for 3D printing probably does not serve the same end use as the physical product. The digital files to create ClearCorrect's aligners do nothing to align the customers' teeth and the customers would not view the CAD file as an acceptable replacement.

2. *The Exclusive Ownership Test*

The final approach to distinguishing an article from a service, the exclusive ownership test, involves both the ability of an entity to have full possession over the product along with the tradability of the product.¹³² An article can be retained and traded multiple times, giving each successive owner an economic benefit from their ownership.¹³³ A service, instead, is used up by its transmission; once the service has occurred, it cannot be transferred to another entity.¹³⁴ CAD files certainly give the owner an economic benefit and can be traded without using up the file like a service.

The second part of this test, the exclusive ownership of the product, also is not as large a hurdle as it seems. Digital files are distinct from physical products in that when they are transferred to another owner, the original owner can retain a copy of the file.¹³⁵ But nobody would say that books are not products because owners can make copies of them before they transfer the books. And digital rights management technology is available to curtail some of this exclusivity issue.¹³⁶ The owners of CAD files for a retainer do get some small economic benefit from their ownership, as the file can be sold to the customer with matching teeth who will print and use the aligner.

131. *Id.*

132. *See id.* at 165 (citing Peter Hill, *Tangibles, Intangibles and Services: A New Taxonomy for the Classification of Output*, 32 CAN. J. ECON 426 (1999) (“[A]n essential characteristic of a good is that ‘an entity over which ownership rights may be established and from which its owner(s) derives some economic benefit.’”)).

133. *Id.*

134. *Id.*

135. *Id.*

136. *Digital Rights Management*, ELEC. FRONTIER FOUND., <https://www.eff.org/issues/drm> [<https://perma.cc/YJY3-3JXX>].

And with the lack of a major exclusive ownership issue, ClearCorrect's files would likely be considered articles under this test.

D. APPLYING THE TESTS

The facts in *ClearCorrect* are not the only imaginable scenario in which the ITC may be forced to confront the importation of infringing digital files. As more and more patents relate to electronics, a number of similar situations may arise. This Part will explore some of these hypothetical issues, looking at how the Federal Circuit may view them and the policy implications of such decisions. The ITC should follow the exclusive ownership test for a number of reasons.

1. Policy Framework

Before considering these hypotheticals, it is important to create a framework for judging the policy implications. One major factor to consider is the capability of the agency to regulate what it is charged with regulating. The ITC, for example, currently has very sophisticated powers to stop infringing physical products from entering the United States via one of the country's border ports.¹³⁷ But the ITC, and any other agency for that matter, does not currently have the ability to intercept or exclude digital files from entering the United States by electronic transmission.¹³⁸ This gap in agency capability exists despite the failed attempts at passing legislation that would give some agency these powers.¹³⁹ Because many of these hypothetical scenarios involve the electronic transmission of digital files, it is worth considering if any U.S. agency could easily bring these products into their authority and whether legislation could be passed allowing them to do so.

Another factor to consider is the ease with which a line can be drawn between what is and is not an article. As detailed earlier, the ITC has a wide range of responsibilities that limits the commissioners' ability to specialize on this specific topic.¹⁴⁰ Creating a test with a lot of uncertainty creates a situation where the ITC must make difficult decisions in an area outside its expertise. A test where a clear distinction exists between what is and is not under ITC authority will ease this process tremendously.

Finally, when applying a test, the ITC must choose one that will not leave its decisions subject to reversal by the Federal Circuit. The ITC should

137. *Official Harmonized Tariff Schedule 2017*, U.S. INT'L TRADE COMM'N, <https://www.usitc.gov/tata/hts/index.htm> [<https://perma.cc/7Y6X-ELHE>].

138. *See id.* (noting that while the USITC maintains the Official Harmonized Tariff Schedule, "Customs and Border Protection is the only agency that can provide legally binding advice or rulings on classification of imports").

139. *See* Ebrahim, *supra* note 42, at 71.

140. *See USITC Facts*, *supra* note 14.

not be making decisions on cases that the Federal Circuit believes are outside the ITC's authority. The best test will give results that align with what the Federal Circuit has decided.

2. *The Easy Cases*

The most common, and easiest to decide, situation to examine is one in which a physical device, such as a flash drive or a CD, containing infringing digital files is physically shipped into the United States. An example of this is a bootlegged movie sent into the United States on a DVD. But it may also occur with music, e-readers, or flash drives containing protected 3D printing files of blueprints. Importing physical devices containing copies of software is very similar to the importation of hard copies of other digital files. In these situations, people are only buying and selling a physical copy of the software and not software in the abstract.¹⁴¹ These cases clearly fall under the ITC's current authority and should remain that way.¹⁴²

These products would be considered articles under all three tests. Under the predominant purpose test, the good aspect clearly predominates. These items are made to be distributed to many consumers with a minimal or nonexistent ongoing service relationship. The equivalent end use test is almost unnecessary because these are physical products. They do not need to be equivalent to a different article to be considered the same. If it is necessary, the media files are essentially the same as non-digital copies of books or movies and should be treated the same. And the exclusive ownership test is easily satisfied as well. As physical items, they can only have one owner to which they provide an economic benefit. There is no issue of transmitting while retaining the original.

An easy case not under ITC authority is telecommunications transmissions. Despite the Court of International Trade's inclusion of these in its definition of articles,¹⁴³ it is unlikely that either the ITC or the Federal Circuit would agree with that decision. Telecommunications transmissions would fail to qualify as goods under all three tests. The service aspect clearly dominates, as they are used up on transmission and are not something that can be sold to a consumer. They are not equivalent to any physical product and are much closer to a service providing assistance over a phone. And they cannot be exclusively owned and do not provide an economic benefit because they are fleeting and cannot be retained.

141. See Kumar, *supra* note 36, at 1927, 1958.

142. Ebrahim, *supra* note 42, at 74.

143. Kumar, *supra* note 36 at 1928.

3. *The Middle Ground*

The middle ground consists mostly of digital files for a wide range of purposes. One example is a digital CAD file for 3D printing. This is essentially what was at issue in *ClearCorrect* where the files were uniquely designed. But it could also apply to the transmission of mass-marketed CAD files, either for standalone products or for replacement parts of preexisting products.

Under the predominant purpose test, the ITC may be required to draw a line between these two types of CAD files. The service aspect would dominate unique files while the good aspect would dominate mass-marketed files. This goes against the principle of creating a simple, bright line rule for the ITC to follow in these cases to ease the burden in their decision-making process. Under the exclusive ownership test, these files could again go either way. Being digital files, there is the possibility that the files could be transmitted while the original owner retained a copy. But if DRM technology was used, this issue could be eliminated; if so, the digital file would be a good. This creates another difficult distinction for the ITC to make. The equivalent end use test is the only one that provides a clear outcome to these files. Although the files are a step on the way to a physical 3D-printed product, they clearly cannot serve the same function as the physical product. They would not be considered goods under this test.

Digital media files are similar to 3D printing files, but they do not yield the same results under every test. Digital media files, such as movie streams, music files, or textbook pdfs, can be uploaded and hosted on a non-U.S. website. This is the major issue that PIPA and SOPA were designed to deal with.¹⁴⁴ Customers in the United States can then access and download these files and circumvent paying for the copyrighted works. These illegal downloaders can be prosecuted, although usually there are so many downloaders who download relatively few works that prosecution is rare.¹⁴⁵ And DMCA takedowns can be ordered, but this only applies to hosts that the DMCA governs and can often be ignored.¹⁴⁶

These files are likely a good under the predominant purpose test. The files are mass marketed and designed to be distributed to many customers,

144. Menell, *supra* note 45, at 317.

145. Jeff Stone, *How People Are Caught Illegally Downloading Music, Movie Torrents*, INT'L BUS. TIMES (Sept. 12, 2012), <http://www.ibtimes.com/how-people-are-caught-illegally-downloading-music-movie-torrents-783071> [<https://perma.cc/4QVE-AM AQ>].

146. Andy, *Completely Ignoring the DMCA an Option for Torrent Sites?*, TORRENT FREAK, (Jan. 31, 2016), <https://torrentfreak.com/completely-ignoring-the-dmca-an-option-for-torrent-sites-160131> [<https://perma.cc/UB3U-QU G4>].

so the good aspect certainly dominates over the service that goes into creating the file. The files are likely a good under the equivalent end use test as well. When a customer is accessing the file to watch the movie or listen to music, there is no difference to them between having the physical DVD or CD and downloading the file off the Internet. For the same reasons as 3D-printing files, the exclusive ownership test gives a gray area. Again, the files require DRM technology to ensure that they are not dually owned. A classification as an article under this test would require that this technology is attached.

Electronic software is a final example of files that may come out differently under the three tests. The predominant purpose test depends on whether the software is custom designed or mass marketed. The service aspect of creating the program would dominate custom-designed software. The good aspect of selling the program to customers would dominate mass-marketed software. This also may depend on whether there is an ongoing service relationship between the seller and the buyer. The equivalent end use test is another question. The software file is equivalent to a physical copy of the software before installation, but once the software is installed, there is no physical product that does the same work as the file. This test could go either way. And the exclusive ownership again depends on the application of DRM technology.

4. *Comparison of the Tests*

Each test has some benefits and drawbacks when applied to these technologies. With one modification regarding DRM technology, the exclusive ownership test has the most benefits. DRM technology, while a useful tool, is not perfect. Under the assumption that a workaround to this technology exists or that the technology is not used for all files, the exclusive ownership test is the correct test. Without DRM technology, this test fits best with the policy framework. Under this test, the digital files that the ITC cannot regulate would not be under its authority. The test would also provide a clear and simple rule for the ITC to follow to make future decisions. Finally, this test would match what the Federal Circuit has decided in the past making it unlikely that they would overturn future decisions made using this test.

The predominant purpose test has the major issue of forcing the ITC to make distinctions between different files of the same type. This goes against the principle of creating an easy framework for the ITC to use. This test would also create the issue of having the ITC regulate digital files, an area where they have no expertise or infrastructure to make and enforce decisions. Finally, while this test does not go against the *Suprema* or

ClearCorrect decisions, it does create uncertainty which may lead to overturned decisions in the future.

The equivalent end use test also is not perfect. It leads to a scenario where the ITC would be regulating digital files it is not prepared to regulate. It is a clearer test than the predominant purpose test, but it still forces the ITC to seek out an equivalent physical product. And this too creates opportunity for the Federal Circuit to overturn ITC decisions because of the uncertainty associated with the test.

III. CONCLUSION

In conclusion, the ITC would be best suited applying the exclusive ownership test to determine what is an article and, therefore, under its authority. This test matches the capabilities that the ITC currently has to regulate trade, draws a clear line for the ITC to easily follow, and matches with decisions from the Federal Circuit. The other two tests leave room for interpretation and uncertainty and may force the ITC to regulate new and unfamiliar areas.

JOHN DOE’S RIGHT OF PUBLICITY

Noa Dreymann[†]

The right of publicity secures “the inherent right of every human being to control the commercial use of his or her identity.”¹ State laws—in the form of recognized common law rights, statutes, or a combination of the two—govern the right of publicity.² Over thirty states³ recognize some form⁴ of this right, and provide a cause of action to plaintiffs who claim to suffer from what William Prosser famously articulated as “the appropriation, for the defendant’s benefit or advantage, of the plaintiff’s name or likeness.”⁵

Originally a subset of the right to privacy,⁶ the right of publicity is the product of a complicated evolution that is arguably still underway. Notably, over the past few decades, California’s right of publicity law⁷ has become a powerful tool for celebrities seeking damages for the appropriation of their identities.⁸

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1. J. THOMAS MCCARTHY, *THE RIGHTS OF PUBLICITY AND PRIVACY* § 1:3 (2d ed. Westlaw 2016).

2. *See id.* § 6:3.

3. *Id.* Cf. 2 MARK A. LEMLEY, PETER S. MENELL & ROBERT P. MERGES, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* VI-72 (2016) (revealing slight discrepancies in the number of states).

4. *See* Jennifer E. Rothman, *Rothman’s Roadmap to the Right of Publicity*, <http://www.rightofpublicityroadmap.com/> [<https://perma.cc/UJQ2-3PBT>] (last visited Jan. 22, 2017) (providing information about each state’s version, or lack thereof, of a right of publicity law).

5. William L. Prosser, *Privacy*, 48 CALIF. L. REV. 383, 401 (1960).

6. MCCARTHY, *supra* note 1, § 1:2.

7. California law provides both a common law right of publicity and a statutory right of publicity. As outlined in *Eastwood v. Superior Court*, 198 Cal. Rptr. 342, 347 (Ct. App. 1983), a plaintiff bringing a California common law right of publicity claim must establish the following elements: (1) the defendant’s use of plaintiff’s identity; (2) the appropriation of plaintiff’s name or likeness to defendant’s advantage, commercially or otherwise; (3) lack of consent; and (4) resulting injury. Additionally, Cal. Civil Code § 3344(a) (1971) (amended 1984) dictates that a violator of California’s right of publicity statute is one who uses “another’s name, voice, signature, photograph, or likeness” without authorization in a commercial manner.

