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PREFACE: PAMELA SAMUELSON AND THE PROMOTION OF PROGRESS

Molly Van Houweling[†]

The Intellectual Property Clause of the United States Constitution authorizes Congress to “promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”¹ Pamela Samuelson, the Richard M. Sherman Distinguished Professor of Law and Professor of Information at the University of California, Berkeley, has devoted her career to pursuing this progress. As the essays in this issue vividly illustrate, she has done this not only with her extraordinary scholarship about intellectual property law, but also by promoting the progress of the people and institutions she reaches with her writing, her advocacy, her teaching, and her leadership.

This issue captures some of the spirit of an extraordinary Symposium Celebrating Pamela Samuelson that was held in Berkeley on November 3, 2023.² Hundreds of attendees gathered to celebrate Pam’s career so far. UC Berkeley Law School Dean Erwin Chemerinsky gave the opening remarks. Making clear that the event was not a retirement party, Dean Chemerinsky observed that “Pam is in the midst of a stunning career.” This sentiment was echoed by the lunchtime keynote speaker, Judge Pierre Leval, United States Circuit Judge of the U.S. Court of Appeals for the Second Circuit, who declared Pam “a national treasure.”³

The rest of the day was devoted to panels of academics, lawyers, activists, librarians, and technologists, exploring themes inspired by Pam’s remarkable body of scholarship and by the ways she has amplified the impact of that

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† Harold C. Hohbach Distinguished Professor of Patent Law and Intellectual Property, University of California, Berkeley, School of Law. Thanks to the student editors at the Berkeley Technology Law Journal for producing this issue, and to Abril Delgado, Richard Fisk, and their colleagues at the Berkeley Center for Law & Technology for organizing the Symposium Celebrating Pamela Samuelson that the issue commemorates.

1. U.S. CONST. art. I, § 8, cl. 8.

2. The symposium program, recording, and transcripts are available at <https://www.law.berkeley.edu/research/bclt/bcltevents/symposium-celebrating-pamela-samuelson/program/>.

3. Andrew Cohen, ‘A National Treasure’: Colleagues Share Heartfelt Tributes to Iconic Professor Pamela Samuelson (Nov. 14, 2023), <https://www.law.berkeley.edu/article/a-national-treasure-colleagues-share-emotional-tributes-to-iconic-professor-pamela-samuelson/>.

scholarship through activism, institution-building, and mentorship. These panels were punctuated by toasts that celebrated Pam as a scholar, teacher, community-builder, leader, and friend. Across all of these panels and toasts, the note that was sounded most frequently was one of personal gratitude for how Pam has intervened in the lives of the people gathered (and countless others) by helping us recognize that we have something interesting and valuable to say, and by inspiring us to realize our potential and to play our own roles in promoting progress.

The opening panel, on “Mapping Copyright,” was inspired by the painstaking work Pam has done to map the intricacies of many doctrines of copyright law—from *scènes à faire* to statutory damages—while also stepping back to look at the big picture of what is within and outside of copyright protection (and why).⁴ Michael Carroll’s essay for this issue elaborates on several aspects of this mapping, focusing in part on how Pam’s scholarship on copyrightable subject matter, scope, and remedies has sought to persuade courts and Congress “to align the substance of current copyright law with its constitutional purpose and thus to improve the coherence and clarity of the law.”⁵ Panelist Niva Elkin-Koren’s essay in this issue demonstrates how Pam’s scholarship has mapped not just copyright, but also the intersections between copyright and other bodies of law.⁶ Contract law, for example, can both enhance and impede the progress that copyright law is intended to promote. As Elkin-Koren observes, Pam was one of the first scholars to recognize this potential and, more generally, to identify “the rise of private ordering as the single most important implication of the digital transformation.”⁷ Elkin-Koren applies Pam’s insights about the copyright-contract interface to new contractual restrictions that could impact the development of generative AI.⁸

The second symposium panel, on “Copyright Reform,” was inspired by Pam’s tireless work to reform copyright for the better and, perhaps more importantly, to fend off changes that would make it worse.⁹ Or, as Pam’s

4. James Boyle, Niva Elkin-Koren, Wendy Gordon, Christopher Jon Sprigman, Madhavi Sunder, Participant, Julie Cohen, Erwin Chemerinsky, Molly Shaffer Van Houweling, Kristelia Garcia, Aaron Perzanowski, Berkeley Law Symposium Celebrating Pamela Samuelson: Session 1 Mapping Copyright (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-01-Mapping-Copyright.pdf>.

5. Michael W. Carroll, *Committed to Copyright’s Constitutional Role*, 39 BERKELEY TECH. L.J. 1199, 1200.

6. Niva Elkin-Koren, *Back to the Future: Navigating the Copyright/Contract Interface in the Generative AI Era*, 39 BERKELEY TECH. L.J. 1137, 1141.

7. *Id.* at 1139.

8. *Id.* at 1157–59.

9. Jerry Reisman, Mark Gergen, R. Anthony Reese, Bernt Hugenholtz, Molly Shaffer Van Houweling, Ruth Okediji, David Hayes, Jennifer Urban, Jessica Litman, Berkeley Law

husband Bob Glushko put it in his toast, to spot impending trainwrecks and “lie down on the tracks and stop the train.”¹⁰ The second half of Carroll’s essay picks up on the theme of copyright reform (and imminent disaster) explaining how Pam has intervened to improve and rescue copyright law’s institutions—including Congress, the Copyright Office, and the courts. Carroll devotes particular attention to Pam’s efforts to improve the judicial process in connection with the Google Book Search project, and to improve the legislative process that produced the Digital Millennium Copyright Act. Carroll describes Pam’s copyright reform efforts as those of a copyright “loyalist,” with “an unwavering commitment to understanding and promoting copyright law’s ability to serve its purpose in our constitutional order.”¹¹

The next symposium panel, on “Authors, Libraries, and Free Expression” reflected on how Pam’s scholarship and efforts to improve copyright law have focused, in particular, on people, institutions and values that have otherwise been underrepresented in copyright debates.¹² Several of the panelists remarked on Pam’s efforts to ensure that these debates recognize the wide variety of perspectives of authors—including authors who are primarily motivated by the desire to spread knowledge. Panelist Daniel Gervais’s essay in this issue provides a fascinating take on the question of what counts as authorship that deserves legal recognition in the age of generative AI.¹³ Revisiting and expanding on Pam’s remarkably prescient article on this topic back in 1986,¹⁴ Gervais develops a framework for assessing both copyrightable

Symposium Celebrating Pamela Samuelson, Session 2 Copyright Reform (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-02-Copyright-Reform.pdf>.

10. Pam Samuelson, Molly Shaffer Van Houweling, Robert Glushko, Berkeley Law Symposium Celebrating Pamela Samuelson, Session 7 Closing Remarks (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-07-Closing-Remarks.pdf>.

11. Carroll, *supra* note 5, at 1199.

12. David Hansen, Zahr Said, Sonia Katyal, Brewster Kahle, Nicole Boucher, Molly Shaffer Van Houweling, John Mashey, Lydia Loren, Pam Samuelson, Marti Hearst, Lila Bailey, Participant, MacKenzie Smith, Daniel Gervais, Berkeley Law Symposium Celebrating Pamela Samuelson, Session 4 Authors, Libraries, and Free Expression (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-04-Authors-Libraries-and-Free-Expression.pdf>.

13. Daniel J. Gervais, *Second-Degree Intellectual Property*, 39 BERKELEY TECH. L.J. 1091, 1112–15.

14. Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 PITT. L. REV. 1185 (1986). Samuelson has revisited the topic of AI more recently, with attention to questions of both ownership of AI-generated works and potential infringement by AI systems. *See, e.g.*, Pamela Samuelson, *Fair Use Defenses in Disruptive Technology Cases*, UCLA L. REV. (forthcoming 2024), available at <https://ssrn.com/abstract=4631726>; Pamela Samuelson, *Generative AI Meets Copyright*, 381 SCIENCE 158 (2023); Pamela Samuelson *Legal Challenges to*

authorship and patentable inventorship in connection with AI creations and human-AI collaborations.¹⁵ He emphasizes, as Pam has done in so much of her work, that the touchstone for analyzing these questions should be how best to promote progress, which in turn requires assessing “both the costs and benefits of the outcomes for humans as users and producers of creations and inventions.”¹⁶

The fourth symposium panel, entitled “Copyright and Internet Activism” was inspired by Pam’s early recognition of the transformative potential of the internet and the many ways in which her work as a scholar, advocate, and supporter of clinical education has helped shape the digital landscape.¹⁷ The panel was moderated by Jason Schultz, whose essay in this issue focuses on Pam’s pioneering work as a founder of the very first technology law and policy (TLP) clinic, and as the global TLP Clinic movement’s “intellectual architect.”¹⁸ As Schultz explains, Pam’s writing, teaching, and public speaking have provided this movement with “the road map for what was needed in a given area, highlighting gaps and key voices and positions missing from the debate.”¹⁹ Pam’s work has also inspired TLP clinics’ engagement with technologists.²⁰ Pam has long recognized that technologists’ insights are essential to understanding the relationship between law and innovation—and that their engagement with the law is essential to ensuring that this relationship is a healthy one. Throughout her career she has facilitated this engagement by targeting some of her scholarship, non-academic writing, collaborations, public speaking, teaching, and mentorship toward a technical audience. Joseph Lorenzo Hall’s contribution to this issue is a testament to that engagement—highlighting, in particular, Pam’s powerful public speaking to technical

Generative AI, Part II, 66 COMMC’NS OF THE ACM 16 (2023); Pamela Samuelson *Legal Challenges to Generative AI, Part I*, 66 COMMC’NS OF THE ACM 20 (2023); Pamela Samuelson, *AI Authorship?*, 63 COMMC’NS OF THE ACM 20 (2000), <https://cacm.acm.org/opinion/ai-authorship/>.

15. Gervais, *supra* note 13.

16. *Id.* at 1095.

17. Eric von Hippel, Andrew Gass, Cindy Cohn, Jason Schultz, Carl Malamud, Joseph Lorenzo Hall, Participant, Molly Shaffer Van Houweling, Corynne McSherry, Blake Reed, Berkeley Law Symposium Celebrating Pamela Samuelson, Session 5 Copyright and Internet Activism (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-05-Copyright-and-Internet-Activism.pdf>.

18. Jason M. Schultz, *Pam Samuelson and the Emergence of the Technology Law and Policy Clinical Movement*, 39 BERKELEY TECH. L.J. 1117, 1136.

19. *Id.* at 1122.

20. *See, e.g., id.* at n. 23 (documenting TLP clinics’ work on behalf of security researchers, among others).

audiences, her interdisciplinary scholarly collaborations, and her devotion to writing that communicates clearly to experts and non-experts alike.²¹

Pam is a scholar of innovation, a champion of innovation, and an innovator in how to construct a scholarly life that has an impact on the real world. So it was fitting that the topic of the last panel of the symposium was “Innovation,”²² and that panelist Margaret Chon’s essay in this issue offers such a capacious and humane perspective on that topic.²³ Chon develops a novel theory of “relational innovation” and explains why and how copyright law should better foster it. As she powerfully argues, “creativity and innovation depend upon human relationships within specific innovation communities—and these relationships must be recognized, nurtured, and protected in important part because of the deeply human and fundamental need to connect and communicate with others, within and across borders.”²⁴ Chon credits Samuelson for doing that nurturing within our own community of intellectual property scholars: “Pam’s support of so many in the IP community has resulted in an enormous amount of creative generativity characterized by two touchstones of relational innovation: a sense of collective belonging and freely shared (albeit frequently contested) understandings.”²⁵ This observation resonates with Claudia Polsky’s symposium toast,²⁶ a tribute to Pam’s compassion that ended with a recitation of Naomi Shihab Nye’s poem “Kindness,”²⁷ and with student Nicole Boucher’s toast describing the kindness Pam shows to students.²⁸ And it echoes James Boyle’s toast, thanking Pam for making “our own niche of the professions such a rewarding and humane field to work in, for all of us.”²⁹ Or, as Wendy Gordon put it in her toast: “She likes us!”³⁰

21. Joseph Lorenzo Hall, *Pam and Inspiring Technologists*, 39 BERKELEY TECH. L.J. 1085, 1086.

22. Rob Merges, James Grimmelman, Erik Stallman, Mary Hewitt, Sharon Sandeen, Rochelle Dreyfuss, Felix, Mark Lemley, Margaret Chon, Rebecca, Claudia Polsky, Michael Geist, Molly Shaffer Van Houweling, Chuck Weisselberg, Participant, Thomas Vinje, Berkeley Law Symposium Celebrating Pamela Samuelson, Session 6 Innovation (Jan. 16, 2024), <https://www.law.berkeley.edu/wp-content/uploads/2024/05/Pam-Samuelson-Session-06-Innovation.pdf>.

23. Margaret Chon, *Relational Innovation and the Public Benefits of Copying*, 39 BERKELEY TECH. L.J. 1169, 1173.

24. *Id.* at 1196.

25. *Id.* at 1197.

26. Merges, *supra* note 22.

27. Naomi Shihab Nye, *Kindness* (1995), <https://poets.org/poem/kindness>.

28. von Hippel et al., *supra* note 17.

29. Boyle et al., *supra* note 4.

30. *Id.*

Chon's focus on the nexus between innovation and human connection captures a sentiment that infused the 2023 symposium and every contribution to this issue: for all of her extraordinary professional accomplishments, the most powerful and enduring way in which Pam has promoted progress has been by promoting *people*—her students, her colleagues, the recipients of the Dovie Samuelson scholarship named in honor of her grandmother,³¹ the technologists who read her columns in *Communications of the Association for Computing Machinery*,³² the participants in Samuelson-Glushko Technology Law and Policy clinics around the world,³³ and more. As Zahr Said put it in her symposium toast: “Nobody has invested more in the people in our community than Pam.”³⁴ And, as Mark Gergen pointed out in his toast, that community extends beyond IP scholars to include faculty from every discipline whose careers Pam has nurtured through her campus leadership.³⁵ Again and again during the symposium, participants expressed amazement that someone who has had such a singular impact on their careers and lives has had the same extraordinary impact on so many others. As panelist and former student Andrew Gass put it, “I don’t know how Pam does that for everyone. It seems impossible. Pam seems impossible . . . Pam shouldn’t scale. But she does.”³⁶ In his symposium toast, Erik Von Hippel followed up with a quip that echoed this sentiment and brought down the house: “Until today, I thought I was Pam’s only friend. Apparently, this is not the case.”³⁷

Indeed, the Symposium Celebrating Pamela Samuelson was a celebration of how friendship and human connection can magnify the impact of an individual scholar across institutions, disciplines, borders, and generations. Pam’s career demonstrates how the promotion of progress requires promoting people. It should perhaps come as no surprise, but is remarkable nonetheless, that our foremost scholar of human progress is among its foremost practitioners as well.

31. See Chon, *supra* note 23, at 1170 (discussing scholarship established by Pam and her husband Bob Glushko).

32. See Communications of the ACM, Pamela Samuelson, <https://cacm.acm.org/author/pamela-samuelson/> (collecting Pam’s contributions to the publication); see also Carroll, *supra* note 5, at 1214 (discussing Pam’s regular contributions to *Communications of the ACM*).

33. See Schultz, *supra* note 18, at n. 12 and accompanying text (discussing establishment and work of clinics at Colorado, Fordham, Ottawa, Amsterdam, and American University in Washington D.C., in addition to the first Samuelson Law, Technology & Public Policy clinic at Berkeley).

34. Hansen et al., *supra* note 12.

35. Reisman et al., *supra* note 9.

36. von Hippel et al., *supra* note 17.

37. *Id.*

PAM AND INSPIRING TECHNOLOGISTS

Joseph Lorenzo Hall, PhD[†]

It is a pleasure to be writing in this volume with such great company, each of us celebrating such an important person and mentor, Pam Samuelson.

I am grateful for the opportunity to represent the many technical professionals who have been inspired and influenced by Pam's work over the years. It is an honor to speak on their behalf and to acknowledge the impact that Pam has had on academia, civil society, government, and industry. Through her leadership, expertise, and mentorship, she has helped shape the careers and aspirations of hundreds. I hope that my words can do justice to the depth of gratitude and admiration that so many of us feel towards Pam and her contributions to the field.

We could easily compose an entire volume on Pam's influence on thinkers in more technical disciplines. While I've always realized and recognized the importance of Pam's mentorship in my scholarship and career, I must admit it was difficult to actually reduce those feelings to remarks and words on paper.

I believe I was Pam's first PhD student, which speaks volumes about her multidisciplinary approach, as she was easily able to advise a technologist with a strong interest in law and policy. It was just another adventure. Pam, as I will explain, transformed my life with a single lecture on the DMCA. Even after that lecture, every time I have the opportunity to hear her speak or read her work, something inside me changes for the better.

Throughout my graduate school journey, Pam played a vital role as my mentor. Even today, she remains a significant and influential figure in my life. Her unwavering guidance and support have been instrumental in shaping my career path, leading me to focus on developing what I call policy technologists: skilled experts with scientific or technical training, who can leverage their knowledge and expertise to bring about positive change in legislatures, agencies, and courts.

From the beginning, I noticed that Pam possesses a unique set of skills and interests that enable her to easily navigate through technical complexities despite not being a technical expert herself. She adeptly operates at the intersection of science, technology, law, and policy, collaborating closely with

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experts in these fields to gain insight on pressing issues. Watching this dynamic, I came to realize that the other direction was just as important: integration of more scientists and technologists into the legal and policy realms would be important in years to come.

We cannot expect everyone to possess Pam's level of ease when working with scientific and technical expertise or understand her emphasis on the importance of having adversarial discussions that incorporate technical and scientific expertise in law and policy debates, just like in our adversarial legal system in areas of internet law. We need to produce scholars and professionals who can make technology understandable to everyone and debate the merits of different technologies in law and policy debates. Therefore, we have to integrate knowledge and expertise in a way that is easily accessible to everyone, to the greatest extent possible.

With that in the way of an introduction, I would like to share three significant aspects of Pam's influence on my once-young technical mind. First, there was a lecture that she delivered which completely transformed my life. It was a testament to her exceptional speaking abilities that I suspect many readers have witnessed. Secondly, Pam's collaboration with an economist had a profound impact on my understanding of intellectual property issues, stemming from the multidisciplinary approach the two scholars took. Finally, there is one paper that I frequently reference and share with others. It is a prime example of Pam's exceptional writing skills and how her writing legacy has contributed to the spread of the "good virus" of communicating complex concepts in a simple, understandable manner.

In 2002, Pam delivered an inspiring talk about the Digital Millennium Copyright Act and its consequences to the UC Berkeley Engineering and Computer Sciences department. As a crucial aspect of effective leadership, public speaking relies heavily on the ability to communicate through performance, particularly when it comes to motivating and inspiring others. Pam's speaking prowess is a testament to her exceptional talent in this regard. You can have all the arguments and data you want, but if you can't communicate persuasively in a manner that invites others into the subject, you simply won't get very far.

During the early 2000s, I was an astrophysics graduate student at Berkeley. To be honest, I was just okay at it. Although I was good at physics and modeling atmospheres, I began to realize that it wasn't what I wanted to do for the rest of my life. I wanted to make a difference in people's lives, and it didn't seem like astrophysics had much of a role to play in that.

One of my fellow teaching assistants for a 1500-student Berkeley astrophysics class, Patrick Garvey (a former student of Pam), mentioned a lecture on the DMCA given by a professor from his department. I was intrigued because I had read about this topic on a nerdy news site called Slashdot over my lunch break, while modeling atmospheres and grading problem sets. During the lecture, the professor, Pam, boiled the subject down to a core thesis: the DMCA was hindering cryptography research. In other words, the United States had passed a law that made it illegal to study certain mathematical structures incorporated into software and hardware. I remember being shocked by this revelation, thinking that they had banned the study of math!

Next, I would like to share a story that highlights Pam's exceptional multidisciplinary collaborations and their potential to inspire and motivate individuals. The story is about a paper titled "The Law and Economics of Reverse Engineering," which Pam wrote in collaboration with Suzanne Scotchmer, who has unfortunately passed away.¹ Suzanne was an extraordinary scholar (and a friend to many of us), and this paper is a testament to the brilliance that can emerge when two exceptional minds work together on an issue that straddles a number of disciplines.

First, let me give you some context. After Pam's DMCA lecture, I was so impressed that I decided to enroll in her cyberlaw class. I clearly caught some sort of legal scholarship bug in the class. Later, I also took Molly Van Houweling's introduction to IP class and Kathy Abram's election law seminar. (During Molly's class, I got the nickname "Joe Dongle" because I was the only student who could explain the meaning of dongles referred to in the DMCA.) However, at some point the law school registrar informed me that I would have to enroll in law school to take more law classes. Eventually, I got accepted into the PhD program at the UC Berkeley School of Information, where Pam was my advisor.

At the School of Information, I worked with Deirdre Mulligan, first from the Law School and then from the School of Information, while Pam was my PhD adviser. Together, we received a grant of around \$10 million from six institutions to study voting machines and create the National Science Foundation's A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections (ACCURATE). I published a number of peer-reviewed

1. See Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575 (2002).

papers on methods to ensure the verification of voting machines, and I eventually completed my PhD.

The work that I was doing for my PhD at the time involved legal restrictions in making black box voting machines transparent and legible. This got me more interested in the proverbial Lessigian levers of regulation (law, markets, norms, technology). While I had a decent understanding of the law and technology, I was unfamiliar with the shape and texture of norms and markets. I needed to know more about these things, and Pam's paper with Suzanne was just what I needed. Their paper explored the importance of inquiry to the underlying process of innovation itself, emphasizing the freedom to tinker (hat tip to Princeton computer scientist Ed Felten, who runs the *Freedom to Tinker* blog). After reading the paper, I discovered that Scotchmer was a professor at Berkeley and taught this stuff right in my backyard!

A few days later, I found myself in an "Economics of Innovation" course at Berkeley with two other PhD students from the School of Information, taught by Suzanne and Bronwyn Hall. In the very first class, Suzanne blew our minds by stating that intellectual property (IP) is a particularly "perverse" way of encouraging innovation from an economic perspective. She explained that there's a lot of waste, deadweight loss, and duplication in terms of incentivizing innovation, along with bitter fights about rights and a complicated legal environment. Despite this, the system ensures that demand identifies and rewards winners by giving people rights to fight it out in the market.

It turns out that the structures in intellectual property are excellent ways to get things you didn't know you wanted. If you have a clear idea of what you want, you can use methods such as grants, contracts, marketplaces, and prizes to incentivize their production. However, if you want to catalyze things that you could never dream of, you need mechanisms that are a bit unusual. Unfortunately, you cannot easily control what you end up getting, and, in fact, you'll receive things you don't want and even wish didn't exist.

This was a very important lesson for me, taught by Scotchmer, whose mind was as sharp as Pam's but in a different direction. It was a different way of looking at things that opened a whole new world to me. This new world of the economics of innovation proved to be very relevant to my current work at the Internet Society, where I defend the internet. Just like IP, the internet was built to be built upon. It was created to allow people to create new things that we couldn't even imagine. Unfortunately, this very essence of the internet, its generativity, is threatened worldwide today.

Finally, a reflection on Pam's writing and her writing legacy, centered around one of her most influential papers in my mind, "Of Orwell and

Window Panes,” published in 1984. The full title of the paper is “Good Legal Writing: of Orwell and Window Panes,” which speaks to the paper’s relevance to legal writers, but I often casually leave that last part off as its insights are broadly applicable to writing in general.

In the paper, Pam argues that good writing should be transparent to the reader. It should convey the intended message with clarity and without any unnecessary complexity that could hinder the reader’s understanding. The central thesis of the paper is that good writing results in concepts manifesting in the reader’s mind as the author intended, without any obstacles or impediments that might impede comprehension.

My informal and completely unscientific polling indicates that Pam’s paper has had a significant impact on her colleagues, mentees, and collaborators in tech policy. Out of all Pam’s scholarship, it is certainly the paper I most frequently cite. In my own circles in Washington, DC and Brussels, it has been used as a reference and piece to re-read before writing Congressional and Administration briefing documents, testimonies, amicus briefs, grant proposals, and other important texts. Its simplicity and clarity have inspired many to adopt a similar approach to writing, and it has contributed to the development of my own motto, “I help government get tech right and tech get governance right.” This motto encapsulates for me the essential truths that Pam articulated in her paper and echoes the importance of simplicity and conciseness in communication.

While the informal sharing of this paper may not be reflected in formal citation counts, its qualitative impact has been profound. Her legacy as a writer in general has been cemented through her work, and its influence will continue to be felt. Pam’s insights have helped many writers to communicate more effectively, and her emphasis on the importance of simplicity and clarity has become a guiding principle for many who seek to improve their writing skills.

Thank you, Pam.

SECOND-DEGREE INTELLECTUAL PROPERTY

Daniel J. Gervais, PhD[†]

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I. INTRODUCTION

The emergence of institutional “intellectual property” can be traced back to the first Venetian patents in the sixteenth century and the Statute of Anne and related developments in the field of authors’ rights on the European continent in the late seventeenth and early eighteenth century.¹ Intellectual property (IP) is underpinned by various admixtures of natural law precepts,

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1. See Christopher May, *The Venetian Moment: New Technologies, Legal Innovation and the Institutional Origins of Intellectual Property*, 20 PROMETHEUS 159, 169 (2002). In this Article, the term “intellectual property” is used to refer essentially to copyright and patent law, although some of the Article’s analysis and suggested solutions could apply to other rights, including designs.

some of them anchored in authorial dignity, others in the Lockean desert approach, and, more recently, a law and economics analysis of market failures and the relationship between law and innovation.² Despite this evolution of theoretical frameworks, and ongoing disagreements about the role of non-economic factors, one *constant* throughout this history has been that the underlying creativity and ingenuity was human. Put simply, only humans could invent or create, and only humans developed the languages that allow us to communicate complex ideas to one another, whether spoken or pictorial. Until now.³

Artificial Intelligence (AI) machines can perform many tasks, from driving autonomous vehicles, to providing speech-based customer service, to folding proteins.⁴ But perhaps the most dramatic aspect of AI to date has been the emergence of Large Language Models (LLMs) and the related development of Generative AI (GenAI). From an IP perspective, GenAI changes, well, just about everything. GenAI is already making it cheaper and faster to produce literary and artistic content such as new music or newspaper articles, and new inventions, such as new molecules to treat various diseases.⁵ And this is just the beginning.

Given the changes wrought by GenAI, it is no exaggeration to say that GenAI raises serious questions about the future of humanity. Think about it. The evolution of ideas may no longer be driven by humans; art and literature produced by humans may no longer have access to viable markets due to competition from “cheap” content.⁶ Although humans and machines “think” differently, machines can outperform humans at many tasks requiring high

2. See generally William Fisher, *Theories of Intellectual Property*, BERKMAN KLEIN CTR. FOR INTERNET & SOC'Y AT HARV. U., <https://cyber.harvard.edu/people/tfisher/iptheory.pdf>.

3. See Kevin Ellis, Adam Albright, Armando Solar-Lezama, Joshua B. Tenenbaum & Timothy J. O'Donnell, *Synthesizing Theories of Human Language with Bayesian Program Induction*, NATURE COMM'NS 13, 5024 (2022) (suggesting that by using natural language, AI machines have “routes for machines that learn the causal structure of the world, while representing their knowledge in a format that can be reused and communicated to other agents, both natural and artificial.”).

4. On self-driving (autonomous) vehicles, see Ed Garsten, *What Are Self-Driving Cars? The Technology Explained*, FORBES (Jan. 23, 2024), <https://www.forbes.com/sites/technology/article/self-driving-cars/?sh=41f9f1e05e07>. On customer service, see Bernard Marr, *How Generative AI Is Revolutionizing Customer Service*, FORBES (Jan. 26, 2024), <https://www.forbes.com/sites/bernardmarr/2024/01/26/how-generative-ai-is-revolutionizing-customer-service/?sh=76ebdbd66944>. On protein folding, see Robert F. Service, *The Game Has Changed: AI Triumphs at Protein Folding*, 370 SCIENCE 1144 (2020).

5. See DANIEL J. GERVAIS, *The Human Cause*, RESEARCH HANDBOOK ON INTELLECTUAL PROPERTY AND ARTIFICIAL INTELLIGENCE 21, 23–24 (Ryan Abbott, ed., 2022) (providing examples of facially copyrightable or patentable outputs by AI machines).

6. See Dan L. Burk, *Cheap Creativity and What It Will Do*, 57 GA. L. REV. 1669 (2023).

cognition. The human monopoly on making and enforcing law, including—significantly—the “right” that humans have arrogated to themselves to decide what is “legal” to do to other species and to the planetary ecosystem as a whole, is in serious jeopardy with the arrival of autonomous entities that can outperform us and are likely not overly concerned about being obligated to pay damages, fines, or imprisonment—two of the most common tools of law enforcement.

In this Essay, I take a narrower focus. Until the advent of AI, particularly LLMs, there was, as noted above, at least one human creators or inventors who caused the creation or invention to occur. This human involvement gave originality to a copyrighted work or inventiveness to an invention, which made it non-obvious to a person skilled in the art.⁷ Put simply, there has always been only one degree of separation between the creation or invention on the one hand and one or more persons on the other. Thus, IP has always been *first-degree*.

I then ask the following question: what happens when the kind of material currently protected by copyright and patent law is created not by humans, but by machines built, programmed, and trained by humans. Thus, for the first time in history, we must ask whether *second-degree IP* rights should exist, which requires both a doctrinal analysis of current factors and, recognizing that such factors predate the radical changes just described, a normative analysis of whether it is justified to grant such rights.

The use of the term “degree” in this context was prompted by Professor Pam Samuelson’s observation, made many years ago, that granting a programmer rights to the output of the machine would “over-reward . . . the programmer, particularly in light of the fact that the programmer is no more able to anticipate the output than anyone else.”⁸ This prescient comment contains both the idea that the programmer is *too far removed* from the output (hence, second degree) to qualify for protection and that the machine is “autonomous” to a significant degree in producing the output. Copyright is meant as an incentive for *humans*.⁹ Here as on many other occasions, Professor Samuelson’s work on copyright promoting progress is particularly helpful, as

7. The notion of cause was usefully applied in this context by Professor Shyamkrishna Balganesh. See Shyamkrishna Balganesh, *Causing Copyright*, 117 COLUM. L. REV. 1 (2017) (developing a theory of authorial causation connecting human agency to the expression embodied in a copyrighted work).

8. See Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185, 1208 (1985).

9. See *id.* at 1224 (“If there is no human author of such a work, how can any human be motivated to create it? The copyright system assumes that society awards a set of exclusive rights to authors for limited times in order to *motivate* them to be creative . . .”).

she has rightly directed readers to consider the changing nature of technology as a necessary vector of a proposal to adapt the copyright framework over time.¹⁰ She also put her finger on the reason why GenAI is “more disruptive than previous technologies,” namely “the exceptionally rapid pace at which generative AI technologies have been launched, adopted, and adapted,” but also its “substantial impacts on the careers of professional writers and artists.”¹¹

Machines can now program themselves, so that, like cousinhood, machine-generated content may ultimately be even more distant from humans.¹² For example, a machine (possibly with the ability to modify its own code) could be programmed to program medical research machines that would then produce new molecules, identify targets of interest, and perform *in silico* research, a combination that might be enough to claim a patent under current law.¹³ I deliberately use medical research as an example because GenAI will most certainly produce valuable content.¹⁴ As with *de novo* molecular design and optimization, there will be thousands of songs and novellas produced by AI.¹⁵

10. See Michael W. Carroll, *Committed to Copyright's Constitutional Role*, 39 BERKELEY TECH. L.J. 1199 (2024) (discussing Professor Samuelson's scholarship on the application of copyright to software).

11. Pamela Samuelson, *Generative AI Meets Copyright*, 381 SCIENCE 158, 159 (2023).

12. See Cade Metz, *A.I. Can Now Write Its Own Computer Code. That's Good News for Humans.*, N.Y. TIMES (Sept. 9, 2021), <https://www.nytimes.com/2021/09/09/technology/codex-artificial-intelligence-coding.html>.

13. Clinical trials (on human patients) are not required to obtain a patent on a new molecule. Nor is FDA a prerequisite for finding a compound useful within the meaning of the patent laws. See *Scott v. Finney*, 34 F.3d 1058, 1063 (Fed. Cir. 1994) (noting that FDA approval is not required to patent a new molecule). If one wanted to push the scenario a bit further, the machine could also announce the clinical trials, select human candidates, manage communications (voice/email) with candidates, and then process and publish the data.

14. See Rizwan Qureshi, Muhammad Irfan, Taimoor Muzaffar Gondal, Sheheryar Khan, Jia Wu, Muhammad Usman Hadi, John Heymach, Xiuning Le, Hong Yan & Tanvir Alam, *AI in Drug Discovery and Its Clinical Relevance*, 9 HELIYON 1, 17 (July 2023), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10302550/pdf/main.pdf> (“AI-based methods are being adopted in the health care industry where low-cost, intelligent, and flexible methods are affecting areas such as drug design, support for clinical decision making, diagnosis, prevention, and making clinical recommendations. . . . AI has been implemented by some pharmaceutical organizations, with revenue from AI-based solutions in the pharmaceutical sector estimated to reach US \$2.199 billion by 2022.”).

15. On new molecules, see *id.* at 16. On novellas, see Adi Robertson, *I Tried the AI Novel-Writing Tool Everyone Hates, and It's Better than I Expected*, VERGE (May 24, 2023), <https://www.theverge.com/2023/5/24/23732252/sudowrite-story-engine-ai-generated-cyberpunk-novella>. On music, see Andrew R. Chow, *AI's Influence on Music Is Raising Some Difficult Questions*, TIME (Dec. 4, 2023), <https://time.com/6340294/ai-transform-music-2023/> (describing AI tools such as BandLab, Endel and Google DeepMind's Lyria model that produce music).

Some are likely to find a place in the marketplace. In many cases, machine-generated content may bring significant benefits to the public. At the same time, it may crowd out existing copyrighted works or patented inventions, limiting the space available for human creations and inventions in the same marketplace. This dual lens is, I suggest, the proper analytical path, because it takes into account both the costs and benefits of the outcomes for humans as users and producers of creations and inventions. The societal impacts that should inform policy decisions in this area require a comprehensive approach, one that is not myopically focused only on possible commercially viable/valuable outputs.

This approach is rooted in the belief that IP was and is intended to promote progress. There is little doubt (at least in my mind) that the word “progress” in Article I, Section 8, Clause 8 meant *human* progress to the Founding Fathers.¹⁶ A simple thought experiment should suffice to prove the point: if all humans died, would the U.S. Constitution’s direction still be followed if AI machines issued patents or copyright registration certificates for art and science produced by machines, and for machines?¹⁷ If the reader agrees with me that the answer is negative, then the real—or at least more immediate—question to ask is whether delegating to machines the task of producing inventions and facially copyrightable material helps or hinders human progress, because IP was created to provide incentives *for humans*. As Professor Samuelson noted in that regard, “[i]f there is no human author of such a work, how can any human be motivated to create it? The copyright system assumes that society awards a set of exclusive rights to authors for limited times in order to *motivate* them to be creative.”¹⁸ The answer, as the Essay below explains, is both. This leads me to conclude that the role of intellectual property law—and of law more generally—is to enhance the positive effects of GenAI and to mitigate the negative effects.

On the positive side, as noted above, medical and technological research may grow much faster in certain areas.¹⁹ Machines can process vast amounts

16. Madison referred to the role of intellectual property as producing “community benefits.” JAMES MADISON, *Monopolies. Perpetuities. Corporations. Ecclesiastical Endowments.*, in JAMES MADISON: WRITINGS 756, 767–68 (Jack N. Rakove ed., 1999); see also *Eldred v. Ashcroft*, 537 U.S. 186, 247 (2003) (Breyer, J., dissenting) (“[U]nder the Constitution, copyright was designed ‘primarily for the benefit of the public,’ for ‘the benefit of the great body of people, in that it will stimulate writing and invention.’” (quoting H.R. REP. NO. 60-2222, at 7 (1909))).

17. This is, of course, because the Constitution (like all other law) is human law, made by and for humans. See Daniel J. Gervais, *Towards an Effective Transnational Regulation of AI*, 38 AI & SOC’Y 391 (2023) (explaining that laws are not meant for all agents, only for humans).

18. Samuelson, *supra* note 8, at 1224.

19. See Qureshi et al., *supra* note 14.

of data, such as published patents and patent applications, scientific and medical journals and other information, in any language, find new correlations, for example by identifying potential new molecules to target specific diseases, and predicting their efficacy and toxicity, a process sometimes referred to as *in silico* (as opposed to *in vitro* or *in vivo*) research.²⁰ On the negative or high-risk-side of the equation, lest we forget, art and science are essential tools for interpreting our world. There will be a lot of non-human noise crowding the traditional channels that humans use to communicate and exchange ideas, including news, novels, movies, art, and music.²¹

As this Essay argues, the decline in the signal-to-noise ratio has two major consequences. First, the mimetic and epistemological signals that current generations send to the next become weaker; second, the intellectual tools we have to understand our world become both coarser and poorer. Yet it is with these tools, and through interpretation, that humans can become agents in the world and ultimately change it. Delegating this very purpose to machines is therefore pregnant with implications for the future, for it changes its arc.²² One might counter that there will always be humans to write, pick up a paintbrush, or try to make a new invention, and that may be true, but market forces will inexorably push for the replacement of humans by machines whenever it is commercially desirable.

If machines can do both basic science and new technology development better, cheaper, and faster than humans, private labs may hire fewer human PhDs and postdocs. But the push will be almost inevitable, precisely because three powerful forces of capitalism will push human creators and inventors out of the picture: quality, price, and speed. Humans that remain will play a new role: collaborating with the machine, as prompt engineers, for example.²³

20. See Qureshi et al., *supra* note 14; Rachel L. Schwein, *Patentability and Inventorship of AI-Generated Inventions*, 60 WASHBURN L.J. 561, 569 (2021) (identifying several “inventions” made by AI machines).

21. See Carys J. Craig & Ian R. Kerr, *The Death of the AI Author*, 52 OTTAWA L. REV. 31, 86 (2021):

To say authorship is human, that it is fundamentally connected with *humanness*, is not to invoke the romantic author, nor is it to impose a kind of chauvinism that privileges human-produced artifacts over those that are machine-made. Rather, it is to say that human communication is the very point of authorship as a social practice—indeed, as a condition of life. As such, we do not think we are being at all romantic when we say that authorship, in this sense, is properly the preserve of the human.

22. See *id.*

23. See Li Wang, Xi Chen, XiangWen Deng, Hao Wen, MingKe You, WeiZhi Liu, Qi Li & Jian Li, *Prompt Engineering in Consistency and Reliability with the Evidence-Based Guideline for LLMs*, 7 NPJ DIGIT. MED. 41 (2024), <https://www.nature.com/articles/s41746-024-01029-4> (“[T]he application of LLMs in medicine is currently thriving. However, most of the current research seems to focus more on the results of using LLMs rather than how to better use LLMs in

University science departments may wither, as will the demand for human-made science, just as the market for human-created art in various forms may shrink. Why should Spotify pay for “human” music when it can use GenAI to generate thousands of songs on the fly, discarding those songs that users skip while keeping others?²⁴ We know the answer, because it is already happening.²⁵ The quest for a deeper and better understanding of the natural world, which has arguably animated humans since the invention of fire, will also be distorted. In sum, our highest and noblest ideals will be delegated, at least in part, to nonhumans. Despite the obvious benefits on the user side of the equation, this should give us pause.

The Article proceeds as follows. In the following Part, it provides an overview of current technology and forms of second-degree IP. Part III discusses how current copyright and patent law applies to second-degree IP. The final Part proposes a test for deciding whether second-degree IP rights should be granted at all, and if so, under what conditions, using the comprehensive societal impact approach outlined above.

II. IDENTIFYING SECOND-DEGREE INTELLECTUAL PROPERTY

GenAI models such as ChatGPT, Dall-E, and others can produce literary and artistic content that looks like material protectable by copyright.²⁶ GenAI and other forms of AI are now routinely used in medical research, industrial design, and other fields, producing what appear to be patentable inventions and designs.²⁷ The key phrase in here, of course, is “looks like,” a matter to which the Essay will return in Part III. In this brief Part, the Essay will only attempt to place definitional limits on the notion of second-degree IP.

clinical medicine. Testing the reliability of LLMs in answering medical questions, using different prompts, and even developing prompts specifically for medical questions could change the application of LLMs in medicine and future research.”).

24. And indeed, it is happening as expected. *See* ChrissyGee, *Release Radar This Week Was Almost All AI Generated Music*, SPOTIFY CMTY. BLOG (Sept. 1, 2023, 11:07AM), <https://community.spotify.com/t5/Content-Questions/Release-Radar-this-week-was-almost-all-AI-generated-music/td-p/5630466>.

25. *See id.*

26. Copyright subsists in “original works of authorship.” *See* 17 U.S.C. §§ 101, 102(a). Works typically belong to one of the listed categories: literary works; musical works; dramatic works, including any accompanying music; pantomimes and choreographic works; pictorial, graphic, and sculptural works; motion pictures and other audiovisual works; sound recordings; and architectural works.