8. *See, e.g.*, *Hilton v. Hallmark Cards*, 599 F.3d 894 (9th Cir. 2010); *Abdul-Jabbar v. Gen. Motors Corp.*, 85 F.3d 407 (9th Cir. 1996); *Midler v. Ford Motor Co.*, 849 F.2d

Though its ultimate decision may be defensible, the Ninth Circuit's reasoning in *Sarver v. Chartier*,⁹ a right of publicity case brought by a non-celebrity, exposes the dangers of failing to understand the origins, development, and justifications of the right of publicity. Ignoring earlier right of publicity cases¹⁰ and the works of important scholars,¹¹ the *Sarver* court seems blinded by the recent influx of celebrity right of publicity claims, and suggests that only celebrities are worthy of protection from right of publicity violations, at least in cases where the defendants' speech is expressive in nature. By overlooking some of the right of publicity's justifications, and misapplying others, *Sarver* may lead future courts to strip non-celebrities of a right meant for "every human being."¹² Now, more than ever, as the average person's social media presence provides easy access to her photographs, videos, and more, it is worthwhile to explore non-celebrities' ability to control the uses of their identities.

Part I of this Note recounts the history of the right of publicity. Part II elaborates on the key policy justifications for the right of publicity, and explains how courts reconcile the right of publicity with the right to freedom of expression. Part III lays out the facts of *Sarver*, and summarizes both the district court's and the Ninth Circuit's treatments of the case. Part IV analyzes the Ninth Circuit's reasoning in *Sarver*, and argues that such a line of reasoning risks jeopardizing the future of non-celebrities' right of publicity.

I. THE RIGHT OF PUBLICITY—A COMPLICATED EVOLUTION

This Part begins by describing the development of the right to privacy, a precursor to the right of publicity. It continues by, first, demonstrating the need for an independent right of publicity, and, second, shedding light on the foundation of the right of publicity doctrine. Finally, this Part provides a survey of more recent right of publicity cases—specifically, those arising out of celebrities' claims.

460 (9th Cir. 1988). This Note often refers to the totality of a person's protected aspects—her name, voice, signature, photograph, likeness, etc.—as her "identity."

9. *Sarver v. Chartier*, 813 F.3d 891 (9th Cir. 2016).

10. *See, e.g.*, *Pavesich v. New England Life Ins. Co.*, 50 S.E. 68 (Ga. 1905).

11. *See, e.g.*, Melville B. Nimmer, *The Right of Publicity*, 19 L. & CONTEMP. PROBS. 203 (1954).

12. MCCARTHY, *supra* note 1, § 1:3.

A. THE EMERGENCE OF THE RIGHT TO PRIVACY

Since the right to privacy acted as a precursor to the right of publicity, a review of the origins of the right to privacy is essential to understanding the right of publicity. In 1890, Samuel Warren and Louis Brandeis, two distinguished Harvard Law School alumni,¹³ wrote an influential law review article,¹⁴ cited as “single-handedly” creating the theory behind privacy rights.¹⁵ Warren and Brandeis envisioned a right to privacy that protected individuals from the “mental pain and distress” brought upon by intrusions into the “sacred precincts of private and domestic life.”¹⁶ Specifically, Warren and Brandeis demanded a remedy against newspaper articles reporting gossip, and unauthorized publications of portraits.¹⁷

In 1902, over a decade after the publication of the Warren and Brandeis article, the New York Court of Appeals case, *Roberson v. Rochester Folding Box Co.*,¹⁸ rejuvenated developments in the realm of privacy rights. In *Roberson*, a woman sued a flour company for using her picture in an advertisement without obtaining her consent, causing her “great distress and suffering, both in body and mind.”¹⁹ A divided court held that there was no precedent to support the existence of a common law right to privacy.²⁰ Notably, this early case raised the same concerns with which courts have continued to grapple throughout the evolution of the right of publicity: the insurmountable difficulties inherent in “draw[ing] a line of demarcation between public characters and private characters,”²¹ as well as qualms about restricting the freedoms of press and of speech.²²

Ultimately, the public outrage that followed the *Roberson* decision²³ led the New York Legislature to enact a statute that rendered the use of the name, portrait, or picture of any person for “advertising purposes or for the purposes of trade” without her written consent a misdemeanor and a tort.²⁴

13. MCCARTHY, *supra* note 1, § 1:12.

14. Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890).

15. MCCARTHY, *supra* note 1, §§ 1:11, 1:4.

16. Warren & Brandeis, *supra* note 14, at 195–96.

17. *Id.*

18. *Roberson v. Rochester Folding Box Co.*, 64 N.E. 442 (N.Y. 1902).

19. *Id.* at 442.

20. *Id.* at 443.

21. *Id.* at 447. The *Roberson* court, like many that have come after it, operated under a framework according to which public characters have surrendered their right to privacy.

22. *Id.*

23. Prosser, *supra* note 5, at 385.

24. N.Y. Sess. Laws, ch. 132, §§ 1–2 (1903) (amended as N.Y. Civ. Rights Law, §§ 50–51 (1921)).

The narrow statute overturned *Roberson* and allowed recovery for unauthorized commercial uses; it did not recognize a broader right to privacy.²⁵

In 1905, as discourse regarding privacy rights continued gaining momentum, *Pavesich v. New England Life Insurance Co.* provided the Georgia Supreme Court an opportunity to recognize a common law right to privacy.²⁶ The relevant facts of *Pavesich* were largely analogous to those of *Roberson*: the plaintiff, a little-known artist, sued an insurance company and a photographer for the unauthorized use of his picture in an advertisement.²⁷ In contrast to the *Roberson* court, however, the *Pavesich* court found that a right to privacy exists, and that the unauthorized commercial use of one's picture constitutes an invasion of the right.²⁸

Over the next few decades, as courts continued to grapple with cases implicating similar causes of action, the *Pavesich* case paved the way for those courts embracing a right to privacy.²⁹ In the 1930s, bolstered by the articulation of such a right in the Restatement (First) of Torts,³⁰ “the tide set in strongly in favor of recognition” of the right to privacy.³¹

25. MCCARTHY, *supra* note 1, § 1:16; *see* Arrington v. New York Times Co., 434 N.E.2d 1319, 1321 (1982) (noting that “[the statute was] drafted narrowly to encompass only the commercial use of an individual’s name or likeness and no more,” and that “the Legislature confined its measured departure from existing case law to circumstances akin to those presented in *Roberson*.”); Harriet F. Pilpel, *The Right of Publicity*, 27 BULL. COPYRIGHT SOC’Y 249, 251 (1980) (remarking that the New York statute contains “[n]ot a word about the prying into personal lives that was the basis of the Brandeis-Warren article—only a ban on commercial use, without consent.”).

26. *Pavesich v. New England Life Ins. Co.*, 50 S.E. 68, 78 (Ga. 1905) (adopting the *Roberson* dissent: “The right of privacy, or the right of the individual to be let alone, is a personal right, which is not without judicial recognition.”).

27. *Id.* at 68–69.

28. *Id.* at 80–81.

29. *See* Prosser, *supra* note 5, at 386 (labeling *Pavesich* as the “leading case” in terms of recognition of a right to privacy). *See also* Edward J. Bloustein, *Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser*, 39 N.Y.U. L. REV. 962, 986 (1964) (noting that *Pavesich* “has probably been cited more often than any other case in the history of the development of the right to privacy.”).

30. RESTATEMENT (FIRST) OF TORTS § 867 (AM. LAW INST. 1939) provided that “[a] person who unreasonably and seriously interferes with another’s interest in not having his affairs known to others or his likeness exhibited to the public is liable to the other.”

31. Prosser, *supra* note 5, at 386. *But see* Arthur L. Goodhart, *Restatement Of The Law Of Torts, Volume IV: A Comparison Between American And English Law*, 91 U. OF PA. L. REV. 487, 508 (1943) (remarking that, at the time of his writing, “[t]he number of States which [had] not as yet recognized this rule [was] still so large that it seem[ed] doubtful whether it [could] be said to represent the settled American law on the subject.”).

B. DISTINGUISHING THE RIGHT OF PUBLICITY FROM THE RIGHT TO PRIVACY

As the right to privacy became increasingly accepted, the tendency to treat what we now call the “right of publicity”³² as a subpart of the right to privacy³³ caused a large deal of confusion in the courts.³⁴ This confusion was exacerbated especially when celebrities, as opposed to non-famous individuals, brought claims of misappropriation of their identities framed as invasions of their right to privacy.³⁵ Courts associated privacy claims with dignitary harms resulting from being thrust into the limelight while longing to be “let alone.”³⁶ To celebrities’ chagrin, courts viewed celebrities as individuals who had effectively waived their right to privacy.³⁷ The 1941 privacy case, *O’Brien v. Pabst Sales Co.*,³⁸ represents one such example of the conflation of privacy claims with appropriation concerns.³⁹ In *O’Brien*, the plaintiff, a famous football player, brought an invasion of privacy claim when his photograph was used in a beer advertisement without his consent.⁴⁰ The Fifth Circuit affirmed the lower court’s finding that “no [privacy] case had been made out” because the plaintiff waived his right to privacy when he ceased being a “private person.”⁴¹

Arguing in dissent that the plaintiff was entitled to recover the reasonable value of the use of his picture,⁴² Judge Holmes opened the door

32. Loosely, the right to not have one’s identity appropriated by another.

33. See e.g., *Pavesich*, 50 S.E. at 68; RESTATEMENT (FIRST) OF TORTS § 867 (AM. LAW INST. 1939).

34. MCCARTHY, *supra* note 1, §§ 1:7, 1:25.

35. *Id.* §§ 1:7, 1:25.

36. *Id.* § 1:25.

37. Opinions written as early as 1902 and as late as 1952 reflect this notion. See, e.g., *Roberson v. Rochester Folding Box Co.*, 64 N.E. 442, 447 (N.Y. 1902) (remarking that “[a] private individual should be protected against the publication of any portrait of himself, but, where an individual becomes a public character, the case is different.”); *Pallas v. Crowley-Milner & Co.*, 54 N.W.2d 595, 597 (1952) (affirming judgment for Defendant where Plaintiff, a “show girl or model,” sought damages for the unauthorized use of her photograph in an advertisement because “[t]he testimony in the case warranted submission to the jury of the question of whether plaintiff had cast aside the cloak of privacy of the ordinary, private person, embraced a public or professional role as show girl or model and thereby waived her right to be free from an invasion of privacy . . .”).

38. *O’Brien v. Pabst Sales Co.*, 124 F.2d 167 (5th Cir. 1941).

39. See MCCARTHY, *supra* note 1, § 1:25.

40. *O’Brien*, 124 F.2d at 168.

41. *Id.* at 169–70 (finding that “the publicity he got was only that which he had been constantly seeking and receiving.”).

42. *Id.* at 170.

to the recognition of a separate right—the right of publicity. Judge Holmes maintained that:

[t]he right of privacy is distinct from the right to use one’s name or picture for purposes of commercial advertisement. The latter is a property right that belongs to every one; it may have much or little, or only a nominal, value; but it is a personal right, which may not be violated with impunity.⁴³

Following the footsteps of Judge Holmes, Judge Jerome Frank took “a long step in [the] direction”⁴⁴ of distinguishing between privacy and publicity rights in the 1953 *Haelan Laboratories, Inc. v. Topps Chewing Gum, Inc.*⁴⁵ opinion. Writing for the *Haelan* court, Judge Jerome Frank rejected the defendant’s argument that “a man has no legal interest in the publication of his picture other than his right of privacy.”⁴⁶ Judge Jerome Frank is widely cited as coining the term “right of publicity”⁴⁷ insofar as it is used to denote the right to grant to another the exclusive right to publish one’s photograph or likeness.⁴⁸

Shortly after the *Haelan* opinion, in 1954, Professor Melville B. Nimmer published his influential *The Right of Publicity*,⁴⁹ lauded as “the foundation stone of the right of publicity.”⁵⁰ Nimmer defines the right of publicity as “the right of each person to control and profit from the publicity values which he has created or purchased.”⁵¹ Nimmer argues that a right of publicity is necessary because (1) there is a pecuniary value inherent in publicity,⁵² and (2) all other “traditional legal theories” are inadequate in protecting such “publicity values.”⁵³

43. *Id.*

44. Joseph Grodin, Note, *The Right of Publicity: A Doctrinal Innovation*, 62 YALE L.J. 1123, 1130 (1953).

45. *Haelan Laboratories, Inc. v. Topps Chewing Gum, Inc.*, 202 F.2d 866 (2d Cir. 1953).

46. *Id.* at 868.

47. MCCARTHY, *supra* note 1, § 1:26. *See also* Nimmer, *supra* note 11, at 204. *See* MCCARTHY, *supra* note 1, § 1:26 n.1 for other, earlier uses of the term “right of publicity.”

48. *Haelan Laboratories*, 202 F.2d at 868 (positing that “in addition to and independent of that right of privacy . . . a man has a right in the publicity value of his photograph, i.e., the right to grant the exclusive privilege of publishing his picture,” and that “[t]his right might be called a ‘right of publicity.’”).

49. Nimmer, *supra* note 11.

50. MCCARTHY, *supra* note 1, § 1:27.

51. Nimmer, *supra* note 11, at 216.

52. *Id.* at 215–16 (pointing to the practice of paying celebrities “considerable sums” for the right to leverage aspects of their identities as evidence for this assertion).

53. *Id.* at 215.

Nimmer's article addresses the second prong of its argument—the inadequacy of other legal theories—by expanding on the then-budding notion that the doctrine of privacy fails to protect one claiming that another has appropriated her name, photograph, or likeness.⁵⁴ According to Nimmer, using the privacy doctrine to pursue such claims is fraught with obstacles.⁵⁵ These obstacles include courts' adoption, to various extents, of the idea that celebrities waive their right to privacy,⁵⁶ and the non-assignable nature of the right to privacy.⁵⁷ Accordingly, Nimmer urges that the right of publicity—unlike the right to privacy, which is a personal right—should be an assignable property right.⁵⁸ As such, Nimmer posits that “the measure of damages should be computed in terms of the value of the publicity appropriated by defendant rather than, as in privacy, in terms of the injury sustained by the plaintiff.”⁵⁹

Nimmer's article also clarifies issues with which present-day courts struggle. An important piece of wisdom that the article imparts is that while publicity values are often of “substantial pecuniary worth” only when associated with celebrities, all persons possess the right.⁶⁰ Practically, Nimmer suggests “rely[ing] upon the rule of damages” whenever famous and non-famous plaintiffs alike bring right of publicity claims:

[I]t should rather be held that every person has the property right of publicity, but that the damages which a person may claim for infringement of the right will depend upon the value of the publicity appropriated which in turn will depend in great measure upon the degree of fame attained by the plaintiff.⁶¹

After *Haelan* and Nimmer's *The Right of Publicity* distinguished between the right to privacy and the right of publicity, William Prosser's

54. *Id.* at 204 (contending that “[t]hose persons and enterprises in the entertainment and allied industries wishing to control but not prohibit the use by others of their own or their employees' names and portraits will find . . . that the right of privacy is generally an unsatisfactory means of assuring such control.”).

55. *Id.* at 204–10.

56. *Id.* at 204–06.

57. *Id.* at 209–10 (explaining that “if a prominent person is found merely to have a personal right of privacy and not a property right of publicity, the important publicity values which he has developed are greatly circumscribed and thereby reduced in value.”).

58. *Id.* at 216.

59. *Id.* See *id.* at 210–15 for Nimmer's arguments regarding the inadequacies of the doctrine of unfair competition and contract theory.

60. *Id.* at 216–17.

61. *Id.* at 217. Consistent with his aversion toward drawing “arbitrary” lines, Nimmer also cautions against dividing speech into “commercial” speech (i.e. speech that is in “connection with trade and advertising”) and other kinds of speech. *Id.*

1960 article, *Privacy*,⁶² remerged the two. Prosser divided the law of privacy into four torts, and labeled the fourth privacy tort as “appropriation.”⁶³ This tort, according to Prosser, consists of the invasion of the plaintiff’s privacy by “the appropriation, for the defendant’s benefit or advantage, of the plaintiff’s name or likeness.”⁶⁴ Prosser’s *Privacy* proved “immensely influential,”⁶⁵ and its division of the privacy right into four torts has been adopted by the Second Restatement of Torts⁶⁶ and accepted by almost all courts in the United States.⁶⁷ Cases as recent as *Eastwood v. Superior Court*—a 1983 California right of publicity claim analyzed as a “fourth category of invasion of privacy” case⁶⁸—reveal that the confusion that Prosser’s article caused has been longstanding and difficult to undo.⁶⁹

C. RECENT CALIFORNIA RIGHT OF PUBLICITY CASES—CELEBRITIES FLOOD THE COURTS

It is no surprise that California courts⁷⁰—which serve, among others, the glamorous residents of Hollywood—hear many right of publicity cases brought by celebrities. As discussed, not too long ago, celebrities complaining of the unauthorized uses of their identities often found their claims dismissed. In the recent decades, however, the right of publicity has evolved as a useful tool for celebrities seeking to counter the appropriation of their identities. Illustrating this development, this Section summarizes four notable Ninth Circuit cases in which celebrities availed themselves of the right of publicity.

1. *Midler v. Ford Motor Co. (1988)*⁷¹

In *Midler*, the famous singer and actress, Bette Midler, sued Ford Motor Company and its advertising agency for using a “sound alike” in a

62. Prosser, *supra* note 5.

63. *Id.* at 389.

64. *Id.* at 401.

65. MCCARTHY, *supra* note 1, § 1:19.

66. RESTATEMENT (SECOND) OF TORTS § 652A (AM. LAW INST. 1977).

67. MCCARTHY, *supra* note 1, §§ 1:19, 1:24.

68. *Eastwood v. Superior Court*, 198 Cal. Rptr. 342, 346 (Ct. App. 1983).

69. *See* MCCARTHY, *supra* note 1, § 1:19 (discussing the confusion that Prosser’s analysis has caused). *See also* Lugosi v. Universal Pictures, 160 Cal. Rptr. 323, 329 (1979) (providing another example of this confusion by stating that “[t]he protection of name and likeness from unwarranted intrusion or exploitation is the heart of the law of privacy.”).

70. Including California state courts, U.S. federal district courts of California, and the U.S. Court of Appeals for the Ninth Circuit.

71. *Midler v. Ford Motor Co.*, 849 F.2d 460 (9th Cir. 1988).

commercial.⁷² After Midler refused to participate in the commercial, the defendants hired Ula Hedwig, who had previously worked as a backup singer for Midler, to sing *Do You Want To Dance* while imitating Midler's voice.⁷³ Hedwig's accurate imitation fooled many people into believing the commercial had, in fact, featured Midler's voice.⁷⁴

The court found that California's right of publicity statute, which awards damages for the appropriation of one's "voice," did not protect Midler since the defendants did not use Midler's actual voice.⁷⁵ Notwithstanding, reasoning that, by using a "sound-alike," the defendants did appropriate an attribute of Midler's identity, the court found that Midler had a California common law right of publicity cause of action.⁷⁶ Refusing to hold that "every imitation of a voice to advertise merchandise is actionable," the court limited the scope of its holding, and stated that "when a distinctive voice of a professional singer is widely known and is deliberately imitated in order to sell a product, the sellers have appropriated what is not theirs and have committed a tort in California."⁷⁷

2. Abdul-Jabbar v. General Motors Corp. (1996)⁷⁸

In *Abdul-Jabbar*, the celebrated basketball player known as Kareem Abdul-Jabbar sued General Motors Corporation for using his given name, Lew Alcindor, in a commercial without his consent.⁷⁹ Abdul-Jabbar alleged violations of California's statutory and common law rights of publicity.⁸⁰ Finding that neither the statute, nor California's common law requires that the protected aspect of one's identity be "in common, present use," the court held that Abdul-Jabbar had alleged sufficient facts to state a claim under both causes of action.⁸¹

3. Hilton v. Hallmark Cards (2009)⁸²

In *Hilton*, Paris Hilton, the famous "flamboyant heiress," brought a California common law misappropriation of publicity claim against

72. *Id.* at 461.

73. *Id.*

74. *Id.* at 461–62.

75. *Id.* at 463.

76. *Id.*

77. *Id.*

78. *Abdul-Jabbar v. Gen. Motors Corp.*, 85 F.3d 407 (9th Cir. 1996).

79. *Id.* at 409.

80. *Id.* at 409–10. Abdul-Jabbar also alleged that GMC violated his trademark under the Lanham Act. *Id.*

81. *Id.* at 415 (internal quotation marks omitted).

82. *Hilton v. Hallmark Cards*, 599 F.3d 894 (9th Cir. 2010).

Hallmark Cards for selling birthday cards featuring a photograph of her head, super-imposed on a cartoon's body, along with Hilton's catchphrase: "That's hot."⁸³ Hallmark moved to strike the right of publicity claim under California's anti-SLAPP statute.⁸⁴ The Ninth Circuit found that Hallmark's card was not sufficiently transformative to entitle Hallmark to the transformative use defense as a matter of law.⁸⁵ Accordingly, the court denied Hallmark's motion to strike, and allowed Hilton to pursue her claim.⁸⁶

4. *In re NCAA Student–Athlete Name & Likeness Licensing Litig.* (2013)⁸⁷

In *In re NCAA*, Samuel Keller, a former college football player, objected to EA's use of his likeness in its video game, which featured "avatars" heavily modeled after real college players.⁸⁸ Keller filed a putative class-action complaint, claiming that EA violated his right of publicity under California's statute and common law.⁸⁹ EA, in turn, raised four affirmative defenses "derived from the First Amendment," and moved to strike the complaint under California's anti-SLAPP statute.⁹⁰ The first of these defenses was the transformative use defense.⁹¹

In considering EA's transformative use defense, the court weighed five factors⁹² that it identified in its reading of the *Comedy III Prods., Inc. v. Gary Saderup, Inc.*⁹³ opinion to determine whether EA's video game was

83. *Id.* at 899.

84. *Id.* California's anti-SLAPP statute is discussed in detail *infra*, Part III.B.

85. *Hilton*, 599 F.3d at 911.

86. *Id.* at 912.

87. *In re NCAA Student–Athlete Name & Likeness Licensing Litig.*, 724 F.3d 1268 (9th Cir. 2013).

88. *Id.* at 1271–72.

89. *Id.* at 1272.

90. *Id.* at 1272–73.

91. *Id.* at 1273. EA also invoked the Rogers test, the public interest test, and the public affairs exemption, but these defenses are less relevant to this Note.

92. The factors, as recited by the dissent, are: "whether: (1) the celebrity likeness is one of the raw materials from which an original work is synthesized; (2) the work is primarily the defendant's own expression if the expression is something other than the likeness of the celebrity; (3) the literal and imitative or creative elements predominate in the work; (4) the marketability and economic value of the challenged work derives primarily from the fame of the celebrity depicted; and (5) an artist's skill and talent has been manifestly subordinated to the overall goal of creating a conventional portrait of a celebrity so as to commercially exploit the celebrity's fame." *Id.* at 1285 (Thomas, J., dissenting).

93. *Comedy III Prods., Inc. v. Gary Saderup, Inc.*, 21 P.3d 797 (Cal. 2001).

“sufficiently transformative to obtain First Amendment protection.”⁹⁴ Ultimately, the court found that the game was not transformative as a matter of law “because it literally recreate[d] Keller in the very setting in which he has achieved renown.”⁹⁵ The Ninth Circuit proceeded to consider each of EA’s other defenses, but was not convinced by any of them, and affirmed the district court’s ruling against EA.⁹⁶

The recent litigiousness of celebrities leveraging their right of publicity seems to have influenced the *Sarver* court’s framing of the right of publicity doctrine.

II. POLICY RATIONALES FOR THE RIGHT OF PUBLICITY

Several rationales—including fruits of labor, incentive, unjust enrichment, right to self-definition, maximizing the value of identities, and consumer protection—may justify the recognition and enforcement of the right of publicity. This Part first surveys the merits and faults of the right’s main justifications, and then discusses the tension between the right of publicity and the First Amendment’s protection of the freedom of expression.

A. FRUITS OF LABOR

In *The Right of Publicity*, Nimmer argues that the right of publicity is necessary because, in its absence, “persons who have long and laboriously nurtured the fruit of publicity values may be deprived of them.”⁹⁷ Nimmer rests his argument on the “first principle of Anglo-American jurisprudence,” according to which, “every person is entitled to the fruit of his labors unless there are important countervailing public policy considerations.”⁹⁸ Courts and additional scholars often endorse this view.⁹⁹

94. *In re NCAA*, 724 F.3d at 1274–79.

95. *Id.* at 1271, 1279. *But see id.* at 1284–90 (Thomas, J., arguing in dissent that the First Amendment protects EA from liability).

96. *Id.* at 1271, 1284.

97. Nimmer, *supra* note 11, at 216.

98. *Id.*

99. *See, e.g., In re NCAA*, 724 F.3d at 1281 (framing the plaintiff’s claim as one concerning the unauthorized appropriation of the plaintiff’s “talent and years of hard work on the football field”); *Uhlaender v. Henricksen*, 316 F. Supp. 1277, 1282 (D. Minn. 1970) (“It is this court’s view that a celebrity has a legitimate proprietary interest in his public personality. A celebrity must be considered to have invested his years of practice and competition in a public personality which eventually may reach marketable status. That identity, embodied in his name, likeness, statistics and other personal characteristics, is the fruit of his labors and is a type of property.”); James M. Treece, *Commercial Exploitation of Names, Likenesses, and Personal Histories*, 51 TEX. L. REV. 637, 647 (1973)

Taking a more nuanced position, some courts and scholars emphasize that other people and factors—in addition to an individual’s labor—contribute to the value of the individual’s identity.¹⁰⁰ One such scholar, Michael Madow, argues that the existence of external factors contributing to one’s fame is such that “a labor-based moral argument for the right of publicity loses much of its initial appeal.”¹⁰¹ However, the notion that one’s labor alone may not explain one’s success does not necessarily undermine the persuasiveness of the “fruits of labor” rationale.¹⁰²

B. INCENTIVE

The incentive justification posits that granting individuals the exclusive rights to their identities incentivizes them to “undertake socially enriching activities which require entering the public scene.”¹⁰³ While many courts readily accept this justification,¹⁰⁴ different scholars have varying interpretations of what it is, exactly, that the right of publicity is supposed to incentivize.¹⁰⁵ Roberta Kwall argues in favor of the right of publicity, essentially, because it incentivizes people to take the steps necessary for transforming into celebrities who are capable of commercializing their identities.¹⁰⁶ Specifically, Kwall contends, the right of publicity is beneficial

(contending that “[s]ince the primary advertising value of a celebrity’s personality was created through the work and sacrifice of the celebrity, that value could constitute an interest that the law should protect.”).

100. See, e.g., *Cardtoons, L.C. v. Major League Baseball Players Ass’n*, 95 F.3d 959, 975 (10th Cir. 1996) (stating that “[c]elebrities . . . are often not fully responsible for their fame”); Leslie A. Kurtz, *Fictional Characters and Real People*, 51 U. LOUISVILLE L. REV. 435, 459 (2013) (positing that “[c]elebrities may be the ones most responsible for creating valuable public personae,” but citing “the skills and efforts of many other people,” the audience’s curiosity, and “time and chance” as likewise “involved” in the process).