27. *See* Gervais, *supra* note 5.

As noted in the Introduction, up to this point in human history, no other species or entity has been able to create copyrightable material or patentable inventions. Of course, there is an avowed speciesism at work here: human policymakers made IP laws to reflect work they thought was worth protecting.²⁸ Non-human animals produce things that are valuable, some directly as commercial products (e.g., chickens produce eggs), and others in ways that can inform human intellectual creativity and ingenuity (spiders weave webs). Yet these animals cannot obtain IP rights, both because they have no legal standing to do so, and because applying for IP protection requires the use of human language.²⁹ Like macaques, AI machines have no legal standing; but unlike macaques, they have mastered our language.³⁰

As the technology currently stands, GenAI machines are programmed and trained by humans, and the computers they run on are also designed and built by humans, although the role of machines in designing, building, and programming new AI systems is expected to grow rapidly.³¹ This means that there is a lot of first-degree IP in AI: the human-written code that powers GenAI systems is copyrighted.³² Some human-invented AI systems are also potentially patentable. These are all “typical” forms of first-degree IP because they have a human proximate cause.

28. Speciesism is the idea of assigning different values or rights to beings on the basis of their species membership. If someone were to argue that intellectual property is speciesist, they might suggest that IP laws prioritize human creativity and interests over those of other “species,” or that they fail to recognize the intellectual contributions of non-humans. It typically reflects the “the assumption of human superiority.” *Speciesism*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/speciesism>; see also Craig et al., *supra* note 21.

29. On the question of standing see *Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018) (refusing to recognize standing in a copyright claim for an Indonesian macaque who had picked up a camera left unattended and took some selfies).

30. See George Musser, *Building Intelligent Machines Helps Us Learn How Our Brain Works*, SCI. AM. (Mar. 19, 2024), <https://www.scientificamerican.com/article/what-the-quest-to-build-a-truly-intelligent-machine-is-teaching-us/> (“Large language models have acquired more problem-solving ability than most researchers expected they ever would. . . . [T]hese systems have unequivocally solved . . . language. They possess what experts call formal competence: they can parse any sentence you give them, even if it’s fragmented or slangy, and respond in what might be termed Wikipedia Standard English.”).

31. See Rina Diane Caballar, *How Coders Can Survive—and Thrive—in a ChatGPT World*, IEEE SPECTRUM (July 3, 2023), <https://spectrum.ieee.org/ai-programming>.

32. See RESTATEMENT OF THE L., COPYRIGHT § 2 cmt. a (AM. L. INST., Tentative Draft No. 2 Rev., 2022) (“The Copyright Act does not explicitly define computer programs as a species of literary works, but the Act’s legislative history does so, and courts and the Copyright Office have treated computer programs accordingly . . .”).

A. HUMANS AS PROXIMATE CAUSE

The concept of causation is well known in law. In tort law, causation can have two meanings: causation-in-fact (also known as “simple cause”) and proximate causation (or “legal cause”). Causation-in-fact is the “but for” test, and is often the simplest: would the result have occurred but for the conduct of a person (usually the defendant in a tort case)?³³ If a person’s actions played a part—any part—in the outcome, then the answer is generally yes.³⁴ Proximate cause is a causal link between the conduct and the result but “unbroken by an efficient intervening cause.”³⁵ This can be interpreted to mean that causes that are two or more steps removed may not be proximate.³⁶

In the case of AI systems, multiple people are typically involved in the creation and operation of AI machines, and many of them may thus make a “but for” contribution to an action or decision. But the main IP novelty contributed by GenAI is its ability to autonomously produce facially copyrightable or patentable material, in the sense that the human contributions to the programming and training of the AI (and, *a fortiori*, to the design and manufacture of the computer itself) are not proximate causes of the output; they are merely “but for” causes.

Applying this to IP law, we can safely say that “but for” causation is not sufficient to qualify for IP protection. Too many hands (and chips) may have played a role that is only tangentially related to the outcome (e.g., the company that provides the electricity) and yet be enough to pass a strict “but for” test.³⁷ The Essay therefore argues that some form of IP proximate causation, imbued with the requisite normativity, should be applied in place of simple cause. Put differently, the argument is that simple cause is both doctrinally and normatively insufficient; it is necessary to identify the source of the creative decisions (copyright) or the contribution to the actual conception of the invention (patent). The concept of “proximate” cause provides both a vocabulary and analytical paths that are useful in this context. Naturally, this

33. Courts sometimes struggle to distinguish causation in fact and proximate cause. *See* Jane Stapleton, *Legal Cause: Cause-in-Fact and the Scope of Liability for Consequences*, 54 VAND. L. REV. 941, 945 (2001).

34. The term “causation in fact” is somewhat of a misnomer. Cause is not, strictly speaking, a “fact”; it is a relationship between two events. *See* Wex S. Malone, *Ruminations on Cause-in-Fact*, 9 STAN. L. REV. 60, 61 (1956).

35. *Beale v. Jones*, 171 S.E.2d 851, 853 (Va. 1970).

36. *Apple Inc. v. Pepper*, 587 U.S. 273, 279 (2019).

37. To take a simple example, the power company doesn’t get IP rights because it provided electricity to the lab, even though the invention would not exist but for the power generation. In the same vein, every programmer who worked on an AI machine arguably meets the “but for” threshold as a technical matter.

means an inversion of the notion's traditional role, as proximate or legal cause is more typically used to impose liability in appropriate cases rather than in a jurisgenerative role (in this case, generating IP protection).³⁸

Where the notion of IP proximate cause may be particularly useful is in its *objective*, for it considers whether the conduct is “a *substantial factor* in bringing about” the result.³⁹ Proximate cause is a determination with built-in flexibility and steeped in temporal and other contextual constraints such as normalcy. It has great dynamicity, therefore. As U.S. Supreme Court Chief Justice Roberts noted in his dissent in *CSX*, the notion of proximate cause provides the vocabulary for answering questions such as “whether there was a superseding or intervening cause.”⁴⁰ Tort law recognizes that “external influences” may be considered as “superseding causes.”⁴¹ From a normative perspective, “superseding” may be interpreted to mean *more relevant*. The Essay argues that courts *can and should* use this sieve in IP cases involving AI machines.⁴² The difficulty in resolving close cases will be to identify a break in the legal causal chain between humans and the result (what looks like a copyrightable work or patentable invention). This break will be due to an *intervening cause*, namely the autonomous contribution of the AI machine.

In their (normative) application of proximity to the cause of a contribution to a literary or artistic work or an invention, there are two mistakes that courts might make. The first error would be to (over)reward (or hold accountable, for example, if the work produced infringes someone else's copyright) humans who are so far removed from the AI machine's operation as to be “far out,” to use the language of the U.S. Supreme Court.⁴³ In extreme cases, for example, the only meaningful human control over the machine may be a “kill switch.”⁴⁴ The second, related, potential mistake is to assume that someone must be rewarded or held accountable. It is possible that no human can be causally

38. See RESTATEMENT (SECOND) OF TORTS § 9 (AM. L. INST. 1965).

39. *Id.*, cmt. a (emphasis added).

40. For example, “[t]he words ‘legal cause’ are used [...] to denote fact that the causal sequence by which the actor's tortious conduct has resulted in an invasion of some legally protected interest of another is such that the law holds the actor responsible for such harm unless there is some defense to liability.” Restatement (Second) of Torts: § 9 (Am. L. Inst. 1965); *CSX Transp., Inc. v. McBride*, 564 U.S. 685, 719 (2011).

41. See Weston Kowert, *The Foreseeability of Human-Artificial Intelligence Interactions*, 96 TEX. L. REV. 181, 184 (2017); Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*, 29 HARV. J.L. & TECH. 353, 365–66 (2016).

42. More rarely so in intentional tort cases. See Restatement (Third) of Torts § 33 cmt. e (Am. L. Inst. 2010).

43. *CSX Transp.*, 564 U.S. at 704.

44. See Thomas Arnold & Matthias Scheutz, *The “Big Red Button” Is Too Late: An Alternative Model for the Ethical Evaluation of AI Systems*, 20 ETHICS & INFO. TECH., 59, 60 (2018).

(factually and legally) linked to the result, and that no one should have an IP right in the machine's output. There are conditions that must be met in order to qualify for IP protection, and there is no rule that says that anything of value should benefit from an IP right, although the old trope "if value, then right" still has some normative purchase.⁴⁵ It should not. It is a return to the discredited notion of the "sweat of the brow" according to which mere expense and labor generated copyright protection.⁴⁶ Protecting autonomous machine creation without human creativity would amount to a 'sweat of the chip' approach, which this Article argues, should be firmly rejected. Copyright, as the Supreme Court explained in an earlier case, is intended to protect "the fruits of *intellectual* labor," not, therefore, computer processing.⁴⁷

There are two well-established IP doctrines that can serve as vehicles for operationalizing proximate causation in IP law. In copyright law, courts should use originality because the U.S. Copyright Act grants protection only to original works of authorship. This notion of originality is, in fact, a worldwide standard, even though it is not explicitly spelled out in international treaties.⁴⁸

The Supreme Court has ruled that originality is required by the Constitution, which allows Congress to protect the "Writings" of "Authors."⁴⁹ It found that it was "unmistakably clear" that the terms "Authors" and "Writings" in the Constitution presuppose a degree of originality.⁵⁰ Originality, in turn, requires a minimal degree of "creativity," a "creative spark."⁵¹ Applied to AI, courts should define originality as requiring that a *human* spark be causally related to the output. This is the approach taken by the European Parliament in considering that "works autonomously produced by artificial

45. An obvious example of something "of value" to human progress that would not be protected by an exclusive right is a scientific discovery or a formula such as $E=mc^2$. On "if value, then right," see Alfred C. Yen, *Brief Thoughts About If Value/Then Right*, 99 B.U. L. REV. 2479 (2019).

46. As the Supreme Court explained, "the 'sweat of the brow' doctrine flouted basic copyright principles. . . . Protection for the fruits of such research . . . may in certain circumstances be available under a theory of unfair competition. But to accord copyright protection on this basis alone distorts basic copyright principles in that it creates a monopoly in public domain materials without the necessary justification of protecting and encouraging the creation of 'writings' by 'authors.'" *Feist Publications, Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340, 354 (1991) (quoting Nimmer § 3.04, p. 3–23).

47. *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879).

48. See Daniel J. Gervais and Elizabeth F. Judge, *Of Silos and Constellations: Comparing Notions of Originality in Copyright Law*, 27 CARDOZO ARTS & ENT. L. J. 375 (2009); Daniel J. Gervais, *Feist Goes Global: A Comparative Analysis of the Notion of Originality in Copyright Law*, 49 J. COPYRIGHT. SOC'Y OF THE U.S.A. 949 (2002).

49. U.S. CONST. art. I, § 8, cl. 8.

50. *Feist*, 499 U.S. at 346.

51. *Id.*

agents and robots might not be eligible for copyright protection, in order to observe the principle of originality, which is linked to a natural person, and since the concept of ‘intellectual creation’ addresses the author’s personality.”⁵²

In patent law, courts could use the concept of inventorship in a similar way, redefining it to achieve the goal of separating human from machine by focusing on the human contributions, if any, to the conception of the invention. As the Federal Circuit noted,

[T]he Supreme Court has held that, when used in statutes, the word “individual” refers to human beings unless there is “some indication Congress intended” a different reading. Nothing in the Patent Act indicates Congress intended to deviate from the default meaning. To the contrary, the rest of the Patent Act supports the conclusion that “individual” in the Act refers to human beings.⁵³

In particular, human inventiveness should be directly causally related to the non-obviousness of the invention.⁵⁴ Interestingly, because much may be “obvious” to a machine, the use of AI tools may raise the bar for nonobviousness.⁵⁵ Put differently, “once AI is common in a given industry, inventors will have to meet the heightened burden of showing nonobviousness based on what a PHOSITA aided by AI—as well as any other widely available technology—would find reasonably pertinent to the problem solved by the invention.”⁵⁶ This parallelism between inventorship and nonobviousness has

52. European Parliament Resolution 2020/2015(INI) of 20 Oct. 2020, Intellectual Property Rights for the Development of Artificial Intelligence Technologies, ¶ 15, https://www.europarl.europa.eu/doceo/document/TA-9-2020-0277_EN.html.

53. *Thaler v. Vidal*, 43 F.4th 1207, 1211 (Fed. Cir. 2022), cert. denied, 143 S. Ct. 1783 (2023) (citation omitted); *see also Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998).

54. *See Sarah R. Wasserman Rajec, Patent Term Tailoring*, 99 IND. L.J. 475, 477 (2024) (stating that patent grants are limited to human-made inventions that are new, useful, and nonobvious); *see also Erica Fraser, Computers as Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law*, 13 SCRIPTED 305, 306–07 (2016), <https://script-ed.org/article/computers-as-inventors-legal-and-policy-implications-of-artificial-intelligence-on-patent-law/> (“[A] computer could autonomously generate outputs that would be patentable inventions *if otherwise created by a human.*”) (emphasis added).

55. *See Connor Romm, Putting the Person in PHOSITA: The Human’s Obvious Role in the Artificial Intelligence Era*, 62 B.C. L. REV. 1413, 1439 (2021) (“Commentators worry that the current obviousness doctrine fails to understand how AI technology influences the modern inventive process. If true, this perceived blind spot in the doctrine would fail to equip the PHOSITA with the AI machines used by average workers in the field.”).

56. *Id.* at 1445; *see also Kenny Truong, Expanding Nonobviousness to Account for AI-Based Tools*, 104 J. PAT. & TRADEMARK OFF. SOC’Y. 51, 54 (2024) (“[O]bviousness should be determined based on whether a PHOSITA, using AI that is commonly employed in the inventive process in the pertinent field . . .”).

been used to argue that, if one views the PHOSITA and the inventor as “two sides of a coin,” then machine inventions should be patentable.⁵⁷ This is doctrinally defensible, but I would suggest that a broader analytical lens is needed to answer a question as ominous for human progress as whether AI inventions with no human proximate cause should be granted rights to exclude all others from making, using, and selling those inventions. There may be a more immediate threat to research and development, especially in business, if a massive number of incremental “AI patents” begin to be issued.

B. PARSING SECOND-DEGREE INTELLECTUAL PROPERTY

In analyzing what is and is not second-degree IP, the previous Section suggests the complexity of the IP issues at stake: if there were intellectual property in GenAI outputs without a human proximate cause, who would own those rights?⁵⁸ The Article will return to this question in the next Part, but for now, let us consider the role of the person who often seems to take center stage: the prompt “engineer.”⁵⁹ GenAI machines work on the basis of prompts. A prompt is essentially a command to ask an AI to do something.⁶⁰ As the booming business of prompt engineering courses shows, prompts matter.⁶¹ For example, a prompt could ask the GenAI machine to assume a certain role (e.g., “write in the style of a business consultant”); create a text on a certain topic (poem, song lyrics, travel recommendation, technical explanation, etc.); modify or edit existing objects such as text, computer code,

57. See Mimi S. Afshar, *Artificial Intelligence and Inventorship - Does the Patent Inventor Have to Be Human?*, 13 HASTINGS SCI. & TECH. L.J. 55, 66 (2022).

58. We have been asking, but not answering, this question for decades. See Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1057–58 (1993) (“Suggested solutions include apportionment between the user (problem-specifier) and the owner of the artificial intelligence software copyright; apportionment between the person who created the program and the person who compiled the data; the author of the underlying computer program; the user of the program; the computer itself; the person who made the capital investment in the computer and its program; or a fictional, non-existent human author, with ownership of the copyright being apportioned among various claimants.”).

59. See Mark A. Lemley, *How Generative AI Turns Copyright Upside Down*, 25 COLUM. SCI. & TECH. L. REV. 190, 194 (2024) (“[We] ignore[] the creativity contributed by the AI but continue[] to reward creativity contributed by users, assuming the prompt or series of prompts is detailed enough to rise to the level of creative choice.”).

60. See Lydia Husser, *Prompt Engineering for Generative AI*, WEVOLVER (Apr. 25, 2023) <https://www.wevolver.com/article/prompt-engineering-for-generative-ai>.

61. Nik Popli, *The AI Job That Pays Up to \$335K—and You Don’t Need a Computer Engineering Background*, TIME (Apr. 14, 2023), <https://time.com/6272103/ai-prompt-engineer-job/> [<https://perma.cc/3WJL-HR6J>] (describing the booming business of prompt engineering).

or musical composition; provide examples; find data, and the list goes on.⁶² But is the prompt engineer truly the “right holder” in the machine’s output? Or is it the company that programmed and trained the model?⁶³ Or neither?

At the end of this Part, the real question remains whether machine outputs should be protected when there is no human proximate cause, recognizing that in certain cases, prompt engineering by humans may be sufficient to create first-degree IP rights because there is still a human proximate cause. This could happen if human users of GenAI can produce a series of successive prompts to bring the output closer to their desired result. But these will be rare cases indeed. As Mark Lemley has argued, prompts are generally ideas, and their expression is that of the machine. Further, copyright protects expression, not ideas.⁶⁴ In patent law, an ingenious prompt identifies a novel problem; the patent belongs to the person who identifies the solution, though sometimes problem identification is a higher bar.

Finally, in defining second-degree IP, the possibility that the human-generated prompt(s) contains what is required to obtain copyright protection (in this case, as we will see in the next Part, this essentially means originality) or a patent (in this case, finding an inventive or non-obvious solution with demonstrable utility or industrial applicability) requires us to examine the issue of *human-machine collaboration*. Human-machine cooperation is possible, and it does not preclude proximate cause. For example, if I ask a GenAI machine to edit or translate a text I have written, the creative choices I made to produce that text do not disappear after the GenAI machine has made changes. As we will see in the next Part, the question of whether the human input “carries over” to the machine’s output can be answered, but it requires a nuanced, well-calibrated approach.

62. According to some experts, very large GenAI models are approaching and may soon surpass human or general intelligence (AGI), including an ability to solve complex problems. See Jeremy Baum & John Villasenor, *How Close Are We to AI that Surpasses Human Intelligence?*, BROOKINGS INST. (July 18, 2023), <https://www.brookings.edu/articles/how-close-are-we-to-ai-that-surpasses-human-intelligence/>.

63. Assuming that this is the same company, which simplifies the analysis, up to a point. An AI model could be made available for others to train, as Meta did by releasing its AI source code. See Emilia David, *Meta’s AI Research Head Wants Open Source Licensing to Change*, VERGE (Oct. 30, 2023), <https://www.theverge.com/2023/10/30/23935587/meta-generative-ai-models-open-source> (noting that “Meta’s AI research group wants to keep releasing models for free despite criticism that Llama 2 isn’t open enough.”).

64. See Lemley, *supra* note 59, at 197 (“[P]rompts don’t own the ideas they contribute and AIs can’t own the expression they contribute.”).

III. APPLICATION OF CURRENT INTELLECTUAL PROPERTY NORMS

As we begin Part III, I will note that granting rights to productions that look like copyrighted works or patentable inventions, but are made by machines, strikes the author of this Article as a new Turing test.⁶⁵ Normatively, it would amount to rewarding a machine for its ability to masquerade as a human. Surely an illusion cannot be a solid normative basis for obtaining intellectual property protection.⁶⁶ As this Part explains, one must be careful to avoid smoke and mirrors when building doctrinal bridges between first- and second-degree IP.

The discussion of the application of existing IP (copyrights, designs, and patents) to GenAI is best done by separating copyrights on the one hand from patents and designs on the other, for reasons that will become clear below.

A. COPYRIGHT

The discussion in this Part assumes, as both the U.S. Copyright Office and U.S. courts have, that a human author is required for a work to be protected by copyright.⁶⁷ This is the view espoused by Professor Samuelson in her luminous piece on the topic.⁶⁸ In other words, a human being must be the source of the creative decisions that produce the originality that is required to qualify for copyright protection.⁶⁹ The primary concern regarding GenAI output of a literary or artistic nature is not the copyrightability of the prompt itself. Rather, the crucial question is whether the prompts and subsequent

65. That may remind the reader of the “Turing test,” a set of questions asked via teletype on any subject whatsoever. Unbeknownst to the questioner, some were answered by a human; others by a machine. Both the human being and the machine attempted to convince the questioner that it or she is the human and the other is not. *See* Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. REV. 1231, 1236 (1992).

66. *See* Gervais, *supra* note 5, at 24.

67. *See* Thaler v. Perlmutter, 687 F. Supp. 3d 140 (D.D.C. 2023).

68. *See* Samuelson, *supra* note 8, at 1224.

69. *See* U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 306 (3rd ed. 2021) (“The U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being.”); *see also* RESTATEMENT OF THE L., COPYRIGHT § 7 cmt. c (AM. L. INST., Tentative Draft No. 2 Rev., 2022) (“Choices need not be artistic or aesthetic in nature in order to meet the minimal-creativity requirement for a work to be original. But choices do not reflect an author’s creative expression if they are merely routine (e.g., the choice to organize a directory in alphabetical order), or if they are significantly constrained by external factors.”).

“discussion” with the GenAI system can provide the necessary elements for the output to possess originality and demonstrate human proximate cause.⁷⁰

Both U.S. and international copyright law assert that copyright does not protect ideas.⁷¹ Thus, if a GenAI output merely reflects ideas contained in the prompt(s), this should not be sufficient to create a copyrightable work. Originality, and the minimum threshold of creativity it requires (in the United States, as a constitutional matter), is measured by the author’s *expression*, not her ideas.⁷² Therefore, the search for originality should continue based on author expression. For example, if the prompt(s) instruct the machine to change certain sentences in a text, a chord sequence, etc., in a very specific way, and those changes themselves are sufficient to produce originality, then it is possible that the output has originality arising from a human proximate cause. This is where things get tricky and, as a recent court decision in China shows, potentially confusing.⁷³ A very detailed prompt containing the outline of a story, for example, is an idea; its expression in a GenAI output would therefore be the autonomous production of the machine (devoid of human creative choices).⁷⁴ In other words, in most cases a prompt or series of prompts that might themselves be original will transfer ideas, not protectable expression, to the output.⁷⁵ Selecting one output among many would not constitute a source of originality, any more than selecting a painting in a large art gallery would.⁷⁶ A human claiming to be an author of a machine output

70. There is an interesting question about infringement of prompts. If two GenAI outputs are substantially similar, should we assume that the prompts were also substantially similar? Will prompts be retained so that this evidence can be produced in court? It seems likely that the answer to both questions is negative. See Lemley, *supra* note 64.

71. For example, article 9.2 of the Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments—Results of the Uruguay Round vol. 31, 33 I.L.M. 81 (1994), provides that “[c]opyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such.” The TRIPS Agreement was approved by Congress. See Uruguay Round Agreements Act, Pub. L. No. 103-465, §§ 101–03, 108 Stat. 4809 (1994). Then in terms of national law, 17 U.S.C. § 102(b) provides in part that “[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery . . .”.

72. On the constitutional matter, see *Feist*, 499 U.S. at 346.

73. See Aaron Wininger, *Beijing Internet Court Releases Translation of Li vs. Liu Recognizing Copyright in Generative AI*, CHINA IP L. UPDATE (Jan. 22, 2024), <https://www.chinaiplawupdate.com/2024/01/beijing-internet-court-releases-translation-of-li-vs-liu-recognizing-copyright-in-generative-ai/>.

74. See Lemley, *supra* note 64.

75. See *id.*

76. It may take a lot of time and effort, but this would amount to a return to sweat of the brow, which the Supreme Court clearly discarded in *Feist*. There is a perhaps misunderstood notion of “selection and arrangement” at play here. As the Supreme Court

would have to demonstrate that original expressive choices in the prompt(s)—not mere ideas—are contained in the output.

B. PATENTS

Just as a machine cannot be an author, it cannot be an inventor as a matter of law.⁷⁷ However, patents are different. To quote Professor Samuelson, “[o]nly those stuck in the doctrinal mud could even think that computers could be ‘authors.’”⁷⁸ While as explained in the previous Section there is no compelling reason to provide copyright protection for the 10,000 songs, texts, videos, or images that an LLM might have produced while you are reading this Article, and several reasons not to do so, the same reasons do not apply—at least not in the same way—to patents.

AI is now routinely used to accelerate and reduce the cost of pharmaceutical research by performing *in silico* research.⁷⁹ AI machines can find hidden patterns in large data sets and automate many predictions.⁸⁰ Applications of AI in pharmaceutical research include disease diagnosis, predicting drug efficacy,⁸¹ and assisting in drug design.⁸² AI machines can select which molecules have suitable properties to attack biological targets of interest.⁸³ AI can identify the optimal chemical structures to reduce toxicity and meet metabolic requirements, both of which can be costly and data-intensive.⁸⁴ They can improve the field of personalized medicine based on

explained in *Feist*, selection and arrangement” may be a source of originality. But it applies to *compilations*, not selecting one object out of a pile. As stated in *Feist*, 499 U.S. at 357: the statute identifies three distinct elements and requires each to be met for a work to qualify as a copyrightable compilation: (1) the collection and assembly of pre-existing material, facts, or data; (2) the selection, coordination, or arrangement of those materials; and (3) the creation, by virtue of the particular selection, coordination, or arrangement, of an “original” work of authorship.

77. See *Beech Aircraft Corp. v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. 1993) (“[O]nly natural persons can be ‘inventors.’”); see also Dan L. Burk, *AI Patents and the Self-Assembling Machine*, 105 MINN. L. REV. HEADNOTES 301, 303 (2021).

78. Samuelson, *supra* note 8, at 1200 (internal citations omitted).

79. See Nic Fleming, *How Artificial Intelligence Is Changing Drug Discovery*, 557 NATURE 55 (2018).

80. See generally AJAY AGRAWAL, JOSHUA GANS & AVI GOLDFARB, PREDICTION MACHINES, UPDATED AND EXPANDED: THE SIMPLE ECONOMICS OF ARTIFICIAL INTELLIGENCE (Harv. Bus. Rev. Press, 2022).

81. See Gregor Gunčar, Matijaž Kukar, Mateja Notar, Miran Brvar, Peter Černelč, Manca Notar & Marko Notar, *An Application of Machine Learning to Haematological Diagnosis*, 8 SCI. REP. (2018).

82. See Hongming Chen, Ola Engkvist, Yin Hai Wang, Marcus Olivecrona & Thomas Blaschke, *The Rise of Deep Learning in Drug Discovery*, 23 DRUG DISCOVERY TODAY, 1241 (2018).

83. See *id.*

84. See *id.*

genetic markers.⁸⁵ In other words, machines can both identify novel compounds and other subject matter and in many cases, predict efficacy, which could be sufficient to meet the utility requirement.⁸⁶ The potential of AI to identify novel drugs that human researchers alone cannot discover has attracted investment from both startups and established pharmaceutical companies.⁸⁷ Though it may have been a publicity stunt, Google's announcement that its AI machines can both make new inventions and apply for patents was also noteworthy.⁸⁸

Still, U.S. law requires that a human inventor to be named on the application for an invention to be patentable.⁸⁹ The consequences of naming on the application one or more persons who did not actually invent are unclear in this context, but if none of the named inventors is actually an inventor, the patent, if granted, would be subject to invalidation for lack of human invention.⁹⁰

The equation to be solved here, with respect to patents, is whether granting patents on "inventions" without a human inventor, that is, inventions without a human cause as defined above, is beneficial under the illumination of the normative lodestar: human progress. Will machines produce tens of thousands of small, incremental innovations and clog the patent office and courts, trolling for every possible application of myriad technologies? Would this add little if any value and could cause great disruption, as trolling is known to do?⁹¹ Or

85. See Kit-Kay Mak & Mallikarjuna Rao Pichika, *Artificial Intelligence in Drug Development: Present Status and Future Prospects*, 24 DRUG DISCOVERY TODAY 773 (2019).

86. See *In re Brana*, 51 F.3d 1560, 1568 (Fed. Cir. 1995) ("Usefulness in patent law, and in particular in the context of pharmaceutical inventions, necessarily includes the expectation of further research and development. The stage at which an invention in this field becomes useful is well before it is ready to be administered to humans.").

87. See Bowen Lou & Lynn Wu, *AI on Drugs: Can Artificial Intelligence Accelerate Drug Development? Evidence from a Large-Scale Examination of Bio-Pharma Firms*, (Mar. 15, 2021) (MISQ Forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3524985.

88. See Rose Hughes, *DeepMind: First Major AI Patent Filings Revealed*, IPKAT (June 7, 2018), <http://ipkitten.blogspot.com/2018/06/deepmind-first-major-ai-patent-filings.html>. The reverse use of AI is true; namely, to defeat patent applications—based on obviousness (to an AI expert) or novelty—by massive preemptive public disclosure of novel subject matter together with its utility. On the former, see Ryan Abbott, *Everything Is Obvious*, 66 UCLA L. REV. 2, 40 (2019). On the latter issue, see Daniel Gervais, *Exploring the Interfaces Between Big Data and Intellectual Property Law*, 10 J. INTELL. PROP., INFO. TECH., & ELEC. COM. L. (2019), <https://www.jipitec.eu/issues/jipitec-10-1-2019/4875>.

89. Thaler, 43 F.4th at 1211 ("Our holding today that an 'inventor' must be a human being is supported by our own precedent. . . . [Previous] cases confirm that the plain meaning of 'inventor' in the Patent Act is limited to natural persons."); see also *supra* note 77.

90. See Thaler, 43 F.4th at 1211.

91. See Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2119 (2013) (describing harms caused by patent trolling).

can we delineate a domain of ‘machine innovation’ that avoids these harms and still manages to increase overall welfare?

IV. A PATH FORWARD

Let us start with patents. In the context of GenAI, what if a machine proposes a solution in an output that seems like patentable or copyrightable subject-matter? When a GenAI system generates output that appears to constitute patentability or copyrightable subject matter, it necessitates a reevaluation of the legal concepts of authorship and inventorship. This analysis must distinguish between traditional “first-degree” intellectual property created directly by humans and a potential new category of “second-degree” intellectual property produced by AI systems, while excluding from this latter category any output that ultimately traces back to direct human creativity.

A. HUMAN-MACHINE COLLABORATION

An inventor is typically not the person(s) who identified a problem, but the person who identified the solution.⁹² A human posing a series of “what if” questions in a “discussion” with GenAI could be either. They could ask the machine to look at the problem from a different angle, but then any solution generated by the machine would have the machine as its “inventor.” On the other hand, if the “what if” prompt contains a possible solution, and the prompt asks the AI machine to test it, then the inventor could be the human author of the prompt(s). What happens if there is no such human inventor?

In copyright law, human-machine collaboration is already a reality.⁹³ As the U.S. Copyright Office noted, the use of AI does not prevent subject-matter that belongs to the field of copyright (essentially, literary, and artistic works) to be protected if there are enough creative choices in the expressive output.⁹⁴ The case for a transfer of any originality in the prompt(s) to the output is likely to be a rare case, as prompts are best seen as ideas turned into a form of “expression” by the machine.⁹⁵ One could see a prompt containing specific expression that the machine would use in the output. A simple example would

92. See *Burroughs Wellcome Co. v. Barr Lab’ys, Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994) (“An idea is definite and permanent when the inventor has a specific, settled idea, a particular solution to the problem at hand . . .”).

93. See Atilla Kasap, *Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of AI-Generated Works in the United States*, 19 WAKE FOREST J. BUS. & INTELL. PROP. L. 335, 363 (2019) (“Computers have already been effectively and widely employed in creative industries and machine and human collaboration has resulted in more creative works being published.”).

94. See U.S. COPYRIGHT OFF., *supra* note 69.

95. See Lemley, *supra* note 64.

be a prompt providing text embodying a sufficient degree of originality that the machine would be instructed to use. Then, the caselaw concerning copying of less than the exact expression but more than just the ideas would inform the analysis of whether the originality transfer from the prompt(s) has occurred.⁹⁶

B. IS THERE A CASE FOR SECOND-DEGREE IP?

Based on existing normative foundations for intellectual property, there are, to simplify, two broad categories of reasons why courts or Congress would expand IP protections to second-degree (or third-degree, fourth-degree, and so on) outputs. First, someone (or something) should be rewarded for an inventive or creative contribution. In the case of second-degree IP, this would “over-reward[] the programmer, particularly in light of the fact that the programmer is no more able to anticipate the output than anyone else.”⁹⁷ Given the black-box nature of LLMs, for example, Professor Samuelson’s comment seems even more apt now than when it was first made. Moreover, any argument that the machine somehow “deserves” rights is best left for the day—if it ever comes—when machines become legal subjects.⁹⁸

Further, we should want to encourage machines to make useful contributions by providing IP rights. Copyright and patent protection are not free: they translate into higher prices for users and consumers.⁹⁹ Why should we (collectively) subsidize those who build, program, train, and/or use AI machines in this way? To do so, this Essay argues, we must show that societal outcomes will improve. This could be done, for example, by identifying a lack of or underinvestment in AI, and in LLMs in particular, combined with a credible demonstration that more investment is likely to lead to these kinds of

96. *E.g.*, *Country Kids ‘N City Slicks, Inc. v. Sheen*, 77 F.3d 1280, 1285 (10th Cir. 1996) (In distinguishing idea from expression, “copyright law seeks to achieve a proper balance between competition based on public ideas and incentive to produce original work.”); *see also* PAUL GOLDSTEIN, *GOLDSTEIN ON COPYRIGHT* § 2.3.1 (Wolters Kluwer, 3rd ed. 2005) (“‘Idea’ and ‘expression’ are best viewed not as precise pigeonholes, but as metaphors for a work’s unprotected and protected elements, respectively.”).

97. *See* Samuelson, *supra* note 8, at 1208.

98. *See generally* DAVID J. GUNKEL, *PERSON, THING, ROBOT* (2023) (describing various paths to legal personhood for AI machines); Daniel J. Gervais & John J. Nay, *Artificial Intelligence and Interspecific Law*, 382 *SCIENCE* 376 (Oct. 2023) (explaining how AI could operate legal entities such as LLCs and how the legal system must adapt to autonomous AI agents).

99. *See* WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 11 (2003) (“[L]egal protection against copying, by enabling the creator of the intellectual property to charge a price per copies (of which his property right makes him a monopolist) in excess of the marginal cost, prevents access to (use of) the intellectual property by persons who value the access at more than the marginal cost but less than the price.”). For patent law, *see id.*, at 74–75.

positive outcomes. At the time of writing, it seems particularly difficult to argue at least the first point, leaving the second highly contingent.¹⁰⁰ A dangerous argument lurking in the shadows of this discussion is the “if value, then right” trope.¹⁰¹ This is in no way a valid argument; it is merely a manipulative maneuver based on a vague restitutionary impulse, and needs to be firmly rejected.¹⁰² Einstein’s $E = mc^2$ certainly had an enormous “value” of some kind, but IP law does not protect it.¹⁰³ Indeed, large investments are often made to discover laws of nature, stars, or new plants or species, but none of these can be protected by exclusive rights.¹⁰⁴

As noted above, there is no argument based on either authorial justification theories (such as “desert”) or societal benefits for granting copyright protection to outputs without human cause, given that machines can produce tens of thousands of elements of a literary or artistic nature and have done so without the need for an incentive.¹⁰⁵ In the patent area, the challenge will be to identify and then properly delineate areas where the patent incentive may produce beneficial welfare effects when applied to machine outputs.

100. See, e.g., Harlem Capital, *Generative AI: The VC Landscape*, <https://harlem.capital/generative-ai-the-vc-landscape/> (“Venture activity in the AI space has witnessed remarkable growth, particularly in Generative AI, which has attracted significant attention from investors. Startups in the field have received a substantial amount of funding, surpassing \$9 billion globally in the last two full years, with H1 2023 already blowing that out of the water (~\$15 billion globally).”).

101. See Alfred C. Yen, *Brief Thoughts About If Value Then Right*, 99 B.U. L. REV. 2479, 2480–81 (2019) (“That principle, which the U.S. Copyright Act does not embrace, expresses the intuition that ‘wherever value is received, a legal duty to pay arises, regardless of whether imposing that legal duty serves public welfare.’ . . . Courts do not directly cite the principle, but they follow it in problematically expansive copyright decisions that consider copying sufficient to establish infringement.”).

102. See Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 178 (1992) (criticizing the “if value, then right” argument).

103. See *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (“[A] new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are ‘manifestations of . . . nature, free to all men and reserved exclusively to none.’) (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 33 U.S. 127 130 (1948)).

104. Examples would include the Hubble telescope, reported to have cost \$16 billion (in 2021 dollars), or the planned new particle collider to be built at the border between France and Switzerland, with a price tag of \$17 billion. See NASA, *Hubble FAQs*, <https://science.nasa.gov/mission/hubble/overview/faqs/>; Pierre Celerier, *Plan for Europe’s Huge New Particle Collider Takes Shape*, PHYS.ORG (Feb. 5, 2024), <https://phys.org/news/2024-02-europe-huge-particle-collider.html>.

105. See Burk, *supra* note 6 and accompanying text.

C. APPLICABLE TEST

The policy choice advocated in this Article, namely to stay the course and avoid creating second-degree IP—at least until a showing has been made that it should exist—requires identifying sufficient human proximate cause in cases of collaboration between a human creator or inventor and an AI machine. But it comes with a twist in patent law.

1. *Copyright Law*

Copyright protects many types of copyrighted works that contain unprotectable elements or elements that are owned by someone else. For example, a translator contributes originality, but the translated work has a different author. If the derivative work (translation) is authorized, the translator owns the copyright in it.¹⁰⁶ Protection of a work based on a pre-existing public domain work is similarly limited to the new expressive elements added by the new author.¹⁰⁷ Courts can and should apply the existing test to separate elements with a human proximate cause from those that were generated by the AI machine.¹⁰⁸ In doing so, they must carefully assess whether the human contribution is at the level of (unprotectable) ideas or actual expressive elements.

One must also avoid the pitfalls of reading too much into “selection and arrangement.”¹⁰⁹ Selecting one or a few outputs from a machine that produces many more is simply not a form of authorship. Consider this simple example: suppose someone is looking for a painting depicting a scene from the African savannah. Fortunately, this person lives near an art gallery that specializes in this type of art and sells over a hundred potentially interesting paintings. The

106. *See, e.g.*, *Olympia Press v. Lancer Books, Inc.*, 267 F. Supp. 920, 922 (S.D.N.Y. 1967) (holding that the English translation of a French work is a new, copyrightable work).

107. *See Warner Bros. Ent. v. X One X Prods.*, 644 F.3d 584, 596–97 (8th Cir. 2011) (“[I]f material related to certain characters is in the public domain, but later works covered by copyright add new aspects to those characters, a work developed from the public domain material infringes the copyrights in the later works to the extent that it incorporates aspects of the characters developed solely in those later works.”).

108. *See id.* at 597 (“[W]e must determine (1) the apparent scope of the copyrights in the later works (here, the films), (2) the scope of the material dedicated to the public in the publicity materials, which correspondingly limits the scope of the film copyrights, and (3) the scope into which each of [the Defendant’s] images falls.”).

109. *See generally Feist*, 499 U.S. at 358; *see also* RESTATEMENT OF THE L., COPYRIGHT § 7 cmt. b (AM. L. INST., Tentative Draft No. 2 Rev., 2022) (“In the case of a compilation, an author’s choices regarding selection, coordination, or arrangement of preexisting material can be minimally creative, even if the material selected, coordinated, or arranged is not itself original to the author.”).

person spends two hours looking at the paintings and chooses one. This person, this Article argues, is not an author.¹¹⁰

Finally, it is also worth noting that if AI machines, their programmers or “trainers” were considered authors of results (i.e., if we were to recognize second-degree IP), then these works could not be joint works in most cases, because the creation of a joint work requires an intent to collaborate in order to create a joint work.¹¹¹ Under the 1976 Copyright Act, this intent must exist at the time of creation.¹¹²

2. Patent Law

Under current patent law, the contribution of each claimed inventor must be identified.¹¹³ This logically assumes that we know who, or *what*, the inventor is. As the Federal Circuit noted, a “party may raise the defense that a patent is invalid for failing to name the correct inventors” under 35 U.S.C. § 102(f), which provides that a person shall be entitled to a patent unless “he did not himself invent the subject matter sought to be patented.”¹¹⁴ The Federal Circuit explained co-inventorship as follows:

110. Naturally, there could be “arrangement” copyright if the person selected several paintings and arranged them in some original way, but that copyright would not apply to the paintings, only the arrangements. This is well illustrated by this example from the Restatement: Editor creates a book containing what she believes are Emily Dickinson’s 20 best poems. Editor has made an at least minimally creative selection by choosing among the many poems that could have been included and the book therefore meets the minimal-creativity requirement for copyright protection. Copyright protection for book does not protect the individual poems, only their selection and arrangement by Editor. RESTATEMENT OF THE L., COPYRIGHT § 7 cmt. c, illus. 11 (AM. L. INST., Tentative Draft No. 2 Rev., 2022).

111. 17 U.S.C. § 101 defines a “joint work” as “a work prepared by two or more authors *with the intention* that their contributions be merged into inseparable or interdependent parts of a unitary whole.” (emphasis added). See Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH. L.J. 343, 382 (2019) (“[S]ome commentators contend that ‘intent to merge’ requires neither actual collaboration nor even knowledge of one’s putative co-author But this scenario seems to collapse the distinction between joint works and derivative works, a distinction the legislative history seeks to maintain.”).

112. See *Batiste v. Island Recs., Inc.*, 179 F.3d 217, 222 n.7 (5th Cir. 1999) (noting that in the 1976 Act Congress overruled previous cases such as *Shapiro, Bernstein & Co. v. Jerry Vogel Music Co.*, 221 F.2d 569 (2d Cir. 1955), allowing a later developed intent to merge contributions into a unitary whole to qualify the contributions as creating a joint work).

113. See *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998) (“[E]ach of the joint inventors need not ‘make the same type or amount of contribution’ to the invention. 35 U.S.C. § 116. Rather, each needs to perform only a part of the task which produces the invention. On the other hand, one does not qualify as a joint inventor by merely assisting the actual inventor after conception of the claimed invention.”).

114. 35 U.S.C. § 102(f). See *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348–50 (Fed. Cir. 1998).

Because ‘[c]onception is the touchstone of inventorship,’ each joint inventor must generally contribute to the conception of the invention. ‘Conception is the ‘formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.’ An idea is sufficiently “definite and permanent” when “only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. The conceived invention must include every feature of the subject matter claimed in the patent. Nevertheless, for the conception of a joint invention, each of the joint inventors need not “make the same type or amount of contribution” to the invention. 35 U.S.C. § 116. Rather, each needs to perform only a part of the task which produces the invention. On the other hand, one does not qualify as a joint inventor by merely assisting the actual inventor after conception of the claimed invention. One who simply provides the inventor with well-known principles or explains the state of the art without ever having ‘a firm and definite idea’ of the claimed combination as a whole does not qualify as a joint inventor. Furthermore, a co-inventor need not make a contribution to every claim of a patent. See 35 U.S.C. § 116. A contribution to one claim is enough.¹¹⁵

Thus, each inventor must contribute to the conception, i.e., a definite or enduring “idea of the complete and operative” of each feature of the claimed invention (though not of each individual claim); such contribution by a human inventor is necessary for a valid patent to issue.¹¹⁶

The possibility of massive trolling should be considered.¹¹⁷ Just as LLMs can produce thousands of texts, songs or images in a very short time, they can process all published patents and patent applications, scientific and medical journals, and other sources of information and identify incremental innovations and predict their utility.¹¹⁸ So the present seems clear: a human inventor, someone causally related to the purpose of the invention, is needed for an invention to be patentable. The real question for the future is: are there cases where we should disregard the lack of human inventorship? What would be the benefit, not to the user of the machine, but to society at large (those who pay the possible patent rent), of granting exclusive rights in such a situation? The Essay is agnostic on this question, since the answer depends to a large extent on empirical data that this author, at least, does not possess.

115. *Ethicon*, 135 F.3d at 1460.

116. *See supra* note 77.

117. *See* Lemley & Melamed, *supra* note 91.

118. *See* Schwein, *supra* note 20.

In the interim, it will be messy. Given the exponential growth in the use of AI in various fields of technology, it is likely that many patent applications will name one or more human inventors who are not actual inventors.¹¹⁹ As noted above, this can lead to invalidation, and an explosion of litigation in this area is predictable as courts begin to analyze human and artificial contributions to a claimed invention.¹²⁰ The answer is *not* to claim a machine as an inventor—although that gets an A for honesty—but rather to refuse to grant second-degree patents until it has been demonstrated that we would be collectively better off if we did. And that day may well come, but such protection, the granting for the first time of second-degree intellectual property rights, should be based on a systematic analysis of data on a broad scale, not anecdota.

V. CONCLUSION

The normative fog surrounding the protection of the output of AI machines by intellectual property rights can be lifted. Machines are not authors. Period. This means that a literary or artistic output produced by a machine without a human cause, as defined in this Essay, is not protected. When a human and a machine “work together,” we look for the human input into the expressive output, keeping in mind that ideas are not protected by copyright. The jurisprudence on the transfer of originality (of expression) through one or a series of prompts and fine-tuning efforts from a human author to the output has yet to emerge, but the test is clear.

The issue is different with patents for at least two reasons. First, any argument about the nature of authorial creativity is inapplicable, and authorship is essential to creating originality. It is a *sine qua non*. Inventorship (by one or more people) is a different doctrine because, first, misidentification of the inventor does not necessarily mean absence of invention, while absence of authorship means absence of a protectable “work.” Misidentification of an inventor can be remedied. Second, and perhaps more importantly from a normative standpoint, there are the risks associated with protecting facially copyrighted machine outputs produced by the tens of thousands (now without any copyright incentive), including massive trolling and the potentially

119. See Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C. L. REV. 1079, 1098 (2016) (providing examples of patents granted on machine-made “inventions”).

120. Although the statute provides a fair degree of flexibility on correcting inventorship, absence of human inventorship does not seem to be a minor “technical” defect. See 37 C.F.R. § 1.324 (2020) (outlining requirements to correct inventorship in an issued patent); 37 C.F.R. § 1.48 (outlining requirements to correct inventorship in a patent application); *Canon Comput. Sys., Inc. v. Nu-Kote Int’l, Inc.*, 134 F.3d 1085, 1089 (Fed. Cir. 1998) (explaining incorrect inventorship as “a technical defect in a patent that may be easily curable”).

irreversible displacement of human authors. The case has certainly not been made that we would be better off with copyright protection of these outputs. But with patents, perhaps the case can be made. Whether the risks (including trolling, massive increase in minimally inventive patent applications) outweigh the benefits is a call this Essay cannot make without further empirical analysis.

PAM SAMUELSON AND THE EMERGENCE OF THE TECHNOLOGY LAW AND POLICY CLINICAL MOVEMENT

Jason M. Schultz[†]

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I. INTRODUCTION

When I arrived at Berkeley Law in 1997 for my first day as a 1L, I had no idea that I was destined for a career in a field of legal education that had yet to come into being. But someone else on campus had already been laying the intellectual, institutional, and political groundwork for years: Pam Samuelson.

My first introduction to Pam came through Laurel Jamtgaard, the incoming editor of the Berkeley Technology Law Journal. At one of our first meetings, Laurel announced that Pam was working with other leading

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academics to organize a massive multi-day conference on Article 2B of the Uniform Commercial Code (UCC). Article 2B was a model law drafted to provide a standard set of rules for regulating transactions in information products and services, similar to what Article 2 of the UCC tried to do for the manufacturing economy and commerce in goods.¹ The authors and supporters of Article 2B planned to submit these new rules for the information economy to state legislatures to enact into law. Further, with the Clinton Administration's recent publication of *A Framework for Global Electronic Commerce* touting internet commerce as the wave of the future for the global economy, Article 2B was poised to make state contract law "the world's preeminent law regulating transactions in information," as Pam would later write.²

The conference was a tour de force, dissecting the problems Article 2B posed to information policy, intellectual property, privacy, and other public interest concerns. It also laid out an exceptional agenda for pushing back on the law. As was typical of conferences that Pam helped organize, the speakers list was a star-studded group of scholars, practitioners, and policymakers. The conversations, presentations, and papers energized many of us in the audience. We knew we had not only come to the right law school, but also found inspiration and strategic ideas for how to make a difference on a topic near and dear to our hearts—law and technology.

The event culminated in the publication of joint-symposium issues by the California Law Review and the Berkeley Technology Law Journal. Pam wrote forwards for both issues, outlining not only theoretical and doctrinal contributions from other leading thinkers such as Mark Lemley, David Nimmer, Michael Froomkin, Jessica Litman, Jane Ginsburg, Julie Cohen, and Rochelle Dreyfuss, but also several paths forward for policy debates and interventions.³ As a student, it was exciting to be part of the event planning and publishing, but many of us felt a collective need for something more and something bigger.

II. *ELDRED V. ASHCROFT* AND THE ORIGINS OF TLP CLINICAL EDUCATION

A watershed moment came for us on January 11, 1999. Professor Larry Lessig filed his complaint on behalf of internet publisher Eric Eldred in *Eldred*

1. Pamela Samuelson, *Intellectual Property and Contract Law for the Information Age: Foreword to a Symposium*, 87 CALIF. L. REV. 1 (1999).

2. *Id.*

3. *Id.*; Pamela Samuelson, *Foreword, Symposium on Intellectual Property and Contract for the Information Age*, 13 BERKELEY TECH. L.J. 809 (1998).

v. Reno (*Eldred v. Ashcroft* on appeal), challenging the additional twenty years of protection that the Sonny Bono Copyright Term Extension Act had granted to copyright owners as both a violation of the Constitution's Copyright Clause and the First Amendment.⁴

As part of his effort to garner legal support for the case, Lessig toured law schools to highlight his arguments. After a talk at Berkeley, there was a discussion of what, if anything, students could do to help. Lessig suggested that we contribute to Harvard's Openlaw effort, "an experiment in crafting legal argument[s] in an open forum" based on the philosophy of open-source software.⁵ *Eldred* was Openlaw's first case; we could still address many topics by uploading our independent research and analysis.⁶

Several of us, especially those of us who had taken Pam's classes, tried to make contributions, but we quickly found the experience frustrating and unsustainable. There was no structure, no supervision, no pedagogical model where our contributions both enhanced our learning and fulfilled the role of lawyering in the public interest. The case was exactly the type we envisioned working on in our careers, but it felt disconnected from the fight, an abstraction of learning and lawyering instead of in situ, real time, and representing a real client.

At the same time, we noticed that many of our friends and colleagues working on other public interest issues were having a very different experience. They were enrolled in clinics such as Berkeley Law's East Bay Community Law Center, Death Penalty Clinic, and International Human Rights Clinic.⁷ In these clinics, they represented real clients and worked on live issues directly under the supervision of faculty. The issues they were working on were just as impactful, albeit in more traditional legal domains. But the most striking differences were pedagogical. As clinic students, they were able to build on their understanding of theory, doctrine, and policy through direct legal work. They could receive regular feedback and practice iteration with experts in the

4. *Eldred v. Reno*, 239 F.3d 372 (D.C. Cir. 2001), *aff'd sub nom.* *Eldred v. Ashcroft*, 537 U.S. 186 (2003).

5. *Openlaw*, BERKMAN KLEIN CTR. FOR INTERNET & SOC'Y AT HARVARD UNIV., <https://cyber.harvard.edu/openlaw>.

6. Most of the Openlaw *Eldred v. Reno* site has been archived, but a sample of the types of questions it asked for help with is here. See *Openlaw: Contribute/Edit Copyright Questions*, BERKMAN KLEIN CTR. FOR INTERNET & SOC'Y AT HARVARD UNIV., <https://cyber.harvard.edu/openlaw/contribute.html>.

7. *Providing Collaborative and Holistic Programs*, EAST BAY CMTY. LAW CTR., <https://ebclc.org/about-us/program-areas/>; *Death Penalty Clinic*, BERKELEY L., <https://www.law.berkeley.edu/experiential/clinics/death-penalty-clinic/>; *Human Rights Clinic*, BERKELEY L., <https://www.law.berkeley.edu/experiential/clinics/international-human-rights-law-clinic/>.

field. In essence, they were able to begin their careers in their chosen areas before graduation, which put them on the path not only to make a greater impact but also toward becoming leading thinkers and advocates across the issues they cared most about. Thus we began to see the way forward—forming a clinic of our own.

The task of creating the first technology, law, and policy (TLP) clinic, however, was not simple. In traditional areas of social justice, clinics had been around since the 1970s.⁸ Technology law, and especially intellectual property law, was commonly seen as “private law”—the domain of corporations and other commercial actors. Even though the social welfare benefits of information infrastructures such as the internet became obvious by 1999 and we had already seen digital public interest organizations such as the ACLU, Electronic Frontier Foundation, Center for Democracy and Technology, and Electronic Privacy Information Center advocate for these benefits in Congress and the Courts, our initial conversations with various law school clinical programs unearthed substantial skepticism.⁹ Would students work on important social justice issues? Or would they simply represent private interests such as startups wanting to raise money? Would students learn what they needed to pursue careers as public interest TLP lawyers?¹⁰ Or would they simply log the equivalent of pro bono hours until they went to work for profit-oriented private law firms? And how would TLP clinics integrate into the broader social justice clinical community and contribute to the growth and development of the field as a whole?

These were just some of the questions that my student colleagues and I began to discuss as the idea for a TLP clinic at Berkeley gained traction. To help answer them, we reached out to several members of the Berkeley Law faculty, all of whom were supportive. Pam quickly emerged as our champion. To no one’s surprise, Pam had already been thinking about the possibility of a

8. See Jane H. Aiken, *The Clinical Mission of Justice Readiness*, 32 B.C. J.L. & SOC. JUST. 231–46 (2012); Stephen Wizner, *The Law School Clinic: Legal Education in the Interests of Justice*, 52 FORDHAM L. REV. 1929 (2002); Stephen Wizner and Dennis Curtis, *Here’s What We Do: Some Notes About Clinical Legal Education*, 29 CLEV. ST. L. REV. 673 (1980).

9. See, e.g., *Reno v. American Civil Liberties Union*, 521 U.S. 844 (1997); *Bernstein v. US Department of Justice*, ELEC. FRONTIER FOUND., <https://www.eff.org/cases/bernstein-v-us-dept-justice>; Juliana Gruenwald, *Congress Finds No Easy Answers to Internet Controversies*, CNN (Jan. 31, 1998), <https://www.cnn.com/ALLPOLITICS/1998/02/02/cq/internet.html>; *Children’s Privacy Protection and Parental Empowerment Act: Hearing on H.R. 3508 Before the Subcomm. on Crime of the H. Comm. on the Judiciary*, 104th Cong. (1996), https://archive.epic.org/privacy/kids/EPIC_Testimony.html (statement of Marc Rotenberg, director of the Electronic Privacy Information Center).

10. Some questioned if the career of “public interest TLP lawyer” even existed, having never heard of it before.

TLP Clinic. She had already been laying the groundwork across the faculty, connecting the substantive issues (especially in intellectual property and information law) with the public interest vision of the program. She had also already begun working together with the Berkeley Law clinical faculty, including Charles (“Chuck”) Weisselberg (the head of the Berkeley Law clinical program at the time), to build the case for integrating a TLP Clinic into the larger program.

Together, we developed a blueprint for a public interest TLP clinic. First, we dedicated the clinic to public interest clients—no startups, no corporations, no VCs or profit-oriented inventors. Our work would focus on the needs of those whose voices were underrepresented or disaggregated in tech law and policy regulatory, litigation, and legislative proceedings. These clients included librarians, grassroots activists, social justice NGOs (especially those without expertise in the technology domain), academic researchers, journalists, individual artists, and privacy advocates.

We also committed the clinic to work on issues that would have a positive social impact beyond the individual clinic clients. For example, a case protecting one client’s constitutional right to online privacy helped protect all our rights to online privacy. Or a case fighting for fair use for librarians or online critics would create breathing room for anyone who made similar uses of copyrighted works. Much like Pam’s framing of the Article 2B conference and subsequent publications, the clinic would take on the fights that would help shape the best rules and protections possible for the future of technology and society, especially for those who couldn’t afford the legal representation that most corporations and governments regularly brought to the table.

Finally, we worked to design the clinical pedagogical experience to mirror that of other tremendous clinical programs, both at Berkeley and across the country. The clinic’s commitment to take on important issues on behalf of clients in need was critical to creating true experiential educational opportunities, as was putting students in the role of lead attorneys to run the cases under the supervision of experienced expert practitioners. TLP Clinics, also faced the added challenge of working on issues involving new technologies that were often nascent, where evidence on various harms and policy considerations was difficult to find let alone marshal. Here, again, Pam provided much-needed mentoring and support. Pam built much of her scholarly career on identifying and dissecting key TLP issues as they emerged. She helped lay out the case for how TLP Clinics could not only intervene in key fights in a timely manner, but also how they could get ahead of important conflicts and policy choices to help shape themselves in their earliest stages.

And the rest, as they say, is history. In 2000, the faculty voted to create what would soon be named the Samuelson Law, Technology, and Public Policy Clinic (SLTPPC). Today, there are over thirty TLP clinics worldwide, including at most major law schools that have a significant TLP faculty presence.¹¹ Berkeley Law's Samuelson Clinic is about to celebrate its twenty-fifth anniversary. Hundreds of law students every year now work on TLP issues as a regular part of their legal education, and thousands of alumni have built careers based in part on having experience as TLP student attorneys.¹² One of the keys to building this successful movement was understanding early on how important it was to have strong connections between clinical and non-clinical TLP faculty at every school. Those strong alliances, which Pam helped foster both at Berkeley with the SLTPPC and at other schools where she helped start TLP clinics, would often prove decisive in the success and sustainability of the TLP Clinic movement. Notably, this also proved true for the *Eldred* case. By the time it reached the U.S. Supreme Court, the Berkeley SLTPPC was there to help file an amicus in support of petitioners' arguments, something Berkeley Law students could never have achieved alone.¹³

Yet Pam's contribution to the TLP clinical education field goes far beyond her vision and support at its moment of origin. For the last quarter century, Pam's scholarship, organizing, and advocacy helped pave the way for numerous areas of TLP clinic work. In her writing, teaching, and public talks, she would often lay out the road map for what was needed in a given area, highlighting gaps and key voices and positions missing from the debate. Many movements look to intellectual architects to help identify key opportunities. Through her teaching, scholarship, and advocacy, Pam provided this

11. For an early snapshot of these developments, see Christine H. Farley, Victoria Phillips, Joshua Sarnoff & Ann Shalleck, *Clinical Legal Education and the Public Interest in Intellectual Property Law*, 52 ST. LOUIS U. L.J. 735 (2008).

12. Pam and her husband Robert Glushko would eventually help personally establish five other clinics, including ones at Colorado, Fordham, Ottawa, Amsterdam, and American University in Washington D.C. Years later, many of us would recount how the Berkeley Law technology faculty, and in particular Pam, had helped so many of us grow into public interest technology lawyers. We affectionately referred to ourselves as Samuelson's Army, a reference to "Dumbledore's Army" in J.K. Rowling's Harry Potter Series. Just as Harry and his classmates took inspiration from their mentor and teacher to form their own peer-led educational cohorts, so too had dozens of us followed Pam's lead to not only fight for TLP public interest values but also to dedicate ourselves to building out the TLP field, especially as part of law school clinical education. See, e.g., *Clinic Alumni*, BERKELEY L., <https://www.law.berkeley.edu/experiential/clinics/samuelson-law-technology-public-policy-clinic/about/clinic-alumni/>.

13. Brief for Eldred et al. as Amici Curiae Supporting Petitioners, *Eldred v. Ashcroft*, 537 U.S. 186 (2003) (No. 01-618), 2002 WL 1059714.

leadership for the TLP Clinic movement. Below are several domains where she has had a profound and undeniable impact.

III. SECTION 1201 OF THE DIGITAL MILLENNIUM COPYRIGHT ACT

When Congress began debating digital copyright reform in the mid 1990s, Pam was well in the middle of it. She wrote many articles on various proposals from the 1994 U.S. National Information Infrastructure Take Force's Report on Intellectual Property Rights to the Clinton Administration's *Framework for Global Electronic Commerce* to the draft and eventual enactment of the Digital Millennium Copyright Act (DMCA) of 1998.¹⁴

The DMCA included several controversial provisions, but among those especially subject to Pam's searing critique were the anti-circumvention regulations.¹⁵ An unprecedented "Copyright Grab," as Pam would pithily coin in an early issue of *Wired Magazine*, the DMCA sought to overturn decades of consumer and competition-friendly copyright decisions, including important fair use precedents such as the canonical 5-4 *Sony v. Universal* decision, upholding the legality of the Betamax VCR.¹⁶

Section 1201 of the DMCA was particularly nefarious. The law sought to outlaw the distribution of technologies that could decrypt digital content (DVDs being the main example at the time), even if their primary or intended use was lawful—such as making a backup copy or compiling film clips for classroom teaching.¹⁷ This entirely new form of legal power allowed copyright owners to reverse the *Sony Betamax* "capable of substantial noninfringing use" rule for digital content, sacrificing the beneficial lawful uses of multimodal devices in favor of protecting copyright owners against potential harm no matter how remote or inconsequential. In her powerful and prescient article, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations*

14. BRUCE A. LEHMAN, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS (1995), https://www.eff.org/files/filenode/DMCA/ntia_dmca_white_paper.pdf; *Read the Framework, Clinton White House*, <https://clintonwhitehouse4.archives.gov/WH/New/Commerce/read.html>; Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C. & 28 U.S.C.).

15. 17 U.S.C. § 1201 *et. seq.*

16. 464 U.S. 417 (1984) (holding manufacturers could not be liable for contributory copyright infringement when their devices were used for copyright infringement as long as they were also capable of substantial non-infringing uses like time shifting television programs for later viewing).

17. Pamela Samuelson, *The Copyright Grab*, WIRED (Jan. 1, 1996), <https://www.wired.com/1996/01/white-paper/>.

Need to be Revised, Pam laid out the arguments why Section 1201 was bad news for copyright policy and the strong need for pushback to protect lawful uses, including uses for consumer enjoyment of digital media, education, commentary, research, and technological interoperability.¹⁸

Following the creation of the TLP Clinical movement, amicus briefs in Section 1201 cases and participation in the Copyright Office's triannual exemption process became the bread and butter of many clinic projects. For example, in the case of *Skylink v. Chamberlain*, SLTPPC filed amicus briefs on behalf of Consumers Union in both the District Court and Federal Circuit proceedings.¹⁹ The case, which centered on whether it was a violation of Section 1201 to sell universal garage door remotes that could work with proprietary garage door openers, raised many of the fundamental public interest concerns Pam had identified in her 1999 paper.²⁰ Chamberlain, the proprietary manufacturer of garage door openers, claimed that competitor Skylink was trafficking in a copyright circumvention tool by selling universal remotes to Chamberlain customers that were capable of activating the copyrighted software that opened their garage. Yes, that's right. According to Chamberlain, opening your own garage door with a third-party universal remote violated Section 1201, at least according to Chamberlain.

The Berkeley Clinic's briefs took this case from a consumer and competition perspective. The briefs argued that to allow Chamberlain to misuse Section 1201 in this manner and block aftermarket products like universal remotes would give their clients a monopoly that copyright law never intended to provide and would undermine the rights of consumers who legitimately bought their openers to use whichever remote they pleased. Moreover, the briefs anticipated a key fight that Pam had flagged. As more and more consumer devices ran on embedded software, companies would look to Section 1201 as legal leverage to "lock in" their customers and prevent them (or any third-party providers) from improving, repairing, or even maintaining their devices.²¹

Fortunately, both the District Court for the Northern District of Illinois and the Federal Circuit ruled against Chamberlain. The courts interpreted Section 1201 to protect consumers and competition and held that for a

18. Pamela Samuelson, *Intellectual Property And The Digital Economy: Why The Anti-Circumvention Regulations Need To Be Revised*, 14 BERKELEY TECH. L.J. 519 (1999).

19. *Chamberlain Group Inc., v. Skylink Tech. Inc.*, 381 F.3d 1178 (Fed. Cir. 2004).

20. Samuelson, *supra* note 18.

21. Samuelson, *supra* note 18; see also Aaron Perzanowski, Chris Hoofnagle & Aniket Kesari, *The Tethered Economy*, 87 GEO. WASH. L. REV. 783 (2019); AARON PERZANOWSKI & JASON SCHULTZ, *THE END OF OWNERSHIP*, MIT PRESS (2016); AARON PERZANOWSKI, *THE RIGHT TO REPAIR*, CAMBRIDGE PRESS (2021).

copyright owner to bring a claim under Section 1201, there must be some “nexus” between the access control circumvented and copyright infringement.²² Since opening a garage door didn’t infringe any Chamberlain copyrights, Skylink emerged victorious, as did the core principles of competition, innovation, and consumer protection the Clinic had fought to preserve.

But the courts were not the only venue where TLP Clinics found purchase when it came to Section 1201. The DMCA also contained a triennial rulemaking administrative exemption process whereby the Copyright Office could recommend that the Librarian of Congress exempt certain classes of users or works from Section 1201’s anti-circumvention access prohibition when necessary to preserve socially valued noninfringing uses.²³ While this administrative process theoretically offered a chance to protect many of the important lawful uses Pam had identified, the time, energy, and funds needed to undertake this process proved prohibitive for most noncommercial users, including libraries, educators, and the general public. For TLP clinical students, on the other hand, it was an ideal pedagogical opportunity. Each exemption request offered a chance to build a case from the ground up, gathering key facts and evidence to support the lawful use exemption requested. It also offered students the chance to understand the unintended consequences and real-world impact of Section 1201 on vulnerable and under-resourced populations. As a result, over the last 25 years, TLP Clinics have helped successfully secure dozens of Section 1201 exemptions for security researchers, educators, consumers, disability advocates, repair enthusiasts, and many others.²⁴

22. *See* Chamberlain, 381 F.3d at 1178. This precedent was further reinforced in *StorageTek v. CHE*, where a manufacturer of magnetic library tape systems attempted to use Section 1201 to shut down independent repair services from fixing and maintaining customer’s systems. Again, the Federal Circuit found there was no nexus with copyright infringement and that the public interest favored both the rights of the customer and competition in the repair market. *Storage Tech. Corp. v. Custom Hardware Eng’g & Consulting Inc.*, 421 F.3d 1307 (Fed. Cir. 2005).

23. The anti-circumvention access prohibition focuses on preventing methods of circumventing any technological protection measure designed to control access to copyrighted works, such as methods of encrypting movie or music content. 17 U.S.C. § 1201.

24. *See, e.g.*, Edward W. Felten and J. Alex Halderman, Comment Letter Re: RM 2005-11 – Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies (Dec. 1, 2005), https://cdn.loc.gov/copyright/1201/2006/comments/mulligan_felten.pdf (CD “rootkit” security research); Alex J. Halderman, Comment Letter In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies (Dec. 2, 2008), <https://cdn.loc.gov/copyright/1201/2008/comments/halderman-reid.pdf> (video game security research); Matthew D. Green, Comment Letter In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection

While the singular focus and short life cycle of amicus briefs have long been seen in clinical pedagogy as an excellent learning vehicle for students, the ability to participate in the 1201 triennial process has provided an especially vibrant opportunity for TLP clinical education. It allows students to study and understand not only the core administrative law and copyright questions but also many of the public policy issues Pam and other scholars identified during the debates before and after its passage. Clinic students have then had a chance to represent actual voices in those post-passage debates and proceedings, counseling them on those questions, filing exemption requests and replies on their behalf, and even representing them in proceedings before the Copyright Office, combining substantive knowledge, policy savvy, and advocacy skills. Dumbledore's army indeed.

IV. A DECADE OF LITIGATION OVER DIGITAL BOOK SEARCH

Anyone who knows Pam's work is well acquainted with her myriad of interventions to help bring reason and public interest perspectives to the Book Search battles of the 2000s. It began when Google announced The Google Books Library Project, a collaboration with some of America's most prominent academic libraries to scan millions of physical books from their collections in order to provide better online book search results and, in return, provide each of those libraries with a single digital copy of each physical book

Systems for Access Control Technologies, https://cdn.loc.gov/copyright/1201/2015/comments-020615/InitialComments_LongForm_Green_Class25.pdf (general-purpose security research); Authors Alliance American Association Of University Professors University Film And Video Association Society For Cinema And Media Studies, Mark Berger, & Bobette Buster, Comment Letter In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, https://cdn.loc.gov/copyright/1201/2015/comments-020615/InitialComments_LongForm_AuthorsAllianceEtAl_Class05.pdf (multimedia ebooks exemption); American Council of the Blind, American Foundation for the Blind, National Federation for the Blind, Long Comment Regarding a Proposed Exemption Under 17 U.S.C. § 1201, https://www.copyright.gov/1201/2021/comments/Class%2008_InitialComments_Accessibility%20Petitioners.pdf (expansion of ebook accessibility exemption to bring the US into compliance with the Marrakesh Treaty on copyright accessibility for the visually impaired); Association of Transcribers and Speech-to-Text Providers, Association of Research Libraries, Long Comment Regarding a Proposed Exemption Under 17 U.S.C. § 1201, <https://cdn.loc.gov/copyright/1201/2018/comments-121817/class2/class-02-initialcomments-atasp-et-al.pdf> (disability services exemption); *Regulatory Filings*, AM. U. WASH. COLL. OF LAW, <https://ipclinic.org/clients/policy-advocacy-regulatory-filings/> (online learning exemptions for film, medicine, computer science, etc.).

they loaned to the project.²⁵ The libraries, in turn, formed their own collaboration entitled HathiTrust, to produce a shared digital collection for enhancing search and access, especially access to those with visual disabilities. As a result, both the Authors Guild and members of the American Association of Publishers (AAP) filed lawsuits against Google, and the Authors Guild filed an additional lawsuit against HathiTrust, claiming that mass digitization of lawfully purchased books to achieve these goals infringed the copyrights. Meanwhile, Google and HathiTrust both claimed their activities were noninfringing under the fair use doctrine.

Pam's work on this topic spans volumes and nearly a decade.²⁶ It also spawned numerous opportunities for TLP clinical education and intervention. After Pam identified a range of public interest issues at stake in the litigation

25. See DEANNA MARCUM & ROGER C. SCHONFELD, *ALONG CAME GOOGLE* (2021); JOHN B. THOMPSON, *BOOK WARS* (2021).

26. See, e.g., Pamela Samuelson, *A Perspective on the Merits of the Antitrust Objections to the Failed Google Books Settlement*, HARV. J.L. & TECH. 1 (2013); Pamela Samuelson, *New Google Books Settlement Aims Only to Placate Governments*, HUFFINGTON POST (Mar. 18, 2010), https://www.huffpost.com/entry/new-google-book-settlemen_b_358544; Pamela Samuelson, *Google Books is Not a Library*, HUFFINGTON POST (Mar. 18, 2010), https://www.huffpost.com/entry/google-books-is-not-a-lib_b_317518; Pamela Samuelson, *The Google Books Settlement: Real Magic or a Trick?*, 6 ECONOMISTS' VOICE ART. 4 (2009); Pamela Samuelson, *Google Book Search and the Future of Books in Cyberspace*, 94 MINN. L. REV. 1308 (2009); Pamela Samuelson, *Legislative Alternatives to the Google Book Settlement*, 34 COLUM. J. L. & ARTS 697 (2011); Pamela Samuelson, *Why the Google Book Settlement Failed -- and What Comes Next*, 54 COMM'NS OF THE ACM 29 (2011); Pamela Samuelson, *Overcoming Copyright Obstacles in a Post-Google Book Settlement World*, CTR. FOR DEMOCRACY (2011); Pamela Samuelson, *The Google Book Settlement as Copyright Reform*, WIS. L. REV. 479 (2011). Pamela Samuelson, *Last Chance to Opt Out of the Google Book Settlement*, HUFFINGTON POST (Mar. 27, 2010), https://www.huffpost.com/entry/last-chance-to-opt-out-of_b_434315; Pamela Samuelson, *Standing up for Copyright: Marybeth Peters and the Google Book Settlement*, 58 J. COPYRIGHT SOC'Y U.S.A. 75 (2010); Pamela Samuelson, *An Academic Author's Perspective on the Google Book Settlement*, 22 AGAINST THE GRAIN 24 (2010); Pamela Samuelson, *Academic Author Objections to the Google Book Search Settlement*, 8 J. ON TELECOMM. & HIGH TECH. L. 491 (2010); Pamela Samuelson, *Google Book Settlement 1.0 is History*, HUFFINGTON POST (Nov. 24, 2009), https://www.huffpost.com/entry/google-book-settlement-10_b_296343; Pamela Samuelson, *DOJ Says No to Google Book Settlement*, HUFFINGTON POST (Nov. 20, 2009), https://www.huffpost.com/entry/doj-says-no-to-google-boo_b_292796; Pamela Samuelson, *The Google Settlement*, NATION (Nov. 5, 2009), <https://www.thenation.com/article/archive/google-settlement/>; Pamela Samuelson, *Why is the Antitrust Division Investigating the Google Book Search Settlement?*, HUFFINGTON POST (Sept. 19, 2009), https://www.huffpost.com/entry/why-is-the-antitrust-divi_b_258997; Pamela Samuelson, *The Audacity of the Google Book Search Settlement*, HUFFINGTON POST (Sept. 10, 2009), https://www.huffpost.com/entry/the-audacity-of-the-googl_b_255490; Pamela Samuelson, *Legally Speaking: The Dead Souls of the Google Book Search Settlement*, 52 COMM'NS OF THE ACM 28 (2009); Pamela Samuelson, *Pamela Samuelson's Letters to the Court: Concerns on the Proposed Google Book Settlement*, 12 TUL. J. TECH. & INTELL. PROP. 185 (2009); see also Michael W. Carroll, *Committed to Copyright's Institutional Role*, 39 BERKELEY TECH. L.J. at 1210–13 (2024).

(and subsequent settlement proposals), there immediately arose a need for the groups who cared about those issues to have representation in those forums. For example, when Google, the Authors Guild, and the Publishers proposed a settlement in their case, Pam quickly gathered many stakeholders for discussions of the over 300-page proposal.²⁷ Critics raised concerns, including privacy, competition policy, access to “orphan” works, and adequate class representation of all authors, not just those who were members of the Guild. When objections were filed to the settlement, a number of TLP Clinics participated. For example, the Berkeley Clinic worked with the Electronic Frontier Foundation to file an objection on behalf of authors and publishers who published books on controversial or sensitive topics such as abortion, sexuality, or domestic violence.²⁸ In the settlement, there were no privacy protections in place to prevent Google from collecting and analyzing reader activity from every single page of those books. That data could be very dangerous for many readers, especially if subpoenaed by law enforcement, abusers, or political attackers, and the lack of privacy protections in the settlement could potentially deter readers who needed access to those works from purchasing those books—a chilling effect on the economic and social interests of the authors and for society as a whole. The EFF/Clinic objection brought these concerns directly to the judge in charge of approving or denying the settlement.

In terms of class representation, Pam was among the first to identify a clear difference between the interests of the Authors Guild (which represented mostly commercial/trade authors) and those of academic and other authors who, while interested in commercial success, prioritized access to their works over profits. This was a key weakness of the settlement, which had been oriented around the Guild’s narrow perspective on the publishing world, claiming that the Guild represented the overwhelming majority of author interests as a class. This was a key weakness of the settlement. While the Guild claimed that it represented the overwhelming majority of author interests as a class, the Guild instead had a narrow perspective on the publishing world.

As part of highlighting the equally important but underrepresented authors focused on access, Pam spearheaded the formation of the nonprofit Authors Alliance, which has become a mainstay client of TLP Clinics, bringing an alternative voice to balance out the dominant voice of the Authors Guild in litigation and policy debates writ large.

27. Pamela Samuelson, *The Google Book Settlement as Copyright Reform*, WIS. L. REV. 479 (2011).

28. *Authors Guild v. Google, Part I: Proposed Class Action Settlement*, ELEC. FRONTIER FOUND., <https://www.eff.org/cases/authors-guild-v-google>.

Disabled readers and their advocates were another set of voices that grew louder in the Book Search cases with help from TLP Clinics.²⁹ These voices have always been part of a larger debate around access to technology and digital materials, but through work on Section 1201 and digitization of books, these connections became much stronger and have led to greater engagement in advocacy as well as scholarship.³⁰

V. THE BATTLE OVER SOFTWARE AND INTERNET PATENTS

After co-directing the SLTPPC from 2007–2013, I founded a new TLP Clinic at NYU Law. One of my very first clinic projects was an amicus brief in *Alice Corp. v. CLS Bank*.³¹ TLP Clinics now regularly file amicus briefs in all types of cases, but none had ever participated in patentable subject matter cases before Pam helped start the TLP Clinic movement. Like so many other fertile areas of public interest work for clinics, Pam was among a unique set of scholars who laid the groundwork in this area. As early as 1990, in her influential article, *Benson Revisited: The Case Against Patent Protection For Algorithms and Other Computer Program-Related Inventions*, Pam questioned whether and how patent law could be appropriately applied to information and algorithmic processes. Decades later, the Supreme Court began to show a renewed appetite to take on these questions, especially as the Federal Circuit Court of Appeals struggled to apply the holdings in *Bilski v. Kappos* and *Prometheus v. Mayo* consistently and often upheld patenting of basic business methods and abstract

29. Brief for Hathitrust et al. as Amici Curiae Supporting Respondent, *Authors Guild, Inc. v. Hathitrust*, 755 F.3d 87 (2d Cir. 2014) (No. 12-4547), 2013 WL 2702551 (the national disability orgs’ amicus brief in *Authors Guild v. Hathitrust* from the Georgetown clinic).

30. See, e.g., Blake Reid, *Copyright and Disability*, 109 CALIF. L. REV. 2173 (2022); see also TLPC Student Att’ys, *TLPC Files Amicus Briefs on Behalf of Print Disability Advocates in Georgia v. Public.Resource.Org*, SAMUELSON-GLUSHKO TECH. LAW & POL’Y CLINIC (Oct. 18, 2019), <https://tlpc.colorado.edu/tlpc-files-amicus-brief-on-behalf-of-print-disability-advocates-in-georgia-v-public-resource-org/> (the print disability advocates’ SCOTUS brief in *Georgia v. PRO—CU* clinic); Colleen McCroskey, *TLPC Presents on Disability and Copyright at WIPO SCCR/38*, SAMUELSON-GLUSHKO TECH. LAW & POL’Y CLINIC (Apr. 15, 2019), <https://tlpc.colorado.edu/tlpc-presents-on-disability-and-copyright-at-wipo-sccr-38/> (the culmination of several visits the CU clinic made to WIPO to survey and present on the implementation of the Marrakesh Treaty in collaboration with Caroline Ncube and her students at the University of Cape Town); TLP Adm’r, *TLPC Files Amicus Briefs for Disability Rights Advocates in Challenge to Federal Agency Incorporation by Reference Practices*, SAMUELSON-GLUSHKO TECH. LAW & POL’Y CLINIC (Apr. 4, 2024), <https://tlpc.colorado.edu/tlpc-files-amicus-brief-for-disability-rights-advocates-in-challenge-to-federal-agency-incorporation-by-reference-practices/> (another accessibility filing in the PRO saga by Vivek and his students at the CU clinic).

31. Brief for CLS Bank International et al. as Amici Curiae Supporting Respondent, *Alice Corp. Pty. Ltd. v. CLS Bank Int’l.*, 573 U.S. 208 (2014) (No. 13-298), 2014 WL 880952.

software processes despite the Supreme Court's skepticism that these were value patentable subject matter.³²

In *Benson Revisited*, Pam laid out the strong case against the patentability of algorithms and software generally, especially for general purpose computing. When the Supreme Court agreed to take the *Alice* case, it was a prime opportunity to write a brief pulling together her work on the subject as well as numerous other business, law, and economics scholars. The students working on the case were among my first ever class of TLP clinic students at NYU. It was an exciting opportunity for them—one that most had never even thought possible when they applied to law school. The ability to combine their substantive patent law coursework (taught by the iconic Rochelle Dreyfuss) with the empirical and analytical scholarship of interdisciplinary experts before the Supreme Court was a first for NYU students, and the beginning of a decades-long dedication to IP amicus filings at NYU along with numerous other TLP clinics around the country.

VI. THE PUSH FOR A COPYRIGHT SMALL CLAIMS COURT AND THE CASE ACT

Another area where Pam's scholarship and TLP clinic work have strongly aligned has been around access to justice in copyright disputes. For example, in the last decade, there have been significant debates over the cost of enforcement for copyright violations (especially online) as well as the draconian penalties that could be imposed on infringers for even minor violations.³³

Among the later criticisms was a highly influential paper by Pam and Tara Wheatland (a former SLTPPC student), *Statutory Damages in Copyright Law: A Remedy in Need of Reform*, which noted, among other problems, the fact that courts would award the upper range of statutory damages (from \$30,000 to \$150,000 per infringed work) on occasions where evidence of actual harm was

32. *Compare* *Ultramercial v. Hulu*, 657 F.3d 1323, 1330 (Fed. Cir. 2011) (holding that a claim for showing advertisements to pay for content distribution over the internet was not “so manifestly abstract as to override the statutory language of section 101”), *with* *Bilski v. Kappos*, 561 U.S. 593, 602 (2010), *and* *Mayo Collaborative Servs. v. Prometheus Lab'ys Inc.*, 566 U.S. 66 (2012).

33. *See, e.g.*, Maria Palante, *The Next Great Copyright Act*, 36 COLUM. J.L. & ARTS. 316, 327–28 (2013); Jennifer M. Urban, Joe Karaganis & Brianna L. Schofield, *Notice and Takedown in Everyday Practice*, TAKEDOWN PROJECT (Mar. 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755628; Ben Depoorter & Robert Kirk Walker, *Copyright False Positives*, 89 NOTRE DAME L. REV. 319, 355–57 (2013) (describing a statutory damages regime that incentivizes plaintiffs to bring claims for a possible windfall, but not defendants to challenge them).

scant, despite those awards being intended by Congress to apply only in “exceptional cases” of willfulness.³⁴ The paper also criticized the general lack of proportionality and due process in statutory damage awards.³⁵

As a result of these and other criticisms, and at the urging of Congress, the Copyright Office undertook a study around mechanisms for helping resolve “small copyright claims” and to report back by the end of September 2013.³⁶ The report included draft legislation proposing the creation of a small claims tribunal system within the Office to adjudicate small copyright infringement claims. This report led to much debate and eventually to several House bills in 2016 and 2017 to implement the U.S. Copyright Office’s proposal as part of the Copyright Alternatives in Small-Claims Enforcement (CASE) Act. One of the key provisions being that claimants could only seek damages under \$30,000 for copyright violations. Of course, this still left the problem of excessive awards in the Courts, but at least the upper limit had been capped in the new tribunal.