101. Michael Madow, *Private Ownership of Public Image: Popular Culture and Publicity Rights*, 81 CALIF. L. REV. 125, 182 (1993).

102. See, e.g., *White v. Samsung Elecs. Am., Inc.*, 971 F.2d 1395, 1399 (9th Cir. 1992), *as amended* (Aug. 19, 1992) (finding that “[c]onsiderable energy and ingenuity are expended by those who have achieved celebrity value to exploit it for profit,” and that “[t]he law protects the celebrity’s sole right to exploit this value whether the celebrity has achieved her fame out of rare ability, dumb luck, or a combination thereof.”).

103. MCCARTHY, *supra* note 1, § 2:6.

104. See, e.g., *Zacchini v. Scripps-Howard Broad. Co.*, 433 U.S. 562, 576 (1977) (“[T]he protection provides an economic incentive for [people] to make the investment required to produce a performance of interest to the public.”); *Carson v. Here’s Johnny Portable Toilets, Inc.*, 698 F.2d 831, 838 (6th Cir. 1983) (Kennedy, J., dissenting); *Martin Luther King, Jr., Ctr. for Social Change, Inc. v. American Heritage Prods., Inc.*, 296 S.E.2d 697, 705 (Ga. 1982) (“Recognition of the right of publicity rewards and thereby encourages effort and creativity.”).

105. MCCARTHY, *supra* note 1, § 2:6.

106. See generally Roberta Rosenthal Kwall, *Fame*, 73 IND. L.J. 1 (1997).

for its ability to: counteract the “disadvantages of celebrity status”;¹⁰⁷ motivate people to undertake the “intellectual, emotional, and physical effort” entailed in “constructing the celebrity persona”;¹⁰⁸ reward celebrities’ “individualism”;¹⁰⁹ and foster the development of “role models and surrogate communities.”¹¹⁰

J. Thomas McCarthy, on the other hand, argues that upholding the right of publicity of only those who are “consciously” driven by the prospect of licensing their identities for commercial gain would be too “narrow” of an application.¹¹¹ Instead, he contends, the right of publicity may find its justification in its potential ability to “marginally encourage”¹¹² people to pursue any and all “socially enriching actions.”¹¹³ McCarthy’s argument rests on the assumption that valuable achievements inevitably lead to some degree of prominence.¹¹⁴ The fear that others might capitalize on one’s prominence in uncontrollable ways may chill motivation to undertake beneficial endeavors; McCarthy argues that the right of publicity should help prevent such a scenario.¹¹⁵

107. *Id.* at 35–36 (listing invasions of privacy, restriction of personal freedoms, uncertainty regarding the trustworthiness of those around them, and lesser protections against defamation as these “disadvantages”).

108. *Id.* at 41.

109. *Id.* at 41–42 (“Rewarding [celebrities’] efforts at differentiation is entirely consistent with America’s long-standing respect for individualism. As a society, we value hard work, and we encourage people making their mark by developing a persona that somehow stands out from the crowd.”).

110. *Id.* at 47–51 (countering the arguments of those who—citing its “shallowness and greed”—oppose incentivizing the cultivation of celebrity culture, Kwall maintains that “[t]hese criticisms overlook the fact that celebrity culture fills some critical needs in our society . . . it is important to examine the strong need Americans have for both role models and surrogate communities, and the critical role these needs play in our society’s fascination with those who have achieved fame.”).

111. MCCARTHY, *supra* note 1, § 2:6.

112. McCarthy concedes that it is impossible to “quantify what we gain by giving an additional legal inducement such as a right of publicity.” *Id.*

113. *Id.* (citing *Matthews v. Wozencraft*, 15 F.3d 432, 437 (5th Cir. 1994), which mirrors this argument: “Protecting one’s name or likeness from misappropriation is socially beneficial because it encourages people to develop special skills, which then can be used for commercial advantage.”).

114. *See* MCCARTHY, *supra* note 1, § 2:6.

115. *Id.* McCarthy illustrated this notion with the following example: “The physician who finds a cure for a disease may think twice about writing a description of the discovery in laymen’s terms for a newspaper, fearing that the resulting prominence will result in crass commercialization of his or her name for commercial purposes, which is uncontrollable unless there exists some legal right resembling a right of publicity.” *Id.* This example leads one to wonder whether the right of publicity may encourage only the act of describing “the discovery in laymen’s terms for a newspaper,” which is but marginally beneficial to

Rejecting the “incentive” rationale altogether, Madow takes issue with the inability to quantify the right of publicity’s effect of increasing the “effort, creativity, and achievement” available for society’s enjoyment.¹¹⁶ Madow argues that the right of publicity may only slightly increase,¹¹⁷ if not decrease,¹¹⁸ the amount of this kind of beneficial¹¹⁹ behavior. Madow cites: the notion that the right of publicity protects merely a “collateral source of [celebrities’] income”;¹²⁰ the handsome compensations most celebrities enjoy regardless of the right of publicity;¹²¹ and non-economic motivations to succeed¹²² as reasons for which the right of publicity is largely inconsequential for incentivizing celebrities’ activities. Moreover, Madow argues, “in a world without the right of publicity,” celebrities might have created and preformed more than they currently do “in order to make up for the lost collateral income.”¹²³ Thus, Madow concludes, society may abolish the right of publicity without fear that celebrities’ “cultural output” will suffer.¹²⁴

C. UNJUST ENRICHMENT

Another oft-used rationale for the right of publicity is that “[w]hen one makes an unauthorized use of another’s identity for his own commercial

society, or if it may play a role in inducing the physician to discover the cure in the first place.

116. Madow, *supra* note 101, at 207–15. McCarthy concedes this point, *supra* note 112.

117. Madow, *supra* note 101, at 208–11 (“[T]here are a number of reasons to believe that the incentive effect of the right of publicity is in fact very slight.”).

118. *Id.* at 211–12 (“[I]t is at least possible, if not likely, that in a world without a right of publicity entertainers would actually be *more*, not less, active and productive.”) (emphasis in original).

119. Madow doubts the basic premise that celebrities’ activities are beneficial, but assumes it to be true, *arguendo*. *Id.* at 215–16 (qualifying his argument: “If we assume further that [these activities are] worth something to someone”).

120. *Id.* at 209 (comparing the right of publicity to copyright law, which “directly protects the primary, if not only, source of income of writers.”). *See also* *Cardtoons, L.C. v. Major League Baseball Players Ass’n*, 95 F.3d 959, 974 (10th Cir. 1996) (recognizing “that publicity rights do provide some incentive to achieve in the fields of sports and entertainment,” but noting that “the inducements generated by publicity rights are not nearly as important as those created by copyright and patent law.”).

121. Madow, *supra* note 101, at 209–10. *See also* *Cardtoons*, 95 F.3d at 974 (“[T]he additional inducement for achievement produced by publicity rights are often inconsequential because most celebrities with valuable commercial identities are already handsomely compensated.”).

122. Madow, *supra* note 101, at 214–15.

123. *Id.* at 211–12.

124. *Id.* at 208, 212, 215. For a discussion of whether society should seek to incentivize this sort of activities in the first place, see *id.* at 215–19.

advantage, he is unjustly enriched, having usurped both profit and control of that individual's public image."¹²⁵ This rationale is perhaps simpler than the "fruits of labor" rationale, which relies on the assumption that one deserves, at least to some extent, the value of one's identity. In practice, Person A normally pays for the right to benefit from Person B's belongings or skills, regardless of whether Person B deserved these belongings or skills in the first place. Under the "unjust enrichment" rationale, the right to profit from another's identity is no different, and should require compensation, regardless of desert.¹²⁶

In *Zacchini v. Scripps-Howard Broad. Co.*,¹²⁷ the Supreme Court's sole review of the right of publicity's constitutionality,¹²⁸ this rationale was key to the decision that upholding the plaintiff's right of publicity claim violated neither the First, nor the Fourteenth Amendments.¹²⁹ The *Zacchini* plaintiff, a "human cannonball" performer whose entire performance was videotaped and shown on a television news program without his consent, brought an Ohio common law right of publicity claim against the broadcasting company.¹³⁰ Citing Harry Kalven,¹³¹ the Supreme Court asserted that "[t]he rationale for (protecting the right of publicity) is the straightforward one of preventing unjust enrichment by the theft of good will."¹³² Reasoning that the effect of a public broadcast of a performance is tantamount to preventing a performer from charging an admission fee, the Court continued quoting Kalven, and stated that "[n]o social purpose is served by having the defendant get free some aspect of the plaintiff that would have market value and for which he would normally pay."¹³³

Similarly, some of the more recent Ninth Circuit cases summarized *supra* evoked the "unjust enrichment" rationale in upholding the respective plaintiffs' right of publicity. In *Midler*, pointing out that the defendants benefitted from a voice that sounded like that of Midler—while avoiding

125. *Lugosi v. Universal Pictures*, 160 Cal. Rptr. 323, 339 (1979) (Bird, C.J., dissenting).

126. See Harry Kalven Jr., *Privacy in Tort Law—Were Warren & Brandeis Wrong?*, 31 L. & CONTEMP. PROBS 326, 331 (1966) (stating that "[t]he rationale for [protecting the right of publicity] is the straightforward one of preventing unjust enrichment," and that "[n]o social purpose is served by having the defendant get for free some aspect of the plaintiff that would have market value and for which he would normally pay.").

127. *Zacchini v. Scripps-Howard Broad. Co.*, 433 U.S. 562, 576 (1977).

128. MCCARTHY, *supra* note 1, § 1:33.

129. *Zacchini*, 433 U.S. at 578–79.

130. *Id.* at 562.

131. Kalven, *supra* note 126, at 331.

132. *Zacchini*, 433 U.S. at 576.

133. *Id.*

the high rate Midler would have probably charged had she agreed to participate in the commercial—the court suggested that the defendants were unjustly enriched.¹³⁴

Labeling the “unjust enrichment” rationale as “a bit quaint,” Madow attempts to refute it using three arguments.¹³⁵ First, Madow points out that the plaintiffs in most right of publicity cases have themselves appropriated others’ works, styles, and trail-blazing efforts, and have thus, too, “enjoy[ed] something of a windfall.”¹³⁶ Second, Madow maintains that “there is still no general common law prohibition against benefiting from the commercial efforts of others.”¹³⁷ According to Madow, absent a countervailing policy rationale, intangibles enter the public domain once they are voluntarily placed in the market.¹³⁸ This “presumption in favor of free appropriability of intangibles,” Madow continues, is meant to encourage incremental creativity and progress, and reflects the recognition of the nonrivalrous nature of many intangibles.¹³⁹ Third, Madow argues that, oftentimes, those accused of violating others’ right of publicity “add something of their own—some humor, artistry, or wit—to whatever they ‘take,’” thereby contributing to the production of something of value.¹⁴⁰

134. *Midler v. Ford Motor Co.*, 849 F.2d 460, 463 (9th Cir. 1988) (asking rhetorically: “Why did they studiously acquire the services of a sound-alike and instruct her to imitate Midler if Midler’s voice was not of value to them?” and finding that “[w]hat they sought was an attribute of Midler’s identity. Its value was what the market would have paid for Midler to have sung the commercial in person.”). *See also* *Abdul-Jabbar v. Gen. Motors Corp.*, 85 F.3d 407, 415 (9th Cir. 1996) (“To the extent GMC’s use of the plaintiff’s birth name attracted television viewers’ attention, GMC gained a commercial advantage.”).

135. Madow, *supra* note 101, at 198.

136. *Id.* at 196–200. However, this argument conflates the “fruits of labor” rationale with that of unjust enrichment, a point which Madow recognizes: “[a supporter of the right of publicity] might say that what is morally problematic about unauthorized commercial appropriation is not so much that the celebrity created her image all by herself and thus deserves to control it, but that the appropriator . . . had no hand in its creation at all. On this view, the reason the law ought to give a celebrity a right of property in the commercial value of her persona is that society has a strong and independent moral interest in preventing people from free riding.” *Id.* at 200.

137. *Id.* at 201 (emphasis omitted).

138. *Id.* This argument does not resolve cases where the intangible was not voluntarily placed in the market. For example, it does not resolve the case where someone takes a person’s photograph (the tangible form of one’s intangible image) without the person’s consent, and uses it in an advertisement.

139. *Id.*

140. *Id.* at 204 (emphasis in original). In such cases, the defendants may benefit from the transformative use defense. *See* *Comedy III Prods., Inc. v. Gary Saderup, Inc.*, 21 P.3d 797, 799 (Cal. 2001) (explaining that it formulates “essentially a balancing test between the First Amendment and the right of publicity based on whether the work in question adds

D. RIGHT TO SELF-DEFINITION

Rejecting a string of possible rationales for the right of publicity,¹⁴¹ Mark P. McKenna argues that it is a person's right to autonomous self-definition that justifies publicity rights.¹⁴² McKenna worries that "[b]ecause the things with which individuals choose to associate reflect the way they wish to be perceived, unauthorized use of one's identity in connection with products or services threatens to define that individual to the world."¹⁴³ Further, because the individual alone bears the emotional and economic costs of others' perceptions of her, the individual "has an interest in controlling the uses of her identity."¹⁴⁴

Recognizing celebrities' interest in self-definition, Kwall, too, maintains that the right of publicity is instrumental for "provid[ing] celebrities with a vehicle for maintaining control over how their constructs are presented to the public."¹⁴⁵ The Ninth Circuit has considered celebrities' rights to self-definition in upholding their right of publicity claims. In *Waits v. Frito-Lay, Inc.*, for example, the court accorded weight to Tom Waits's testimony that his refusal to endorse products constituted "part of [the] character and personality and image" that he has "cultivated."¹⁴⁶

McKenna, however, notes that the interest in autonomous self-definition is equally "relevant" for celebrities and non-celebrities.¹⁴⁷ The appropriation of a celebrity's identity usually leads third parties to believe that the celebrity is sponsoring or endorsing a product.¹⁴⁸ Non-celebrities' right of publicity claims, McKenna posits, "might go even further because non-celebrities have a broader range of interests at stake."¹⁴⁹ McKenna lists

significant creative elements so as to be transformed into something more than a mere celebrity likeness or imitation.").

141. Mark P. McKenna, *The Right of Publicity and Autonomous Self-Definition*, 67 U. PITT. L. REV. 225, 245–79 (2005) (rejecting the idea that celebrity identity be protected as a property right; the "unjust enrichment" rationale; labor-based justifications; allocative efficiency arguments; and a Kantian property theory).

142. *Id.* at 294 ("It is that interest, and only that interest, that the law should seek to protect.").

143. *Id.*

144. *Id.* at 229.

145. Kwall, *supra* note 106, at 36–37.

146. *Waits v. Frito-Lay, Inc.*, 978 F.2d 1093, 1104 (9th Cir. 1992), *abrogated by* *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 134 S. Ct. 1377 (2014).

147. McKenna, *supra* note 141, at 279. *See also id.* at 285–88.

148. *Id.* at 285.

149. *Id.*

anonymity, secrecy, and solitude as possible interests that a non-celebrity may seek to protect.¹⁵⁰

The “right to self-definition” rationale often seems forgotten in an era in which economic justifications appear to trump dignitary ones. Some states, however, in line with McKenna’s scholarship, cherish each citizen’s right to autonomous definition, and have shaped their right of publicity laws accordingly. For example, in the interest of allowing its citizens to control the cultivation of their reputations, Arkansas’s right of publicity statute seeks to protect citizens from all walks of life against the unauthorized uses of their identities.¹⁵¹

E. MAXIMIZING THE VALUE OF IDENTITIES

Richard A. Posner contends that a “perfectly good economic reason” justifies the enforcement of the right of publicity.¹⁵² Assigning every individual the rights to her identity, he argues, assures that the entity to which an identity’s aspect is most valuable will be the entity that attains the right to publish it.¹⁵³ According to this rationale, surrendering individuals’ names, photographs, and likenesses to the public domain would lead to their repeated publication, and, consequentially, to the diminution of their value as they no longer attract the attention that advertisers covet.¹⁵⁴ By contrast, creating artificial scarcity such that not all stove campaigns are free to use the photograph of a certain star chef, for example, helps maintain the value of the chef’s identity.¹⁵⁵

150. *Id.* at 286.

151. The Frank Broyles Publicity Rights Protection Act of 2016 reads: “The General Assembly finds that citizens of this state: (1) Are renowned for their hard work and accomplishments in many areas that contribute to the public health, welfare, and pursuit of happiness; (2) Often spend most of their lives developing and maintaining reputations of honesty and integrity; (3) Have a vested interest in maintaining the memory of personal traits that characterize them and their accomplishments; and (4) Should have the use of their names, voices, signatures, photographs, and likenesses protected for their benefit and the benefit of their families.” Frank Broyles Publicity Rights Protection Act of 2016, 2016 Ark. Acts (codified at Ark. Code Ann. § 4–75–1102).

152. Richard A. Posner, *The Right of Privacy*, 12 GA. L. REV. 393, 411 (1978).

153. *Id.* Posner expresses this idea by discussing, specifically, the assignment of a property right in a photograph to the person photographed, such that the advertiser who most values the photograph will purchase the rights to it. *Id.* From this example, this Note extrapolates Posner’s economic justification to the right of publicity at large. *But see* Madow, *supra* note 101, at 223–24 (arguing that transaction costs may prevent the publishing rights from ending up with the advertiser(s) who truly values them most).

154. *See* *Matthews v. Wozencraft*, 15 F.3d 432, 437–38 n.2 (5th Cir. 1994). *See also* Madow, *supra* note 101, at 220 (mockingly labeling this line of thinking as “The Tragedy of the Celebrity Commons?”).

155. *See* *Matthews*, 15 F.3d at 437–38.

Courts and scholars have countered that this economic efficiency rationale does not apply to all right of publicity cases with equal force. The *Cardtoons, L.C. v. Major League Baseball Players Ass'n* opinion remarks that the economic efficiency rationale is not as persuasive outside of the advertising context.¹⁵⁶ Similarly, Madow uses the example of “Madonna T-Shirts,” to contend that the frequent and widespread use of a likeness in the merchandising context, for example, is not as likely to decrease the value of the identity used.¹⁵⁷ To the contrary, the omnipresence of the T-shirts may even increase the identity’s value as more people desire the popular item as well as related “paraphernalia.”¹⁵⁸

F. CONSUMER PROTECTION

James M. Treece argues that the recognition of the right of publicity functions as a “private law mechanism for advertising regulation.”¹⁵⁹ Allowing right of publicity claims, he contends, not only protects those making the claims, but also helps assure that consumers are not “misled about the willingness of a celebrity to associate himself with a product or service.”¹⁶⁰ Treece maintains that, absent other means to differentiate between competing firms’ services, a consumer’s assumption that a responsible celebrity “would not associate himself, even for a fee, with a firm that provides inferior service” may influence her to buy the advertising firm’s service, as opposed to the competing firm’s service.¹⁶¹ Therefore, the argument goes, a consumer’s ability to rely on such logic in making a rational choice would be hindered in the absence of the right of publicity, which serves to assure that the celebrity was, in fact, willing to associate himself with the service.¹⁶²

Taking this rationale to an extreme, Stacey L. Dogan and Mark A. Lemley suggest limiting the right of publicity to “circumstances in which the use of an individual’s name or likeness in connection with the sale of a product is likely either to confuse consumers or to dilute the significance of

156. *Cardtoons, L.C. v. Major League Baseball Players Ass'n*, 95 F.3d 959, 975 (10th Cir. 1996) (referencing Madow, *supra* note 101, at 221–22).

157. Madow, *supra* note 101, at 222.

158. *Id.*

159. Treece, *supra* note 99, at 647.

160. *Id. Contra In re NCAA Student–Athlete Name & Likeness Licensing Litig.*, 724 F.3d 1268, 1279–82 (9th Cir. 2013) (rejecting this “win-win” scenario, and asserting that “[t]he right of publicity protects the *celebrity*, not the *consumer*”) (emphasis in original).

161. Treece, *supra* note 99, at 645.

162. *See id.* at 647.

a famous name.”¹⁶³ Thus curtailing the right of publicity, they argue, would “avoid some of the worst abuses of the right, limit the conflict between the right of publicity and First Amendment principles, and put the right on a more solid conceptual grounding.”¹⁶⁴ These scholars believe that, while “the overlap [between the goals of trademark law and those of the right of publicity] is not perfect,” both laws promote the “same core goals,” and should use the same framework.¹⁶⁵

Madow, on the other hand, rejects the consumer protection rationale as a justification for the right of publicity.¹⁶⁶ Maintaining that consumers do not take the time to engage in the thought process described by Treece, Madow disagrees with the idea that the association between a product or service and a celebrity heavily influences a consumer’s purchasing decision.¹⁶⁷ Alternatively, Madow contends that even if some consumers do allow such associations to influence their purchasing decisions, “it is not clear that the ‘rationality’ of their consumer purchase decisions is thereby enhanced.”¹⁶⁸ Madow maintains that the assumption that celebrities sufficiently research the products and services they promote is often misguided, and that this faulty assumption renders the rationality of such purchasing decisions merely illusory.¹⁶⁹ Finally, Madow rejects the consumer protection rationale as one that employs circular reasoning: consumers assume that celebrities consent to the use of their identities in advertisements because of the existing law and business customs; were these to change such that it is clear that a celebrity’s consent is not necessary, consumers would no longer assume voluntary associations, and would not be misled by the use of an identity in the promotion of a product or service.¹⁷⁰

163. Stacey L. Dogan & Mark A. Lemley, *What the Right of Publicity Can Learn From Trademark Law*, 58 STAN. L. REV. 1161, 1166 (2006).

164. *Id.*

165. *Id.*

166. Madow, *supra* note 101, at 236.

167. *Id.* at 230 (citing *Pacific Dunlop Ltd. v. Hogan*, 87 A.L.R. 14, 45 (Fed. Ct. of Austl., Gen. Div. 1989)) (arguing that the “association of a celebrity image with a product proceeds more subtly to foster favourable inclination towards it, a good feeling about it, an emotional attachment to it”) (internal quotation marks omitted).

168. Madow, *supra* note 101, at 230.

169. *Id.* at 230–31.

170. *Id.* at 235–36.

G. THE TENSION BETWEEN THE RIGHT OF PUBLICITY AND THE FIRST AMENDMENT

Notwithstanding the various rationales justifying the right of publicity, enforcing the right of publicity is fraught with concerns about unduly limiting the freedom of expression.¹⁷¹ This Section uses two cases to illustrate how courts grapple with these often-conflicting rights. Specifically, in deciding whether a given defendant's freedom of expression trumps a given plaintiff's right of publicity, courts may assess the transformative value of the work in question, or attempt to classify the defendant's speech as either commercial or expressive.

1. *The Work's Transformative Value*

In *Comedy III Prods., Inc. v. Gary Saderup, Inc.*,¹⁷² the Supreme Court of California devised a test to balance between the state interest in upholding an individual's right of publicity and an author's interest in free expression.¹⁷³ This balancing test has proven useful to the Ninth Circuit in cases where it sought to reconcile these rights.¹⁷⁴

In *Comedy III*, the owner of all rights to the famed comedy act, The Three Stooges, brought a right of publicity action against an artist who used his own charcoal drawings of The Three Stooges to create and sell lithographs and T-shirts "bearing a likeness of The Three Stooges."¹⁷⁵ The artist's contention that his conduct was "protected by the constitutional guaranty of freedom of speech"¹⁷⁶ prompted the Supreme Court of California to formulate a "balancing test between the First Amendment and the right of publicity."¹⁷⁷

Borrowing the first factor of copyright law's fair use defense¹⁷⁸—the purpose and character of the use¹⁷⁹—the court articulated its balancing test as one that is "based on whether the work in question adds significant creative elements so as to be transformed into something more than a mere

171. These are the same concerns the *Roberson* opinion anticipated in 1902. *Roberson v. Rochester Folding Box Co.*, 64 N.E. 442, 447 (N.Y. 1902).

172. *Comedy III Prods., Inc. v. Gary Saderup, Inc.*, 21 P.3d 797 (Cal. 2001).

173. *Id.* at 799.

174. *See, e.g., In re NCAA Student-Athlete Name & Likeness Licensing Litig.*, 724 F.3d 1268, 1281 (9th Cir. 2013); *Hilton v. Hallmark Cards*, 599 F.3d 894, 909 (9th Cir. 2010).

175. *Comedy III*, 21 P.3d at 800–01.

176. *Id.* at 801.

177. *Id.* at 799.

178. *Id.* at 807–08.

179. 17 U.S.C. § 107(1) (2012).

celebrity likeness or imitation.”¹⁸⁰ In other words, when grappling with a plaintiff’s right of publicity and a defendant’s freedom of expression, a court should assess whether the work “containing [the plaintiff’s] likeness is so transformed that it has become primarily the defendant’s own expression rather than the [plaintiff’s] likeness.”¹⁸¹ Whereas the state’s interest in protecting a person’s right of publicity outweighs an artist’s expressive interest in a less transformative work, an artist’s expressive interest in a highly transformative work outweighs the state’s interest in upholding a person’s right of publicity.¹⁸² Because the defendant’s work did not add any “significant transformative or creative contribution” to its “literal, conventional depictions of The Three Stooges,” the court upheld the plaintiff’s right of publicity at the expense of the defendant’s freedom of expression.¹⁸³

The court also provided a “subsidiary inquiry” for courts struggling to determine whether a work is sufficiently transformative: whether “the marketability and economic value of the challenged work derive primarily from the fame of the celebrity depicted.”¹⁸⁴ When the work does not owe its value (primarily) to the person depicted—but rather to the artist’s “creativity, skill, and reputation”—the person’s right of publicity claim must generally give way to the artist’s freedom of expression.¹⁸⁵ However, the conclusion that the work’s value does stem from the identity of the person depicted therein does not necessarily suggest that the work is outside the bounds of First Amendment protection.¹⁸⁶

2. *The Commercial or Expressive Nature of the Speech*

Though drawing a line of demarcation between commercial and expressive speech would be both difficult¹⁸⁷ and ill-advised,¹⁸⁸ courts traditionally characterize commercial speech as speech that “does no more than propose a commercial transaction.”¹⁸⁹ Commercial speech that

180. *Comedy III*, 21 P.3d at 799.

181. *Id.* at 809. The original language uses the word “celebrity” instead of “plaintiff.”

182. *Id.* at 808.

183. *Id.* at 811.

184. *Id.* at 810.

185. *Id.*

186. *Id.*

187. *Hoffman v. Capital Cities/ABC, Inc.*, 255 F.3d 1180, 1184 (9th Cir. 2001) (stating that the “boundary between commercial and noncommercial speech has yet to be clearly delineated”).