In the ensuing debate over the CASE Act, Pam was actively involved, hosting several workshops of the merits of the proposal and eventually publishing *Scholarly Concerns about a Proposed Small Copyright Claims Tribunal* with Kathryn Hashimoto, a paper documenting and synthesizing comments from eighteen scholars specializing in economics, civil procedure, and intellectual property law. These concerns broke down into roughly six categories: (1) constitutionality concerns, (2) jurisdictional concerns, (3) due process concerns, (4) potential for abuses, (5) underexplored alternatives, and (6) larger questions about the proposal, including whether copyright was so exceptional as to deserve its own small claims tribunal when compared to other federal court claims.

Nonetheless, Congress passed the CASE Act in 2020 and it was signed into law by then-President Donald Trump. Subsequently, the Copyright Office issued a Notice of Proposed Rulemaking (NPRM) on law student participation in front of the Copyright Claims Board (CCB). This alone was a huge recognition of the impact that TLP clinics had on copyright law, including through their participation in the 1201 exemption proceedings.

In response to the NPRM, thirteen TLP clinical faculty members filed a comment outlining a range of concerns about the Office’s approach to

34. Pamela Samuelson & Tara Wheatland, *Statutory Damages in Copyright Law: A Remedy in Need of Reform*, 51 WM. & MARY L. REV. 439 (2009), <https://scholarship.law.wm.edu/wmlr/vol51/iss2/5>; see also Carroll, *supra* note 26 at 109–11.

35. Samuelson & Wheatland *supra* note 34.

36. See *Remedies for Copyright Small Claims*, U.S. COPYRIGHT OFF., <http://www.copyright.gov/docs/smallclaims/>.

implementing a process for law student participation in the CCB.³⁷ Drawing from several of the critiques in *Scholarly Concerns* as well as decades of research and scholarship on clinical pedagogy, we noted that the structure of the CCB's "opt-out" provision could result in situations that limited access to justice for clients with limited financial resources (those likely to be clinic clients) and greatly diminished the pedagogical learning opportunities that the CCB could offer for clinic students.³⁸ Given the general advantages of litigating copyright claims in federal district court, we noted how clinic students would often be strategically and ethically obligated to recommend that their clients "opt-out" of the CCB process, thereby undermining its goals of increasing access to justice. The ability to marshal these arguments both as experts in substantive copyright law and clinical pedagogy would never have been possible without the alignment of scholars like Pam with the approach of the TLP clinical movement.

VII. ORACLE V. GOOGLE AND THE BATTLE OVER APIS

Another important way that Pam has contributed to the TLP Clinical movement is through co-authoring amicus briefs with clinic students. One of the most important cases where this occurred was the decade-long copyright litigation between Oracle and Google over the JAVA API code that was reimplemented in Google's Android operating system. The case involved many of the core copyright issues that Pam had written about for decades—the scope of copyright for functional computer code, the idea-expression distinction and the merger doctrine, the unprotectability of methods of operation, and the application of fair use to code where technological interoperability and compatibility were at stake.³⁹

37. Jonathan Askin, Lynda Braun, Cynthia L. Dahl, Ron Lazebnik, Jack I. Lerner, Amanda Levendowski, Phil Malone, Art Neill, Viki Phillips, Jef Pearlman, Blake E. Reid, Jason Schultz & Erik Stallman, Comment on Copyright Claims Board: Representation of Law Students and by Business Entities, (Feb. 3, 2022) (No. 2021-9), <https://www.regulations.gov/comment/COLC-2021-0011-0012>.

38. *Id.*

39. See, e.g., Pamela Samuelson, *The Story of Baker v. Selden: Sharpening the Distinction Between Authorship and Invention*, UC BERKELEY (June 15, 2005), <https://escholarship.org/uc/item/0vw4q999#main>; ROCHELLE COOPER DREYFUSS & JANE C. GINSBURG, INTELLECTUAL PROPERTY STORIES, FOUNDATION PRESS (2005); Pamela Samuelson, *Why Copyright Law Excludes Systems and Processes from the Scope of Its Protection*, 85 TEX. L. REV. 1921 (2007); Pamela Samuelson, *Reimplementing Software Interfaces is Fair Use*, 64 COMM'NS OF THE ACM 24 (2021), <https://dl.acm.org/doi/pdf/10.1145/3466607>; Pamela Samuelson, *API copyrights revisited*, 62 COMM'NS OF THE ACM 20 (June 24, 2019), <https://dl.acm.org/doi/10.1145/3332805>; Pamela Samuelson, *Three Fundamental Flaws in CAFC's Oracle v. Google Decision*, EUR. INTELL. PROP. REV. (Aug. 13, 2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2643840;

As the case proceeded through multiple stages of appeal, Pam was able to work side-by-side with the SLTPPC faculty and students not only to bring together an exacting and strategic set of arguments around the copyright doctrines and policies at issue in the case, but also to help recruit numerous other well-respected intellectual property scholars to sign onto the brief, including over 72 signatories in the merits amicus before the Supreme Court.⁴⁰ Scholarly amicus briefs in significant technology law cases are now common, with numerous TLP clinics representing and often co-authoring with scholars to bring their research and understanding of the law before various courts. Pam's efforts in the areas of patentable subject matter and issues covered in *Oracle v. Google* represent just a few examples of many such collaborations where Pam's leadership, insight, and dedication to both public interest issues and student learning have helped establish this field-defining practice.

VIII. ARTIFICIAL INTELLIGENCE

Today we are in the midst of yet another major copyright crisis—this time over artificial intelligence. The rise of generative AI has raised serious issues for copyright communities, from questions of authorship to what is a protectable expression to who is a volitional actor when an AI-generated work allegedly infringes a prior work.⁴¹ Without a doubt, many of these issues will be resolved among the countless court cases, Copyright Office proceedings, and legislative efforts circling AI at the moment.⁴² Left to the moneyed interests, most of the participants in these forums will be primarily the titans of content industries (such as the major publishers, Hollywood, etc.) versus

Pamela Samuelson, *Why Google's Fair Use Victory Over Oracle Matters*, *GUARDIAN* (May 13, 2016), <https://www.theguardian.com/technology/2016/may/31/google-fair-use-victory-oracle-software-androids>; Pamela Samuelson, *Reconceptualizing Copyright's Merger Doctrine*, 63 *J. OF THE COPYRIGHT SOC'Y OF THE U.S.A.* (Apr. 18, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2763903; Pamela Samuelson, *Google's Fair Use Victory is Good for Open Source*, *ARS TECHNICA* (June 2, 2016), <https://arstechnica.com/tech-policy/2016/06/googles-fair-use-victory-is-good-for-open-source/>; Pamela Samuelson, *Fair Use Prevails in Oracle v. Google*, 59 *COMM'NS OF THE ACM* 24 (Oct. 28, 2016), <https://dl.acm.org/doi/10.1145/3000608>; Pamela Samuelson, *Functionality and Expression in Computer Programs: Refining the Tests for Software Copyright Infringement*, 31 *BERKELEY TECH. L.J.* 1215 (2016).

40. For a full list of the amicus collaborations between Pam and the Berkeley TLP Clinic, see *Google v. Oracle Amicus Brief*, Berkeley Law (Jan. 13, 2020), <https://www.law.berkeley.edu/case-project/google-v-oracle-amicus-briefs/>.

41. See Pamela Samuelson, *Generative AI Meets Copyright*, *SCIENCE* (July 13, 2023), <https://www.science.org/doi/abs/10.1126/science.adi0656>; Katie Crawford & Jason Schultz, *The Work of Copyright Law in the Age of Generative AI*, MIT (2024), https://direct.mit.edu/grey/article-abstract/doi/10.1162/grey_a_00389/119006/The-Work-of-Copyright-Law-in-the-Age-of-Generative.

42. See *ChatGPT is Eating the World*, <https://chatgptiseatingtheworld.com/>.

the dominant AI technology companies, such as Microsoft, OpenAI, Google, Facebook, and Amazon.

But so much more is at stake than just those points of view. The perspectives of independent artists, academic researchers, as well as libraries and other cultural institutions are equally important. For example, how will we be able to study the biases, geopolitics, and other sociotechnical concerns surrounding AI unless researchers and investigative journalists have equal access to datasets and AI models as technology companies?⁴³ With strict copyright rules that do not allow for fair use, these important insights could easily be inhibited. Constitutionally, U.S. Copyright Law is meant to reward authors to provide incentives to create.⁴⁴ Yet algorithms do not have incentives. They have instructions, they have objectives to optimize, and they have outputs to produce.

Questions of competition policy and interoperability have also risen as central policy themes, especially in jurisdictions such as the European Union, which is the first major governmental entity to pass comprehensive AI legislation while at the same time attempting to foster a nascent AI industry to compete with the US and China-dominated providers. There are also key questions about the viability of “open” AI copyright resources such as open-source models and open datasets.⁴⁵ TLP Clinics will need to play a pivotal role in helping to broaden the issues to see the impacts of AI from a more broad and diverse perspective.

Once again, Pam is among the leading scholars marking the way. In the area of computational authorship, her 1986 article, *Allocating Ownership Rights in Computer-Generated Works*, outlined the copyright conundrum concerning the

43. See, e.g., Katie Crawford & Trevor Paglen, *Excavating AI The Politics of Images in Machine Learning Training Sets*, <https://excavating.ai/>; Christo Buschek & Jer Thorp, *Models All The Way Down*, KNOWING MACHINES, <https://knowingmachines.org/models-all-the-way/>; Hamsini Sridharan & Jer Thorp, *Bird In Hand*, KNOWING MACHINES, <https://knowingmachines.org/publications/bird-in-hand/>; Kate Crawford, Mike Ananny, Christo Buschek Hamsini Sridharan, Jer Thorp, Jason Schultz, Will Orr & Sasha Luccioni, *9 Ways To See A Dataset*, KNOWING MACHINES, <https://knowingmachines.org/publications/9-ways-to-see/>.

44. Both the U.S. Constitution and the Copyright Act assume that an “author” of a work exists, somewhere. Section 8, Clause 8 of the U.S. Constitution calls on the U.S. Congress “to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” U.S. CONST. art. I, § 8, cl. 8.

45. See Udbhav Tiwari & Maximilian Gahntz, *Center for Democracy and Technology Call for Openness and Transparency in AI*, MOZILLA (Mar. 25, 2024), <https://blog.mozilla.org/netpolicy/2024/03/25/mozilla-cdt-openness-ai-letter/>; Alex Engler, *The EU’s attempt to regulate open-source AI is counterproductive*, BROOKINGS (Aug. 24, 2022), <https://www.brookings.edu/articles/the-eus-attempt-to-regulate-open-source-ai-is-counterproductive/>.

creation of copyrighted works by machines.⁴⁶ Almost four decades later, this conundrum is now at the heart of U.S. copyright policy, with the US Copyright Office currently rejecting many registration applications for AI-generated works that fail to define the delineations between what is machine-authored and what is human-authored.⁴⁷

Pam has also written on the fair use implications and pulled together several workshops. As these issues move forward in the courts and policymaking circles, there will be no shortage of work for TLP Clinics. And there will be no doubt that Pam's involvement will be key in helping to shape the debates, the public interest perspectives, and numerous valuable learning opportunities for TLP clinic students.

IX. CONCLUSION: THE CHALLENGES AHEAD FOR TLP CLINICS

As the field of TLP Clinical Education approaches its twenty-fifth year, we are entering a complicated and increasingly challenging terrain. Discrete arenas of doctrine, such as intellectual property, privacy, or First Amendment protections are no longer occasional isolated issues intersecting with one or two new technologies in discrete instances. Instead, as technologies expand across every aspect of our society, the need for public interest voices and advocates working on these issues couldn't be greater. At the same time, this intersection intensifies the connection between classic TLP issues and a broader set of social concerns such as racial justice, labor, environmentalism, etc.⁴⁸

Thus, TLP clinics are at a turning point. No single clinic can now handle the entire TLP docket—technology is everywhere, impacting almost every area of law. The TLP movement needs to evolve beyond a single-clinic model to embrace both TLP issues in other clinics and multiple TLP clinics within each law school. Much like Pam, we cannot and should not limit ourselves to specific doctrines or specific technologies but instead see the broader public

46. See Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 47 (1986).

47. Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, U.S. COPYRIGHT OFF. (Mar. 16, 2023), https://copyright.gov/ai/ai_policy_guidance.pdf.

48. Laura Moy, *Tech Support: Wiring Technology Law Clinics to Serve Racial Justice*, 30 CLINICAL L. REV. 205 (2023), <https://www.law.nyu.edu/sites/default/files/Laura%20Moy%20-%20Wiring%20Tech%20Law%20Clinics.pdf>; Amanda Levendowski, *Teaching Doctrine for Justice Readiness*, 29 CLINICAL L. REV. 201 (2022), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4042023; see also Amanda Levendowski, *Clean SLATE: How Lawyers Can Shape Better Technologies* (U. Cal. Press forthcoming).

interest issues impacting society as a whole. The challenges of the day demand it. In Pam, we have not only a role model for how to approach these challenges but also an intellectual architect, champion, and colleague.

BACK TO THE FUTURE: NAVIGATING THE COPYRIGHT/CONTRACT INTERFACE IN THE GENERATIVE AI ERA

Niva Elkin-Koren[†]

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I. INTRODUCTION

How should laws and regulations adapt to new disruptive technologies? This question poses the greatest challenge for lawyers and policymakers in the face of technological change. Meeting this challenge requires a thorough understanding of the technological transformation, including its social implications and the risks and opportunities it presents. It also involves tailoring legal rights, procedures, and institutions to address these changes.

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This challenge has become particularly timely with the rapid rise of Generative Artificial Intelligence (GenAI). While GenAI disrupts numerous domains, including medicine, finance, transportation, and education, significant attention has been focused on its impact on the creative industries.¹ While it opens new avenues for artistic expression and collaboration, GenAI has also sparked a wave of new copyright litigation.² GenAI disrupts copyright law because it introduces powerful tools of generating expressive works, thus transforming how we create, share, and draw upon works created by others.³ It raises new questions about creativity and originality, authorship and ownership, and the appropriate scope of protection and fair use for works generated with such models.⁴

The need to adapt copyright to new technology is not a new phenomenon. A few decades ago, in the early 1990s, copyright law found itself on the front lines of another technological revolution: digital technology and the internet. At the time, some believed that digital networks threatened to signal the ‘death of copyright,’ and, worse, of creativity as we knew it.⁵

In this context, Pamela Samuelson was among the first to accurately identify the true nature of digital transformation, highlighting the new opportunities and risks it posed, and outlining strategies for courts and policymakers on how to address them. As demonstrated in this Article, this approach may still prove useful in navigating the current disruption caused by GenAI.

1. See, e.g., Ryan Abbott & Elizabeth Rothman, *Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence*, 75 FLA. L. REV. 1141 (2023); Oren Bracha, *The Work of Copyright in the Age of Machine Production* (Sept. 24, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4581738.

2. See, e.g., *Doe 1 v. GitHub, Inc.*, 672 F. Supp. 3d 837 (N.D. Cal. 2023); *Authors Guild v. OpenAI Inc.*, No. 1:23-cv-08292, 2024 U.S. Dist. LEXIS 59322 (S.D.N.Y. Sept. 19, 2023); *Andersen v. Stability AI, Ltd.*, 700 F. Supp. 3d 853 (N.D. Cal. 2023); *Getty Images v. Stability AI*, 23-CV-00135 (D. Del. 2023); *N.Y. Times Co. v. Microsoft Corp.*, No. 1:23-cv-11195 (S.D.N.Y. Dec. 27, 2023).

3. See, e.g., Pamela Samuelson, *Generative AI Meets Copyright*, 381 SCIENCE 158 (2023); Peter Henderson, Xuechen Li, Dan Jurafsky, Tatsunori Hashimoto, Mark A. Lemley & Percy Liang, *Foundation Models and Fair Use*, STAN. L. & ECON. OLIN WORKING PAPER NO. 584 (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4404340#.

4. See generally Dan L. Burk, *Cheap Creativity and What It Will Do*, 57 GA. L. REV. 1669, 1673 (2023); Matthew Sag, *Copyright Safety for Generative AI*, 61 HOUS. L. REV. 295 (2023); Uri Y. Hacothen & Niva Elkin Koren, *Copyright Regenerated: Harnessing GenAI to Measure Originality and Copyright Scope*, 37 HARV. J.L. & TECH. 555 (2024); Benjamin Sobel, *Artificial Intelligence's Fair Use Crisis*, 41 COLUM. J.L. & ARTS 45 (2017).

5. See John Perry Barlow, *The Economy of Ideas*, WIRED (Mar. 1, 1994), <https://www.wired.com/1994/03/economy-ideas/>.

Samuelson was a pioneer in identifying the rise of private ordering as the single most important implication of the digital transformation. She demonstrated how this shift has transferred the power to set legal norms from public bodies—the legislature and courts, to rights holders.⁶ This shift has sparked heated debate regarding whether and under what circumstances courts should enforce contractual provisions that conflict with copyright policy.

In a series of articles, Samuelson developed a framework for addressing these issues, proposing principles to guide courts in determining when copyright should override contractual restrictions.⁷ In essence, she argued that mass-market license restrictions, which undermined the core objectives of copyright policy, should be overridden.⁸ This straightforward principle, guided by copyright fundamentals, offers a useful standard for navigating the copyright/contract interface. This approach is gaining increasing relevance in addressing some of the emerging copyright/contracts disputes in the new GenAI landscape.

This Article proceeds as follows: Part II describes the rise of private ordering as a dominant framework for governing creative works and explains the complex tension between copyright and contracts. It further discusses the theoretically informed, yet pragmatic approach proposed by Samuelson for resolving such conflicts. Part III demonstrates how this approach could assist in resolving emerging controversies involving the use of copyrightable materials for training GenAI systems. Finally, Part IV concludes.

6. See, e.g., Pamela Samuelson, *Copyright and Freedom of Expression in Historical Perspective*, 10 J. INTELL. PROP. L. 319 (2003); Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-circumvention Rules Need to Be Revised*, 14 BERKELEY TECH. L.J. 519 (1999); Pamela Samuelson, *Intellectual Property Rights and the Global Information Economy*, 39 COMM. ACM. 23 (Jan. 1996); Pamela Samuelson, *The Copyright Grab*, 4.01 WIRED 134 (Jan. 1996).

7. See Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1661 (2001); Pamela Samuelson, Jon A. Baumgarten, Michael W. Carroll, Julie E. Cohen, Troy Dow, Brian Fitzgerald, Laura Gasaway, Daniel Gervais, Terry Ilardi, Jessica Litman, Lydia Pallas Loren, Glynn Lunney, Tyler Ochoa, R. Anthony Reese, Jule Sigall, Kate Spellman, Christopher Sprigman, Michael Traynor, Tara Wheatland & Jeremy Williams, *The Copyright Principles Project: Directions for Reform*, 25 BERKELEY TECH. L.J. 1175, 1235–38 (2010); Pamela Samuelson, *Possible Futures of Fair Use Symposium*, 90 WASH. L. REV. 815 (2015); Pamela Samuelson, *Freedom to Tinker*, 17 THEORETICAL INQUIRES L. 563 (2016).

8. Samuelson, *Possible Futures of Fair Use Symposium*, *supra* note 7, at 859–60.

II. THE DIGITAL TRANSFORMATION AND THE PRIVATIZATION OF COPYRIGHT

A. THE RISE OF COPYRIGHT PRIVATE ORDERING

The advent of digital technology caused significant disruption in copyright law, a legal regime that originally developed alongside the introduction of the printing press.⁹ While there was a consensus that the law must adapt to confront these fundamental challenges, ongoing controversies persisted regarding the nature of these challenges and the necessary adaptations required in copyright law.¹⁰

Samuelson was a pioneer in identifying the rise of private ordering as the single most important implication of the digital transformation.¹¹ As the internet grew more popular, scholars and policymakers primarily focused on the ease of copying and costless dissemination enabled by digital networks, advocating for stronger copyright protection and further expansion of rights granted to copyright owners.¹² Yet, digital technology has also introduced new methods of governing the use of copyrighted materials.¹³ Given the ease of digital copying, rights holders increasingly turn to self-help measures, utilizing technological protection measures and boilerplate contracts to protect their rights and interests.¹⁴

Technological protection measures, such as encryption and password-protected paywalls, were soon backed by the anti-circumvention rules

9. See generally RAY PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* (1968); MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* (1993).

10. One such issue of controversy during the 1980s was whether to protect computer programs. The United States 1978 report of the National Commission of New Technological Uses of Copyrighted Works (CONTU) argued that while programmers need to invest significant effort to create economically valuable software, the ease of digital copying threatens to undermine the incentive to make that investment. Consequently, it was argued that software should be protected by copyright as a “literary work.” Samuelson, however, argued that computer programs are utilitarian works, and affording them copyright protection as literary works might be a misfit. See Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663 (1984); 93d Cong., NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS (1974) [hereinafter CONTU].

11. See Samuelson, *Possible Futures of Fair Use*, *supra* note 7, at 859 (“Two techniques commonly used to impede fair uses of copyrighted works are the adoption of mass-market license agreements containing restrictive terms and the implementation of technical protection measures (TPMs) that prevent access to or copying of digital works.”).

12. See *id.*; see, e.g., CONTU *supra* note 10.

13. See Samuelson, *Possible Futures of Fair Use*, *supra* note 7, at 859.

14. See, e.g., Viktor Mayer-Schonberger, *Beyond Copyright: Managing Information Rights with DRM*, 84 DENV. U. L. REV. 181 (2006).

established under the Digital Millennium Copyright Act of 1998 (DMCA).¹⁵ These rules prohibit ducking the technological protection measures used by copyright owners to control access to their works¹⁶ and impose civil and sometimes even criminal liability for circumventing these locks.¹⁷ Mounting criticism has emerged during the 2000s, raising concerns regarding the expansion of copyright and enclosure of the public domain under this legal regime.¹⁸ Technological protection measures, initially forecasted to limit access to knowledge, did not prove useful for protecting copies of copyrighted works as anticipated. Nowadays, however, access to copyrighted materials is predominantly facilitated through digital platforms and relies heavily on streaming, cloud computing, and mobile access.¹⁹ This has strengthened the scope and effectiveness of technological measures, making algorithmic management of access even more robust. In this model, users do not acquire any physical copies of works. Instead, copyrighted materials (e.g., software, music, books) are stored remotely, and users' rights and obligations are determined by technological affordances and contractual restrictions imposed by digital platforms.

A second method applied by rights holders to restrict some uses of copyrighted materials is contracts. The availability of expressive materials online enabled rights holders to directly contract with the end users of their respective works at low cost, subjecting any access to materials to contractual provisions in the Terms of Service (ToS) of the hosting facility (e.g., cloud service, digital platform). Such boilerplate contracts often stipulate that users who access or download content agree to the contractual terms simply by entering the website.

15. See generally David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 U. PENN. L. REV. 673 (2000). Under 17 U.S.C. § 1201, it is a violation of the DMCA to circumvent or traffic in products meant to circumvent an access control measure used to protect a copyrighted work.

16. Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised* (1999); JONATHAN L. ZITTRAIN, *TECHNOLOGICAL COMPLEMENTS TO COPYRIGHT* (2005).

17. 17 U.S.C. § 1203 sets civil remedies for a violation of the anti-circumvention provisions including temporary or permanent injunctions and either actual or statutory damages. Criminal liability may apply in case of willful violation of the anti-circumvention provisions for commercial advantage or private gain under 17 U.S.C. § 1204.

18. See Pamela Samuelson, *The Copyright Grab*, WIRED (Jan. 1, 1996); JESSICA D. LITMAN, *DIGITAL COPYRIGHT* (2000); JAMES BOYLE, *THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND* (2008); LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2001).

19. Niva Elkin-Koren, *The New Frontiers of User Rights*, 32 AM. U. INT'L L. REV. 1, 2–13 (2016).

Boilerplate contracts and license agreements typically impose additional restrictions on the use of copyrighted materials, sometimes conflicting with copyright norms.²⁰ For instance, contractual terms may prohibit the adaptation, repairs, or modifications of software,²¹ limit the right to engage in reverse engineering (which might be permissible under fair use),²² restrict consumers' rights to resell or give away purchased copies of copyrighted works such as digital books (often protected under first-sale doctrine), or constrain the use of facts and raw data, which are otherwise not protected by copyright law.²³

Samuelson raised concerns regarding the rise of private ordering as a dominant strategy employed by rights holders for governing creative works. Drawing upon the history of the Stationers' copyright system,²⁴ she warned that leaving the exploitation of informational works solely at the discretion of rights holders may undermine public policy.²⁵

Are contractual terms that may conflict with copyright law legally enforceable, and should they be as a matter of legal policy? The following sections aim to explore these questions.

B. PREEMPTION DOCTRINE AND ITS LIMITS

Copyright preemption doctrine is a legal framework for scrutinizing state law claims, including breach of contract, which may conflict with copyright norms under the 1976 Copyright Act.²⁶ This doctrine may effectively limit the freedom of copyright owners to contract around copyright law in order to

20. *Id.* at 10.

21. *Universal Instruments Corp. v. Micro Sys. Eng'g, Inc.*, 924 F.3d 32, 48–49 (2d Cir. 2019).

22. *Sega Enterp. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1522–24 (9th Cir. 1992); *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

23. *See Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991). *See* discussion *infra* notes 119–121 and accompanying text. Contractual restrictions may apply to various aspects of creative works, including both copyright-protected elements (i.e., original expressions) and those not covered by copyright (e.g., ideas). Although unprotected, these aspects are often inseparably linked with the copyrighted elements. This enables rights holders to impose broad restrictions in their license agreements, extending limitations on access and use to the unprotected aspects of the licensed works.

24. RAY PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* (1968); *see also* MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* (1993); JOHN FEATHER, *A HISTORY OF BRITISH PUBLISHING* (1988).

25. Pamela Samuelson, *Copyright, Commodification and Censorship: Past as Prologue—but to What Future?*, *THE COMMODIFICATION OF INFORMATION* 63 (Niva Elkin-Koren & Neil W. Nentanel eds., 2002).

26. 17 U.S.C. § 301(a).

extend any of the exclusive rights granted to them by law.²⁷ Accordingly, in cases where contractual provisions effectively override copyright law, this doctrine may transform the legal dispute between rights holders and potential users of copyrighted materials, from a contractual cause of action subject to state law into a federal copyright dispute.

Section 301(a) states that copyright protection arises exclusively under federal law, preempting state law claims involving rights that are “equivalent to any of the exclusive rights within the general scope of copyright” and that “come within the subject matter of copyright.”²⁸ Accordingly, to determine whether a specific contractual claim is preempted under the law, courts apply a two-part analysis.²⁹ First, the court examines whether the work affected by the plaintiff’s exercise of a state-created right (here, the breach of contract claim) falls within the subject matter of copyright, as specified by sections 102 and 103.³⁰ If the subject matter of the state law claim falls within copyright subject matter, then the court must determine whether the rights asserted under the state law claim are equivalent to any of the exclusive rights listed under section 106 of the Copyright Act.³¹

To satisfy the first prong of the analysis—the “subject matter requirement”—the underlying work must be “a ‘literary work,’ a ‘musical work,’ a ‘sound recording,’ or any other category of ‘work of authorship’ within the ‘subject matter of copyright.’”³² Importantly, the scope of copyright for the purpose of preemption is broader than the scope of available copyright protection. Hence, a plaintiff may not claim a contractual right in a *type* of work covered by section 102 and 103 of the Copyright Act, even if, for some reason, that work is not protected by copyright (i.e., because it fell into the public domain or because it lacks sufficient originality).³³ Such a broad interpretation procures the statutory distinction between copyrighted works and works that ought to remain in the public domain, limiting the ability of the parties to contract around it.

27. Niva Elkin-Koren, *Copyright in the Digital Ecosystem: A User Rights Approach*, in COPYRIGHT LAW IN AN AGE OF LIMITATIONS AND EXCEPTIONS 132 (Ruth Okediji ed., 2017).

28. 17 U.S.C. § 301(a) states: “[A]ll legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright as specified by section 106 in works of authorship that are fixed in a tangible medium of expression and come within the subject matter of copyright as specified by sections 102 and 103 . . . are governed exclusively by Title 17.”

29. *MLGenius Holdings LLC v. Google LLC*, No. 20-3113, 2022 U.S. App. LEXIS 6206, at *4 (2d Cir. Mar. 10, 2022), *cert. denied*, 143 S. Ct. 2658 (2023).

30. *See Jackson v. Roberts*, 972 F.3d 25, 42 (2d Cir. 2020).

31. *Genius*, 2022 U.S. App. LEXIS, at *4.

32. *Jackson*, 972 F.3d at 42–43.

33. *Forest Park v. Universal TV Network, Inc.*, 683 F.3d 424, 429–30 (2d Cir. 2012).

To meet the second prong of the preemption test—the “equivalence” requirement—the defendant must show that the right the plaintiff asserts in the work (which meets the first prong of the test) is “equivalent to any of the exclusive rights within the general scope of copyright as specified by section 106.”³⁴ For preemption to apply, “the state law claim must involve acts of reproduction, adaptation, performance, distribution or display.”³⁵ Nevertheless, a claim is not preempted if it “include[s] any extra elements that make it qualitatively different from a copyright infringement claim.”³⁶ To determine whether such an extra element exists, courts evaluate “what the plaintiff seeks to protect, the theories in which the matter is thought to be protected and the rights sought to be enforced.”³⁷ This requires “a holistic evaluation of the nature of the rights sought to be enforced, and a determination whether the state law action is qualitatively different from a copyright infringement claim.”³⁸

As further discussed below, the enforceability of contractual provisions that may conflict with copyright has been highly contested. Despite mounting critique by academics, studies show that courts have routinely approved such contractual override of copyright norms in numerous cases.³⁹ In fact, over the past decades, courts have rejected the preemption of contractual restrictions, practically upholding any contractual provision that applies to those parties who agreed to accept it.⁴⁰

Recently, however, the Second Circuit reaffirmed preemption claims concerning contracts in two significant cases. In *Universal Instruments Corp. v. Micro Systems Engineering Inc.*, the court addressed a contractual dispute between a software provider and a licensee. The plaintiff licensed its software for the first phase of the defendant’s project, while subsequent phases were eventually assigned to its competitor. The plaintiff argued that adapting the software during the implementation of the second phase was contrary to the license agreement and, therefore, constituted a breach of contract.⁴¹ The Second

34. *Jackson*, 972 F.3d at 43.

35. *Genius*, 2022 U.S. App. LEXIS 6206, at *6.

36. *Id.*

37. *Id.* at *7.

38. *Jackson*, 972 F.3d at 44 n.17.

39. See Guy A. Rub, *Copyright Survives: Rethinking the Copyright-Contract Conflict*, 103 VA. L. Rev. 1141 (2017) (surveying 279 cases and proposing the “no-preemption” approach is the prevalent interpretation for copyright preemption in the United States).

40. *Id.*

41. *Universal Instruments Corp. v. Micro Sys. Eng’g, Inc.*, 924 F.3d 32, 49 (2d Cir. 2019) (holding that a contract claim was preempted and explaining that the parties’ “contractual privity does nothing to change the fact that vindication of an exclusive right under the

Circuit held that the breach-of-contract claim, which involved adaptation covered by copyright law, was preempted by the Copyright Act.

In another recent decision by the Second Circuit, *ML Genius Holdings LLC v. Google LLC*, the court reaffirmed copyright preemption of another type of breach-of-contract claim: a website's ToS. The plaintiff, Genius, a publisher of lyric transcriptions of songs, argued that Google had copied the lyrics and displayed them in its search results, in violation of its ToS. The appellate court held the contract claim was preempted because the plaintiff effectively sought to protect a right that is coextensive with the exclusive right to reproduce and make derivative works of the lyrics.⁴² The Supreme Court denied the plaintiff's petition for a writ of certiorari.⁴³

The scope of copyright preemption doctrine involving breach-of-contract claims has remained vague and ambiguous, largely because copyright and contracts are often complimentary. Copyright law defines initial entitlements, while contracts govern their transfer. The distinction between a property license, which derives its binding force from the grant of exclusive rights by copyright, and a contract, where the binding force stems from the parties' consent, is not always easy to discern. As further discussed below, that is especially true in the context of mass-market licenses. Therefore, when boilerplate contracts are involved, it is difficult to determine whether an extra element exists that would trump the preemption doctrine.

C. SHOULD COPYRIGHT OVERRIDE CONTRACTUAL RESTRICTIONS?

The enforceability of contractual provisions that override copyright law has been a subject of long-standing debate among legal scholars.⁴⁴ Advocates of private ordering argue that contracts are essential for facilitating market transactions, enabling rights holders to extract remuneration from the commercial exploitation of their works.⁴⁵ The copyright regime is designed to generate incentives to authors by facilitating market transactions, assuming that markets could generally allocate access to creative works in the most efficient way and signaling when creative expressions are socially valuable.

Copyright Act" asserted through a breach-of-contract claim "is preempted by the Copyright Act").

42. See *Genius*, 2022 U.S. App. LEXIS 6206, at *3.

43. See *id.*

44. See Amit Elazari Bar On, *Unconscionability 2.0 and the IP Boilerplate*, 34 BERKELEY TECH. L.J. 567, 595 (2019).

45. Licenses, terms of use, terms of service of digital platforms, or end users license agreements, often simply authorize specific uses in copyrightable materials. These agreements provide an important legal mechanism for exercising copyright, enabling rights holders to generate remunerations from their works.

Therefore, ensuring efficient contract formation between rights holders and potential licensees is considered a key to a thriving market in copyrighted materials. Arguably, it follows that, as a general matter, contracts should be enforceable, even when potentially expanding the rights granted to rights holders under copyright law.⁴⁶

Advocates further argue that contracts can never contradict copyright law. This is due to a division of labor between two legal regimes: copyright laws are responsible for defining initial entitlements, while contracts govern their transfer. Copyright creates rights *in rem*, while contracts only apply to their immediate contracting parties.

This approach was established by the Seventh Circuit in *ProCD v. Zeinberg*, where the court held that a breach-of-contract claim was not preempted because a “copyright is a right against the world,” while “[c]ontracts, by contrast, generally affect only their parties” and therefore “do not create ‘exclusive rights.’”⁴⁷ In *ProCD*, the plaintiff sought to protect uncopyrightable digitized telephone listings using a shrink-wrap license. The appellate court held that such contracts only affect the parties involved and cannot establish rights *in rem* equivalent to copyright. Under this line of reasoning, a breach-of-contract claim would stand unless the respondent can prove that no valid contract was formed. Issues of contract formation may arise, for instance, in “browsewrap” agreements, where questions of awareness to the contractual restrictions and explicit consent might need further elaboration.⁴⁸

Samuelson has raised concerns over the use of contractual restrictions that contradict the norms set by copyright law, thus undermining its goals. She has warned against the potential chilling effect of enforcing such restrictive duties on the fundamental goals of copyright law, which aim to promote progress.⁴⁹ She has also expressed worries that contractual terms, providing

46. See Guy A. Rub, *Copyright and Copying Rights*, 98 N.Y.U. L. REV. 342 (2023).

47. *ProCD, Inc. v. Zeinberg*, 86 F.3d 1447, 1454 (7th Cir. 1996); see also *Bowers v. Baystate Techs., Inc.*, 320 F.3d 1317, 1325 (Fed. Cir. 2003), *cert. denied*, 539 U.S. 928 (2003); *Lipscher v. LRP Publ'ns, Inc.*, 266 F.3d 1305, 1318 (11th Cir. 2001) (finding that “claims involving two-party contracts are not preempted because contracts do not create exclusive rights, but rather affect only their parties,” and holding that a contract claim was not preempted).

48. *Nguyen v. Barnes & Noble Inc.*, 763 F.3d 1171, 1176 (9th Cir. 2014) (“The defining feature of browsewrap agreements is that the user can continue to use the website or its services without visiting the page hosting the browsewrap agreement or even knowing that such a webpage exists.”).

49. See Samuelson, *Copyright and Freedom of Expression in Historical Perspective*, *supra* note 7, at 335–36; see also Niva Elkin Koren, *Can Formalities Save the Public Domain? Reconsidering Formalities for the 2010s*, 28 BERKELEY TECH. L.J. 1537, 1537–38 (2013); Niva Elkin-Koren, *A*

broader protection to rights holders beyond those secured by copyright law, may compromise socially beneficial practices. For instance, when rights holders seek to restrict the fair use of creative works, such as tinkering,⁵⁰ testing, criticism, research, and learning,⁵¹ they risk undermining the goals of copyright law, which aims to promote these uses.⁵²

At the same time, however, copyrights and contracts are complementary. Copyright grants authors exclusive rights in their creative works, providing incentives to create by making these works excludable. This allows right holders to earn compensations through licensing agreements and contracts. While copyright law defines these entitlements, contract law enables rights holders to leverage them effectively to generate income. Therefore, Samuelson concluded that a more promising approach is to avoid a categorical approach that would render unenforceable any contractual term that contradicts copyright.⁵³ Instead, she suggested that the articulation of standards for the enforceability of such restrictive terms would evolve through court decisions.⁵⁴

In a series of articles, Samuelson outlined several key principles to guide courts in determining under what circumstances copyright should override contractual restrictions. Essentially, she argued that restrictions in mass-market licenses that undermine the core objectives of copyright policy should be overridden. The proposed principles address three aspects: the type of contract, the identification of potential conflicts between different norms, and the rationale for overriding contractual terms based on copyright policy.

First, Samuelson drew a key distinction between negotiated contracts, where courts are unlikely to override contractual restrictions that limit fair use, and mass-market license agreements (boilerplate contracts), where courts might be more willing to override license terms.⁵⁵ The nature of the contract

Public-Regarding Approach to Contracting Copyrights, EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY, 191, 192 (Rochelle C. Dreyfuss, Diane L. Zimmerman & Harry First 2001); Margaret J. Radin, *Regime Change in Intellectual Property: Superseding the Law of the State with the “Law” of the Firm*, 1 U. OTTAWA L. & TECH J. 173, 178 (2004).

50. Samuelson, *Freedom to Tinker*, *supra* note 7, at 564; Maayan Perel & Niva Elkin Koren, *Black Box Tinkering: Beyond Disclosure in Algorithmic Enforcement*, 69 FLA. L. REV. 181 (2017).

51. See Samuelson, *Copyright, Commodification and Censorship*, *supra* note 25; see also Mark A. Lemley & Bryan Casey, *Fair Learning*, 99 TEX. L. REV. 743 (2021).

52. See Samuelson, *Possible Futures of Fair Use Symposium*, *supra* note 7, at 859.

53. *Id.* at 859 (“articulation of standards for determining under what circumstances fair use should override license or technical restrictions” might evolve).

54. *Id.*

55. Samuelson, *Possible Futures of Fair Use Symposium*, *supra* note 7, at 859–60 (arguing that “[i]t seems unlikely that courts would accept that fair use should either always or never override

is significant both as a matter of contract law and as a matter of copyright policy. From the perspective of contract law, holding contractual restrictions binding assumes they reflect an efficient bargain by consenting parties. However, contracts governing the use of copyrighted materials, such as browsewrap licenses (e.g., website ToS) and shrinkwrap license (e.g., End User License Agreements (EULAs)), have been enforced by courts based on very minimal evidence of consent.⁵⁶ As eloquently described by Margaret Jane Radin: “The idea of voluntary willingness first decayed into consent, then into assent, then into a mere possibility or opportunity for assent, then merely fictional assent, then to mere efficient rearrangement of entitlements without any consent or assent.”⁵⁷ In the absence of meaningful consent, there is no guarantee that the contract indeed reflects an efficient allocation of rights.

The boilerplate nature of the contract also matters for copyright policy. While negotiated contractual obligations and their corresponding rights apply only to the contracting parties, mass-market contracts widely expand the contract’s scope. In fact, in digital distribution, the contract and the copyrighted work often converge, making the breach of contractual restrictions universally applicable. Smart contracts take this convergence a step further, by enabling automatic enforcement. In the absence of meaningful privity, boilerplate contracts become universally enforceable. They apply to each access to the work, thus creating a *de facto* right against the world.⁵⁸ Consequently, such contracts have the same impact as property rules. This blurs the distinction between copyright (property) and contracts. Given the scope and scale of such mass-market licenses, judicial scrutiny is essential for sustaining the balance of interests that copyright seeks to achieve.⁵⁹

A second challenge in deciding whether a contractual obligation should be overridden by copyright is identifying which contractual restrictions potentially trigger copyright policy. This requires moving beyond a technical application of the preemption doctrine’s two-part test, to analyze the substance of the

contractual restrictions” and that “[t]he most promising approach is one that would override mass-market license restrictions that interfere with copyright policy purposes”).

56. Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CALIF. L. REV. 111 (1999). For instance, shrinkwrap licenses were enforced even when the licensee became aware of the terms only after the computer program was purchased (*ProCD Inc.*, 86 F. 3d 1447). Similarly, browsewrap licenses were held enforceable even where the license provisions were simply posted online stating that the mere use of the product or website constituted acceptance of the terms of the license.

57. Margaret J. Radin, *Boilerplate Today: The Rise of Modularity and the Waning of Consent*, 104 MICH. L. REV. 1223, 1231 (2006).

58. See Niva Elkin-Koren, *Copyright Policy and the Limits of Freedom of Contract*, 12 BERKLEY TECH. L.J. 93 (1997).

59. See Samuelson, *The Copyright Principles Project*, *supra* note 8, at 1237.

breach of contract claim and determine whether it is ultimately governed by copyright policy. In 2010, Samuelson collaborated with a group of copyright experts to propose amendments to copyright law, aiming to adjust it to the digital transformation.⁶⁰ The team listed some factors that courts may consider in determining whether a breach of contract claim should be preempted by federal copyright law.⁶¹ In essence, “contractual provisions that forbid undertaking activities that copyright law would otherwise permit or that require action, such as giving attribution, that copyright law otherwise does not expressly require, should be subject to implied preemption analysis in appropriate cases.”⁶²

Finally, in deciding whether copyright should override contractual restrictions, it is essential to assess whether enforcing these restrictions would conflict with copyright policy. Samuelson outlines three concerns that offer a useful framework for examining whether specific restrictions undermine copyright policy. One concern is chilling free speech when contracts restrict criticism, research, and learning. Another concern relates to stifling innovation, interoperability, and competition, when contractual provisions seek to limit tinkering, reverse engineering, or systems testing.⁶³ In this context, Samuelson proposed considering factors such as the nature of the market to which these restrictive provisions apply, specifically whether it is a market with strong

60. The Copyright Principles Project (CPP) aimed to propose some improvements to adjust copyright law to the challenges raised by the digital transformation. *Id.* at 1235–38.

61. Among the considerations recommended by the team are: (1) the extent to which the contractual provision at issue alters the scope of protection copyright would otherwise provide; (2) whether the contractual provision accompanies a work that is published or otherwise publicly distributed; (3) whether the contractual provision is individually negotiated or part of a uniform, mass-market license; (4) whether the idea or information that is the subject of contractual protection is otherwise readily available from other sources without similar contractual restrictions; (5) whether enforcing the contract would establish legal control over ideas or information that copyright leaves unprotected in ways that would unreasonably inhibit future authorship or create undue monopolization; (6) whether the contract would stifle the dissemination of new creative works, such as works that criticize or comment on existing works; (7) the copyright owner's purpose in including the challenged provision in the contract; (8) whether failure to enforce the contractual provision frustrate efficient, practical enforcement of the copyright rights; and (9) whether the contract would restrict access to works that are no longer protected by copyright. *Id.*

62. *Id.*

63. For instance, Samuelson conceptualizes the freedom to tinker, which is essential for innovation, demonstrating how contract could place substantial constraints on user rights to tinker with and modify computer programs and digital works. *See* Samuelson, *Freedom to Tinker*, *supra* note 7.

network effects.⁶⁴ Finally, contractual provisions may shrink the public domain when contracts aim to extend protection beyond what is granted by copyright law—to uncopyrightable ideas, functionalities, and data. These three considerations—free speech, innovation, and the public domain—could guide courts in identifying the circumstances where contractual restrictions should be overridden.

This straightforward standard proposed by Samuelson for navigating the copyright/contract interface may prove useful in addressing emerging copyright disputes in the GenAI era, as further discussed in Part III.

III. CONTRACT/COPYRIGHT INTERFACE & GENAI

A. CONTRACTUAL BARRIERS TO TRAINING GENAI SYSTEMS

GenAI models are rapidly expanding in popularity and reach. GenAI may bring about great benefits to society, potentially leading to important breakthroughs in various domains such as medicine, transportation, and governance.⁶⁵ These systems piggyback on the impressive capability of foundation models, such as OpenAI’s Generative Pre-trained Transformer (GPT) or Google’s Bidirectional Encoder Representations from Transformers (BERT), to extrapolate patterns and structures from granular data.⁶⁶ Foundation models are large-scale neural networks pre-trained on vast amounts of unlabeled data, using self-supervised learning on surrogate tasks. These general-purpose models learn generalizable and adaptable data representations that can be applied to new downstream tasks. Adapting to new tasks may involve techniques such as fine-tuning, namely training the foundation model on a smaller, task-specific dataset.⁶⁷ ChatGPT, for instance,

64. See Samuelson & Scotchmer, *The Law and Economics of Reverse Engineering*, *supra* note 7, at 1661 (arguing that there is no “intrinsic reason” to allow contracts to circumvent copyright “especially in markets with strong network effects.”).

65. See e.g., Bill Gates, *The Age of AI Has Begun*, GATESNOTES (Mar. 21, 2023), <https://www.gatesnotes.com/The-Age-of-AI-Has-Begun>; *From Code to Cure, How Generative AI Can Reshape the Health Frontier*, DELOITTE (2023), <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-from-code-to-cure-1.pdf>.

66. See generally Peter Henderson, Xuechen Li, Dan Jurafsky, Tatsunori Hashimoto, Mark A. Lemley & Percy Liang, *Foundation Models and Fair Use*, STAN. L. & ECON. OLIN WORKING PAPER, Paper No. 584 (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4404340# [<https://perma.cc/5RTM-NVBT>]; Rishi Bommasani, Drew A. Hudson, Ehsan Adeli, Russ Altman, Simran Arora & Sydney Von Arx, *On the Opportunities and Risks of Foundation Models*, ARXIV, 5–15 (2021), <https://arxiv.org/abs/2108.07258>.

67. Bommasani et al., *supra* note 67 at 3 (“A foundation model is any model that is trained on broad data (generally using self-supervision at scale) that can be adapted (e.g., fine-tuned) to a wide range of downstream tasks . . .”).

is built on OpenAI's foundation models GPT3.5 and GPT4 to enable bot-human interaction. ChatGPT could be fine-tuned further for more nuanced natural language processing tasks, such as language translation, classification, and text summarization.

Foundation models were initially aimed at learning about data without supervision⁶⁸ but were increasingly deployed for generative applications.⁶⁹ Downstream diffusion applications, such as Midjourney and Stable Diffusion, which have been the focus of recent copyright disputes, involve text-to-image tools for creating and editing visual works. These applications enable users to generate original expressive outputs by prompting the model with a written description of the desired output.⁷⁰ Like the foundation models on which they are based, diffusion applications do not rely on formal instructions to generate original outputs. Instead, these models' learning is extrapolated from their preexisting training examples. For example, Copilot and Midjourney are trained on giant corpora of prewritten code and images from the GitHub open-source code repository and the LAION 5B database, respectively.⁷¹ By allowing users to generate code and images in response to "prompts", GenAI tools arguably augment human creativity and democratize the creative process by enabling users to draw upon synthesized preexisting works.⁷²

The emergence of foundation models and GenAI was made possible by the availability of vast amounts of data and the advancements in data storage and processing capabilities.⁷³

68. Sam Bond-Taylor, Adam Leach, Yang Long & Chris G. Willcocks, *Deep Generative Modelling: A Comparative Review of VAEs, GANs, Normalizing Flows, Energy-Based and Autoregressive Models*, 44 IEEE TRANSCON. PATTERN ANALYSIS & MACH. INTELL. 7327, 7327 (2022).

69. *Id.*

70. See Bracha, *supra* note 2, at 10 ("The main purpose of GenAI, by contrast, is to generate new informational goods . . .").

71. Romain Beaumont, *Laion-5B: A New Era of Open Large-Scale Multi-Modal Datasets*, LAION (Mar. 31, 2022), <https://laion.ai/blog/laion-5b/> (explaining the Laion-5B project); Doe 1 v. GitHub, Inc., 672 F. Supp. 3d 837, 846–48 (N.D. Cal. 2023); Andersen v. Stability AI, Ltd., 700 F. Supp. 3d 853 (N.D. Cal. 2023).

72. Cf. Rachel Metz, *AI Won an Art Contest, and Artists Are Furious*, CNN BUS. (Sept. 3, 2022), <https://edition.cnn.com/2022/09/03/tech/ai-art-fair-winner-controversy/index.html> (reporting that a game designer with no artistic training won a fine art competition using GenAI).

73. For example, Google's T5 and Facebook's LLaMA datasets were trained on content from over 15 million websites. Similarly, OpenAI's GPT-3 features a model size of 175 billion parameters and was trained with 45 terabytes of data. See Ce Zhou, Qian Li, Chen Li, Jun Yu, Yixin Liu, Guangjing Wang, Kai Zhang, Cheng Ji, Qiben Yan, Lifang He, Hao Peng, Jianxin Li, Jia Wu, Ziwei Liu, Pengtao Xie, Caiming Xiong, Jian Pei, Philip S. Yu & Lichao Sun, *A*

Like humans, GenAI models learn from examples. They use preexisting materials to learn patterns of language, extract common styles, generalize principles from new materials, and apply these features in reconstructing a new output. They generalize expressive patterns and apply those learnings to perform different tasks, such as autocompleting sentences or generating visual outputs in response to a textual prompt. Yet, unlike human learning, which occurs within the confines of the human mind, GenAI learning involves digital reproduction. Thus, the training of GenAI models requires access and copying of massive amounts of data, often scraped from the internet.

The scraping of materials while training AI systems has sparked numerous class actions lawsuits alleging copyright infringement. These lawsuits claim that the models infringe on copyright by copying protected materials without authorization from the rights holders.⁷⁴ Scraping involves “‘extract[ion of] data from a website’ and copying it into a structured format, allowing for data manipulation or analysis.”⁷⁵ The process is not intended to store or distribute the original content but to temporarily copy it to extract data and learn patterns. Therefore, scraping for the purpose of training AI models has invoked a heated debate among scholars and policy makers.⁷⁶ Some believe that the use of copyrighted materials in the course of training GenAI models generally amount to fair use.⁷⁷ Others are more skeptical, claiming that the use of copyrighted materials during training does not amount to what courts have traditionally labeled non-infringing non-expressive use.⁷⁸ Some scholars argue that since such intermediary scraping, intended to simply extract data and learn patterns that are otherwise not protected by copyright law, should not even be considered an infringement of the exclusive right to copy.⁷⁹

Comprehensive Survey on Pretrained Foundation Models: A History from BERT to ChatGPT, ARXIV (May 2023), <https://arxiv.org/pdf/2302.09419.pdf>.

74. See Samuelson, *Generative AI Meets Copyright*, *supra* note 3; see, e.g., Andersen v. Stability AI, Ltd., No. 23-cv-00201-WHO, 2024 U.S. Dist. LEXIS 143204, at *1, *31 (N.D. Cal. Aug. 12, 2024); Tremblay v. OpenAI, Inc., Nos. 23-cv-03223-AMO; 23-cv-03416-AMO, 2024 U.S. Dist. LEXIS 24618, 1, 11–12 (N.D. Cal. Feb. 12, 2024).

75. See *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985, 991 n. 3 (9th Cir. 2019).

76. See generally Lemley & Casey, *Fair Learning*, *supra* note 51; Benjamin L. W. Sobel, *A New Common Law of Web Scraping*, 25 LEWIS & CLARK L. REV. 147 (2021).

77. See, e.g., Lemley & Casey, *Fair Learning*, *supra* note 51, at 767; OPINION: USES OF COPYRIGHTED MATERIALS FOR MACHINE FOR MACHINE LEARNING, Israeli Ministry of Justice (2022), <https://www.gov.il/BlobFolder/legalinfo/machine-learning/he/18-12-2022.pdf> (the use of copyrighted content to train a machine-learning tool is likely to be permissible as “fair use” under copyright law).

78. See Sobel, *supra* note 5, at 48.

79. See, e.g., Bracha, *supra* note 2.

Uncertainty regarding copyright claims involving scraping has led rights holders to undertake self-help measures to protect their content against it. Many stakeholders enforce contractual obligations prohibiting scraping and supplement these with technological measures to detect or prevent such scraping. For example, the ToS of digital platforms often prohibit automated data collection of publicly available data, such as users' posts or personal data hosted by the platform.⁸⁰ Similarly copyright owners use their EULA to restrict the use of their works in the course of training GenAI models.⁸¹

This part describes these contractual practices and examines whether such contractual obligations should be enforceable.

B. RESTRICTIONS ON SCRAPING IN DIGITAL PLATFORMS

Digital platforms often prohibit the scraping of data hosted by the platform in their ToS. Data, often referred to as the 'new oil',⁸² or 'gold'⁸³ of the digital era, is the primary business asset of these platforms.⁸⁴ They typically host user-generated content and data, track users' online behavior to generate profiles for targeted advertising, and either sell data to third parties or use it to develop products and services, including the training of GenAI models.⁸⁵

Many digital platforms prohibit data scraping and other methods of automated data collection in their various contracts with users.⁸⁶ For instance, LinkedIn's user agreement prohibits users from making steps to "[d]evelop, support or use software, devices, scripts, robots or any other means or processes ... to scrape the Services or otherwise copy profiles and other data from the Services."⁸⁷ Data scraping refers to "the process of extracting and combining content of interest from the Web in a systematic way..." and involves taking "raw data in the form of HTML code from sites and convert

80. *See infra* notes 86–98.

81. *See infra* notes 134–51.

82. *The World's Most Valuable Resource is no Longer Oil, But Data*, ECONOMIST (May 6, 2017), <https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data> (last visited Dec. 29, 2023).

83. Sandro Shublazde, *How to Make Use of the New Gold: Data*, FORBES (Mar. 27, 2023), <https://www.forbes.com/sites/forbestechcouncil/2023/03/27/how-to-make-use-of-the-new-gold-data/?sh=1ad429042bbf> (last visited Dec. 29, 2023).

84. ECONOMIST, *supra* note 82.

85. Data on digital platforms is essential for research in social science, in language, in medicine, and also for the purpose of studying and oversighting the social implications of platforms.

86. Niva Elkin-Koren, Maayan Perel & Ohad Somech, *Unlocking Platform Data for Research*, IN. L.J. (forthcoming 2024).

87. LINKEDIN, *User Agreement*, § 8.2(2) (Feb. 1, 2022), www.linkedin.com/legal/user-agreement.

it into a usable structured format.”⁸⁸ Similarly, Section 3.2.3 of Facebook’s ToS provides that: “You may not access or collect data from our Products using automated means (without our prior permission) or attempt to access data you do not have permission to access.”⁸⁹

Contractual bans on scraping have been invoked by platforms even when scraping was intended solely for non-competing research purposes,⁹⁰ targeting investigative journalists, academic researchers or civil society organizations seeking to enhance transparency.⁹¹ For instance, in a recent lawsuit filed by X Corp. against the Center for Countering Digital Hate (CCDH), a non-profit organization that conducted research on the dissemination of hateful content on social media, X alleged that CCDH had intentionally and unlawfully scraped data from the X platform (formerly known as Twitter), thereby violating its ToS.⁹² Rejecting X’s claim, the court noted that “X Corp. has brought this case in order to punish CCDH for CCDH publications that criticized X Corp.—and perhaps in order to dissuade others who might wish to engage in such criticism.”⁹³

Contractual bans on scraping were enforced against entrepreneurs seeking to use data for developing new products and services. For instance, LinkedIn filed a lawsuit against hiQLabs, a data analytics company, which scraped LinkedIn publicly available profiles.⁹⁴ hiQLabs used this data to develop new analytic tools, such as apps predicting the risk of a talented employee being recruited by a competitor (‘skill mapping’), or diagnosing skill gaps in organizations.⁹⁵ LinkedIn argued that extracting information using these tools

88. Domenico Trezza, *To Scrape or Not to Scrape, This is Dilemma: The Post-API Scenario and Implications on Digital Research*, FRONTIERS (Mar. 15, 2023), <https://www.frontiersin.org/articles/10.3389/fsoc.2023.1145038/full>.

89. Meta Platforms, Inc. v. Bright Data Ltd., No. 23-cv-00077-EMC, 2024 U.S. Dist. LEXIS 11913 (N.D. Cal. Jan. 23, 2024).

90. See, e.g., Axel Bruns, *After the ‘APIcalypse’: Social Media Platforms and Their Fight Against Critical Scholarly Research*, 22 INFO. COMM’N. & SOC’Y 1544 (2019).

91. For instance, in 2018, after the research group ProPublica refused to cease from using a web-scraping tool to monitor political advertisements on Facebook during the U.S. elections, Facebook implemented technical measures that effectively blocked ProPublica’s scraping tool. See Jeremy B. Merrill & Ariana Tobin, *Facebook Moves to Block Ad Transparency Tools—Including Ours*, PROPUBLICA (Jan. 28, 2019), <https://www.propublica.org/article/facebook-blocks-ad-transparency-tools>.

92. X Corp. v. Ctr. for Countering Digit. Hate Ltd., No. 23-cv-03836-CRB, 2024 U.S. Dist. LEXIS 53042 (N.D. Cal. Mar. 25, 2024).

93. *Id.* at *22.

94. hiQ Labs, Inc. v. LinkedIn Corp., 31 F.4th 1180 (9th Cir. 2022).

95. Javier Torre de Silva & López de Letona, *The Right to Scrape Data on the Internet: From the US Case hiQLabs, Inc. v. LinkedIn Corp. to the ChatGPT Scraping Cases: Differences Between US and EU Law*, 5 GLOB. PRIV. L. REV. 5 (2024), <https://doi.org/10.54648/gplr2024001>.

violated its User Agreement, which explicitly prohibited scraping or copying by automated methods.⁹⁶

In another recent case, *Meta Platforms, Inc. v. Bright Data Ltd.*,⁹⁷ the court examined whether Bright Data, a company that searches, collects and sells publicly available data from various websites, including Facebook and Instagram, was breaching Facebook's and Instagram's ToS. Bright Data utilizes data collected from digital platforms to offer new types of access services, such as a *proxy network* that enables anonymous browsing, or a *Web Scraper Integrated Development Environment*, which assists programmers in developing their own search tools.⁹⁸ Meta alleged that scraping was contrary to some restrictions in the ToS and therefore amounts to a breach of contract.⁹⁹

To determine whether such restrictions applied by platform's contract are preempted under the 1976 Copyright Act, courts apply a two-part test.¹⁰⁰ First, the court must examine whether the work that would be affected by the contractual claim comes within the subject matter of copyright, as specified by sections 102 and 103.¹⁰¹ If so, the court moves to examine the second prong, to determine whether the rights asserted under the state law claim are equivalent to any of the exclusive right listed under section 106 of the Copyright Act.¹⁰²

Applying the first prong of the copyright preemption test to raw data is challenging since raw data is not copyrightable. To be eligible for copyright protection, a work must be an original work of authorship, namely originated with the author, and fixed in a tangible medium.¹⁰³ Raw data (“wholly factual information not accompanied by any original written expression”) is therefore excluded from copyright protection because it is “discovered” rather than “author[ed].”¹⁰⁴ The Copyright Act explicitly excludes in section 102(b) ideas,

96. See LINKEDIN, *supra* note 87.

97. *Meta Platforms, Inc. v. Bright Data Ltd.*, No. 23-cv-00077-EMC, 2024 U.S. Dist. LEXIS 11913 (N.D. Cal. Jan. 23, 2024).

98. *Id.*

99. Based on construing the ToS, the court concluded that the contractual terms that restrict scraping do not apply to Bright Data's logged-off scraping of publicly viewable data, and therefore denied Meta's motion for summary judgment.

100. *MLGenius Holdings LLC v. Google LLC*, No. 20-3113, 2022 U.S. App. LEXIS 6206, at *4 (2d Cir. Mar. 10, 2022), *cert. denied*, 143 S. Ct. 2658 (2023).

101. See *Jackson v. Roberts*, 972 F.3d 25, 42 (2d Cir. 2020).

102. *Genius*, 2022 U.S. App. LEXIS 6206, at *4.

103. 17 U.S.C. § 102(a). See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (noting that originality is “[t]he *sine qua non* of copyright”).

104. See *Feist*, 499 U.S. at 345–46. Justice O'Connor stated, for a unanimous court, that facts are categorically excluded from copyright protection because they never originate with

procedures, processes, systems, methods of operation, concepts, principles or discoveries from copyright protection.¹⁰⁵ Likewise, knowledge, truths ascertained, conceptions and ideas are considered “free as the air to common use.”¹⁰⁶ As famously elaborated by the Court in *Feist Publications v. Rural Telephone Service*, the idea-expression dichotomy in copyright law ensures that only original expressions of facts—but not facts in themselves—are protected by copyright.¹⁰⁷ While data is unprotected, it is clearly regulated by copyright law, which ensures it is not excluded from the public domain.

The second prong of the preemption test may easily apply to legal claims that seek to prohibit any reproduction of the data, including derivative modifications made to adapt it for AI training models.¹⁰⁸ However, since this claim stems from a contractual restriction in the ToS, courts will need to decide whether the contract amounts to an “extra element” necessary to avoid preemption.¹⁰⁹

The Second Circuit’s recent decision on preemption in *Universal Instruments Corp. v. Micro Sys. Eng’g, Inc.* took the approach that more than basic contractual privity is required to transform an otherwise equivalent claim into one that is qualitatively different from a copyright infringement claim.¹¹⁰ The Second Circuit also followed this approach in the *ML Genius* case.¹¹¹ Genius argued that since its breach-of-contract claim requires it to plead “mutual assent and valid consideration”, and “assert[] rights only against the contractual counterparty, not the public at large,” its claim was qualitatively different from

the author but are “discovered” rather than “author[ed].” However, this principle does not cover “constructed” or “created” facts, which may reflect original contribution of their author and thus might be protected. *See, e.g.*, Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 996 (1990) (arguing that facts “do not exist independently of the lenses through which they are viewed”).

105. 17 U.S.C. § 102(b).

106. *Int’l News Serv. v. Associated Press*, 248 U.S. 215, 250 (1918) (Brandeis, J., dissenting).

107. *Feist*, 499 U.S. at 348 (noting that “all facts—scientific, historical, biographical, and news of the day” may not be copyrighted and are part of the public domain available to every person).

108. *See, e.g.*, Nicola Lucchi, *ChatGPT: A Case Study on Copyright Challenges for Generative Artificial Intelligence Systems*, EURO. J. RISK REG. 1 (2023).

109. *See supra* notes 37–39 and accompanying text.

110. *See, e.g.*, *Universal Instruments Corp. v. Micro Sys. Eng’g, Inc.*, 924 F.3d 32, 49 (2d Cir. 2019) (explaining that the parties’ “contractual privity does nothing to change the fact that vindication of an exclusive right under the Copyright Act” asserted through a breach-of-contract claim “is preempted by the Copyright Act”).

111. *MLGenius Holdings LLC v. Google LLC*, No. 20-3113, 2022 U.S. App. LEXIS 6206, at *7 (2d Cir. Mar. 10, 2022), *cert. denied*, 143 S. Ct. 2658 (2023).

a copyright claim, and therefore should not be preempted.¹¹² The Second Circuit disagreed, noting that Genius was effectively contemplating for “a per se rule that all breach of contract claims are exempt from preemption.”¹¹³ Such a rule, according to the court, “would be in tension with our precedent holding that the general scope inquiry is ‘holistic.’”¹¹⁴ Because the court found that Genius sought to protect a right equivalent to the exclusive rights secured by copyright, it concluded that the contractual claim was preempted.¹¹⁵

As discussed earlier, however, there exists a major circuit split regarding the applicability of the preemption doctrine to contractual restrictions.¹¹⁶ This results in a high level of uncertainty regarding whether scraping should be governed by copyright law or left to the discretion of market players through private ordering.

In this contested context, the guiding principles outlined by Samuelson on the copyright/contract interface may provide additional clarity.

First, decisions concerning pervasive restrictions involving copyrights should not be decided by boilerplate contracts alone. Contractual bans on scraping in digital platforms’ ToS effectively establish a “right against the world.”¹¹⁷ While ToS technically apply only to people who accept them, any potential users of the platform might be bound by them.¹¹⁸ Additionally, there are often no alternative ways to obtain access to the data but through the platform. For instance, anyone seeking to access a post on Instagram must do so through its infrastructure, which is accessible only to signed-up users.¹¹⁹ Consequently, by restricting reproduction of publicly available data hosted on their servers, platforms de facto secure themselves a proprietary right in that data. Such a restriction embedded in boilerplate ToS seeks to bind all users and therefore, if enforceable, resembles the in rem characteristics of a property right.¹²⁰

112. *Id.* at *3.

113. *Id.* at *9.

114. *Id.*

115. *Id.*

116. *See Genius*, 2022 U.S. App. LEXIS 6206, *petition for cert. filed* 2022 WL 3227953 (U.S. Aug. 5, 2022) (No. 22-121).

117. Elkin-Koren, *The Limits of Freedom of Contract*, *supra* note 58, at 104.

118. *Id.* (explaining that “the introduction of new distribution technologies blurs the distinction between rights in personam and rights in rem. The availability of direct communication with users and the technical ability to prevent any unlicensed access by technological fencing facilitate a regime that is very similar in its nature to a property regime.”).

119. *See, e.g.*, Linnea Laestadius & Alice Witt, *Instagram Revisited*, HANDBOOK OF SOC. MEDIA RSCH. METHODS, 581 (2022); Anna Lenhart, *A Vision for Regulatory Harmonization to Spur International Research*, LAWFARE (May 2, 2023).

120. *See supra* notes 55–59 and accompanying text.

Second, to identify contractual restrictions that may conflict with copyright, it is necessary to examine whether these provisions prohibit an action that copyright law would otherwise permit. When platforms' ToS ban the scraping of data that is publicly available, they aim to limit the copying of data—a use that is otherwise permitted by copyright law. Raw data, such as data extracted from users' profiles or the syntax of language extracted from users' posts, is not protected by copyright law. From a copyright perspective, raw data that is hosted by platforms and made publicly available should remain in the public domain. Copyright law aims to promote progress not only by granting exclusive rights to authors, but also by ensuring a robust public domain that fosters further creation. Therefore, raw data, which serves as building blocks for future creators, is deliberately excluded from copyright protection. This reflects a delicate balance “between the interests of authors . . . in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand”¹²¹ When platforms attempt to assert exclusive rights over users' data hosted on their servers, they essentially disrupt the delicate balance between exclusivity and access, articulated by copyright policies.¹²² Accordingly, contractual restrictions on the scraping of raw data in platforms ToS may conflict with copyright law where data is deliberately left in the public domain.

Finally, in deciding whether enforcing such contractual restrictions may undermine copyright policy, it is crucial to consider the implications on copyright policy. The enforceability of sweeping contractual prohibitions by digital platforms on publicly available data scraping might compromise the primary goals of copyright law. Digital platforms often serve as unique access point to data, which can be indispensable for basic research.¹²³ Under copyright law, scraping for research is often considered fair use due to the transformative nature of use, and because it does not threaten the platforms' core market.¹²⁴ Researchers essentially engage in “non-expressive” copying,¹²⁵ and do not intend to compete with the platform in the data market. Copyright policy may also seek to promote transformative use by entrepreneurs who seek

121. *See, e.g.*, *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 429 (1984).

122. *See generally*, Robert A. Kreiss, *Accessibility and Commercialization in Copyright Theory*, 43 UCLA L. REV. 1, 2–4 (1995).

123. For example, it may be essential for detecting early indicators of imminent natural disasters, identifying markers for infectious disease outbreaks, or developing new research methodologies employing Artificial Intelligence.

124. Matthew Sag, *The New Legal Landscape for Text Mining and Machine Learning*, 6 J. COPYRIGHT SOC'Y U.S.A. 291, 301–02 (2019).

125. Lemley & Casey, *supra* note 52, at n. 92.

to develop competing products and service, provided they only obtained access to non-protected data and ideas.¹²⁶ If GenAI developers were required to obtain a license for non-expressive copying of publicly available webpages, transaction costs would be prohibitive. Ensuring access to online publicly available data could also play important role in promoting freedom of speech. Scraping platforms' data by independent academic researchers and investigative journalists might be crucial for generating unbiased evidence to guide public oversight and inform public debates regarding the social ramifications of digital platforms.¹²⁷

Overall, this analysis suggests that the determination of core copyright choices should not be left to contractual agreements but rather governed by copyright law. The legitimacy of scraping unprotected data and extracting unprotected ideas (patterns, weights) for training GenAI models should not depend on the drafting of contract restrictions by digital platforms. This concern regarding the power of platforms to unilaterally shape the norms of accessing data was highlighted by the Court of Appeals in *LinkedIn v. hiQ*: “Giving companies like LinkedIn free rein to decide, on any basis, who can collect and use data—data that the companies do not own, that they otherwise make publicly available to viewers, and that the companies themselves collect and use—risks the possible creation of information monopolies that would disserve the public interest.”¹²⁸

Leaving the issue of access to non-protected data to contract law may stifle the reuse of such data for developing new creative works, hinder the ability to learn from that data, and restrict free speech by limiting effective oversight of digital platforms.

Another disadvantage of contract law for regulating access to platforms' publicly available data, is the high level of uncertainty regarding restrictions on access. Various sites may include different restrictions, and courts' construction of these provisions may also vary. The recent decisions in *Bright Data* and *LinkedIn v. hiQ* demonstrate this issue. Following a long-running scraping litigation, the district court in the hiQLabs/LinkedIn dispute concluded that the data analytics hiQ has breached LinkedIn's contract by scraping and using scraped data.¹²⁹ In the lawsuit construing similar contractual

126. *Sega Enterp. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1522–24 (9th Cir. 1992); *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

127. Niva Elkin-Koren, *A2D in Digital Platforms: Bridging the Transatlantic Divide*, VERFBLOG (Feb. 23, 2024), <https://verfassungsblog.de/a2d-for-researchers-in-digital-platforms/#:~:text=Bridging%20the%20Transatlantic%20Divide,these%20platforms%20encounter%20growing%20obstacles.>

128. *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985 (9th Cir. 2019).

129. *hiQ Labs, Inc. v. LinkedIn Corp.*, 639 F. Supp. 3d 994 (N.D. Cal. 2022).

restrictions in Meta's ToS, the court held that there was no breach of contract since there was no evidence that Bright Data had scraped non-publicly available data in violation of the contract.¹³⁰ Such uncertainty regarding the validity of contractual restrictions, their scope, and construction by courts may raise transaction costs involved in determining and acquiring access rights, thereby strengthening barriers to the use of data for further creation.

In another lawsuit against Bright Data, the district court finally addressed the preemption challenge in the context of data scraping.¹³¹ Dismissing X's breach of contract claim against Bright Data, for scraping contrary to the ToS, the court held that: "invoking state contract and tort law, X Corp. would entrench its own private copyright system that rivals, even conflicts with, the actual copyright system enacted by Congress."¹³² The court held that X's ToS that ban scraping conflict with copyright law since they prohibit the scraping of posts, which are not owned by X, but rather owned by its users. An enforceable contractual ban on scraping would enable X Corp., which is a non-exclusive license, to exclude others from reproducing, adapting, distributing, and displaying works that belong to its users, thus conflicting with users' copyrights in the content, and also with the fair use privileges of third parties.¹³³ Moreover, the enforceability of such a contractual ban "would upend the careful balance Congress struck between what copyright owners own and do not own, and what they leave for others to draw on" thus shrinking the public domain.¹³⁴

The court's analysis demonstrates how the focus on copyright policy, proposed by Samuelson, could help address the ban on scraping in platforms' ToS. Platforms' attempt to secure exclusive rights to publicly available data by contractually prohibiting scraping conflict with copyright policy and therefore should be preempted by copyright law.

C. RESTRICTING GENAI TRAINING BY EULA

Another context where contractual provisions related to copyrightable materials are invoked is where right holders rely on their EULA.¹³⁵ Recently,

130. *Meta Platforms, Inc. v. Bright Data Ltd.*, No. 23-cv-00077-EMC, 2024 U.S. Dist. LEXIS 11913 (N.D. Cal. Jan. 23, 2024).

131. *X Corp. v. Bright Data Ltd.*, No. C 23-03698 WHA, 2024 U.S. Dist. LEXIS 84708 (N.D. Cal. May 09, 2024).

132. *Id.* at *20.

133. *Id.* at *23–24.

134. *Id.* at *24.

135. EULAs were used early on by software providers to define the scope of protection for software, at a time when it was still unclear whether software is entitled to any intellectual

such breach of contract claims were raised in several pending class action lawsuits regarding the use of copyrighted materials in training GenAI systems.¹³⁶ In one lawsuit, the plaintiffs argued that Stable Diffusion, Midjourney, and DeviantArt infringed upon their copyrights by using images for training without proper authorization.¹³⁷ The plaintiffs allege that the models not only violated the license agreement but also infringed upon their copyright by copying images without authorization to generate derivative works.¹³⁸ Another lawsuit raised similar claims against OpenAI's flagship application ChatGPT.¹³⁹

One of the most interesting noteworthy cases involving a breach of contract claim based on EULA is *Doe 1 v. GitHub, Inc.*¹⁴⁰ GitHub, a popular collaborative software development tool (acquired by Microsoft), offers public repositories for open source software.¹⁴¹ On November 3, 2022, several unnamed software developers filed a class action lawsuit against GitHub, OpenAI, and Microsoft, concerning Copilot, a code editor extension which generates code suggestions in response to a users' prompt, and Codex, a generative AI model trained on publicly available code, including those in GitHub's repositories.¹⁴² Plaintiffs contended that their Open Source Systems (OSS) stored on GitHub were used to train Copilot and Codex without authorization, and that their source code was subsequently reproduced in Copilot suggestions without proper attribution.¹⁴³ While the court dismissed

property protection. When copyright laws worldwide were expanded to cover computer programs, and in some jurisdictions, software was even granted patent protection, licenses were used for acquiring additional legal protection.

136. *See, e.g., Doe 1 v. GitHub, Inc.*, 672 F. Supp. 3d 837 (N.D. Cal. 2023); Authors Guild v. OpenAI Inc., No. 1:23-cv-08292 (S.D.N.Y. Sept. 19, 2023); Andersen v. Stability AI, Ltd., 700 F. Supp. 3d 853 (N.D. Cal. 2023); Getty Images v. Stability AI, No. 23-CV-00135 (D. Del. 2023); The N.Y. Times Co. v. Microsoft Corp., OpenAI, No. 1:23-cv-11195 (S.D.N.Y. Dec. 27, 2023).

137. *See Andersen*, 700 F. Supp. 3d at *1 (N.D. Cal. Oct. 30, 2023).

138. Specifically, they claimed that the model infringes copyrights because it was (1) trained on copyrighted code without authorization, and (2) generated snippets of that same copyrighted code. *Id.* at 21–24.

139. *See Tremblay v. OpenAI, Inc.*, Nos. 23-cv-03223-AMO, 2024 U.S. Dist. LEXIS 110905, at *1, *11–12 (N.D. Cal. June 24, 2024).

140. *Doe 1 v. GitHub, Inc.*, 672 F. Supp. 3d 837 (N.D. Cal. 2023).

141. According to public reports, it has more than 100 million registered users and hosts over 300 million code repositories. Back in 2018, Microsoft acquired GitHub for a reported \$7.5 billion. GitHub's annual recurring revenue stands at \$1 billion.

142. *See Doe 1 v. GitHub, Inc.*, 672 F. Supp. 3d at 847 (N.D. Cal. 2023).

143. *Id.*

some claims in preliminary proceedings, it allowed the plaintiff's breach of OSS licenses claim to proceed.¹⁴⁴

What makes this legal dispute particularly intriguing is that it concerns OSS licenses. Open source initiatives aim to enhance access to software.¹⁴⁵ Beginning with the General Public License (GPL) introduced by the Free Software Foundation (FSF) in the late 1980s, free software licenses seek to promote four freedoms pertaining to computer programs: the freedom to run the program, to study it, to modify it, and to share or redistribute both the original program and any modified versions.¹⁴⁶ The Open Source Initiative, established in 1998, pursued a more permissible approach, outlining essential criteria that a license must satisfy to qualify as open source, resulting in a plethora of open source licenses.¹⁴⁷

In this lawsuit, the plaintiffs raised claims under both copyright law and California state law,¹⁴⁸ including a breach of contract claim. They alleged that defendants violated the OSS license agreement, which mandates attribution.¹⁴⁹

144. Defendants, GitHub, OpenAI, and Microsoft, argued that (1) the plaintiffs were anonymous, (2) the plaintiffs did not provide specific instances where Copilot reproduced their licensed code, (3) GitHub's Terms of Service (TOS) grants broad rights to use and reproduce code. Moreover, the TOS preempts the breach of license claims. The court allowed the Digital Millennium Copyright Act (DMCA) violation, breach of OSS licenses, unjust enrichment, and unfair competition to proceed. On June 8, 2023, plaintiffs filed an amended complaint. This analysis is focused on plaintiffs' claims of violation of the DMCA and breach of open-source licenses governing their OSS.

145. See Niva Elkin-Koren, *What Contracts Cannot Do: The Limits of Private Ordering in Facilitating a Creative Commons*, 74 *FORDHAM L. REV.* 375, 391–92 (2005).

146. The GPL has a viral effect and applies automatically to any new copy of the software and any derivative program based on the original one. Subsequent creators and users are therefore bounded by the terms of access defined by the license and must strictly apply them to any subsequent work they create using the original free software.

147. See Elkin-Koren, *What Contracts Cannot Do*, *supra* note 145, at 411–13.

148. Several state law claims were dismissed in the preliminary proceedings, including tortious interference in a contractual relationship, fraud, false designation of origin, unjust enrichment, negligence, breach of the GitHub Privacy Policy and Terms of Service, violation of the California Consumer Privacy Act (CCPA) and unfair competition. See *Doe v. GitHub, Inc.*, No. 22-cv-06823-JST, 2024 U.S. Dist. LEXIS 11068 (N.D. Cal. Jan. 3, 2024).

149. Plaintiffs argue that defendants failed to include in the output of the Copilot extensions: (1) attribution to the owner, (2) a copyright notice, and (3) the license terms, contrary to explicit provisions laid out in the OSS licensing terms. *Doe 3 v. GitHub, Inc.*, No. 22-cv-7074-JST, ECF No. 1, 34 n. 4 (N.D. Cal. Nov 03, 2022). For instance, one Plaintiff in this class action (*Doe 1*) alleges that the relevant OSS license agreement (MIT License) requires attribution. Since Copilot allegedly uses the program in the training, and the output includes a verbatim copy of plaintiff's original code, such use constitutes both copyright infringement and a breach of contract. See *Doe v. Github, Inc.*, No. 22-cv-06823-JST, 2024 U.S. Dist. LEXIS 11068, 861 (N.D. Cal. Jan. 3, 2024). This decision, however, does not include any findings on the breach of contract claim since the defendants did not move to dismiss

Allegedly, since Copilot utilized the code in the training, the output may include verbatim copies of plaintiff's original code, resulting in both copyright infringement and a breach of contract.

One approach to rebutting the contractual claims is to establish that GitHub was authorized to use software in its repository based on its ToS, and the license obtained from its users, including the plaintiffs, upon signing for the service.¹⁵⁰ GitHub's ToS grants it the right to “store, archive, parse, and display” copies of code uploaded by users. Furthermore, it is permitted to “parse it into a search index or otherwise analyze it” and publish the results for the use of others.¹⁵¹ Users who opt to make their repositories public “grant each User of GitHub a nonexclusive, worldwide license to use, display, and perform” their content through the GitHub Service and to reproduce the content “solely on GitHub as permitted through GitHub's functionality.”¹⁵² Accordingly, if the use for training the model falls within the scope of the license acquired by GitHub, there is no copyright infringement.

The breach of contract claim, however, also involves a failure to fulfill an affirmative duty stipulated in the contract, to provide attribution in derivative works, arguably, in Copilot/Codex output.

Should courts enforce contractual obligations to provide attribution when software is used during training? Here again, the principles outlined by Samuelson may prove beneficial.

First, EULA, akin to ToS, resembles a boilerplate contract. Consequently, contractual obligations set forth by EULA may affect copyright policy. If rights holders can enforce duties against third parties, extending beyond the bundle of rights defined by copyright, they are effectively able to unilaterally establish a new quasi-copyright regime. When the legal obligations specified by the license become enforceable against all subsequent users, these users are compelled to ascertain which restrictions from the multitude of applicable licenses pertain to their respective use, merely to avoid infringement. This explains why the law may be hesitant to enforce contracts that run with the asset—such as an easement, which bind obligations directly to the asset rather than to the contracting parties—and why claims against third parties are often

Plaintiffs' claims for breach of contract for open-source license violations or breach of contract for selling licensed materials.

150. GitHub requires all of its users to agree to its terms of service. *Doe 3 v. GitHub, Inc.*, No. 22-cv-06823-JST, ECF No. 108, 110 (N.D. Cal. Jan 22, 2024).