188. See *Nimmer*, *supra* note 11, at 217.

189. *Bolger v. Youngs Drug Prods. Corp.*, 463 U.S. 60, 66 (1983) (internal quotation marks omitted).

“concern[s] lawful activity,” and that is not misleading benefits from First Amendment protection,¹⁹⁰ but to a lesser extent than does expressive speech.¹⁹¹ The Ninth Circuit case, *Hoffman v. Capital Cities/ABC, Inc.*,¹⁹² illustrates the relevance of the commercial or expressive nature of the defendant’s speech to the weighing of the state interest in upholding a plaintiff’s right of publicity against a defendant’s interest in freedom of expression.

In 1997, Los Angeles Magazine published an article featuring altered versions of still photographs taken from films.¹⁹³ The stills were altered such that the actors in the photographs appeared to be wearing Spring 1997 fashions.¹⁹⁴ One of the photographs, taken from the film *Tootsie*, retained the head of the renowned actor, Dustin Hoffman, as it appeared in the original still, but replaced Hoffman’s body with the body of a male model “in the same pose, wearing a spaghetti-strapped, cream-colored, silk evening dress and high-heeled sandals.”¹⁹⁵ The photograph’s caption identified the designers of the dress and the sandals, respectively.¹⁹⁶

Hoffman claimed, in relevant part, that the magazine’s publication of the altered photograph misappropriated his name and likeness, violating both California’s common law right of publicity and California’s statutory right of publicity.¹⁹⁷ Hoffman argued that the photograph constituted “pure commercial speech,” and thus merited a lesser level of constitutional protection.¹⁹⁸ Although the photograph’s caption identified the designers of the depicted fashions, the court found that “[v]iewed in context, the article as a whole [was] a combination of fashion photography, humor, and visual and verbal editorial comment on classic films and famous actors.”¹⁹⁹ Thus, the court reasoned, the article was more than “a simple advertisement.”²⁰⁰

190. *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n of N.Y.*, 447 U.S. 557, 566 (1980).

191. *See* 44 *Liquormart, Inc. v. Rhode Island*, 517 U.S. 484, 498 (1996) (“[T]he State may regulate some types of commercial advertising more freely than other forms of protected speech.”).

192. *Hoffman*, 255 F.3d 1180.

193. *Id.* at 1183.

194. *Id.*

195. *Id.*

196. *Id.*

197. *Id.* Hoffman claimed that the publication also violated the California unfair competition statute, Business and Professions Code § 17200, and the federal Lanham Act, 15 U.S.C. § 1125(a). *Id.*

198. *Id.* at 1184–85.

199. *Id.* at 1185.

200. *Id.* at 1186.

Reversing the district court's decision, the Ninth Circuit held that the defendant was "entitled to the full First Amendment protection awarded noncommercial speech," and directed judgment in favor of the defendant.²⁰¹

In *Sarver*, the Ninth Circuit discussed some of the right of publicity's policy rationales described in this Part. The court likewise assessed the transformative value of the defendants' work, as well as the extent to which the work constituted expressive speech. Ultimately, the court found the defendants' interest in free speech to trump the state interest in upholding the plaintiff's right of publicity.

III. SARVER V. CHARTIER—CASE SUMMARY

Following a string of right of publicity cases brought by Hollywood stars, *Sarver v. Chartier*²⁰² presented the Ninth Circuit with an opportunity to explore how California's right of publicity applies to non-celebrities. Unfortunately, the court did not heed the call to delve into the history behind the right and the policy rationales that may support upholding an ordinary person's right of publicity. Instead, the court performed a perfunctory balancing test between the state's interests in upholding the defendants' freedom of expression and the plaintiff's right of publicity. Specifically, the court failed to consider a number of important motivations for upholding anyone's right of publicity. Further, the court distorted the motivations that it did consider such that they justified upholding only celebrities' right of publicity claims. Given the occasion to adjudicate a non-celebrity's right of publicity claim, future courts should grapple with the right of publicity's scope while refraining from relying solely on the *Sarver* analysis.

A. THE FACTS OF *SARVER*

Plaintiff Jeffrey Sarver is an army sergeant who, after years of service in the United States Army, served as an Explosive Ordnance Disposal (EOD) technician during the Iraq War.²⁰³ Mark Boal, a journalist working for *Playboy* magazine, shadowed Sarver, interviewed him a number of times, and "took photographs and video of him while he was on and off duty."²⁰⁴ In 2005, Boal published an article titled *The Man in the Bomb Suit*.²⁰⁵ The *Playboy* article "focused on Sarver's life and experiences in

201. *Id.* at 1189.

202. *Sarver v. Chartier*, 813 F.3d 891 (9th Cir. 2016).

203. *Id.* at 896.

204. *Id.*

205. Mark Boal, *The Man in the Bomb Suit*, PLAYBOY, Sept. 2005, at 70.

Iraq” and featured two photographs of him.²⁰⁶ Sarver “allege[d] that he never consented to the use of his name and likeness” in the article, and that he especially objected to certain portions of it.²⁰⁷ Boal went on to write the screenplay for the 2009 film, *The Hurt Locker*.²⁰⁸ Sarver claimed that the filmmakers of *The Hurt Locker* based the film’s main character on his life and experiences without obtaining his consent.²⁰⁹ To correct this perceived wrong, Sarver brought a cause of action for, in relevant part, right of publicity and misappropriation of his name and likeness against the filmmakers.²¹⁰ The defendants moved to strike Sarver’s complaint under California’s anti-SLAPP statute.²¹¹

B. BACKGROUND ON CALIFORNIA’S ANTI-SLAPP STATUTE

Under the California anti-SLAPP (strategic lawsuit against public participation) statute,²¹² a court may, under certain conditions, grant a special motion to strike causes of action that arise from acts that are “in furtherance” of the right of petition or free speech under the United States Constitution or the California Constitution.²¹³ For the court to strike the cause of action, the defendant’s act must also be connected with a public issue, and the plaintiff must have failed to establish a probability of success on the claim’s merits.²¹⁴ The California Legislature enacted the statute to “allow early dismissal of meritless first amendment cases aimed at chilling expression through costly, time-consuming litigation.”²¹⁵

The anti-SLAPP analysis therefore comprises three inquiries: (1) whether the defendant’s acts constituted the exercise of free speech; (2) whether the defendant’s acts were connected with a public issue; and (3) whether the plaintiff has established a probability of success on the claim’s merits. In *Sarver*, and on other occasions,²¹⁶ the Ninth Circuit merged the first two inquiries into one.²¹⁷

206. *Sarver*, 813 F.3d at 896.

207. *Id.*

208. *Id.*

209. *Id.*

210. *Id.*

211. *Id.*

212. Cal. Civ. Proc. Code § 425.16 (West 2014).

213. Cal. Civ. Proc. Code § 425.16(b)(1) (West 2014).

214. *Id.*

215. *Metabolife Int’l, Inc. v. Wornick*, 264 F.3d 832, 839 (9th Cir. 2001).

216. *See, e.g., In re NCAA Student–Athlete Name & Likeness Licensing Litig.*, 724 F.3d 1268, 1272 (9th Cir. 2013) (“We evaluate an anti-SLAPP motion in two steps.”).

217. *See Sarver v. Chartier*, 813 F.3d 891, 901 (9th Cir. 2016) (stating that it “evaluate[s] anti-SLAPP motions in *two* steps” (emphasis added)).

C. THE DISTRICT COURT OPINION

In *Sarver v. Hurt Locker LLC*,²¹⁸ the Central District of California performed an in-depth anti-SLAPP analysis that led to the dismissal of Sarver's right of publicity claim.²¹⁹ The court began by asserting that the "[d]efendants have easily met the first prong of showing that they were engaged in protected speech."²²⁰ Next, concluding that Sarver's contribution to the Iraq war as an outstanding EOD technician was "connected to an issue of public interest," the court found the defendants to "have also met their burden of demonstrating the second prong that their conduct is connected to a public issue."²²¹

Lastly, the court found that the defendants' successful "transformative use" defense barred Sarver from showing a probability of prevailing on his right of publicity claim.²²² Noting that "California courts have analyzed misappropriation claims brought by individuals who do not claim celebrity status,"²²³ the court methodically verified that the film did not violate Sarver's right of publicity. Citing *Comedy III*, the court explained that, to "distinguish between forms of artistic expression protected by the First Amendment and those that must give way to the right of publicity," the California Supreme Court has "adopted" the "transformative use" defense from copyright law's fair use analysis.²²⁴ The court found that the defendants "unquestionably contributed significant distinctive and expressive content" to the character of the film's protagonist, and that "a significant amount of original expressive content was inserted in the work through the writing of the screenplay, and the production and direction of the movie."²²⁵ The court concluded that the character of the film's protagonist, "even if modeled after [Sarver]," was "so transformed that it ha[d] become primarily the defendant's own expression rather than [Sarver's] likeness."²²⁶ Moreover, the court found that "the value of *The Hurt Locker* unquestionably derived from the creativity and skill of the writers, directors, and producers who conceived, wrote, directed, edited,

218. *Sarver v. Hurt Locker LLC*, No. 2:10-CV-09034-JHN, 2011 WL 11574477 (C.D. Cal. Oct. 13, 2011).

219. *Id.* at *4-7.

220. *Id.* at *4.

221. *Id.* at *4-5.

222. *Id.* at *6-7.

223. *Id.* at *5.

224. *Id.* at *6 (internal quotations omitted).

225. *Id.* at *7.

226. *Id.*

and produced it,” and not from Sarver’s identity.²²⁷ Accordingly, the court held that no reasonable trier of fact could conclude that *The Hurt Locker* was not a transformative work, and dismissed Sarver’s right of publicity claim.²²⁸ The court then proceeded to dismiss Sarver’s defamation, false light and invasion of privacy, breach of contract, intentional infliction of emotional distress, fraud, and negligent misrepresentation claims.²²⁹

D. THE NINTH CIRCUIT’S REASONING AND HOLDING

Upon performing its own anti-SLAPP analysis, the Ninth Circuit affirmed the district court’s decision to grant the defendants’ anti-SLAPP motion.²³⁰ First, the court inquired into whether the defendants had established that their film furthered their constitutional right of petition or free speech in connection with a public issue.²³¹ Upon holding that the defendants “satisfied the public interest inquiry,”²³² the court assessed whether Sarver had established a reasonable probability of prevailing on his claims.²³³

The *Sarver* court declined to engage with the elements of a right of publicity claim, holding instead that the “dispositive” issue was whether allowing Sarver to pursue his right of publicity action would infringe the defendants’ constitutional right to free speech.²³⁴ The court found that the defendants’ film constituted “speech that is fully protected by the First Amendment.”²³⁵ The court further found that a right of publicity claim attacking this kind of speech would be “presumptively unconstitutional.”²³⁶ Distinguishing Sarver from similarly situated celebrity plaintiffs, the court reasoned that the right of publicity did not motivate Sarver to lead the life that he led, and that Sarver did not work to create a persona bearing economic value.²³⁷ Thereupon, the court concluded that Sarver could not

227. *Id.*

228. *Id.*

229. *Id.* at *8–12.

230. *Sarver v. Chartier*, 813 F.3d 891, 906 (9th Cir. 2016).

231. *Id.* at 901.

232. *Id.* at 902.

233. *Id.* at 901–03.

234. *Id.* at 903. The court thus used the anti-SLAPP statute’s third inquiry (reasonable probability of success) to answer the first inquiry (constitutional right of free speech). A more careful anti-SLAPP analysis would have already shown that the defendants’ speech constituted protected free speech by the time it reached the merits of the plaintiff’s claim, and would require an additional reason to establish that the plaintiff is unable to show a probability of success on his claims.

235. *Id.* at 905.

236. *Id.* at 905–06.

237. *Id.* at 905.

rebut the presumption that upholding his right of publicity would be unconstitutional,²³⁸ and held that “applying California’s right of publicity in this case would violate the First Amendment.”²³⁹ Finally, the court affirmed the dismissal of Sarver’s right of publicity claim.²⁴⁰

Lest one believe the Ninth Circuit found Sarver’s grievances more appropriately addressed on other grounds, the court likewise affirmed the dismissal of all of Sarver’s additional claims.²⁴¹ Highlighting non-celebrities’ need for the right of publicity, one of the claims dismissed was Sarver’s false light invasion of privacy claim.²⁴² Like Sarver, many non-celebrities may find that the right to privacy will not shield them against others’ appropriation of their identities—especially when these non-celebrities engage in public activities, or publicize their otherwise private activities.

IV. ANALYSIS OF SARVER’S FLAWED REASONING

In finding that Sarver’s right of publicity claim paled in comparison to the defendants’ freedom of expression, the Ninth Circuit entertained a couple of rationales that may justify upholding a person’s right of publicity. However, the court’s assessment of the available rationales’ applicability to Sarver’s claim seems incomplete.

The Ninth Circuit characterized California’s right of publicity law as a content-based law,²⁴³ and emphasized that, as such, it is “presumptively unconstitutional and may be justified only if . . . [it is] narrowly tailored to serve compelling state interests.”²⁴⁴ The court qualified this statement, however, by noting that both commercial speech and “speech which . . . appropriates the economic value of a performance or persona” are “unprotected by the First Amendment against a California right-of-publicity claim.”²⁴⁵ A synthesis of these two assertions reveals three scenarios in which a right of publicity claim may succeed: (1) if the speech in question is commercial; (2) if the speech in question appropriates the economic value of a performance or persona; or (3) if the state has a compelling interest in

238. *Id.* at 905–06.

239. *Id.* at 906.

240. *Id.*

241. *Id.* at 906–07.

242. *Id.* at 907. See Plaintiff’s Complaint and Demand for Jury Trial at 17 ¶ 75–77, *Sarver v. Hurt Locker LLC*, No. 2:10-CV-09034-JHN, 2011 WL 11574477 (C.D. Cal. Oct. 13, 2011).

243. *Sarver*, 813 F.3d at 903.

244. *Id.* (citing *Reed v. Town of Gilbert*, Ariz., 135 S. Ct. 2218, 2226 (2015)).

245. *Id.* at 905.

upholding the right of publicity claim, even at the cost of restricting free speech. While *The Hurt Locker* definitely does not constitute commercial speech, the film may have appropriated the economic value of Sarver's identity, to the extent that it leveraged it to make a hugely profitable film.²⁴⁶ Alternatively, even if careful examination shows that the defendants did not appropriate the value of Sarver's identity, the state may have had a compelling interest in preventing the defendants' unjust enrichment and in protecting Sarver's right to autonomous definition. In sum, Sarver's right of publicity claim certainly did not fall under the first scenario, but it may have fallen under the second or the third, or both.

The court simultaneously held both that the defendants did not appropriate the economic value of Sarver's identity,²⁴⁷ and that the state had no compelling interest in upholding Sarver's right of publicity.²⁴⁸ The court did not clearly delineate the distinction between these two conclusions. In reaching this dual holding, the *Sarver* court compared Sarver to the plaintiffs in *Zacchini*, *Hilton*, and *In re NCAA*.²⁴⁹ The court used these plaintiffs as examples of worthy plaintiffs—ones whose protection against right of publicity violations would be justified by either the “fruits of labor” or the “incentive” policy rationales. Taking these successful plaintiffs and the corresponding cases in turn,²⁵⁰ it becomes apparent that the *Sarver* court misconstrued the precedent on which it relied. Specifically, the *Sarver* court wholly overlooked the “right to self-definition” rationale, and gave short shrift to the “unjust enrichment” rationale. Additionally, while the court did contemplate the “incentive” and “fruits of labor” rationales, it applied these to the case of a non-celebrity in a perfunctory manner.

246. Over one hundred million dollars in theaters box office and video sales according to *The Hurt Locker* (2009), THE NUMBERS, <http://www.the-numbers.com/movie/Hurt-Locker-The#tab=box-office> [<https://perma.cc/L8XJ-BSY5>] (last visited Jan. 22, 2017).

247. Or, alternatively, that his identity did not bear any economic value to begin with: “Sarver did not . . . invest time and money to build up economic value in a marketable performance or identity.” *Sarver*, 813 F.3d at 905.

248. *Id.* at 905–06.

249. *Id.*

250. This Note discusses only *Zacchini* and *Hilton* in detail. In *In re NCAA*, a football player brought California statutory and common law right of publicity claims against Electronic Arts (EA) for using his likeness in a video game. The Ninth Circuit upheld the Plaintiff's right of publicity claims. The *Sarver* court, evoking the “fruits of labor” rationale for the right of publicity, highlights the *In re NCAA* Plaintiff's “talent and years of hard work on the football field” as rendering him worthy of protection. *In re NCAA Student–Athlete Name & Likeness Licensing Litig.*, 724 F.3d 1268, 1281 (9th Cir. 2013).

A. ZACCHINI AND THE OVERLOOKED IMPORTANCE OF UNJUST ENRICHMENT

Emphasizing the importance of the “fruits of labor” and the “incentive” policy rationales, *Sarver* downplayed the relevance of the “unjust enrichment” rationale. In *Zacchini*, a “human cannonball” performer sued a broadcasting company for showing his performance on a television news program without his consent.²⁵¹ Earlier in the opinion, the *Sarver* court recognized that *Zacchini* referred to unjust enrichment as one reason to uphold the *Zacchini* Plaintiff’s right of publicity claim.²⁵² However, the *Sarver* court undermined this justification by linking it to the “incentive” rationale, rather than allowing it to stand independently, as a key rationale, as the *Zacchini* court did.²⁵³ Later in the opinion, when finding Sarver unworthy of protection, the *Sarver* court emphasized only the “fruits of labor”²⁵⁴ and “incentive”²⁵⁵ policy rationales, neglecting the “unjust enrichment” rationale altogether.

Where the broadcasting company in *Zacchini* profited from the plaintiff’s performance, the defendants in *Sarver* drew on Sarver’s experiences in making a successful Hollywood film, for which they were undoubtedly handsomely compensated. Suggesting that life stories have intrinsic value, it is common practice for film studios to acquire life story

251. *Zacchini v. Scripps-Howard Broad. Co.*, 433 U.S. 562, 563–64 (1977).

252. *Sarver*, 813 F.3d at 903.

253. *Compare id.* at 903–04 (presenting the prevention of unjust enrichment as the means to achieve an end—providing an economic incentive: “According to the [*Zacchini*] Court, the state’s right of publicity law was aimed at protecting the proprietary interest of the individual in his act and prevent[ing] unjust enrichment by the theft of good will, *in order to* provide an economic incentive for [the individual] to make the investment required to produce a performance of interest to the public.”) (internal quotation marks omitted, emphasis added), *with Zacchini*, 433 U.S. at 576: (“The rationale for (protecting the right of publicity) is the straightforward one of preventing unjust enrichment by the theft of good will.”) (citing *Kalven*, *supra* note 126, at 331, internal quotation marks omitted), *and Zacchini*, 433 U.S. at 576 (noting, several lines below: “[T]he protection provides an economic incentive for him to make the investment required to produce a performance of interest to the public.”).

254. *Sarver*, 813 F.3d at 905 (alluding to the “unjust enrichment” rationale by using the word “stole,” but, ultimately, highlighting the “fruits of labor” rationale: “Neither the journalist who initially told Sarver’s story nor the movie that brought the story to life stole Sarver’s ‘entire act’ or otherwise exploited the economic value of any performance or persona he had worked to develop.”).

255. *Id.* (“Sarver did not make the investment required to produce a performance of interest to the public . . . Rather, Sarver is a private person who lived his life and worked his job. Indeed, while Sarver’s life and story may have proven to be of public interest, Sarver has expressly disavowed the notion that he sought to attract public attention to himself.”) (internal quotations omitted).

rights when making a film about a living person.²⁵⁶ Kalven's and *Zacchini's* articulation of the logic behind preventing unjust enrichment—"[n]o social purpose is served by having the defendant get for free some aspect of the plaintiff that would have market value and for which he would normally pay"²⁵⁷—implies that film studios should continue to pay for their muses' life stories. A court more receptive of the "unjust enrichment" rationale might have concluded that Sarver's story and identity do have "market value," and that the defendants appropriated this value to the extent that they based the character of their film's protagonist on Sarver's life. Since *Sarver* found that speech that appropriates the economic value of a persona is not immune on First Amendment grounds to a California right of publicity claim,²⁵⁸ it is plausible that Sarver's claim should not have been dismissed at the anti-SLAPP stage.

The argument that the common practice of paying for life story rights suggests that life stories have economic value and must be purchased is, however, circular.²⁵⁹ It may be the case that many film studios are simply over cautious, and it is their peace of mind, rather than the life stories, that is valuable to them.²⁶⁰ Notwithstanding, even if the *Sarver* defendants did not appropriate the economic value of Sarver's identity, per se, they did profit from whatever inspiration Sarver may have sparked in them. In any case, a better reading of *Zacchini* would have noticed the parallels between the unjust enrichment of the broadcasting company in *Zacchini* and the profits that the defendants in *Sarver* enjoyed, and recognized that *Zacchini* stands for upholding the right of publicity to prevent unjust enrichment. By dismissing Sarver's case without grappling with the notion that the defendants benefitted from Sarver's identity and gave him nothing in return, the Ninth Circuit sent a message that non-celebrities' right of publicity

256. See Lisa A. Callif, *To Acquire or Not to Acquire Life Rights for a Movie*, LAW360, (June 22, 2015, 10:28 AM), <http://www.law360.com/articles/665781/to-acquire-or-not-to-acquire-life-rights-for-a-movie> [<https://perma.cc/6NHU-RPD5>] (last visited Jan. 22, 2017) (discussing the benefits of acquiring life rights even when not legally required).

257. Kalven, *supra* note 126, at 331; *Zacchini*, 433 U.S. at 576.

258. *Sarver*, 813 F.3d at 905.

259. See generally James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882 (2007) (discussing the phenomenon of "risk-averse licensing" and the resulting "doctrinal feedback" in various intellectual property law doctrines).

260. Considering that the typical errors and omissions (E&O) insurance application in the movie industry requires written releases for all names, faces, and likenesses, this cautiousness may be characterized as institutional. *Id.* at 893.

claims need not be upheld even where an important rationale for the right may be on their side.

B. THE ABSENT RATIONALE: THE RIGHT TO SELF-DEFINITION

Missing from the court's consideration was the state's potential interest in allowing all claimants the ability to control the way in which they are projected to society. In describing *The Hurt Locker*'s main character, Jimmy Fallon and Jeremy Renner (the film's lead actor) used the words "messed up" and "reckless," respectively.²⁶¹ Even though *The Hurt Locker* named its main character "James" rather than "Sarver," a reasonable person who both read Mark Boal's *The Man in the Bomb Suit* (which did use Sarver's name and provided details about Sarver's appearance and accent)²⁶² and watched the film would realize that the film, too, is about Sarver, and would form an opinion about Sarver. Given that the film portrays Sarver as a war-obsessed soldier who violates military rules, and as a detached father,²⁶³ many of the film's viewers likely grew to associate Sarver with such negative characteristics.

While Sarver's complaint listed most reputation-related harms under Sarver's "Defamation" claim,²⁶⁴ scholars such as McKenna would argue that a court should weigh Sarver's right to self-definition in deciding whether to uphold his right of publicity claim.²⁶⁵ Further, McKenna's contention that non-celebrities may seek to protect their anonymity, secrecy, and solitude²⁶⁶ is especially fitting in Sarver's case. Sarver, described by one of the defendants as "a loner by nature,"²⁶⁷ eschews public attention.²⁶⁸ Further, as a particularly apt EOD technician deployed in an enemy country, Sarver must maintain his anonymity to effectively and safely perform his duty.²⁶⁹

261. See Plaintiff's Complaint, *supra* note 242, at 18 ¶ 79c.

262. See Boal, *supra* note 205, at 72 (describing Sarver's height and "West Virginia twang").

263. Plaintiff's Complaint, *supra* note 242, at 18 ¶ 79a. See also *THE HURT LOCKER*, (Voltage Pictures 2008).

264. Plaintiff's Complaint, *supra* note 242, at 18–19 ¶¶ 78–81.

265. MCKENNA, *supra* note 141, at 294.

266. *Id.* at 286.

267. See Boal, *supra* note 205, at 150.

268. See *Sarver v. Chartier*, 813 F.3d 891, 905 (9th Cir. 2016).

269. See Plaintiff's Complaint, *supra* note 242, at 21 ¶ 93b; Boal, *supra* note 205, at 73 (noting that, "reputedly," there is a "\$25,000 bounty" on the heads of EOD techs).

C. *HILTON AND THE DISTORTED VIEW OF INCENTIVES AND LABOR*

The *Sarver* court's comparison between Sarver and Paris Hilton²⁷⁰—the plaintiff in *Hilton v. Hallmark Cards*²⁷¹—proves illustrative of the court's superficial application of the “incentive” and “fruits of labor” rationales. As discussed *supra*, Hilton was allowed to proceed with her right of publicity claim against Hallmark after the court found Hallmark's card to lack the requisite transformative value that would entitle Hallmark to the transformative use defense as a matter of law.²⁷²

While the *Sarver* court neglected neither the “incentive” nor the “fruits of labor” policy rationales, a close reading of the opinion reveals that the court distorted these rationales such that they align with upholding only celebrities' right of publicity claims.²⁷³ A reflection on the types of behaviors that the state should incentivize and reward shows that the state may, in fact, have an interest in upholding the right of publicity of non-celebrities.

1. *The “Incentive” Rationale*

By finding that the “incentive” rationale is one that is applicable to Hilton's right of publicity claim—but inapplicable to Sarver's claim²⁷⁴—the *Sarver* opinion may lead to a distortion in the types of behaviors future courts deem worthy of incentivizing. As McCarthy posits, an important goal of the right of publicity is to make “[us] all better off” by motivating members of society to “undertake socially enriching activities which require entering the public scene.”²⁷⁵ The *Sarver* court distinguished between Hilton and Sarver by stressing that while Hilton was consciously motivated by the prospect of attaining a “marketable . . . identity,” Sarver shunned “public attention”;²⁷⁶ the public's fascination with Sarver was merely a collateral effect of his excellence in disarming improvised explosive devices. McCarthy would criticize *Sarver*'s emphasis on this distinction as one that “misperceives the real issue.”²⁷⁷ Arguably, the “real issue” is that

270. *Sarver*, 813 F.3d at 905–06.

271. *Hilton v. Hallmark Cards*, 599 F.3d 894 (9th Cir. 2010).

272. *Id.* at 911–12.

273. This interpretation is potentially in agreement with scholars such as Kwall. *See generally* Kwall, *supra* note 106 (arguing that the right of publicity should incentivize the various actions required of, particularly, celebrities).