151. *Id.*

152. *See Doe 3 v. GitHub, Inc.*, No. 22-cv-7074-JST, ECF No. 1, 27–28 (N.D. Cal. Nov 03, 2022). Pamela Samuelson, *Legal Challenges to Generative AI, Part I*, 66 COMM. OF THE ACM. 20 (July 2023).

dismissed.¹⁵³ These costs of compliance may inadvertently raise barriers to access and use creative works.¹⁵⁴

The second issue is determining whether any contractual provisions may conflict with copyright. As noted by Samuelson and her coauthors, contractual obligations “that require action, such as giving attribution, that copyright law otherwise does not expressly require” may clash with copyright law.¹⁵⁵ An author’s right to receive attribution in copyrighted materials is not enumerated under U.S. copyright law, and no such right applies to authors of computer programs.¹⁵⁶ The plaintiffs in the GitHub/Copilot case are asserting a new legal right, not granted by copyright, and therefore cannot be licensed.

On the other hand, open-source licenses typically mandate attribution. Although there are various types and versions of the OSS licenses, the vast majority clearly require providing attribution when code is used.¹⁵⁷ Indeed, compliance with OSS often comes down to crediting the rights holder and sharing the source code covered by the OSS license.

The breach of contract claim based on the OSS license could be interpreted as a conditional license, where the license requires attribution to the original author, and if the licensee fails to satisfy that condition the use of the code would be unauthorized, and therefore infringing. The Federal Circuit in *Jacobsen v. Katzer* held that an open source software, was subject to a conditional property license.¹⁵⁸ Consequently, the court held that incorporating an open source software into a commercial software, without meeting the conditions (proper attribution, reference to the license and the tracking of changes in the program) was an unlicensed modification and distribution of

153. See generally, Molly Shaffer Van Houweling, *Exhaustion and the Limits of Remote-Control Property*, 93 DENV. L. REV. 951 (2016); Molly Shaffer Van Houweling, *The New Servitudes*, 96 GEO. L.J. 885 (2008); Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773 (2001) (arguing that property rights communicate a standard bundle of rights related to an asset explaining the objection to new forms of rights *in rem* in reducing information costs). Rights of exclusion, which are automatically imposed against third parties, may increase the information cost of potential users who seek to avoid copyright infringement. See Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 482–83 (2004).

154. See generally Elkin-Koren, *What Contracts Cannot Do*, *supra* note 146.

155. See Samuelson, *The Copyright Principles Project*, *supra* note 8.

156. Indeed, Section 1202 of the Digital Millennium Copyright Act (DMCA) provides that Copyright Management Information (CMI) that is conveyed with the work should not be removed or altered by third parties. Recently the court dismissed Plaintiffs’ claims under Section 1202(b)(1) and 1202(b)(3) of the DMCA with leave to amend. *Doe 3 v. GitHub, Inc.*, No. 22-cv-06823-JST, ECF No. 108, 110 (N.D. Cal. Jan 22, 2024).

157. *Doe 3 v. GitHub, Inc.*, No. 22-cv-06823-JST, ECF No. 50, 53 (N.D. Cal. Nov 05, 2023).

158. *Jacobsen v. Katzer*, 535 F.3d 1373 (Fed. Cir. 2008).

copyrighted materials, which constituted copyright infringement.¹⁵⁹ Yet, unlike more typical OSS legal disputes, where rights holders rely on their copyright in the code, it is unclear whether simply using code for training is a copyright infringement.¹⁶⁰

Furthermore, the interpretation of compliance with the attribution requirement when using code to train GenAI models remains unclear. In *Jacobsen v. Katzer*, the Federal Circuit emphasized the importance of the OSS license agreement in fostering collaboration among numerous contributors and offering reassurance to downstream users against liability.¹⁶¹ However, these considerations might lead to a different outcome when publicly available software is utilized for training GenAI systems.

While compliance with open-source attribution requirements is relatively straightforward, in the case of works used in training it is likely to be far more burdensome and ambiguous. Foundation models are trained on vast datasets capable of encompassing substantial portions of society's entire corpus of documented cultural knowledge.¹⁶² This means hundreds of billions of words, or essentially the entire internet.¹⁶³ The extensive datasets upon which foundation models are built enable these models to excel in generalizing from seen to unseen examples.¹⁶⁴ This implies that models effectively deconstruct and reconstruct patterns: they “learn” concepts, principles, and generalities from their training datasets and then apply them to generate entirely new data that are logically, semantically, or phonetically similar (but not identical) to the

159. *Id.*

160. *See infra* notes 161–164 and accompanying text.

161. *Jacobsen v. Katzer*, 535 F.3d 1373 (Fed. Cir. 2008).

162. *See generally* Bommasani et al., *supra* note 67, at 131. For example, Google's T5 and Facebook's LLaMA datasets were trained on content from over 15 million websites. Similarly, OpenAI's GPT-3 features a model size of 175 billion parameters and was trained with 45 terabytes of data. Kevin Schaul, Szu Yu Chen & Nitasha Tiku, *Inside the Secret List of Websites that Make AI Like ChatGPT Sound Smart*, WASH. POST (Apr. 19, 2023), <https://www.washingtonpost.com/technology/interactive/2023/ai-chatbot-learning/>. Similarly, OpenAI's GPT-3 features a model size of 175 billion parameters and was trained with 45 terabytes of data. *See* Ce Zhou, Qian Li, Chen Li, Jun Yu, Yixin Liu, Guangjing Wang, Kai Zhang, Cheng Ji, Qiben Yan, Lifang He, Hao Peng, Jianxin Li, Jia Wu, Ziwei Liu, Pengtao Xie, Caiming Xiong, Jian Pei, Philip S. Yu & Lichao Sun, *A Comprehensive Survey on Pretrained Foundation Models: A History from BERT to ChatGPT*, ARXIV (2023), <https://arxiv.org/pdf/2302.09419.pdf>.

163. Frederik Bussler, *Will the Latest AI Kill Coding?*, MEDIUM (July 21, 2020) <https://towardsdatascience.com/will-gpt-3-kill-coding-630e4518c04d> (last visited Feb. 17, 2024); Alex Hughes, *ChatGPT: Everything You Need to Know About OpenAI's GPT-4 Tool*, SCIENCE FOCUS (Sept. 25, 2023), <https://www.sciencefocus.com/future-technology/gpt-3> (last visited Dec. 31, 2023).

164. Generalization refers to the ability to adapt to unseen examples drawn from seen data distribution.

data in their training datasets.¹⁶⁵ The contribution of each particular piece of work to this process of generalization is often untraceable. Consequently, it might not be feasible to impose an obligation to provide attribution that would be enforceable against all downstream users of such models.

Finally, to determine whether contractual restrictions should be overridden by copyright, it is necessary to ascertain whether enforcing them would conflict with copyright policy. Granting quasi-copyright protection to the attribution requirement, which extends beyond the exclusive rights granted under copyright law, may clash with copyright objectives. Such an approach is likely to create a contractual thicket with conflicting provisions, resulting in unnecessary barriers to potential innovative uses of code in the GenAI ecosystem. This would undermine the balance struck by copyright law between providing incentives to authors and facilitating access to works—a balance essential for promoting progress. Enforcing duties to provide attribution in OSS against the use in GenAI training, may therefore impede the advancement of functional learning from existing code, conflicting not only with the objectives of copyright law but also with the purpose of the open-source movement.

IV. CONCLUSIONS

Despite its rapid and widespread penetration into various aspects of our lives, GenAI is still in its infancy development stage, making it difficult to predict the full scope of social consequences it will carry.¹⁶⁶ Consequently, there is relatively little GenAI related legislation, and regulatory expertise is still developing. This may reinforce the emergence of private ordering solutions to address some of the contested issues as described in this paper. However, it does not necessarily mean that these private ordering arrangements will be more efficient or considerate of the implications for social welfare.

Contract law may facilitate experimentation with different allocations and contribute to the development of new types of transactions between stakeholders, thus supporting innovative business models. However, boilerplate contracts involving creative works should be carefully examined through the lens of copyright policy. Prohibitions on scraping in the ToS of digital platforms or new obligations created by contracts, which are not otherwise mandated by copyright law, should be examined in light of copyright principles. Unlike contract law, copyright law embodies important checks and

165. See, e.g., Andrew Brock, Jeff Donahue & Karen Simonyan, *Large Scale GAN Training for High Fidelity Natural Image Synthesis*, ARXIV (2018), <https://arxiv.org/abs/1809.11096>.

166. See generally, DAVID COLLINGRIDGE, *THE SOCIAL CONTROL OF TECHNOLOGY* (1980).

balances enforced by courts. Courts would need to determine whether scraping bans involve the legitimate reproduction of unprotected facts or are otherwise permissible under the fair use doctrine.¹⁶⁷ Similarly, courts could evaluate how new obligations created by boilerplate contracts impact the objectives of copyright law. Even if such provisions are not entirely preempted, courts could interpret those that conflict with copyright policy more narrowly.¹⁶⁸

Samuelson was aware of the complexity raised by the copyright/contract interface and therefore opposed a categorical ban that would render unenforceable any contract terms contradicting copyright.¹⁶⁹ Instead, she advocated for incremental development of the law, whereby standards for enforceability of such restrictive terms would evolve through court rulings.¹⁷⁰ This incremental approach is useful for facilitating trial and error not only in developing legal norms but also in shaping new emerging technologies and infrastructures.

167. The Copyright Act § 107 (“[T]he fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright.”).

168. See Elkin-Koren, et al., *supra* note 86.

169. Samuelson, *Possible Futures of Fair Use Symposium*, *supra* note 7, at 859–60.

170. *Id.*

RELATIONAL INNOVATION AND THE PUBLIC BENEFITS OF COPYING

Margaret Chon[†]

As members of groups, our creative behavior and evaluations of others' innovations reflect a desire to extend the values of those groups and to challenge the values of outsiders. To be celebrated rather than vilified, innovators need to know the norms they are departing from. Eventually they also need an audience willing to embrace the new ways of seeing or behaving made possible by their work. To meet with success, therefore, creative endeavors must transform communities. These newly formed audiences then drive the cultural change that novel endeavors spark.¹

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I. INTRODUCTION

Pam Samuelson and I first met just before she joined the Berkeley Law faculty in 1996. By then, she had established herself as one of the pioneering scholars exploring the interface of computer software and intellectual property

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† Donald and Lynda Horowitz Endowed Chair for the Pursuit of Justice, Seattle University School of Law. Many thanks to Molly Van Houweling for her invitation to participate in this symposium, to Eric Von Hippel and Daniel Evans for their encouragement of my ideas, and to my research assistant Ania Smeraldo (class of 2025) for her support. All errors are mine. This essay is dedicated, of course, to the inimitable Pam Samuelson.

1. S. Alexander Haslam, Inmaculada Adarves-Yorno & Tom Postmes, *Creativity is Collective*, 23 SCI. AMERICAN (SPECIAL EDITION) NO. 5S, 26–31 (Jan 1, 2015); cf. WILLIAM PATRY, MORAL PANICS AND THE COPYRIGHT WARS 177 (2009) (“By definition, innovation requires creative and significant change from the past. Creativity involves a recasting of prior relationships and prior strategies: creativity is inconsistent with embalming existing relationships and existing business models. Creativity is change, not the status quo. Creativity is bottom-up, not top-down.”).

(IP) and had already published a dozen articles on that topic.² In contrast, I had just published my first full-length law review article, which addressed the then-recent *Computer Associates v. Altai* decision.³ Because of her welcoming and low-key manner, I had no idea that I should have been completely intimidated by her! And over the years, although I am fairly nonchalant about keeping in touch with people, Pam has consistently reached out just to catch up, such as when she visits Seattle annually to meet recipients of the Dovie Samuelson scholarship—a scholarship Pam and her husband Bob established in honor of Pam’s grandmother that is awarded to deserving undergraduate female science and engineering students at the University of Washington.⁴ Most recently, Pam sent me a brief message that nudged me to watch the movie “Past Lives,”⁵ a gorgeous film about being caught between two cultures—specifically Korean and American.⁶ Pam’s recent message to me was typical of her support of others in our invisible college of IP scholars. In turn, we acknowledge and articulate our huge debt of gratitude to Pam, not only for her path-breaking work and scholarly passion but also her consistent *compassion* towards others, which has helped to create and maintain our eclectic but cohesive community.

This mix of passion and compassion also inflects Pam’s approach to IP law. Her influential corpus largely explores the contested boundaries of copyright protection, frequently focusing on what is not or should not be protected. This emphasis should not be misinterpreted as antipathy towards copyright. Rather, her work is laser-focused on optimizing copyright’s public policy goals, in balance with other important social policy goals, including

2. It is beyond the scope of this essay to address software copyright, which is another major focus of Pam’s scholarship. *See, e.g.*, Pamela Samuelson, Randall Davis, Mitchell D. Kapor & J.H. Reichman, *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2309 (1994); Pamela Samuelson, *Some New Kinds of Authorship Made Possible by Computers and Some Intellectual Property Questions They Raise*, 53 U. PITT. L. REV. 685 (1992); Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185 (1986).

3. *Computer Associates Int’l, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992).

4. Bob Roseth, *New Scholarship Provides Full Funding for Women Studying Science or Technology*, UW NEWS (June 16, 2000), <https://www.washington.edu/news/2000/06/16/new-scholarship-provides-full-funding-for-women-studying-science-or-technology/>.

5. Justin Chang, *Across Continents and Decades, ‘Past Lives’ is the Most Affecting Love Story in Ages*, NPR: MOVIE REVIEWS (June 9, 2023), <https://www.npr.org/2023/06/09/1180748796/past-lives-review-greta-lee-teo-yoo>.

6. As mentioned by several people at the symposium conference who (like me) come from non-dominant backgrounds, whether by geography or race or otherwise, it is rare yet so important to see oneself represented and to feel seen by others. Pam implicitly understood this when she sent me this message out of the blue.

human self-actualization achieved in part by interplay with pre-existing works. As she notes, even the oldest multilateral copyright treaty, the venerable 1886 Berne Convention for the Protection of Literary and Artistic Works, “recognizes the importance of promoting ongoing authorship by mandating that member states must adopt a right of fair quotation in their national copyright laws.”⁷

Pam’s signature style is to taxonomize a daunting body of caselaw in encyclopedic detail. Her goal is to discern and deduce broader patterns most relevant to the sometimes aligned and sometimes competing policy goals revolving around copyright. She has applied this method not only to copyright’s exceptions and limitations,⁸ but also to the continuum of categories that comprise copyright’s public domain,⁹ and most recently to the impact of artificial intelligence on copyright law.¹⁰

Inspired by and drawing upon Pam’s methods and ideas, especially a relatively recent article, *Freedom to Tinker*,¹¹ this Essay introduces the concept

7. Pamela Samuelson, *Justifications for Copyright Limitations & Exceptions*, COPYRIGHT IN AN AGE OF LIMITATIONS AND EXCEPTIONS 12, 25 (Ruth L. Okediji ed., 2017) (citing to Berne Convention for the Protection of Literary and Artistic Works, art. 10(1), (adopted Sept. 9, 1886), S. TREATY DOC. No. 99-27, 1161 U.N.T.S. 3 (amended Sept. 28, 1979); see also TANYA APLIN & LIONEL BENTLY, GLOBAL MANDATORY FAIR USE: THE NATURE AND SCOPE OF THE RIGHT TO QUOTE COPYRIGHT WORKS (2020).

8. Samuelson, *Justifications*, *supra* note 7 at 15 (these include “protecting authorial interests and promoting ongoing authorship, . . . user interests, . . . public interests, including those that promote public access to information, activities of nonprofit institutions, and functions of public institutions[.] . . . economic issues, such as fostering competition and innovation, exempting incidental uses that lack economic significance, and addressing market failures[.] political expedient ends[.] and the need for flexibility and adaptability over time”).

9. Pamela Samuelson, *Enriching Discourse on Public Domains*, 55 DUKE L.J., 783 (2006); Pamela Samuelson, *Mapping the Public Domain*, 66 LAW & CONTEMP. PROBS. 147, 151 (2003).

10. Pamela Samuelson, *Fair Use Defenses in Disruptive Technology Cases*, 71 UCLA L. REV. (forthcoming 2024).

11. Pamela Samuelson, *Freedom to Tinker*, THEORETICAL INQUIRIES IN L. (Jan. 1, 2016), at 565–66 (“I conceptualize freedom to tinker for the purposes of this Article as having several dimensions: it entails, first, an intellectual freedom to imagine what one might do with existing artifacts to learn more about them; second, an intellectual privacy and autonomy interest in investigating and exploring those artifacts in which one has a property or other legitimate interest, especially when the investigation is done in one’s own premises; third, a right to develop one’s skills by testing, analyzing, and interacting with existing artifacts; fourth, a liberty interest to learn from tinkering and to become a more actualized person as a consequence; fifth, a right to distill what one has learned from tinkering and disseminate the results of one’s research to others; sixth, a right to repair that which is broken and make other uses of artifacts as long as one is not harming the interests of others; seventh, a right to act upon and create new artifacts based on what one has learned through tinkering; and eighth, a *right to share with*

of *relational innovation*—that is, freedom to learn and to exchange knowledge within a specific innovation community. This term describes a significant part of the innovation ecosystem partially governed by copyright. Thus, it should be factored into any balance between copyright’s exclusive rights and access. Yet, as a public policy goal, relational innovation is often under-recognized by lawmakers and scholars interpreting the 1976 Copyright Act¹²—even by those who tend to identify as pro-access.

This Essay first presents two examples of communities in which relational innovation plays an undeniable and immediately discernible role. Building upon the work of Pam and other IP scholars, the Essay then explores the importance of learning as a public policy objective of copyright law. Following this exploration, it introduces and justifies the concept of relational innovation as an expression of important but partially concealed aspects of “the public benefits the copying will likely produce” articulated by the U.S. Supreme Court in its recent *Google LLC v. Oracle America, Inc.* decision (hereinafter *Google*).¹³ The Essay concludes by speculating on where relational innovation might fit into copyright’s doctrinal framework, both domestically and globally. It suggests that courts carefully consider the concept of “public benefits”—of which relational innovation is just one albeit significant type—throughout the analysis of all four fair use factors.¹⁴

Grounded theoretically in various scientific insights developed in the fifty years since the 1976 Copyright Act went into effect,¹⁵ relational innovation challenges the *homo economicus* template that has largely shaped judicial and other interpretations of that Act.

II. TWO EXAMPLES OF RELATIONAL INNOVATION

Consider this: Our legal profession generates a huge number of works protected by copyright. We use written words, which are the quintessential

others any new creations that are the fruits of one’s tinkering and build a community around this sharing.” (emphasis added)).

12. 17 U.S.C. §§ 101–810 (2022).

13. *Google LLC v. Oracle America, Inc.*, 593 U.S. 1 (2021). As Michael Carroll and Peter Jaszi have noted: “It remains to be seen what courts will make of this invitation to broaden the inquiry by taking public value added into account along with private monetary losses. But it is at least possible that the language in question will open up new and promising directions in fair use analysis.” Michael W. Carroll & Peter A. Jaszi, *The Triumph of Three Big Ideas in Fair Use Jurisprudence*, 99 TUL. L. REV. (Apr. 24, 2024).

14. 17 U.S.C. § 107 (2022).

15. See generally OXFORD HANDBOOK OF INTELL. PROP. RSCH.: LENSES, METHODS, & PERSPS. (Irene Calboli & Maria Lillà Montagnani eds., 2021).

mode of creativity regulated by copyright law. And much of our resultant work-product is both fixed and original, albeit perhaps more fact-bound than other types of creative works. Yet, putting aside the assertion of copyright in state law reporters, copyright enforcement by and large has not taken hold in our space.

Indeed, in the first copyright case to reach the Supreme Court, *Wheaton v. Peters*,¹⁶ the Court soundly rejected copyright protection of its own reporter's publications. More recently, in *Georgia v. Public.Resource.Org*,¹⁷ the Court reiterated the existence of a particular public interest attached to legal works—an access value that overrides copyright's exclusive rights. And despite the general lack of IP enforcement within the legal profession, we have managed to generate many new forms of expression that have led to creative legal arguments, concepts, doctrine, and theory.

Lawyers comprise a specific community of innovators. And we are also Exhibit A for the inadequacy of incentive theory¹⁸ to capture what is often at the core of innovation. Our community literally could not function if we were always looking over our shoulders (instead of standing on each other's shoulders¹⁹) to see whether what we just wrote is substantially similar to what someone else wrote or if we had to worry about paying statutory damages for what was copied from another. We even encourage rampant copying because we need to communicate with each other (and with non-lawyers) by using a shared knowledge base for the purpose of furthering our clients' interests, and without detriment to the development of law overall. One might even argue that this freedom to co-create the law with each other is an integral part of the common law method.²⁰

16. *Wheaton v. Peters*, 33 U.S. 591 (1834); accord *Matthew Bender & Co. v. W. Publ'g Co.*, 158 F.3d 674, 677 (2d Cir. 1998) (finding no copyright protection in various aspects of West's federal reporters).

17. *Georgia v. Public.Resource.Org, Inc.*, 140 S. Ct. 1498 (2020).

18. Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. L. REV. 623, 624 (2012) ("The whole idea of copyright and patent law is that people won't create or invent things without incentives. If people can just swoop in and make copies, the reasoning goes, these necessary incentives will be lacking. This is the classic economic argument for intellectual property law."); see also Glynn S. Lunney, Jr., *Reexamining Copyright's Incentives-Access Paradigm*, 49 VAND. L. REV. 483, 492–98 (1996).

19. ROBERT K. MERTON, ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT (1965).

20. Kathryn Boling, What is 'the Rule'? Quotation Marks and the Role of Courts and Lawyers as Performers of the Common Law (unpublished manuscript) (on file with author) (arguing against the necessity of quotation marks for widely received and accepted legal rules).

As an innovation community, we have the luxury of caring less about copyright's statutory limitation of fair use,²¹ because tolerated sampling is an essential characteristic of what we do every day. To use Pam's terminology (in turn borrowed from Edward Felten),²² we have almost complete freedom to tinker with each other's works. Equally important, however, is that tinkering is an integral part of our relationships with each other. It is an exemplar of relational innovation, which stems from our needs both to belong to a community and to understand (as well as to challenge) others in this community via shared social meanings—which are fundamental human needs, as will be developed later in this essay.²³

Of course, our specific tribe of lawyers may be one that can function on business models that do not depend on copyright.²⁴ Nonetheless, we can partially extrapolate our own experiences as members of a group in which copyright is rarely (if ever) enforced against each other to other creative communities, such as the software developers²⁵ addressed in *Google*.

The *Google* majority opinion's analysis of fair use reflects the insight that many innovation communities would not function if copyright was enforced anytime an arguably protectible work is involved. For example, the fourth fair use factor is clearly very market oriented; it focuses on "the effect of the use

21. See 17 U.S.C. § 107.

22. Samuelson, *Freedom to Tinker*, *supra* note 11, at 565 (Computer scientist Edward Felten has articulated well why freedom to tinker matters to scientific researchers, defining the term as "your freedom to understand, discuss, repair, and modify the technological devices you own.") (citing Edward Felten, *The New Freedom to Tinker Movement*, FREEDOM TO TINKER (Mar. 21, 2013), <https://freedom-to-tinker.com/blog/felten/the-new-freedom-to-tinker-movement/>).

23. SUSAN T. FISKE, SOCIAL BEINGS: CORE MOTIVES IN SOCIAL PSYCHOLOGY 14–15 (4th ed. 2003); see also S. Alexander Haslam, Inmaculada Adarves-Yorno, Tom Postmes & Lise Jans, *The Collective Origins of Valued Originality: A Social Identity Approach to Creativity*, 17 PERSONALITY & SOC. PSYCH. REV. 384 (2013) ("Yet one could argue that there is a more fundamental importance to creativity, stemming from its functions for humans as a species. For humans possess specific abilities that separate them from other animals in nonphysical ways. In particular, over the course of their evolution, humans have evolved a capacity for culture. As a result, human societies are defined by embedded sets of shared norms and values that serve to create shared meaning for their members . . .").

24. Hal R. Varian, *Copying and Copyright*, 19 J. ECON. PERSPS. 121, 134–36 (2005) (outlining various business models in a world without copyright).

25. According to the amicus brief filed by the Developers Alliance, the "current case has implications that go far beyond the two litigants involved. In 2017 there were an estimated three million software developers in the United States, and their collective work added an estimated \$565 billion to the country's gross domestic product." Brief for Developers Alliance as Amicus Curiae Supporting Petitioner at 2, *Google LLC v. Oracle America, Inc.*, 593 U.S. 1 (2021) (No. 18-956).

upon the potential market for or value of the copyrighted work.”²⁶ Nonetheless, the Court held that the use of the Java application programming interfaces (APIs) at issue was justified because the APIs were not just assets for Oracle to deploy as sources of licensing revenue, but also served as a shared software environment familiar to many developers who were creating large amounts of third party applications precisely because of this familiarity.

As Google’s brief pointed out, “independent developers using Java have created *millions* of Android applications used by more than a *billion* people.”²⁷ The source of Java’s value lay, according to the majority, in the eventual widespread adoption of Java and its APIs by this larger innovation community, which outweighed the need for financial incentives to Oracle (or more accurately its predecessor Sun) for coming up with Java in the first instance. The Court captures this concern several times in the opinion.²⁸ For example, Justice Breyer’s majority opinion stated that:

*[W]e must take into account the public benefits the copying will likely produce. Are those benefits, for example, related to copyright’s concern for the creative production of new expression? Are they comparatively important, or unimportant, when compared with dollar amounts likely lost (taking into account as well the nature of the source of the loss)?*²⁹

Per incentive theory, the primary purpose of copyright’s exclusive rights is to prevent the kinds of economic free-riding to which the Court alluded here (and to which the dissent vociferously objected³⁰). Framed solely within the standard incentive justification for copyright, the Court’s reference to a

26. 17 U.S.C. § 107(4) (In determining whether a use made of a work in any particular case is a fair use, one of the factors to be considered is “the effect of the use upon the potential market for or value of the copyrighted work.”).

27. Brief of Petitioner at 9, *Google LLC v. Oracle America, Inc.*, 593 U.S. 1 (2021) (No. 18-956).

28. The majority referred to this concern not only in the context of the fourth fair use factor, but throughout its analysis of all four fair use factors. This is discussed more in Part V of this essay.

29. *Google*, 593 U.S. at 35 (citing to *MCA, Inc. v. Wilson*, 677 F.2d 180, 183 (2d Cir. 1981) (calling for a balancing of public benefits and losses to copyright owner under this factor) (emphasis added).

30. “By copying Oracle’s code to develop and release Android, Google ruined Oracle’s potential market in at least two ways. First, Google eliminated the reason manufacturers were willing to pay to install the Java platform . . . Second, Google interfered with opportunities for Oracle to license the Java platform to developers of smartphone operating systems.” *Id.* at 53–54 (Thomas, J., joined by Alito, J., dissenting).

mandatory analysis of the “public benefits the copying will likely produce”³¹ is awkward, if not startling. A more capacious economic analysis, however, could view this as a win for dynamic efficiency over static inefficiency because the benefit of encouraging overall innovation over the long term often outweighs the short-term reward via exclusive rights to the rightsholder for having come up with the innovation in question.³²

Indeed, the Court relied heavily on a different economic theory—network effects—which posits that when an innovation reaches the point of becoming an innovation community’s standard, then the community’s interest in access to this innovation prevails over the individual interest in enforcement of copyright.³³ As the Court stated, with a strong nod to the early computer software decision, *Lotus v. Borland*:³⁴

When a new interface, like an API or a spreadsheet program, first comes on the market, it may attract new users because of its expressive qualities, such as a better visual screen or because of its superior functionality. As time passes, however, it may be valuable for a different reason, namely, because users, including programmers, are just used to it. They have already learned how to work with it.³⁵

31. In a forthcoming article, Amanda Levendowski surveys 38 fair use cases other than Google that have explicitly invoked the term “public benefits” and concludes that this concept has been an underrecognized and undertheorized subfactor in the fair use analysis. Amanda Levendowski, *Fairer Public Benefit*, CARDOZO L. REV. (forthcoming 2025).

32. Joseph E. Stiglitz, *Knowledge as a Global Public Good*, GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY 308, 311 (Inge Kaul, Isabelle Grunberg & Marc Stern eds., 1999) (“The gain in *dynamic* efficiency from the greater innovative activity [from intellectual property protection] is intended to balance out the losses from *static inefficiency* from the underutilization of the knowledge or from the underproduction of the good protected by the [intellectual property right].”).

33. Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479 (1998).

34. *Lotus Dev. Corp. v. Borland Int’l, Inc.*, 49 F.3d 807 (1st Cir. 1995).

35. *Google*, 593 U.S. at 38–39 (citing *Lotus Dev. Corp.*, 49 F.3d at 821 (Boudin, J., concurring)); see also *Google*, 593 U.S. at 37 (“[T]he jury also heard evidence that Sun foresaw a benefit from the broader use of the Java programming language in a new platform like Android, as it would further expand the network of Java-trained programmers.”). As Google pointed out in its brief, “[l]ike Sun before it, Oracle touted Java as a ‘free and open’ programming language. Millions of developers collectively invested incalculable effort in learning how to use thousands of non-copyrighted calls to create applications. Now Oracle says that it has the power to effectively lock those developers into programming for only its platform.” Brief of Petitioner at 28, *Google LLC v. Oracle America, Inc.*, 593 U.S. 1 (No. 18-956) (quoting Pet. App. 5a, 9a).

Numerous intellectual property scholars have argued that incentive theory only measures one very narrow dimension of what makes people innovate and may not be applicable at all in many cases.³⁶ And while the concept of network effects does explain some of the social dimensions of innovation, it is tightly linked to the standardization and interoperability concerns that are arguably more salient for works such as software than for other types of copyrightable works. This continuing over-dependence on narrow economic frames is peculiar in light of the wealth of insights about the nature of innovation that legal and other scholars have documented in the half century since the 1976 Copyright Act was enacted. It is to some of these insights we now turn.

III. COPYRIGHT LAW'S LEARNING OBJECTIVE

In *Unbundling Fair Uses*,³⁷ published many years prior to the Supreme Court's decision in *Google*, Pam made several important observations about the fair use doctrine. Organizing then-extant fair use decisions into what she called "policy-relevant clusters," she claimed that "policies [that] underlie modern fair use law include promoting freedom of speech and of expression, the ongoing progress of authorship, *learning*, access to information, truth-telling or truth-seeking, competition, technological innovation, and privacy and autonomy interests of users."³⁸ She argued that both Congress and courts have recognized that "research, scholarship, and teaching uses are often undertaken to promote learning by persons who are neither scholars nor would-be authors."³⁹

Unlike "teaching . . . , scholarship, or research," the promotion of learning *per se* is not explicitly listed in the statute as one of the six categories of potentially permissible downstream uses.⁴⁰ However, learning is surely implicit in those other categories, which center around the transmission of knowledge from and to others within specific communities. And it is arguably a relevant

36. It is beyond the scope of this essay to explore these critiques fully. However, *see, e.g.*, DAVID L. LANGE & H. JEFFERSON POWELL, *NO LAW: INTELLECTUAL PROPERTY IN THE IMAGE OF AN ABSOLUTE FIRST AMENDMENT* 68 (2009) ("[T]he assertion that exclusivity equals productivity is essentially thin or testimonial or theoretical, or some combination of the three, and 'believe' is the operative word. We do not know in absolute fact whether intellectual property regimes significantly encourage intellectual productivity, much less whether they are 'necessary.'") (citing Mark Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 139 (2000) ("The problem is that we don't have a clue how innovation works.")).

37. Pamela Samuelson, *Unbundling Fair Uses*, 77 *FORDHAM L. REV.* 2537 (2009).

38. *Id.* at 2537 (emphasis added).

39. *Id.* at 2545.

40. 17 U.S.C. § 107.

category in its own right in the context of U.S. copyright law’s constitutional purpose of “promotion of Progress of Science.”⁴¹ This interpretation of copyright’s fundamental purpose accords with its fore-runner, the British statute often referred to as the Statute of Anne, but more precisely entitled “An Act for the Encouragement of Learning . . .”⁴² It is the general public for whom “Learning” is encouraged through the provision of copyright.⁴³

Indeed, Pam argued that personal use should be considered as a type of use that could be recognized beyond the six statutorily recognized uses⁴⁴ and described how personal use (and its corollary personal learning) is facilitated by the proliferation of technologies that affords greater availability by ordinary users to previously inaccessible information and knowledge.⁴⁵ Through digital networked technologies, this expansion of access to knowledge has amplified the magnitude of personal use (and concomitant personal learning) relative to copyright and its constitutional policy goals.

Other areas of IP, including trade secret law, also interface with personal use and learning. Sharon Sandeen, for example, advocates for an “employee’s right to learn [as] a matter of human dignity, human development, and human rights because it respects how human brains collect, store, and process information. It recognizes that it is not possible for humans to excise the information that they perceive, process, and store in their brains and that society benefits greatly from their collective cognitive capital.”⁴⁶ Employees’ personal uses thus “[t]ypically, [] include[] skills and knowledge . . . learned throughout their life and while on the job. It can include what is known as tacit knowledge and is likely to be a part of an employee’s memory.”⁴⁷

41. U.S. CONST. art. I, § 8, cl. 8.

42. Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, During the Times therein mentioned, 1710, 8 Anne, c. 19 (Gr. Brit.). The first US Copyright Act of 1790 was similarly titled “An Act for the encouragement of learning, by securing the copies of maps, Charts, and books, to the authors and proprietors of such copies, during the times therein mentioned.”, <https://www.copyright.gov/about/1790-copyright-act.html>.

43. Diane Leenheer Zimmerman, *The Statute of Anne and its Progeny: Variations Without a Theme*, 47 HOUS. L. REV. 965 (2010).

44. Samuelson, *Unbundling Fair Uses*, *supra* note 37, at 2587 (She terms this “Foreseeable Uses of Copyrighted Works Beyond the Six Statutorily Favored Purposes.”).

45. The Supreme Court first encountered the power of personal uses in *SONY v. Universal City Studios*, 464 U.S. 417 (1984).

46. Sharon K. Sandeen, *The Employee's Right to Learn* (June 2024) (“From a societal perspective, the employee’s right to learn recognizes the important contributions that employees make toward economic growth as idea generators, innovators, and entrepreneurs and the benefits to be derived from their ‘collective cognitive capital.’”).

47. *Id.*

One can extrapolate from employees to others who desire to satisfy their curiosity of ‘how things work’ such as the third-party developers who figured so prominently in *Google*. These software creators build upon their own personal knowledge base, including Java’s APIs, so that they may go on to be creators in their own right, by combining their current knowledge with their reimplementations efforts. Their personal uses for purposes of personal learning are not necessarily tied to teaching, scholarship, or research within formal educational settings, which (as noted earlier) are the explicit statutory categories associated with learning in the fair use doctrinal universe. Importantly, however, such learning can include knowledge gained from reverse engineering, a doctrine recognized in both copyright⁴⁸ and trade secret law.⁴⁹ And it can include knowledge gained from simply tinkering with publicly available sources, including non-secret sources placed in the open market.⁵⁰

How does a recognition of personal learning as a type of fair use then connect to a larger community of innovation? Another foundational copyright concept—the public domain⁵¹—may help to clarify this relationship. In addition to taxonomizing fair use, Pam has also methodically categorized how various concepts of the public domain overlap with copyright goals and policies.⁵² Many of these different conceptual approaches to the public domain

48. *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992). Pam recognized this kinship in *Freedom to Tinker*, *supra* note 11, at 599.

49. Sandeen, *supra* note 46 (“Thus, when trade secret doctrine is properly applied, employees have the right to learn from, retain, and use information that: is generally known among the public; is generally known within an industry or field of endeavor; could be easily gleaned from publicly available sources, including by reverse engineering available products”); *see also* ORLY LOBEL, TALENT WANTS TO BE FREE: WHY WE SHOULD LEARN TO LOVE LEAKS, RAIDS, AND FREE RIDING (2013); *cf.* CATHERINE L. FISK, WORKING KNOWLEDGE: EMPLOYEE INNOVATION AND THE RISE OF CORPORATE INTELLECTUAL PROPERTY, 1800–1930 (2009).

50. Sandeen, *supra* note 46 (“[E]mployees have the right to learn from, retain, and use information that . . . does not enjoy economic value due to its secrecy; or was not the subject of reasonable efforts to maintain its secrecy. Importantly, all these limitations on protectable information apply even if the source of the information was the employer, but employees also have the right to learn from other non-trade secret information.”).

51. The public domain is sometimes referred to interchangeably with or metaphorically as “the commons.” *See, e.g.*, JAMES BOYLE, THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND (2010). However, the term “commons” can also have more specific meanings, based upon Elinor Ostrom’s work on commons governance. *See, e.g.*, Michael J. Madison, Brett M. Frischmann & Katherine J. Strandburg, *Constructing Commons in the Cultural Environment*, 95 CORNELL L. REV. 657, 665 (2010); *cf.* Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986).

52. Samuelson, *Enriching Discourse on Public Domains*, *supra* note 9. This comprehensive taxonomy builds upon and categorizes prior work by many other pioneering copyright

provide signposts towards not only personal use, but also the collective creativity resulting from a community of personal users.

To focus here on just a few scholars in this area, Michael Birnhack has emphasized the critical role of the public domain in fostering “personal self-development, learning, experiencing, imagining, speaking with others, creating new works for the benefit of ourselves and wider circles, starting from the immediate interlocutor and up to the entire community.”⁵³ Similarly, Julie Cohen has urged “more careful attention to creativity as a social phenomenon manifested through creative practice” and suggested that the public domain “is not a discrete preserve, but rather a distributed property of social space.”⁵⁴ David Lange (an early mentor of Pam’s and one of the first scholars to theorize about the public domain) has visualized a “dynamic and robust” relationship of the individual creator to the whole, one in which courts would recognize the “affirmative right of authors to imagine and bring into being new works, even if they thereby incorporate parts of existing creations.”⁵⁵ And Yochai Benkler has championed what Pam characterizes as an informational freedom approach to the public domain.⁵⁶ Exercised by individuals upon digital networked technologies, this freedom allows spatially and geographically distributed creators to engage in collective creativity.

Each of these insights about the public domain brings to mind how both members of the legal profession and software developers⁵⁷ create meaning with each other. And all of these nuances on the public domain recognize and

scholars. *See, e.g.*, Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965 (1990); David Lange, *Recognizing the Public Domain*, 44 LAW & CONTEMP. PROBS. 147 (1981).

53. Samuelson, *Enriching Discourse on Public Domains*, *supra* note 9, at 805 (quoting Michael Birnhack, *More or Better? Shaping the Public Domain*, THE PUBLIC DOMAIN OF INFORMATION 59–86 (P. Bernt Hugenholtz & Lucie Guibault eds., 2005)).

54. *Id.* at 804 (quoting Julie E. Cohen, *Copyright, Commodification, and Culture: Locating the Public Domain*, THE PUBLIC DOMAIN OF INFORMATION 121–66 (P. Bernt Hugenholtz & Lucie Guibault eds., 2006)).

55. *Id.* (quoting David Lange, *Reimagining the Public Domain*, 66 LAW & CONTEMP. PROBS. 463 (2003)).

56. *Id.* at 121 (quoting Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354, 361–62 (1999) and citing Robert Merges, *A New Dynamism in the Public Domain*, 71 U. CHI. L. REV. 183, 184 (2004)); *see also* YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006).

57. Indeed, according to the Developers Alliance amicus brief in support of Google, “[s]oftware interfaces promote innovation by breaking complex software systems into large numbers of component parts that can be improved in parallel. Rather than a single author capable of limited creative iterations, software interfaces allow a multitude of authors to work simultaneously.” Brief for Developers Alliance, Google, *supra* note 25, at 16.

rely upon the social as well as individual aspects of creative activity. Fair use, which deems what would be otherwise unauthorized use to be non-infringing use, is a major means of moving protectible information into the category of unprotectible. It assigns that particular use (which would otherwise be infringing) to the public domain if, as Pam succinctly states, the public domain “is best understood as freedom from IP constraints.”⁵⁸ The overall result is to construct liability-free spaces of relational innovation, in which the individual has freedom to learn and to connect readily to others within a collective creative community.⁵⁹

IV. REVEALING RELATIONAL INNOVATION

These more capacious accounts of the roles of both fair use and the public domain in effecting copyright’s public policy goals reveal what is missing from *Google’s* stated justifications for the “public benefits the copying will likely produce.” Current judicial analysis of fair use heavily depends on some version of market theory. It assumes that copyright primarily exists to enable its individual rightsholders to—in popular parlance—monetize content. This judicial over-emphasis falls far short of addressing how best to promote innovation.⁶⁰ Because of this unduly narrow focus, the “public benefits” highlighted by the Court are at risk of being underestimated, undervalued, or even illegible. As Julie Cohen has aptly observed, “the distinction is between a social theory of creativity that embraces an eclectic range of methods, including economic methods, and an economic model of creativity that has room only for its own methods.”⁶¹

58. Samuelson, *Freedom to Tinker*, *supra* note 11. As Julie Cohen has observed, “the term ‘public domain’ functions metaphorically to describe the geographic and practical accessibility of the cultural commons.” JULIE E. COHEN, *CONFIGURING THE NETWORKED SELF: LAW, CODE, AND THE PLAY OF EVERYDAY PRACTICE* (2012)..

59. Samuelson, *Freedom to Tinker*, *supra* note 11. This discussion of the social functions of the public domain is reminiscent of Carys Craig’s feminist/dialogic approach (which Craig refers to as relational theory) to copyright. While Craig’s work is not focused on the public domain *per se*, relational theory involves situated discourse in which the context for a writer’s utterance shapes the sign’s meaning, which in turn is constantly renegotiated with others in relation to the self. CARYS CRAIG, *COPYRIGHT, COMMUNICATION AND CULTURE: TOWARDS A RELATIONAL THEORY OF COPYRIGHT LAW* (2011).

60. COHEN, *supra* note 58.

61. *Id.* And as she has documented extensively, current copyright law lacks a descriptively accurate theory of copyright-related creativity.

Strong versions of incentive theory⁶² miss many pre-market, post-market, and non-market activities that are essential to innovation, such as personal learning and personal use.⁶³ Furthermore, these versions view a community's innovation activities and motivations as an aggregation of individual atomized choices. Thus, they miss the key characteristic of innovation as emanating more organically from social relations within these communities (not to mention the specific cultures, groups, and societies that co-create upon a substrate of common understandings and shared meanings). As Stephanie Plamondon Bair and Laura Pedraza-Fariña recently observed, “[f]rom a sociological perspective, a key defining characteristic of . . . inventor[s] or artist[s] is [their] embeddedness in a community or communities of peer inventors or artists.”⁶⁴

Partially bucking incentive theory's sole emphasis on market-based analysis, the recent *Google* decision gives primacy to third-party software developers' freedom to use their general knowledge, skills, and experience (to borrow from the trade secret concept⁶⁵) to innovate within a specific knowledge ecosystem. The Court acknowledged that these benefits of relational innovation—personal learning and subsequent exchange of knowledge within a specific community—outweighed the harm to the copyright owner. The Court's reference to “the public benefits” afforded by copying thus implicitly acknowledged the large and growing body of copyright scholarship moving decisively away from reductive economic instrumentalist approaches that may over-depend on assumptions of liberal individualism and under-value the social aspects of innovation. The Court's reliance on a model of network effects is a start in the right direction, but is unnecessarily

62. Rochelle C. Dreyfuss, *Expressive Generativity: Trademarks as Language in the Pepsi Generation*, 65 NOTRE DAME L. REV. 387, 405 (1990) (coining term “if value, then right”).

63. Margaret Chon, *Prioritizing Intellectual Property's Freedom to Operate*, IMPROVING INTELLECTUAL PROPERTY: A GLOBAL PROJECT 7 (Susy Frankel, Margaret Chon, Graeme B. Dinwoodie, Jens Schovsbo & Barbara Lauriat eds., 2023).

64. Stephanie Plamondon Bair and Laura Pedraza-Fariña, *The Sociology and Psychology of Innovation: A Synthesis and Research Agenda for Intellectual Property Scholars*, 60 HOUS. L. REV. 261, 265 (2022); see also *id.* at 268 (“Until quite recently, IP scholarship all but ignored sociology's challenge to the “great minds” view of innovation. Accounts of innovation in the legal academy mirrored quite closely those post-Enlightenment traditions that [Science, Technology, and Society] scholarship sought to displace—portraying innovation as driven largely by technological and market forces and proceeding in a linear path towards the ever-increasing accumulation of knowledge.”); accord Andres Sawicki, *The Law of Creativity?*, CORNELL L. REV. (forthcoming 2024) (arguing that the Supreme Court acknowledged the sociology of creativity in *Bleistein v. Donaldson*).

65. Camilla Hrды, *The General Knowledge, Skill, and Experience Paradox*, 60 BOS. COLL. L. REV. 2409 (2019).

parsimonious as a theoretical frame, especially when considering the wealth of possible other rationales for non-infringement.

Even within the field of economics, more capacious models can further elucidate the “public benefits the copying will likely produce.” These include innovation economics, which posits that diffusion of people and ideas results in increased innovative capacity of individual firms as well as overall industries,⁶⁶ and other approaches that analogize knowledge to essential infrastructure;⁶⁷ highlight the critical importance of knowledge spillovers;⁶⁸ point to the generativity of open innovation frameworks,⁶⁹ and explore the so-called negative space of IP.⁷⁰

More community-centric lenses also include knowledge commons approaches, based on Elinor Ostrom’s path-breaking political economy work on governance of commonly held resources.⁷¹ And outside of economics, disciplines as disparate as cognitive science, management, neurobiology, psychology, sociology, as well as science, technology and society (STS) studies show the ubiquity of engagement with others in the creative process,⁷² often

66. Non-Compete Clause Rule, 88 Fed. Reg. 3482 (proposed Jan. 19, 2023) (to be codified at 16 C.F.R. pt. 910); ANNALEE SAXENIAN, REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128 (1994).

67. BRETT M. FRISCHMANN, INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES (2012).

68. Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 258 (2007) (“[W]e explain that in IP, unlike real property, a wide range of externalities matter, because IP rights are much less certain than property rights and because the decision to create a legal entitlement will determine whether or not a transaction must occur. Second, we suggest that there is no reason to think that complete internalization of externalities is necessary to optimize investment incentives; at some point, there are decreasing returns (in terms of improved incentives) to allowing property owners to capture more of the value from their inventions.”).

69. HENRY CHESBROUGH, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY (2003); Jeremy de Beer, *Intellectual Property and ‘Open’ Innovation: A Synthesis of Concepts*, OXFORD HANDBOOK OF INTELL. PROP. RSCH.: LENSES, METHODS, AND PERSPS. 714 (Irene Calboli & Maria Lilla Montagnani eds., 2021).

70. Kal Raustiala & Christopher Jon Sprigman, *When are IP Rights Necessary? Evidence from Innovation in IP’s Negative Space*, RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Vol. I—Theory) (Peter Menell & Ben Depoorter eds., 2016); KAL RAUSTIALA & CHRISTOPHER SPRIGMAN, THE KNOCKOFF ECONOMY: HOW IMITATION SPARKS INNOVATION (2012).

71. BRETT M. FRISCHMANN, MICHAEL J. MADISON & KATHERINE J. STRANDBURG, GOVERNING KNOWLEDGE COMMONS (2014).

72. See, e.g., COHEN, *supra* note 58, at 80 (“Within pre-existing cultural networks, individuals and communities appropriate cultural goods for interrelated purposes of consumption, communication, self-development, and creative play.”); Madhavi Sunder, *Intellectual Property in Experience*, 117 MICH. L. REV. 197, 250 (2019).

conducted within institutions specializing in the sharing and shaping of knowledge within specific communities,⁷³ including the workplace.⁷⁴ Anthropologist Agustín Fuentes attributes human creativity partly to the fact that “[h]umans have evolved to be supercooperators.”⁷⁵

Zeroing more closely into one of these non-economic disciplines, social psychologists have explored the key affective as well as cognitive drivers of human behavior, including creativity. These social psychological accounts of the creative process toggle between individual drives (often referred to as intrinsic motivation⁷⁶) and group norms.⁷⁷ One approach, social identity theory, simultaneously examines both personal and social identity (viewing oneself as a member of a group to which one belongs). According to this view, when

[S]ocial identity is salient, individuals derive relevant aspects of their sense of self from their membership of a particular group and value their own and others’ actions with reference to internalized

73. Bair & Pedraza-Fariña, *supra* note 64.

74. Sharon K. Sandeen, *Economic Growth Requires Idea Generators*, THE ELGAR COMPANION TO INTELLECTUAL PROPERTY AND THE SUSTAINABLE DEVELOPMENT GOALS 262 (Matthew Rimmer, Caroline B. Ncube & Bitá Amani eds., 2024).

75. AGUSTÍN FUENTES, *THE CREATIVE SPARK: HOW IMAGINATION MADE HUMANS EXCEPTIONAL* 7 (2017).

76. Various IP legal scholars have explored the importance of intrinsic motivation theory. *See, e.g.*, Joseph P. Fishman, *Creating Around Copyright*, 128 HARV. L. REV. 1333, 1359 (2015) (“[P]eople are more creative when motivated primarily by innate interest in a task, rather than a goal imposed by others. Because freedom and personal autonomy increase intrinsic motivation, it follows that they also increase creativity.”); *see also* Gregory Mandel, *To Promote the Creative Process: Intellectual Property Law and the Psychology of Creativity*, 86 NOTRE DAME L. REV. 1999 (2011); Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441, 1460 n.116 (2010); *see also* Johnson, *supra* note 18, at 624 (“Contrary to orthodoxy, the great driver of artistic and technological progress is not external, but internal. Call it inherent motivation. People have an intrinsic drive to create. Business firms have natural reasons for innovating. The idea of inherent motivation may be counter-intuitive, but the evidence is compelling.”).

77. Haslam, Adarves-Yorno, Postmes & Jans, *supra* note 23, at 392 (“[T]he nature of a person’s creative activity depends on the content of group norms and the degree to which those norms are self-defining. When their social identity is salient, individuals engage in forms of creativity that involve following ingroup norms; but when their personal identity is salient, their creativity involves departing from those norms. Importantly, this analysis helps explain why creativity can involve acceptance and rejection of normative practices, and divergent thinking.”); *see also* THERESA M. AMABILE, *CREATIVITY IN CONTEXT: UPDATE TO THE SOCIAL PSYCHOLOGY OF CREATIVITY* 37–38 (1996) (Conceptually we—and most of the field—still endorse the spirit of Morris Stein’s (1953) definition of creativity as ‘that process which results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time.’”).

understandings of that group membership. . . One direct implication of this for creativity is that when social identity is salient . . . , a person's creative behavior and their evaluation of the creative behavior of others are likely to be informed by group values, preferences, and norms.⁷⁸

Although diverging in details, other social psychological models also emphasize the interplay among culture, society, and the individual.⁷⁹ Humanistic psychologist Ruth Richards writes, for example:

In our interdependent society, the study of social creativity is on the rise, and participatory and collaborative structures have become an important focus. . . Interpersonal and interactive creativity becomes all the more intriguing, since the criteria for everyday creativity of (a) originality and (b) meaningfulness apply quite nicely to authentic interchanges in the moment—to what one might call creative encounter . . . Furthermore, the introduction of caring relationships into the creativity conversation . . . shows the universal importance of everyday creativity in human encounter.”⁸⁰

Even those social psychologists who focus primarily on enhancing creativity through the cultivation of intrinsic motivation concede “the motivational potential of extrinsic reinforcers, while emphasizing the importance of maintaining the highest levels of intrinsic motivation in order to facilitate creative accomplishment.”⁸¹ In ascertaining the optimal conditions and settings for creativity, one researcher notes the importance of a nearby social system (or at least an advocate) that values the relevant form of creativity, a rich motivational milieu, access to information and new

78. S. Alexander Haslam, Inmaculada Adarves-Yorno, Niklas K. Steffens & Tom Postmes, *Inspired and Appreciated by the Group: The Social Identity Approach to Creativity*, OXFORD HANDBOOK OF GRP. CREATIVITY & INNOVATION 118, 120 (Paul B. Paulus & Bernard A. Nijstad eds., 2019).

79. Mihaly Csikszentmihalyi, *Society, Culture, and Person: A Systems View of Creativity*, NATURE OF CREATIVITY: CONTEMP. PSYCH. PERSPS. 325 (Robert J. Sternberg ed., 1988).

80. Ruth Richards, *Everyday Creativity: Process and Way of Life — Four Key Issues*, CAMBRIDGE HANDBOOK OF CREATIVITY 189, 206 (James C. Kaufman & Robert J. Sternberg eds., 2010).

81. Regina Conti & Teresa Amabile, *Motivation/Drive*, ENCYCLOPEDIA OF CREATIVITY 251, 258 (Mark A. Runco & Steven R. Pritzer eds., 1999) (“[A]lthough intrinsic motivation is necessary for high levels of creativity, extrinsic motivation is not always detrimental. Some extrinsic motivation may combine loosely with intrinsic motivation and thus boost overall levels of creativity. The [motivational synergy] theory proposes that this is most likely when intrinsic motivation is initially high and when the extrinsic motivators are perceived as supporting, rather than limiting, autonomy and skill development.”).

perspectives, as well as the transmission of completed projects to responsive and nourishing audiences, among other factors.⁸²

Various IP legal scholars have begun to explore the critical importance of social belonging⁸³ and pro-social emotions⁸⁴ in creative endeavors and processes. For example, Betsy Rosenblatt has observed that “belonging [to a group] is a basic, perhaps innate, human need.”⁸⁵ Her review of pertinent social science literature leads her to conclude that:

[C]reative communities are often well-suited to developing belonging: they unite people around types of creative endeavors, and they provide opportunities for people to experience a sense of competence and accomplishment. It seems, however, that some sorts of creative communities are more likely than others to foster a sense of belonging: those that provide opportunities for recognition, collaboration, and status, and those that embrace shared norms and facilitate trust among members.⁸⁶

As Rosenblatt pithily concludes regarding the constitutional copyright goal of “Progress,” “Stuff Isn’t Everything”⁸⁷ and “Money Isn’t Everything Either.”⁸⁸

These findings align with core social motives theory, pioneered by social psychologist Susan T. Fiske.⁸⁹ Core social motives theory posits that “fundamental, underlying psychological processes . . . propel people’s thinking, feeling, and behaving in situations involving other people. [These]

82. David M. Harrington, *Conditions and Settings/Environment*, ENCYCLOPEDIA OF CREATIVITY 323, 326–339 (Mark A. Runco & Steven R. Pritzker eds., 1999); *see also* David M. Harrington, *The Ecology of Human Creativity: A Psychological Perspective*, THEORIES OF CREATIVITY 143 (Mark A. Runco & Robert S. Albert eds., 1990).

83. Betsy Rosenblatt, *Belonging as Intellectual Creation*, 82 MO. L. REV. 91 (2017).

84. Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513 (2009); Margaret Chon, *Emotions and Intellectual Property Law*, 54 AKRON L. REV. 529 (2021).

85. Rosenblatt, *supra* note 83, at 96 (“Belonging is a ‘personal and contextually-mediated’ emotion that people experience when they feel (a) ‘secure, accepted, included, valued, and respected’ by a group; (b) ‘connected [] or integral to the group’; and (c) that their ‘values are in harmony’ with the group.”) (citations omitted).

86. *Id.* at 104.

87. *Id.* at 126.

88. *Id.* at 128. As Rosenblatt goes on to observe: “Valuing economic incentives while ignoring emotional ones such as belonging undervalues the multi-faceted nature of individual motivation and warps social concepts of who can be a creator by artificially dividing the world into corporate ‘makers’ and individual ‘consumers.’” *Id.* at 129.

89. FISKE, *supra* note 23.

motives [include] belonging . . . [and] understanding.”⁹⁰ Across many communities and cultures, these core social motives of belonging and understanding result in shared social representations that help bind people together within specific innovation spaces.

The core motive of belonging is “the idea that people need strong, stable relationships with other people.”⁹¹ Fiske claims that “[b]elonging, as the motive that makes us emphatically social beings . . . [and] aids our social survival.”⁹² Indeed, as legal scholars have pointed out in other contexts, belonging to a group is arguably a deep-seated and universal human need, the absence of which can and will render an individual as bereft as lack of food or water.⁹³

Most pertinent to IP and its mandate of encouraging creativity and inventiveness, Fiske claims that “[a]s people struggle to understand and make sense of their world, they share their theories with other people in an effort to reach agreement” resulting in “social representations” or “group meaning.”⁹⁴ Although core motive theory explores motives other than belonging and understanding,⁹⁵ these two motives are particularly relevant to a robust theory of relational innovation. The innate drive to belong to a group and to share (as well as to challenge and re-make) understandings within that group is an important catalyst of human creativity.

Drawing from various related strands of cultural and social theory, Madhavi Sunder similarly has claimed:

Learning by doing has a social dimension. [Economist Kenneth] Arrow describes the role played by personal contacts in the transmission of knowledge, as familiarity and trust facilitate

90. *Id.* at 12.

91. *Id.* at 15. This fundamental motive of belonging is driven more by affective responses than by cognitive responses and forms the basis for the other core motives that Fiske proffers, which are more cognition-based.

92. *Id.* at 21.

93. Danieli Evans, *Institutionalized Ostracism*, 29 MICH. J. RACE & L. (forthcoming 2024). Evans examines how belonging (and its flip side, ostracism) pervades different areas such as housing, education, and employment and concludes that “addressing institutionalized ostracism should be a compelling government interest—a responsibility of government as important as protecting people from physical violence.” *Id.*

94. FISKE, *supra* note 23.

95. *Id.* at 15. The full list of core motives includes “controlling, self-enhancing, and trusting,” in addition to belonging and understanding. Fiske sees these five as one of several possible interpretations of core motives; the list could be longer or shorter, depending upon the perspective of the researcher. *Id.* at 13; see also Gregg Henriques, *The BUC(k)ET Model of Core Social Motives*, PSYCH. TODAY (Feb. 6, 2024), <https://www.psychologytoday.com/intl/blog/theory-of-knowledge/202402/the-bucket-model-of-core-social-motives>

knowledge disclosure and acceptance. Individuals share knowledge through mentoring and apprenticeships with people they know and trust. Personal relationships can override efficiency in knowledge markets. As Arrow concludes, “The production of knowledge is thus basically different in character from the production of goods.”⁹⁶

In addition, Jessica Silbey’s ethnographic research underscores that the cultural characteristics of a specific creative communities, such as a community of professional photographers, may frame social norms and understandings that align with or diverge from copyright’s legal framework.⁹⁷ Peter Jaszi and Patricia Aufderheide have worked with specific creative communities, such as documentary film-makers, to create fair use norms and standards that can provide certainty in the face of the fair use doctrine’s famous ambiguity.⁹⁸ And Andres Sawicki sheds light on the importance of the specific “evaluators” within communities of “makers” that determine the path of creative progress.⁹⁹

These sociolegal and community-based models share the view of innovation as necessarily social and iterative, that is, arising within and from specific creative communities. They demonstrate that individual creativity is necessarily exercised within a group and that one of the quintessential human desires is to create meaning together with others, not by ‘bowling alone.’¹⁰⁰ Yet the paradigmatic, persistent, and ultimately misleading meme of innovation is of the lone genius plunking away on a typewriter (or keyboard), hoping someday to be a best-selling author—with little regard to the community in which that genius is situated.¹⁰¹

Returning to Pam’s article on tinkering, although one might visualize tinkering as a single person in a garage trying to fix a problem by themselves, it

96. Madhavi Sunder, *Intellectual Property in Experience*, 117 MICH. L. REV. 197, 235 (2019) (quoting Kenneth J. Arrow, *Classificatory Notes on the Production and Transmission of Technological Knowledge*, AM. ECON. REV., May 1969, at 29, 34).

97. JESSICA SILBEY, *THE EUREKA MYTH: CREATORS, INNOVATORS, AND EVERYDAY INTELLECTUAL PROPERTY* (2014).

98. PETER JASZI & PATRICIA AUFDERHEIDE, *RECLAIMING FAIR USE: HOW TO PUT BALANCE BACK IN COPYRIGHT* (2018).

99. Sawicki, *supra* note 64.

100. ROBERT T. PUTNAM, *BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY* (2000); Lulu Garcia-Navarro, *‘The Interview:’ Robert Putnam Knows Why You’re Lonely*, N.Y. TIMES (July 13, 2024), <https://www.nytimes.com/2024/07/13/magazine/robert-putnam-interview.html>.

101. *Accord* Bair & Pedraza-Fariña, *supra* note 64, at 263 (“Humans are social animals, and despite the persistent myth that innovation is primarily the domain of the lone genius, innovation increasingly occurs in group settings like university research labs, startups, and large research firms.”).

is a highly socially embedded activity. I'll try to illustrate this with a tinkering experience of my own. Last summer, we had an accidental jibe while sailing on Lake Union in Seattle—and the boom broke off from the traveler car. (For readers unfamiliar with sailing lingo, this meant that we could not control the sail and we were a danger to ourselves and others on the lake.) Fortunately, after we got the boat under control and made it back home safely, we were able to figure out how to fix what was broken. The original manufacturer no longer supplied the critical (presumably patent protected) part, so we consulted the (presumably copyright protected) owner's manual and on-line discussion groups. This was the first step, but the process didn't stop there. Another crucial step was talking to employees at the local stores that catered to boat owners and that carried boating supplies, then to their recommendations such as local machine shops and rigging shops. After various discussions with experienced individuals who had worked with boat parts all their lives (and the inevitable trial and error), the boom was re-attached to the traveler, albeit in a way that was different from the original.

This demonstrates the interplay between codified and tacit knowledge, as well as personal and collective knowledge. It also shows the significance of permitting the flow of information across these different knowledge realms to reach an innovative solution to a problem. Of course, this example may be more apt for a patent or trade secret innovation conversation because it implicates the right to repair.¹⁰² But Pam argues that with the onset of copyright-protected software and other types of quasi-functional creative works, tinkering should not be actionable as copyright infringement either.¹⁰³ The informal information exchanges involved with tinkering and other innovative activities may be much more pervasive than the transactions of codified knowledge that are often the lodestar of intellectual property decisions. And they often lead to innovative insights that move the needle forward on our collective body of knowledge.

102. Samuelson, *Freedom to Tinker*, *supra* note 11, at 599. Aaron Perzanowski & Jason Schultz, *Digital Exhaustion*, 58 UCLA L. REV. 899, 913–15 (2011) (arguing that copyright exhaustion historically covers the right to repair).

103. Samuelson, *Freedom to Tinker*, *supra* note 11, at 594. Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1650 (2002) (“For the traditional subject matters of copyright law, namely, artistic and literary works, reverse engineering has not been an issue because viewers and readers do not need to reverse-engineer these works to understand them. Yet as copyright’s subject matter expanded to include computer software, reverse engineering became a significant policy issue in copyright law as well.”); *see also* *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1993) (finding that reverse engineering software is fair use).

In *Freedom to Tinker*, Pam draws upon the well-developed literature on user-innovation and notes that

[Andrew] Torrance and [Eric] von Hippel coined the phrase ‘innovation wetlands’ to suggest . . . that legislation and other forms of regulation can have a “significant *negative* impact” on the “fragile” innovation ecosystem that enables user innovation to flourish.¹⁰⁴

While the environmental metaphor of “innovation wetlands” powerfully conveys the importance of the protecting the overall knowledge eco-system (or put another way, cultivating a robust public domain), it arguably reinforces our relative nonchalance towards human relational concerns. Both our information environment *and* our social relationships with each other are fragile. The core policies of copyright law ought to recognize the fundamental importance (and fragility) of both.

As I have written previously, “we may overestimate the potential of content (digital or otherwise) by itself to promote knowledge. Creating content and creating knowledge are vastly separate projects.”¹⁰⁵ Creating knowledge depends upon healthy, robust, and trust-infused social relations within a community. Harry Collins terms some of what is discussed here collective tacit knowledge and refers to a strong version of this as “Social Cartesianism” by which he means “[t]he collectivity, rather than the individual, is the location of the knowledge.”¹⁰⁶ Regardless of whether one subscribes to this or to less strong views of tacit knowledge, it is fair to say that we think (and tinker) together, therefore we are.

V. POSSIBLE DOCTRINAL DIRECTIONS

If this argument in favor of recognizing relational innovation is (or mostly is) persuasive, then what is next? Justice Breyer’s concern with “the risk of creativity-related harms to the public”¹⁰⁷ expresses the undue burden placed on socially embedded activities within particular creative communities, i.e., relational innovation, through the over-protection of copyright. But this

104. Samuelson, *Freedom to Tinker*, *supra* note 11, at 566 (quoting Andrew W. Torrance & Eric von Hippel, *The Right to Innovate*, 2015 MICH. ST. L. REV. 793, 802).

105. Margaret Chon, *Sticky Knowledge and Copyright*, 2011 WIS. L. REV. 177, 185. “In short, people and their relationships—including their quirks and their ability to connect, as well as their possible disconnects—are critical for knowledge diffusion” and ensuing follow-on innovation. *Id.* at 192; *see also* Eric von Hippel, “*Sticky Information*” and the Locus of Problem Solving: *Implications for Innovation*, 40 MGMT. SCI. 429, 430–31 (1994).

106. HARRY COLLINS, TACIT AND EXPLICIT KNOWLEDGE 59 (2010).

107. *Google LLC v. Oracle America, Inc.*, 593 U.S. 1, 40 (2021).

concern—now apparently a required part of the fair use analysis—finds an uneasy home within the fourth fair use factor, which is primarily concerned with market-based harms to the copyright holder. The fourth factor does not explicitly weigh market harms against benefits to innovation communities. In other words, the *Google* majority was missing a doctrinal tool because there is currently no welcoming space in the statute or extant caselaw for the acknowledgement of relational innovation values.

Where might courts find a legal hook for these public policy concerns? In the U.S. context, at least three possibilities are obvious candidates. One is to expand the constitutional understanding of the Progress Clause, which arguably, courts have already done. For example, the *Google* decision itself begins with a pronouncement of the Progress Clause with some additional gloss beyond its plain text:

Copyright and patents, the Constitution says, are to “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” Art. I, § 8, cl. 8. Copyright statutes and case law have made clear that copyright has practical objectives. It grants an author an exclusive right to produce his work (sometimes for a hundred years or more), not as a special reward, but in order to encourage the production of works that others might reproduce more cheaply. At the same time, copyright has negative features. Protection can raise prices to consumers. It can impose special costs, such as the cost of contacting owners to obtain reproduction permission. *And the exclusive rights it awards can sometimes stand in the way of others exercising their own creative powers.*¹⁰⁸

108. *Id.* at 1195 (emphasis added); *see also id.* at 1203 (“To the extent that Google used parts of the Sun Java API to create a new platform that could be readily used by programmers, its use was consistent with that creative ‘progress’ that is the basic constitutional objective of copyright itself.”).

In these sections of the majority opinion, the Court echoes Pam’s concluding words in *Unbundling Fair Uses*:

Copyright law promotes the public good by protecting authors and other rights holders from uses of their works that unfairly appropriate the commercial value of their work. But copyright also promotes the public good when subsequent authors are able to draw upon existing works in making and preparing to make new works, when members of the public are able to use copyrighted materials in a way that allows them to make a range of reasonable uses that pose no meaningful likelihood of harm to the markets for protected works, and when developers of new technologies provide new opportunities for the public to make such reasonable uses.

Samuelson, *Unbundling Fair Uses*, *supra* note 37, at 2617.

Imbuing the Progress Clause with substantive meaning is an important and already established mode of constitutional interpretation. The Court has interpreted key terms of this clause, such as “Authors” and “Writings.”¹⁰⁹ Similarly, the Court could recognize and articulate an understanding of relational innovation within the instrumentalist term “Progress of Science.” What if, rather than simply acknowledging that copyright can be an impediment to creativity, as in the quote above, courts affirmatively state that the progress of “Science” is furthered through encouraging and supporting relational innovation?

A second, constitutionally avoidant, approach would embed relational innovation concerns into a fifth fair use factor since, as Pam and others have noted,¹¹⁰ the legislative history to the 1976 Act does not foreclose the development of additional factors.¹¹¹ The statute’s four statutory factors are non-exclusive, and Congress foresaw that the courts would continue to develop and shape fair use doctrine through the common law-making process.¹¹² In practice, however, courts do not frequently move beyond these factors.¹¹³ So while this is doctrinally feasible, it is perhaps a less viable path

109. Edward Lee, *Prompting Progress: Authorship in the Age of AI*, FLA. L. REV. (forthcoming) (relying on constitutional interpretations of authorship to argue that “Author” should be construed to include AI-assisted human creativity); cf. Christophe Geiger, *Reconceptualizing the Constitutional Dimension of Intellectual Property*, INTELLECTUAL PROPERTY AND HUMAN RIGHTS (Paul Torremans ed., 2020) (linking IP with the universally recognized right to culture and science).

110. Samuelson, *Unbundling Fair Uses*, *supra* note 37.

111. “The bill endorses the purpose and general scope of the judicial doctrine of fair use, but there is no disposition to freeze the doctrine in the statute, especially during a period of rapid technological change. Beyond a very broad statutory explanation of what fair use is and some of the criteria applicable to it, the courts must be free to adapt the doctrine to particular situations on a case-by-case basis.” H.R. REP. NO. 94-1476, at 65–66 (1976), *quoted in* Samuelson, *Unbundling Fair Uses*, *supra* note 37).

112. RESTATEMENT OF THE LAW, COPYRIGHT, ch. 6, § 6.12 cmt. a, at 3 (AM. L. INST., Draft Apr. 2024) (“The use of the word “include” in the statutory language means that the fair use inquiry, the “equitable rule of reason” referred to in the legislative history, is not necessarily exhausted in a particular case through consideration of the four statutory factors, and that courts can consider other factors when relevant.”).

113. According to copyright scholar Lydia Loren, at least two reported decisions have articulated a factor beyond the four statutory factors. *DC Comics Inc. v. Unlimited Monkey Bus.*, 598 F. Supp. 110, 119 n.2 (N.D. Ga. 1984) (considering as a “fifth factor” weighing against fair use that defendant’s skits “have been sold on the strength of their association with plaintiff’s originals, not on the strength of defendant’s imagination and originality”); *Wojnarowicz v. Am. Fam. Assn.*, 745 F. Supp. 130, 146 (S.D.N.Y. 1990) (“[I]t is highly significant to the scope of fair use that plaintiff accepted public funds to support his artwork. This fact broadens the scope of the fair use exemption because of the strong public interest, protected by the First Amendment, in free criticism of the expenditure of federal funds.”).

forward. Nonetheless, given the heavy weight that the existing fair use factors place on market-based harms, courts might express relational harms via a separate factor.

A third possibility is to embed the relational innovation value in the analysis of all four of the existing statutory factors. This approach resembles the structure of the *Google* opinion itself, which threaded its public interest concerns into each of the four factors, ending with a factor four exclamation point regarding “the public benefits [of] copying.”¹¹⁴ In its discussion of the first fair use factor, which instructs courts to evaluate the purpose and character of the use, the Court states that “Google . . . provided a new collection of tasks operating in a distinct and different computing environment”¹¹⁵ and that the jury heard that the “reimplementation of interfaces is necessary *if programmers are to be able to use their acquired skills*”¹¹⁶— and thus finds that Google’s use of the APIs was transformative.

With respect to the second fair use factor, the nature of the work, the Court observes that,

[u]nlike many other programs, its value in significant part derives from the value that those who do not hold copyrights, namely, *computer programmers, invest of their own time and effort to learn the API’s system. And unlike many other programs, its value lies in its efforts to encourage programmers to learn and to use that system so that they will use (and continue to use) Sun-related implementing programs that Google did not copy.*¹¹⁷

And as to the third factor, the amount and substantiality of the portion used, the Court notes that

Google copied those lines not because of their creativity, their beauty, or even (in a sense) because of their purpose. It copied them

Email from Lydia Loren, Professor of L., Lewis & Clark L. Sch., to Margaret Chon, Donald & Lynda Horowitz Endowed Chair for the Pursuit of Just., Seattle Univ. Sch. of L. (Feb. 24, 2024) (on file with author).

114. *Google LLC v. Oracle America, Inc.*, 593 U.S. 1, 26–40 (2021). Amanda Levendowski notes that pre-*Google* courts have toggled between the first and fourth fair use factor as a locus for articulating the “public benefits” sub-factor, and that a post-*Google* case, *Am. Soc’y for Testing & Materials v. Public.Resource.Org, Inc.*, No. 22-7063, 2023 WL 5918491 (D.C. Cir. Sept. 12, 2023), analyzes “public benefits” under factor one. Levendowski, *supra* note 31.

115. *Google*, 593 U.S. at 31.

116. *Id.* (emphasis added). “If the API labels change, then either the software wouldn’t continue to work anymore or the developer . . . would have to learn a whole new language to be able to use these API labels.”

117. *Id.* at 28–29 (emphasis added).

*because programmers had already learned to work with the Sun Java API's system, and it would have been difficult, perhaps prohibitively so, to attract programmers to build its Android smartphone system without them.*¹¹⁸

These are clear judicial statements about the need for and value of personal learning and resultant relational innovation. They assign the increased value of the copyright-protected work to the personal uses that are made by the public of that work, in order to produce follow-on innovation. Conversely, a literal 'if value, then right'¹¹⁹ approach to IP inevitably ignores or minimizes the myriad benefits and interests that attach to the non-enforcement of those rights, whether they flow from applying an exception, limiting IP's scope, or raising a successful defense. This Essay advocates a pervasive approach towards the "public benefits" analysis, so that these benefits are considered holistically within each of the fair use factors against potential market harms to the copyright holder. By contrast, if a court confines its "public benefits" analysis to fair use factor four, with that factor's unilateral focus on market harms, it may be more likely to find against fair use. For example, in a post-Google case, *Hachette Book Group v. Internet Archive*, the district court found against fair use, based wholly on factor four.¹²⁰

Following the lead of the *Google* majority, courts could begin to articulate more explicitly the concept of relational use, which expresses the freedom to learn and to exchange knowledge within all sorts of innovation communities, rather than treating the software development community as exceptional. Such a judicial gloss would be akin to the transformative use concept that has so powerfully shaped the first fair use statutory factor,¹²¹ in turn influencing each of the other three factors. Few recent developments in the fair use doctrine are more important than this mandate in *Google* to rebalance fair use factors in the direction of the public interest in this (and possibly other) ways.

118. *Id.* at 34 (emphasis added).

119. Dreyfuss, *supra* note 62; see also Brett M. Frischmann, *Evaluating the Demsetzian Trend in Copyright Law*, 3 REV. L. & ECON. 649 (2006).

120. *Hachette Book Grp., Inc. v. Internet Archive*, 1:20-cv-04160-JGK (S.D.N.Y. Mar. 24, 2023).

121. Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990). In *Google*, the majority discussed this judicial gloss in this manner: "Commentators have put the matter more broadly, asking whether the copier's use 'fulfill[s] the objective of copyright law to stimulate creativity for public illumination.' In answering this question, we have used the word 'transformative' to describe a copying use that adds something new and important." 593 U.S. at 29 (citation omitted) (quoting Leval, *supra*); see also *Andy Warhol Found. for Visual Arts, Inc. v. Goldsmith*, 598 U.S. 508 (2023) (interpreting the scope of transformative use in the context of a work of visual art).

Outside of the United States, jurisdictions have adopted enumerated exceptions and limitations, fair dealing provisions, or (in a few cases) a U.S.-style open-ended fair use provision.¹²² Arguably, some courts have expressed a relational innovation concern in their copyright jurisprudence. For example, the Canadian Supreme Court has interpreted its fair dealing statute to accommodate copying by teachers on behalf of their students.¹²³ Notably, some of the Justices criticized the Canadian Copyright Board, stating:

The teacher/copier shares a symbiotic purpose with the student/user who is engaging in research or private study. The Copyright Board's approach drives an artificial wedge into these unified purposes of instruction and research/private study by drawing a distinction between copies made by the teacher at the request of a student and copies made by the teacher without a prior request from a student. The word "private" in "private study" should not be understood as requiring users to view copyrighted works in isolation.¹²⁴

This is a judicial recognition of relational innovation in the traditional context of a formal educational learning community, which elevates the relationship of teachers and their students to a key copyright value. Analogously, the Delhi High Court has expansively interpreted its relevant educational exceptions to accommodate copying for educational purposes.¹²⁵ Within the European Union, some courts have stepped in "to clarify that 'exceptions' are not mere exceptions to a rule [of exclusive rights] but instead define positive, enforceable rights to use copyrighted works in certain circumstances."¹²⁶

In the multilateral context, Tanya Aplin and Lionel Bently have persuasively argued that "the quotation exception in Article 10 of the Berne

122. *See generally* COPYRIGHT IN AN AGE OF LIMITATIONS AND EXCEPTIONS (Ruth L. Okediji ed., 2017).

123. *Alberta (Educ.) v. Can. Copyright Licensing Agency (Access Copyright)*, [2012] 2 S.C.R. 345 (Can.).

124. *Id.* at ¶ 23. *Alberta (Minister of Educ.) v. Can. Copyright Licensing Agency*, 2012 SCC 37, 2012 CSC 37, 2012 CarswellNat 2419.

125. *The Chancellor, Masters & Scholars of the Univ. v. Rameshwari Photocopy Services*, 233 (2016) DLT 279 (subject to overrule by the Indian Supreme Court).

126. Christophe Geiger & Bernd Justin Jütte, *Copyright as an Access Right: Concretizing Positive Obligations for Rightholders to Ensure the Exercise of User Rights*, WOLTERS KLUWER COPYRIGHT BLOG (Mar. 13, 2024), <https://copyrightblog.kluweriplaw.com/2024/03/13/copyright-as-an-access-right-concretizing-positive-obligations-for-rightholderstoensure-the-exercise-of-user-rights/>) (citing to *Funke Medien v Bundesrepublik Deutschland* (<https://curia.europa.eu/juris/liste.jsf?num=C-469/17>)).

Convention constitutes a global mandatory fair use provision.”¹²⁷ This minimum standard, incorporated by reference into the TRIPS addendum to the WTO, states that:

It shall be permissible to make quotations from a work which has already been lawfully made available to the public, provided that their making is compatible with fair practice, and their extend does not exceed that justified by the purpose, including quotations from newspaper articles and periodicals in the form of press summaries.¹²⁸

Aplin and Bently explore the various possible meanings of “fair practice” in Article 10(1) and state that “[t]he reference to fair practice potentially invokes notions of distributive justice—that is, the fair allocation and reallocation of resources in society.”¹²⁹ I have argued separately that Berne Article 10(2)’s teaching exception provides a similar multilateral-sanctioned space to express values related to teaching and learning.¹³⁰ These are all expressions of the considerable public interest in copyright law.¹³¹

And of course, the doctrinal recognition of relational innovation is not confined to fair use or fair dealing. It is omnipresent in assessing the correct scope of copyright as well as its other exceptions and limitations such as the first sale doctrine.¹³² Many spaces exist within treaty, statutory, and common law to allow courts to reach beyond their current, almost unilateral focus on market values¹³³ and recognize the fundamental importance of relational innovation and other public benefits.

VI. CONCLUSION

Creativity and innovation depend upon human relationships within specific innovation communities—and these relationships must be recognized, nurtured, and protected in important part because of the deeply human and

127. Aplin & Bently, *supra* note 7.

128. Berne Convention, *supra* note 7.

129. Aplin & Bently, *supra* note 7, at 163. *See generally id.* at 163–67.

130. Margaret Chon, *Copyright and Capability for Education: An Approach ‘from Below’*, INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT: CURRENT TRENDS AND FUTURE SCENARIOS 218 (Tzen Wong & Graham Dutfield eds., 2010).

131. Along these lines, IP legal scholars such as Lateef Mtima argue in favor of IP values that promote access, inclusion, and empowerment. Lateef Mtima, *IP Social Justice Theory: Access, Inclusion, and Empowerment*, 55 GONZ. L. REV. 401, 416 (2019); *see also* JESSICA SILBEY, *AGAINST PROGRESS: INTELLECTUAL PROPERTY AND FUNDAMENTAL VALUES IN THE INTERNET AGE* (2023) (arguing for greater recognition of equality, privacy, and distributional justice values within IP).

132. 17 U.S.C. § 109(a).

133. *See generally* Chon, *Prioritizing*, *supra* note 63.

fundamental need to connect and communicate with others, within and across borders.¹³⁴ Hopefully this essay has highlighted some of the reasons identified by Pam and others as to why building and nurturing communities of tinkerers are of utmost importance and relevance to IP law and policy.¹³⁵ The legal community, including our IP community, is comprised of highly skilled tinkerers. Not coincidentally, our community is characterized by relational innovation at its best, made possible only by general non-enforcement of copyright. In this way, it is an apt illustration of the larger social policies that Pam and many others have advocated for in the half century since the 1976 Copyright Act went into effect.

We recognize Pam through her important advocacy on behalf of the public interest values in copyright as well as her consistent care for relationships within an IP scholarly community that endeavors to inform copyright law with the best social science knowledge available as copyright faces twenty-first century challenges. In short, Pam's support of so many in the IP community has resulted in an enormous amount of creative generativity characterized by two touchstones of relational innovation: a sense of collective belonging and freely shared (albeit frequently contested) understandings.

134. Haslam, Adarves-Yorno, Postmes & Jans, *The Collective Origins of Valued Originality*, *supra* note 23, at 384 (“Yet one could argue that there is a more fundamental importance to creativity, stemming from its functions for humans as a species. For humans possess specific abilities that separate them from other animals in nonphysical ways. In particular, over the course of their evolution, humans have evolved a capacity for culture. As a result, human societies are defined by embedded sets of shared norms and values that serve to create shared meaning for their members . . .”).

135. Samuelson, *Freedom to Tinker*, *supra* note 11, at 598 (“[I]t often makes competition and ongoing innovation more possible. But it also enables freedom of thought, study, inquiry, self-expression, diffusion of knowledge, and *building a community of highly skilled tinkerers*. In addition, freedom to tinker fosters privacy, autonomy, human flourishing, and skills-building interests of tinkerers.”) (emphasis added); cf. Margaret Chon, *Postmodern ‘Progress’: Reconsidering the Copyright and Patent Power*, 43 DEPAUL L. REV. 97, 145 (1993) (advocating for a “‘free use of faculties,’ as a type of property right (and as a type of civil right . . . [within a] commons of knowledge held in stewardship by the courts and guarded by them against over-appropriation”).