274. *Sarver*, 813 F.3d at 905–06.

275. MCCARTHY, *supra* note 1, § 2:6.

276. *Sarver*, 813 F.3d at 905.

277. MCCARTHY, *supra* note 1, § 2:6.

where Sarver led his team to save, potentially, “hundreds of lives,”²⁷⁸ Hilton’s benefit to society consists of a modicum of entertainment.

Moreover, Sarver’s case bolsters McCarthy’s theory that, without the ability to control the use of one’s persona as secured by the right of publicity, the apprehension associated with attaining prominence may chill advantageous endeavors in any field.²⁷⁹ Sarver’s complaint pointed out that the defendants’ film exposed Sarver to “an increased risk of harm or even death during future deployments in a war zone” since it may have “further incit[ed] enemies to hunt down this high profile bomb squad hero who holds the record for most disarmed enemy IEDs.”²⁸⁰ The \$25,000 bounty that the Iraqi insurgency had “reputedly placed on the heads of EOD techs”²⁸¹ establishes the concreteness of this risk. Sarver’s ability to control his identity’s exposure may have thus been crucial for him to continue to serve the country and save more lives; the state undoubtedly had a compelling interest in incentivizing him to do so.

2. *The “Fruits of Labor” Rationale*

In much the same way that *Sarver* distorted the “incentive” rationale to suggest that the state may have a compelling interest in incentivizing the activities of celebrities, but not the activities of other productive citizens, *Sarver* tailored its “fruits of labor” analysis to justify rewarding the work that celebrities typically perform. *Sarver* compared Sarver to Hilton, and found that the work that Hilton performed—presumably, her attendance of glamorous events and participation in episodes of *The Simple Life*²⁸²—merited a reward: the upholding of her right of publicity claim.²⁸³

This comparison seems incomplete, however, since it failed to account for the work that Sarver performed—the same work that caused his life to be “of public interest.”²⁸⁴ Specifically, Sarver joined the army when he was nineteen,²⁸⁵ and, in the later years of his service, worked forty-eight hour

278. See Boal, *supra* note 205, at 72.

279. MCCARTHY, *supra* note 1, § 2:6. See also the discussion *supra*, at note 115 (suggesting that such apprehension may chill *talking* about one’s accomplishments).

280. See Plaintiff’s Complaint, *supra* note 242, at 21 ¶ 93b.

281. See Boal, *supra* note 205, at 73.

282. Between 2005 and 2007, Paris Hilton participated in a reality television show called *The Simple Life*. Paris Hilton, IMDB, <http://www.imdb.com/name/nm0385296/> [<https://perma.cc/MZ28-VTGE>] (last visited April 5, 2017).

283. *Sarver v. Chartier*, 813 F.3d 891, 905 (9th Cir. 2016). See also *id.* at 904 (comparing Sarver to Keller, and stressing Keller’s “years of hard work on the football field” to illustrate the kind of labor that merits protection) (internal quotation omitted).

284. *Id.*

285. Boal, *supra* note 205, at 149.

shifts as an EOD in Baghdad, where he dismantled countless bombs and saved the lives of American soldiers and Iraqi civilians.²⁸⁶ While the bronze star he received for having led his team to “render[] safe the largest number of IEDs that were disarmed by any one team since operations began in Iraq”²⁸⁷ may suffice in terms of rewarding Sarver’s efforts, the state may have a compelling interest in rewarding Sarver’s accomplishments by upholding his right of publicity claim.

3. Summary

As the *Sarver* court distinguished *Sarver* from *Hilton*, its reading of *Hilton*’s reasoning proved tone-deaf. First, *Sarver* did not acknowledge the *Hilton* court’s characterization of Hilton as a “flamboyant heiress” who is “famous for being famous.”²⁸⁸ While not all heiresses are equally known, and Hilton has taken affirmative steps to become a household name, Hilton was born into the limelight. Therefore, though it may be plausible that the incentive that the right of publicity may offer motivated Hilton to continuously cultivate her persona, Hilton was arguably born with a “marketable identity” that no incentive scheme could have encouraged.

Additionally, *Sarver* ignored *Hilton*’s insinuations that Hilton is unaccustomed to working and emphasis on Hilton’s “privileged upbringing[.]”²⁸⁹ *Hilton*’s portrayal of Hilton is in tension with the *Sarver* court’s theory that Hilton, unlike Sarver, merited protection against a right of publicity violation since she “worked to develop” her persona, while Sarver did not.²⁹⁰

It seems perverse to express that the state has an interest in incentivizing and rewarding individuals who do nothing but engage in self-promoting, superficial activities, but that “[t]he state has no interest”²⁹¹ in doing the same for someone who has dedicated about twenty years of his life to the country.

D. IMPLICATIONS OF *SARVER*

As the District Court opinion demonstrated, there were good reasons to find that *The Hurt Locker* constitutes protected speech, and to dismiss Sarver’s right of publicity claim.²⁹² The reasoning that the Ninth Circuit

286. *Id.* at 149–52.

287. *Id.* at 152.

288. *Hilton v. Hallmark Cards*, 599 F.3d 894, 899 (9th Cir. 2010).

289. *Id.*

290. *Sarver v. Chartier*, 813 F.3d 891, 905 (9th Cir. 2016).

291. *Id.*

292. *Sarver v. Hurt Locker LLC*, No. 2:10-CV-09034-JHN, 2011 WL 11574477, *7 (C.D. Cal. Oct. 13, 2011).

employed in *Sarver* is, however, dangerous for the future of non-celebrities' right of publicity. One can imagine right of publicity cases as sorting out into one of four quadrants, along two axes. One axis relates to the status of the plaintiffs, dividing the plaintiffs into celebrities and non-celebrities. The other axis relates to the nature of the defendants' identity-appropriating works, dividing the works into expressive speech and commercial speech. The *Sarver* court may provide precedent for future courts to dismiss a claim falling into the non-celebrity-expressive-speech quadrant.

Figure 1

Celebrity P against Commercial Speech (Minimal protections to speech)	Non-Celebrity P against Commercial Speech (Minimal protections to speech)
Celebrity P against Expressive Speech (The State may have a compelling interest in upholding P's claim)	Non-Celebrity P against Expressive Speech CAN NEVER WIN

This “carving-out” of a subset of right of publicity cases is in tension with Nimmer’s *The Right of Publicity*, which warned against drawing lines between celebrity and non-celebrity plaintiffs, and between commercial and expressive speech.²⁹³ Further, barring non-celebrities’ claims represents a break from some of the right’s important policy rationales—namely, the “unjust enrichment” and the “right to self-definition” rationales—and, potentially, a distortion of the “incentive” and “fruits of labor” rationales.

E. BEYOND *SARVER*—LOOKING TO THE FUTURE

In *Sarver*, the Ninth Circuit short-circuited the balancing-of-interests process that *Sarver*’s claim invited, and dismissed a non-celebrity’s right of publicity claim. Ultimately, the scales may have tipped in favor of the defendants’ freedom of expression even if the court had considered the full range of interests that support upholding a non-celebrity’s right of publicity. Nonetheless, examining the soundness of the Ninth Circuit’s “scale” is worthwhile because, should forthcoming courts reuse the *Sarver* “scale,” they may find that it tips also in favor of less meritorious expressive—or

293. Nimmer, *supra* note 11, at 216–17.

even commercial—works, jeopardizing the future of non-celebrities' right of publicity.

Over the past few decades—ever since celebrities began vigorously seeking the enforcement of their right of publicity—it has been difficult to imagine scenarios in which non-celebrities' identities would be used in works lacking significant transformative value. Owing to the value that a celebrity's perceived endorsement carries, advertisers often exploit celebrities' images for commercial purposes.²⁹⁴ Moreover, celebrities' identities have often been incorporated in works that, like the *Hilton* card, are somewhat, but not significantly, transformative.²⁹⁵ Conversely, non-celebrities' identities are commonly featured in highly transformative novels and films that seek to expose aspects of little-known, but interesting, people's lives.²⁹⁶ Hence, it is plausible that, typically, a court confronted with a non-celebrity's right of publicity claim would be justified in finding the claim to pale in comparison to the given defendant's freedom of expression. Such cases may have been characterized as “easy,” and probably did not call for extensive analyses of society's interests in upholding the right of publicity.

Due to recent cultural developments, however, we may be witnessing a shift in the type of works that exploit the identities of people, who, while not celebrities, are no longer anonymous. Seeing as eighty-one percent of Americans in the United States have a social media profile,²⁹⁷ non-celebrities are now more vulnerable than ever to having their identities misappropriated. As ordinary people share their photos and thoughts online, they become increasingly exposed to the public. Over night, ordinary people

294. Treece, *supra* note 99, at 644–46.

295. *Hilton v. Hallmark Cards*, 599 F.3d 894, 911 (9th Cir. 2010).

296. See e.g., MARGOT LEE SHETTERLY, *HIDDEN FIGURES: THE AMERICAN DREAM AND THE UNTOLD STORY OF THE BLACK WOMEN MATHEMATICIANS WHO HELPED WIN THE SPACE RACE* (2016) (recounting a true story, and serving as the basis for the 2016 film, *Hidden Figures*); MARTIN SIXSMITH, *THE LOST CHILD OF PHILOMENA LEE* (2009) (recounting the true story of a mother's fifty-year search for her forcibly adopted son, and serving as the basis for the 2013 film, *Philomena*).

297. *Percentage of U.S. population with a social media profile from 2008 to 2017*, STATISTA, <https://www.statista.com/statistics/273476/percentage-of-us-population-with-a-social-net-work-profile/> [<https://perma.cc/4R44-YSBG>] (last visited Mar. 19, 2017).

can become “Instagram famous”²⁹⁸ or YouTube sensations.²⁹⁹ Additionally, as the phenomenon of memes illustrates, virtually anyone’s photograph can be found online and transformed into a popular joke, seen by millions.³⁰⁰ A meme qualifies as an expressive work because its creator transforms an ordinary photograph into a form of social commentary by adding a whimsical caption. Although memes can be printed on merchandise and sold, they are generally created for non-commercial purposes. A given memes’ expressive value, however, is plausibly lesser than that of an Oscar-winning film. Courts should be prepared to carefully consider such non-celebrities’ right of publicity claims, especially should they arise in response to works that are less than transformative as a matter of law.

V. CONCLUSION

Sarver v. Chartier showcases a distorted right of publicity analysis that may have resulted from disregarding the right of publicity’s complicated evolution. It seems that the Ninth Circuit myopically looked only to the near past, and misconstrued the frequency of recent star-studded California right of publicity cases as signifying that celebrities alone merit protection when their identities are used without authorization. Failing to heed the warning of Nimmer’s *The Right of Publicity*,³⁰¹ the court drew bright lines to distinguish between celebrity and non-celebrity plaintiffs.

Moreover, the Ninth Circuit discounted some of the rationales justifying the right of publicity. Specifically, *Sarver* emphasized distorted versions of the “incentive” and the “fruits of labor” rationales, and neglected the “unjust enrichment” and the “right to self-definition” rationales. While the former pair of rationales—especially as presented by the court—aligns more

298. See e.g., Natasha Gillezeau, *Instagram Girl of the Week: Helen Owen*, GQ (Mar. 6, 2015), <http://www.gq.com.au/gq+girls/instagram+girl+of+the+week+helen+owen,36077> [<https://perma.cc/8A5X-FWHL>] (last visited Mar. 19, 2017) (interviewing Helen Owen, an “Instagram Famous” young woman who currently has 1.1 million followers).

299. See e.g., Chiara Milioulis, *Social Butterfly: Lauren Elizabeth*, SPLASH (Dec. 15, 2016), <http://www.chicagosplash.com/2016/12/15/social-butterfly-lauren-elizabeth> [<https://perma.cc/Y8CM-QHAV>] (last visited Mar. 19, 2017) (describing Lauren Elizabeth’s road to YouTube fame; she has nearly 1.3 million subscribers).

300. See e.g., *Who is ‘Scumbag Steve’? Internet teenage hate figure reveals infamous picture was taken by his mother (and he’s actually quite a nice guy)*, Daily Mail.com (Feb. 11, 2011, 07:59 AM), <http://www.dailymail.co.uk/news/article-1355793/Scumbag-Steve-Blake-Boston-speaks-Internet-hate-figure-reveals-famous-picture-taken-mother.html> [<https://perma.cc/2ENX-QFTW>] (last visited Mar. 19, 2017) (recounting the story of a young man whose MySpace picture became a viral meme).

301. Nimmer, *supra* note 11, at 217 (suggesting that courts should “rely upon the rule of damages” for all right of publicity cases, regardless of the celebrity status or lack thereof of the plaintiff as well as the nature of the defendant’s speech).

closely with protecting celebrities' personas than with protecting the identities of all persons, the latter pair is more inclusive and accounts for interests we all share.

The reasoning and holding of *Sarver* convey that, at least when the speech at issue is expressive, the state may have a compelling interest in upholding a celebrity's right of publicity claim, but a non-celebrity's claim is unable to rebut its presumptively unconstitutional nature, and merits no consideration. Such a conclusion may leave non-celebrities without recourse when expressive works leverage their identities without their consent. In today's social media era, virtually everyone has access to ordinary people's photographs, videos, résumés, and thoughts. This exposure renders non-celebrities more vulnerable than ever to having their identities appropriated without their consent. Hopefully, future courts granted with an opportunity to examine a non-celebrity's right of publicity claim will thoughtfully consider the full range of state interests promoted by upholding the right of publicity.