COMMITTED TO COPYRIGHT’S CONSTITUTIONAL ROLE

Michael W. Carroll[†]

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I. INTRODUCTION

Who is Pam Samuelson? She is many things to many people: scholar, teacher, mentor, leader, advocate, and friend, to name a few. One could easily add “force of nature” to the list. This Article suggests adding the term “loyalist” to argue that an important through-line in Pam’s work has been an unwavering commitment to understanding and promoting copyright law’s ability to serve its purpose in our constitutional order.

One might flinch at the term for its association with the rearguard in the nation’s founding or because it implies commitment without room for reflection or independent thought. But I use the term here as a response to those who have attacked Pam’s integrity and values over the years with hyperbolic rhetoric that positions the speaker as being on the side of copyright

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law and Pam, and others, as being “against” copyright law. This is, and has always been, backward.

Instead, through thick and thin, Pam has thought, written, and acted to support the founding vision of copyright law as an instrument that promotes the public interest in innovation and cultural flourishing. Loyalty in this context means something more than mere “commitment.” The term also implies that a person, when faced with difficult choices or temptations, remains true to their foundational commitments. In my view, that person is Pam.

The remainder of this Article briefly elaborates on this point with respect to Pam’s engagement in three areas: (1) copyright scholarship; (2) copyright institutions; and (3) public policy.

II. COPYRIGHT LAW SCHOLARSHIP

Much of Pam’s copyright scholarship addresses copyright law’s subject matter, scope, or its remedial provisions. Pam’s work, which frequently uses case synthesis as her methodology, seeks to persuade the courts, or, at times, Congress, to align the substance of current copyright law with its constitutional purpose and thus to improve the coherence and clarity of the law. Starting early in, and carrying through, her career, Pam’s interest in getting the balance right on subject matter has focused on intellectual property law’s problem child, software.¹

A. COPYRIGHTABLE SUBJECT MATTER

Promoting progress can be hard work. I have been impressed by the evolution of Pam’s views on whether software should be copyrightable subject matter. It reflects her willingness to reconsider or adapt these views in light of new evidence or new developments in the world. Should computer programs in machine-readable form be copyrightable? Initially, Pam’s answer was “no” because these programs fail to disclose their contents in machine-readable form.² But she recognized that no protection would leave software developers vulnerable, undermining their incentives to produce. A better approach, she argued, would be to tailor the law to the specific characteristics of functional

1. See, e.g., *infra* note 7 and accompanying text (discussing Pam’s co-authored proposal for *sui generis* protection for software because the mix of software’s expressive and functional aspects make it a poor fit with existing intellectual property doctrine); see also Jacqueline D. Lipton, *IP’s Problem Child: Shifting the Paradigms for Software Protection*, 58 HASTINGS L.J. 205 (2006).

2. See Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663 (1984).

expression and the industry that produces it.³ As someone with an interest in understanding when the benefits to tailoring outweigh the costs,⁴ I remain impressed by her argument for *sui generis* software protection.

In characteristic Pam fashion, she asked, why simply write about a topic when you can organize a conference around it? So, early in her career, Pam organized an important gathering at the University of Pittsburgh to consider software as copyrightable subject matter.⁵ Her own perspicacious contribution to the resulting conference issue anticipated contemporary concerns raised by generative artificial intelligence, by considering the follow-on issue of whether computer-generated works should also be deemed copyrightable subject matter, and if they were, who should be deemed the author(s) of such works.⁶

Through conversation and further thought about her early proposal to tailor protection for software, Pam, in collaboration with others, decided that the topic was important and urgent enough that it did not need just another article. It needed a manifesto!⁷ I was in law school when the manifesto was published. I distinctly recall picking up the symposium issue featuring this weighty, lengthy piece of scholarship. I had taken copyright law and had developed a strong interest in the subject. I was so impressed by the article's originality, thoroughness, and careful, pragmatic proposal to solve such a sticky problem by creating a form of hybrid copyright-patent protection tailored to the unique characteristics of compute programs. I had already known that I wanted an academic career, and this was a model for deep legal scholarship that has informed my work from the beginning.

Another aspect of Pam's work that I admire is her ability to trace the longer arc of contemporary developments by placing them in historical context. For example, nearly two decades later, Pam returned to the subject of copyright in computer programs in *The Uneasy Case for Software Copyrights Revisited*.⁸ She first

3. See Pamela Samuelson, *Creating a New Kind of Intellectual Property Law: Applying the Lessons of the Chip Law to Computer Programs*, 70 MINN. L. REV. 471 (1985).

4. See, e.g., Michael W. Carroll, *One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights*, 70 OHIO STATE L.J. 1361 (2009).

5. See Pamela Samuelson, *Introduction, Symposium: The Future of Software Protection*, 47 U. PITT. L. REV. 905 (1986) (explaining that “[a]ll of the speakers . . . had been asked to address the question: Can intellectual property law evolve to provide adequate protection for computer software . . .”).

6. See Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185 (1986); see also Pamela Samuelson, *Some New Kinds of Authorship Made Possible by Computers and Some Intellectual Property Questions They Raise*, 53 U. PITT. L. REV. 685 (1992).

7. See Pamela Samuelson, Randall Davis, Mitchell Kapor & J.H. Reichman, *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308 (1994).

8. Pamela Samuelson, *The Uneasy Case for Software Copyrights Revisited*, 79 GEO. WASH. L. REV. 1746 (2011).

asked whether then-Professor Breyer's skepticism about software copyright prior to enactment of the 1976 Act had been warranted: answer, yes.⁹ Given the structure of the market in the 1970s, copyright law had little meaningful effect on the incentives to develop software. She then considered that the circumstances may have changed in the 1990s. But, in a thorough review of industry developments in the twenty-first century, Pam convincingly argued that, as an economic matter, the software industry relies on other sources of protection and the case for software copyright has become uneasier as an economic matter, even if we are stuck with it as a legal matter.¹⁰

In addition to considering what aspects of software should be protected, Pam has been equally attentive to those aspects that should not be protected. It should not be a surprise that much of Pam's thinking in this area has been informed by a deeper understanding of the Supreme Court's enigmatic opinion in *Baker v. Selden*.¹¹ Among other things, *Baker* designates distinct roles for copyright law, patent law, and the public domain with the constitution's purpose in mind.¹²

Pam's work has helped me better understand and teach *Baker*. Pam also has used her understanding of *Baker* to argue persuasively about the proper interpretation of the opinion's principles as reflected in section 102(b) of the Copyright Act of 1976.¹³ In one of her early forays into *amicus* advocacy in *Lotus Development Corp. v. Borland International*,¹⁴ Pam argued to the Supreme Court on behalf of fellow scholars that "*Baker* is fundamentally a case about the unprotectability of the functional content embodied in copyrighted works and the right of others to copy that content in order to make use of it."¹⁵ The

9. *See id.* at 1746.

10. *See id.* at 1782 ("Copyright protection has, in fact, become so deeply entrenched in software protection law and in software industry's expectations that it will be with us and the software industry for decades to come, regardless of whether it really is (or is not) economically necessary.").

11. *Baker v. Selden*, 101 U.S. 99 (1879).

12. *See* Pamela Samuelson, *Baker v. Selden: Sharpening the Distinction Between Authorship and Invention*, in *INTELLECTUAL PROPERTY STORIES* (Rochelle C. Dreyfuss & Jane C. Ginsburg eds., 2005).

13. *See* 17 U.S.C. § 102(b) ("In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.").

14. *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 516 U.S. 233 (1996), *aff'g by an equally divided court* *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 49 F.3d 807 (1st Cir. 1995).

15. Pamela Samuelson, *Brief Amicus Curiae of Copyright Law Professors in Lotus Development Corp. v. Borland International, Inc.*, 3 J. INTEL. PROP. L. 103, 120–21 (1995); *see also* Pamela Samuelson, *The Nature of Copyright Analysis for Computer Programs: Copyright Law Professors' Brief Amicus Curiae in Lotus v. Borland*, 16 HASTINGS COMM/ENT L.J. 657 (1994)

legislative history about this section could have been more thorough, but with the Constitution's goals in plain sight, Pam provided a convincing account of why functional expression properly belongs in the public domain.¹⁶

More recently, I was pleased to sign Pam's thorough brief in *Google LLC v. Oracle America, Inc.*,¹⁷ which argued persuasively that in the wake of the split decision in *Borland*, the industry had correctly come to understand that application programming interfaces (APIs) were not copyrightable.¹⁸ While Justice Breyer's opinion in the case acknowledged that the case for the copyrightability of Oracle's declaring code was weaker than the general case for software copyrightability,¹⁹ the Court chose to assume copyrightability to resolve the case on fair use grounds. So, Pam did what she often does. Undeterred, she authored an article with Mark Lemley, and argued that the fight should go on to fully establish that APIs are not copyrightable.²⁰

While software copyrightability has understandably occupied most of Pam's attention on the topic of copyrightable subject matter, she has also thought about the principles that should guide decisionmakers when confronted with claims for protection outside of the eight subject matter categories enumerated in Section 102(a).²¹ When the 1976 Act adopted the general category of "works of authorship," it provided little express guidance about what might be protectible beyond the enumerated categories. Pam argued that Congress need not exhaust its constitutional power to protect the

(brief to First Circuit Court of Appeals); Pamela Samuelson, *Computer Programs, User Interfaces, and Section 102(b) of the Copyright Act of 1976: A Critique of Lotus v. Paperback*, 55 LAW & CONTEMP. PROB. 311 (1992).

16. Pamela Samuelson, *Why Copyright Excludes Systems and Processes from the Scope of Its Protection*, 85 TEX. L. REV. 1921 (2007).

17. *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183 (2021).

18. Pamela Samuelson, *Why 72 Intellectual Property Scholars Support Google's Copyrightability Analysis in the Oracle Case*, 36 BERKELEY TECH. L.J. 413 (2021).

19. *See Google LLC v. Oracle Am., Inc.*, 141 S. Ct. at 1202 ("In our view, for the reasons just described, the declaring code is, if copyrightable at all, further than are most computer programs (such as the implementing code) from the core of copyright.").

20. Mark A. Lemley & Pamela Samuelson, *Interfaces and Interoperability After Google v. Oracle*, 100 TEXAS L. REV. 1, 3 (2021) ("Refusing to protect APIs is also good policy. Indeed, we argue that decisions not to give the developers of APIs copyright control over reimplementations three decades ago was central to the development of the interoperable ecosystem and the open internet we enjoy today."); *cf.* Pamela Samuelson, *Are Patents on Interfaces Impeding Interoperability?*, 94 MINN. L. REV. 1943 (2009) (arguing that some regulation of interface patents may be appropriate to avoid certain harms and that tailoring certain patent doctrines to promote interoperability is desirable).

21. *See* 17 U.S.C. § 102(a) (providing that "[c]opyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression" and listing eight categories of works that are included within this definition); Pamela Samuelson, *Evolving Conceptions of Copyright Subject Matter*, 78 U. PITT. L. REV. 17 (2016).

“writings” of an author. Instead, Pam provided five helpful criteria to test claims seeking to expand copyrightable subject matter.²²

Finally, let us not forget the public domain. Pam’s work has raised the visibility and defended the boundaries of copyright’s public domain. Pam has answers for questions like: does the United States need a *sui generis* database right?;²³ how should we understand the merger doctrine’s role in keeping ideas in the public domain?²⁴ and, importantly, how should we think about and map the public domain in the digital era?²⁵

B. SCOPE OF COPYRIGHT PROTECTION

Pam’s commitment to finding the right balance of interests to promote progress manifests itself in her work on scope of copyright protection as well. Most of what follows discusses the scope of copyright law’s exclusive rights in traditional terms. But, as a practical matter, infringement doctrines, particularly the test for substantial similarity, also define copyright’s effective scope. For this reason, I would include Pam’s helpful attempt to clean up what was then an even messier infringement doctrine as going to her desire to get effective scope right.²⁶

22. See Pamela Samuelson, *Evolving Conceptions of Copyright Subject Matter*, 78 U. PITT. L. REV. 17, 54–57 (2016) (naming criteria as economic, legal fit, new or changed circumstances, authorship, and human communication).

23. Jerome H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?*, 50 VAND. L. REV. 51 (1997) (arguing against *sui generis* protection for unoriginal databases).

24. Pamela Samuelson, *Reconceptualizing Copyright’s Merger Doctrine*, 63 J. COP. SOC’Y 417, 467 (2016) (demonstrating “the evolving utility of the merger doctrine in mediating conflicts between and among the interests of first and second-generation authors, of third parties affected by those disputes, and of the public who would otherwise suffer the consequences of unwarranted monopolies over information or products”); cf. Pamela Samuelson, *Questioning Copyright in Standards*, 48 B.C. L. REV. 193 (2007) (categorizing arguments that undermine incentive-based arguments in favor of copyright in standards).

25. See Pamela Samuelson, *Enriching Discourse on Public Domains*, 55 DUKE L.J. 783 (2006); Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, 66 L. & CONTEMP. PROBS. 147 (2003).

26. See Pamela Samuelson, *A Fresh Look at Tests for Nonliteral Copyright Infringement*, 107 NW. L. REV. 1821 (2013) (discussing and criticizing aspects of five different infringement tests used by courts and arguing in favor of an analytical method that uses more uniform vocabulary while remaining sensitive to differences in context). While the Ninth Circuit subsequently agreed to use the Second Circuit’s basic vocabulary of “copying” and “unlawful appropriation” as the two-step test applicable once ownership of a valid copyright has been established, the Ninth Circuit continues to use its extrinsic/intrinsic test for comparing the plaintiff’s and defendant’s respective works as part of the “unlawful appropriation” inquiry. See *Rentmeester v. Nike, Inc.*, 883 F.3d 1111, 1117 (9th Cir. 2018) (aligning its general terminology with that first introduced in *Arnstein v. Porter*, 154 F.2d 464, 468 (2d Cir. 1946)).

With respect to the delineation of exclusive rights, Pam played a role in the Second Circuit's important course correction in *Computer Associates International v. Altai*,²⁷ which right-sized the scope of copyright in computer programs by adopting the abstraction-filtration-comparison methodology to compare works in cases claiming non-literal infringement.²⁸ As Pam has noted, Altai appended her amicus brief in *Borland* to its own appellate brief.²⁹ Also in the software context, Pam has been particularly strong about keeping copyright's scope in its lane despite the ebb and flow of software patenting.³⁰

Pam also has shown a particular solicitude for the role of the user or follow-on creator and their needs to use or build upon existing works. This view emerged in her early work addressing the right to modify software.³¹ She later took a close look at the derivative work right in general with the public's interest in mind. In a thorough exploration of the derivative work right's history, Pam and Richard Sherman first identified that among the categories of exemplary derivative works in the statutory definition, there are three clusters of derivatives that are either shorter versions, faithful renditions, or transformations of the source work.³²

Pam and Richard then took up the question of how broadly courts should read the end of that definition, according to which a derivative work can take "any other form in which a work may be recast, transformed, or adapted."³³ Their analysis pushed back against an argument that the breadth of these terms should grant the copyright owner an expansive scope of exclusivity to build upon their existing works. I call this expansionist argument the prospect theory of copyright scope.³⁴ But Pam and Richard thoroughly and persuasively argued that:

27. *Computer Assocs. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992).

28. *See id.* at 706 ("As discussed herein, we think that district courts would be well-advised to undertake a three-step procedure, based on the abstractions test utilized by the district court, in order to determine whether the non-literal elements of two or more computer programs are substantially similar. ").

29. *See* Pamela Samuelson, *Staking the Boundaries of Software Copyrights in the Shadow of Patents*, 71 FLA. L. REV. 243, 265 n.118 (2019).

30. *See* Pamela Samuelson, *Strategies for Discerning the Boundaries of Copyrights and Utility Patents*, 92 NOTRE DAME L. REV. 1493 (2017); *see also* Pamela Samuelson, *Functionality and Expression in Computer Programs: Refining the Tests for Software Copyright Infringement*, 31 BERKELEY TECH. L.J. 1215 (2016).

31. Pamela Samuelson, *Modifying Copyrighted Software: Adjusting Copyright Doctrine to Accommodate a Technology*, 28 JURIM. J. 179 (1988).

32. *See* Pamela Samuelson & Richard M. Sherman, *The Quest for a Sound Conception of Copyright's Derivative Work Right*, 101 GEO. L.J. 1505 (2013).

33. *See* 17 U.S.C. § 101.

34. *See* Michael W. Carroll, *Why the Supreme Court Rejected the Prospect Theory of Copyright Scope*, 42 CARDOZO ART & ENTER. L.J. (forthcoming 2024).

To be consistent with the text of the statute, the legislative history, and the constitutional purpose of copyright, derivative work liability should only be imposed under the last clause of the definition if the plaintiff's claim is analogous to one or more of the exemplary derivatives in the statutory definition.³⁵

Recently, Pam has brought together her deep knowledge of derivative works as both a subject matter category and as an exclusive right to prepare such subject matter. Under section 103(a), a person may not claim authorship of part, or, sometimes all, of a derivative work if it incorporates preexisting works that were used unlawfully.³⁶ Pam argued that in *Andy Warhol Foundation for the Visual Arts, Inc. v. Goldsmith*, the Solicitor General hijacked the case to limit its scope to a single act of licensing.³⁷ Doing so enabled the Court to sidestep the thorny issues under section 103(a) that it would have had to address had it engaged with the full scope of Goldsmith's initial claims.³⁸

One other area of Pam's work branches from her initial concerns about the right to modify software. Software is functional, and users want to be able to make changes to the tools they use to have them better perform their functions. Sometimes they don't need to modify the copyrighted work as such, but in a software-rich environment, they do need to be able to access and run the software to repair the functional articles in which it is embedded. Pam's interest in the growing movement for a "right to repair"³⁹ spans these two forms of user interest, including their interest in having freedom to tinker with what they use.⁴⁰

Pam has also shown a keen interest in another important other scope doctrine, fair use. In the software context, Pam viewed the *Altai* court's decision to resize the scope of the reproduction right as complimentary with the courts' determination that most forms of reverse engineering are fair use.⁴¹ She later developed her thinking about reverse engineering more broadly in

35. Samuelson & Sherman, *supra* note 32, at 1511.

36. *See* 17 U.S.C. § 103(a).

37. *See* Pamela Samuelson, *Did the Solicitor General Hijack the Warhol v. Goldsmith Case?*, COLUM. J.L. & ARTS (forthcoming 2024); *see also* Andy Warhol Found. For the Visual Arts, Inc. v. Goldsmith, 598 U.S. 508 (2023).

38. Samuelson, *supra* note 37.

39. *See, e.g.*, Thorin Klosowski, *What You Should Know About Right to Repair*, N.Y. TIMES WIRECUTTER BLOG (Apr. 15, 2021), <https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/> (describing principal policy goals of those who seek legislation guaranteeing consumers a right to repair their own software-enabled devices).

40. *See* Pamela Samuelson, *Freedom to Tinker*, 17 THEOR'L INQUIR. L. 563 (2016).

41. *See* Pamela Samuelson, *Fair Use for Computer Programs and Other Copyrightable Works in Digital Form: The Implications of Sony, Galoob and Sega*, 1 J. INTEL. PROP. L. 49 (1993) (discussing three foundational cases in this line of precedent).

the deep and careful analysis in the brilliant *Law and Economics of Reverse Engineering* with Suzanne Scotchmer.⁴²

However, technology in the form of protective measures threatens fair use's ability to regulate copyright scope because digital locks can extend effective exclusivity beyond what is granted by the law. Pam and others responded with a proposal to create a reverse notice-and-takedown regime to maintain fair use's effectiveness in this context.⁴³

Pam's strength as a categorizer and synthesizer of doctrine was on full display in her terrific article *Unbundling Fair Uses*.⁴⁴ She first organized the case law to demonstrate that the courts have found uses to be fair when they fall into certain policy-relevant clusters, including promoting freedom of speech and of expression, the ongoing progress of authorship, learning, access to information, truth telling or truth seeking, competition, technological innovation, and the privacy and autonomy interests of users.⁴⁵ Her well-reasoned and persuasive normative conclusion that fair use is an essential and integral part of copyright law was an overdue recognition of this point. Always looking ahead, Pam later mapped the possible futures of the doctrine in 2015.⁴⁶ But, why map the future when you can save it?⁴⁷

C. REMEDIES FOR COPYRIGHT INFRINGEMENT

If a right without a remedy is no right at all, what is a right with too large a remedy? At times, that can be copyright. The Constitution grants Congress power to grant authors exclusive rights in their writings, but, as one might expect, it leaves the question of remedies to Congress and the courts. Over time, the expansive remedies that Congress has provided in the 1976 Act have increased the threat value of copyright to extend the effective reach of exclusive rights beyond their intended range.

Attentive to this concern, Pam has identified certain facets of copyright's remedial regime in need of reform. When the Recording Industry Association of America (RIAA) launched its enforcement initiative against its users,⁴⁸ the

42. Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575 (2002).

43. Jerome H. Reichman, Graeme Dinwoodie & Pamela Samuelson, *A Reverse Notice and Takedown Regime to Enable Fair Uses of Technically Protected Copyrighted Works*, 22 BERKELEY TECH. L.J. 981 (2007).

44. Pamela Samuelson, *Unbundling Fair Uses*, 77 FORDHAM L. REV. 2537 (2009).

45. *See id.*

46. *See* Pamela Samuelson, *Possible Futures of Fair Use*, 90 WASH. L. REV. 815 (2015).

47. *See* Clark D. Asay & Pamela Samuelson, *Saving Software's Fair Use Future*, 31 HARV. J. L. & TECH. 535 (2018).

48. From 2003 to 2008, the RIAA sued approximately 35,000 individuals for file sharing. *See, e.g.*, Erika Morphy, *RIAA Abandons Mass Lawsuit Strategy in File-Sharing War*, ECOMMERCE

outsized threat of statutory damages came to the fore.⁴⁹ Pam took a deep look and proposed a solution.⁵⁰ She set forth a creative proposal to fine-tune the disgorgement remedy in intellectual property cases.⁵¹

The prospect of injunctive relief also carried too much weight because courts were willing to presume irreparable harm upon a showing of copying. Pam rightly argued that this presumption was inconsistent with the Supreme Court's reasoning in *eBay v. MercExchange*.⁵² The Second Circuit and other courts accepted this point and returned real equitable discretion to the district courts.⁵³ Have these decisions made a difference?

Pam went to look, and answered yes, and that is a salutary development. Conducting characteristic doctrinal synthesis, Pam found that courts withheld injunctive relief:

(1) [W]hen copyright owners failed to offer persuasive evidence of irreparable harm and/or inadequacy of legal remedies, (2) when a balance of hardships favored defendants, (3) when public interests would be better served by denying the requested injunctions, and (4) when the plaintiff was seeking to vindicate non-copyright interests. While injunctions are still quite common in simple piracy cases, eBay

TIMES (Dec. 19, 2008), <https://www.ecommercetimes.com/story/RIAA-Abandons-Mass-Lawsuit-Strategy-in-File-Sharing-War-65590.html> (describing the RIAA's strategy and why it eventually abandoned it).

49. See 17 U.S.C. § 504(c)(2) (giving court discretion to award a maximum of \$150,000 in statutory damages for each work shown to have been infringed willfully); see also, e.g., J. Cam Baker, Note, *Grossly Excessive Penalties in the Battle against Illegal File-Sharing: The Troubling Effects of Aggregating Minimum Statutory Damages for Copyright Infringement*, 83 TEX. L. REV. 525 (2004) (describing the effects of RIAA using § 504(c)'s per-work standard for statutory damages to aggregate claims for infringement of multiple songs by individual file-sharers).

50. See Pamela Samuelson & Tara Wheatland, *Statutory Damages in U.S. Copyright Law: A Remedy in Need of Reform*, 51 WM. & MARY L. REV. 439 (2009); Pamela Samuelson & Ben Sheffner, Debate, *Unconstitutionally Excessive Statutory Damage Awards in Copyright Cases*, 158 U. PA. L. REV. PENNUMBRA 53 (2009); see also Phil Hill, Pamela Samuelson & Tara Wheatland, *Statutory Damages: A Rarity in Copyright Laws Internationally—But for How Long?*, 60 J. COP. SOC'Y 529 (2013).

51. See Pamela Samuelson, John Golden & Mark Gergen, *Recalibrating the Disgorgement Remedy in Intellectual Property Cases*, 100 B.U. L. REV. 1999 (2020).

52. See Krzysztof Bebenek & Pamela Samuelson, *Why Plaintiffs Should Have To Prove Irreparable Harm in Copyright Preliminary Injunction Cases*, 5 I/S: J. L. & POLICY FOR INFO. SOC'Y 67 (2009).

53. See, e.g., *Salinger v. Colting*, 607 F.3d 68, 77–83 (2d Cir. 2010); *Perfect10, Inc. v. Google, Inc.*, 653 F.3d 976, 979–81 (9th Cir. 2011) (recognizing that *eBay* had implicitly overruled Circuit's precedent accepting presumption of irreparable harm in place of evidence); *Christopher Phelps & Assocs., LLC v. Galloway*, 492 F.3d 532, 543 (4th Cir. 2007) (relying on *eBay* to deny preliminary injunction).

has radically changed the injunctive relief calculus for copyright plaintiffs.⁵⁴

But that is not the answer that some in the copyright field wanted. Some scholars instead continue to insist that *eBay* has had little or no effect on equitable remedies in copyright cases.⁵⁵ Characteristically, Pam has pushed back—with data. Working with Matthew Sag, she again proved the point that *eBay*, reinforced by *Winter v. Natural Resources Defense Council, Inc.*,⁵⁶ had a substantial effect on the availability of injunctive relief in copyright cases.⁵⁷

III. COPYRIGHT LAW'S INSTITUTIONS

A. CONGRESS AND THE COPYRIGHT OFFICE

The Constitution provides the structure of government along with its protections of individual liberty. Substantively, copyright law divides liberties between copyright owners, through exclusive rights, and users, through fair use and other limitations coupled with the First Amendment. Pam's thoroughgoing commitment to working to make copyright perform its intended function necessarily requires attention to the structure of government and to the institutions that create and administer this law.

Pam has opined on the future of the Copyright Office: will it be obsolete in the twenty-first century? Pam's answer was, possibly, but not likely.⁵⁸ When Congress considered a proposal to add what is now the Copyright Claims Board to the Office's responsibilities, Pam did what she often does when something significant is happening in the world of copyright law—she organized a scholarly workshop to vet the new development. Her report of that meeting identified a number of concerns that should continue to guide

54. Pamela Samuelson, *Withholding Injunctions in Copyright Cases: The Impact of eBay*, 63 WM. & MARY L. REV. 773, 773–74 (2022).

55. See, e.g., Paul Goldstein, Goldstein on Copyright, §§ 13.1.2.2, 13.2.1.1 (3rd ed. 2020) (relying on Jiarui Liu, *Copyright Injunctions After eBay: An Empirical Study*, 16 LEWIS & CLARK L. REV. 215 (2012)); Alfred C. Yen, *Rethinking Copyright's Relationship to the First Amendment*, 100 B.U. L. REV. 1215, 1225 (2020) (same).

56. *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20, 32 (2008) (making clear that standards for preliminary and permanent injunctions are aligned except as to whether success on the merits is likely (for preliminary injunctions) or has been proven (for permanent injunctions)).

57. See Matthew Sag & Pamela Samuelson, *Discovering eBay's Impact on Copyright Injunctions Through Empirical Evidence*, 64 WM. & MARY L. REV. 1447 (2023).

58. See Pamela Samuelson, *Will the Copyright Office Be Obsolete in the Twenty-First Century . . .*, 13 CARDOZO ARTS & ENT. L.J. 55 (1994).

assessment of the Board's performance.⁵⁹ More generally, as interest in copyright reform has waxed and waned, Pam's views of Congress's capabilities exhibited some hope but also necessary caution.⁶⁰ Her institutional concerns were not limited to those in the United States; she has also identified challenges that the international system would have to confront.⁶¹

B. CONGRESS AND THE COURTS: *GOOGLE BOOKS*

Google wanted to make public domain and in-copyright books searchable. After Google made agreements with primarily academic libraries, it digitized about twelve million books to create its Google Book Search (GBS) service. About ten million of these books were in-copyright.⁶² Publishers and some professional authors were outraged. How could this be a fair use? This was a moment of real culture clash between twentieth century and twenty-first century copyright law.⁶³

1. *Pre-Settlement*

Prior to the October 28, 2008 settlement, the case was primarily a fair use case. Pam convened another scholarly meeting to vet the arguments. While we did not discuss it at the time, I would have fully expected Pam to lead or participate in amicus support for Google's fair use position. The courts already had agreed that copying billions of files to create an image search and to display thumbnail images to the user was fair use.⁶⁴ Functionally, Google Book Search was sufficiently analogous, and the publishers' and Authors Guild arguments about a potential licensing market were unpersuasive.

2. *The Settlement: Advocacy*

Under this sweeping settlement, which took thirty months to negotiate, Google would have paid \$125 million to be administered by a new non-profit

59. See Kathryn Hashimoto & Pamela Samuelson, *Scholarly Concerns About a Proposed Copyright Small Claims Tribunal*, 33 BERKELEY TECH. L.J. 689 (2018).

60. See Pamela Samuelson, *Preliminary Thoughts on Copyright Reform*, 2007 UTAH L. REV. 551 (2007); see also Pamela Samuelson, *Is Copyright Reform Possible?*, 126 HARV. L. REV. 740 (2013) (book review); Jessica Litman & Pamela Samuelson, *The Copyright Principles Project: Directions for Reform*, 25 BERKELEY TECH. L.J. 1175 (2011) (with Members of the Copyright Principles Project).

61. See, e.g., Pamela Samuelson, *Challenges for the World Intellectual Property Organization and the Trade-Related Aspects of Intellectual Property Rights Council in Regulating Intellectual Property Rights in the Information Age*, 21 EUR. INTELL. PROP. REV. 578 (Nov. 1999).

62. See Pamela Samuelson, *Academic Author Objections to the Google Book Settlement*, 8 J. TELECOM. & HIGH TECH. L. 217 (2010) (summarizing history of GBS and the settlement).

63. See Michael W. Carroll, *Copyright and the Progress of Science: Why Text and Data Mining is Lawful*, 53 U.C. DAVIS L. REV. 893, 899–901 (2019).

64. See *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146 (9th Cir. 2007).

Book Rights Registry.⁶⁵ The settlement would have bound all class members who had not opted out, giving Google the equivalent of a private statutory license to use orphan works within the scope of the settlement.⁶⁶ The settlement provided financial incentives for authors and publishers to add works to the Book Search service, giving Google a uniquely powerful position in the book market.

The settlement, shall we say, *energized* Pam. It was audacious. Most of the scanned books were written by academic authors, many of whose primary interest was in wide dissemination of their work. Yet, here were three individual plaintiff-authors and the Authors Guild, none of whom had much to do with academic scholarship, purporting to represent a class of *all* authors. The orphan works problem was under legislative consideration at the time, and here was Google gaining a substantial first-mover advantage with a private compulsory license.

To be fair, the settlement was creative and had features that would have greatly improved access to the scanned works. As Pam's second letter to Judge Chin, United States District Court for the Southern District of New York, explained, the settlement could have been modified to address many of the concerns she had identified.⁶⁷ But, from where I sat, it seemed clear that Pam's energy to engage was driven by how deeply problematic the settlement was from an institutional perspective.⁶⁸

The courts' power to bind non-parties to a dispute under Rule 23 of the Federal Rules of Civil Procedure is an exceptional one, and it should be used when justified by the underlying merits. Here, on the merits, there were really two closely-related legal questions in dispute: did the fair use doctrine cover the copying done during Google's book-scanning process and did fair use also cover Google's snippet displays of the books? These legal questions required discovery of only a comparatively modest amount of facts necessary for the analysis.

65. After objections discussed immediately *infra* note 66, the agreement was amended in geographic scope and certain other respects. See Authors Guild, Inc. v. Google, Inc., Proposed Amended Settlement Agreement, 05-CV-8136-DC, (S.D.N.Y. Nov. 13, 2009), <https://authorsguild.org/app/uploads/2012/08/Amended-Settlement-Agreement.pdf>.

66. See Pamela Samuelson & Elizabeth T. Gard, *Pamela Samuelson's Letters to the Court: Concerns on the Proposed Google Book Settlement*, 12 TULANE J. TECH. & INTELL. PROP. L. 185 (2009).

67. See *id.* at 194–207 (Disclosure: I was one of the signatories to the second letter.)

68. See Jason Schultz, *Pam Samuelson and the Emergence of the Technology Law and Policy Clinical Movement*, 39 BERKELEY TECH. L.J. 1117 (providing additional details about Pam's response to the proposed settlement, including the role of law school clinics).

The “settlement” went remarkably far beyond resolving this straightforward dispute. It asked the court to issue a judgment that, among other things, would have: (1) bound a large class of authors with heterogeneous interests, (2) created a new collective rights management organization, (3) created a new digital book market, and (4) granted a single private entity special privileges under copyright law.⁶⁹

Pam’s letter, written in advance of the court’s fairness hearing, eloquently closed with this:

Whatever the outcome of the fairness hearing, we believe strongly that the public good is served by the existence of digital repositories of books, such as the GBS corpus. We feel equally strongly that it would be better for Google not to have a monopoly on a digital database of books. The future of public access to the cultural heritage of mankind embodied in books is too important to leave in the hands of one company and one registry that will have a de facto monopoly over a huge corpus of books and rights in them.⁷⁰

On this analysis, the orphan works problem needed a solution, but the institution that was best-placed to solve this problem and to provide for the other elements of the settlement was Congress, not the courts. Responding to the institutional problem arising from the unrepresentativeness of the Authors Guild, Pam responded institutionally. Having gathered support from a wide range of academic authors to formally object to the settlement, Pam realized that this otherwise unrepresented group was likely to need a voice in other copyright developments going forward. She invited these authors to exercise their freedom of association to form the Authors Alliance, a then-new non-profit organization that promotes authors’ interests in wide dissemination of their works and which celebrated its tenth anniversary in May 2024.⁷¹

On March 22, 2011, Judge Chin rejected the proposed settlement agreement, finding that it was “not fair, adequate, and reasonable.”⁷² His opinion tracks closely with many of the points that Pam had initially raised and had repeated through the course of the settlement litigation. She was not alone in finding problems with the settlement. The U.S. Department of Justice

69. See Pamela Samuelson, *The Google Book Settlement as Copyright Reform*, 2011 WISC. L. REV. 479, 514–36 (detailing the full range of the settlement’s proposed changes to existing law).

70. Samuelson, *supra* note 66, at 205.

71. See Authors Alliance, *Authors Alliance 10th Anniversary Event: Authorship in an Age of Monopoly and Moral Panics*, <https://www.authorsalliance.org/2024/03/15/authors-alliance-10th-anniversary-event-authorship-in-an-age-of-monopoly-and-moral-panics/> (Disclosure: I am one of the authors invited to be a founding member of Authors Alliance).

72. See *Authors Guild v. Google, Inc.*, 770 F. Supp 2d 666, 686 (S.D.N.Y. 2011).

(DOJ) and certain European governments also had raised objections.⁷³ Pam also highlighted the role that the Register of Copyrights, Marybeth Peters, played.⁷⁴ But it was the arguments that Pam and her fellow objectors raised that went to the core of why this was an inappropriate use of the Rule 23 mechanism.

3. *The Settlement: Scholarship*

I admire how Pam was able to write extensively about the fairness of the settlement during and after the litigation. Demonstrating her remarkable ability to be both a participant and an observer in the process, Pam reflected on the ways in which this attempted use of a class-action settlement would have been a partial form of copyright reform.⁷⁵ As an institutionalist, she turned attention to how Congress could address the problems covered by the settlement.⁷⁶ She reflected on the antitrust problems identified by DOJ.⁷⁷ She also offered her perspective on how to solve the orphan works problem,⁷⁸ and how not to.⁷⁹

IV. POLICY ADVOCACY IN COPYRIGHT LAW

Pam's commitment to progress has led her to actively participate in policy discussion in the United States and in Europe. She has been an intellectual engaged with the general public on the issues of the day. Most recently, for example, when *Science* needed a copyright scholar to explain the copyright issues raised by generative artificial intelligence, it should surprise no one that they sought out Pam.⁸⁰ Her early interest in software copyright led to her continued engagement with the computer science and software development

73. See *Authors Guild v. Google, Inc., Statement of Interest of the United States of America Regarding Proposed Amended Settlement*, No. 05-Civ.-8136 (DC) (S.D.N.Y. Feb. 4, 2010), <https://www.justice.gov/atr/case-document/file/488166/dl>; Daniel Gervais, *The Google Book Settlement and International Intellectual Property Law*, 15 INSIGHTS, AM. SOC'Y OF INT'L L., (Apr. 11, 2011), <https://www.asil.org/sites/default/files/insight110411.pdf> (describing positions taken by the German and French governments in filings before the court in publication of the American Society of International Law).

74. See Pamela Samuelson, *Tribute to Marybeth Peters: Standing Up for Copyright: Marybeth Peters and the Google Book Settlement*, 58 J. COP. SOC'Y 75 (2011).

75. See Samuelson, *supra* note 68.

76. See Pamela Samuelson, *Legislative Alternatives to the Google Book Settlement*, 34 COLUM. J. L. & ARTS 697 (2011).

77. See Pamela Samuelson, *A Perspective on the Merits of the Antitrust Objections to the Failed Google Book Settlement*, Harv. J. L. & TECH. OCCAS'L PAPERS (July 2013).

78. See Pamela Samuelson, David Hansen, Gwen Hinze, Kathryn Hashimoto & Jennifer Urban, *Solving the Orphan Works Problem for the United States*, 37 COLUM. J. L. & ARTS 1 (2013).

79. See Pamela Samuelson, *Extended Collective Licensing to Enable Mass Digitization: A Critique of the U.S. Copyright Office Proposal*, 38 EUR. INTELL. PROP. REV. 75 (Feb. 2016).

80. See Pamela Samuelson, *Generative AI Meets Copyright*, 381 Science 158 (2023).

communities by regularly contributing to *Communications of the Association for Computing Machinery*.⁸¹

Without describing all of the policy debates Pam has engaged in, I want to recall an early and important one—the debate about the Clinton White House’s White Paper on Intellectual Property and the National Information Infrastructure in the run-up to what eventually became the Digital Millennium Copyright Act of 1998.⁸² The White Paper represented another kind of audacity, treating open questions as answered in favor of enlarged copyright scope and proposing a range of legislative changes that would have further enlarged copyright’s subject matter, scope, and duration. The policy process was moving quickly—bipartisan bills that would implement much of the White Paper’s recommendation had been introduced in both the House and Senate in September 1995. I was in my final year of law school, following this debate with interest.

Pam was among a number of public-interest-minded legal scholars who joined with libraries and other organizations to push back. One important initiative in this regard was the Digital Future Coalition.⁸³ Related to that initiative, in January 1996, in this contentious environment, Pam published *The Copyright Grab* in *Wired*.⁸⁴

The piece was a momentous *cri de coeur* and call to action. Pam identified eight flaws with the White Paper’s proposals, including a significant scaling back of fair use and first sale. The White Paper also imagined that the “Information Superhighway” could be made “safe” for content through rules about copyright management information and technological protection measures. Online service providers would have been subject to liability for their users’ infringing conduct, giving them strong incentives to monitor and police their users’ online interactions. As Pam wrote:

81. See Communications of the ACM, Pamela Samuelson, <https://cacm.acm.org/author/pamela-samuelson/> (collecting Pam’s contributions to the publication).

82. See UNITED STATES DEPARTMENT OF COMMERCE, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS (Sept. 1995); The Digital Millennium Copyright Act, Pub. L. No. 105-304 (1998).

83. See *Digital Future Coalition*, WIKIPEDIA, https://en.wikipedia.org/wiki/Digital_Future_Coalition, (explaining the role my colleague Peter Jaszi played in coordinating it); see also Bryan Bello & Patricia Aufderheide, *Information Activism in the First Digital Copyright Decade: A Case Study of the Digital Future Coalition, 1996–2002 and the Internet that Nearly Was*, (21st Annual Conference of the Association of Internet Researchers, 2020), <https://spir.aoir.org/ojs/index.php/spir/article/download/11169/9792>.

84. Pamela Samuelson, *The Copyright Grab*, 4.01 WIRED 134 (Jan. 1996), <https://www.wired.com/1996/01/white-paper/>.

It's hard to fully appreciate how substantial a change the white paper would wreak upon copyright law until you grasp the negative synergies among its eight interrelated parts. The diminishment of fair-use rights, for example, might seem less threatening when viewed in isolation than when viewed in conjunction with the white paper's call for an expansion of copyright owner control over browsing and transmissions.⁸⁵

To convey a sense of the urgency of the time and the scale of provocation that the White Paper was, consider Pam's closing rhetoric:

[T]he copyright maximalists and their lobbyists are not thinking about how to promote real public respect for copyright law or about what's in the public interest. Their strategy is to rush the white paper's legislation through Congress today and force it down the public's throat tomorrow. You are the public whose throat this policy is about to be forced down. If you don't want it to happen, you'd better do something, and quickly.⁸⁶

Sadly, Pam has been vilified time and again for standing up against these extraordinary changes to the law.⁸⁷ I raise this only to provide some context for my argument about Pam's loyalty to the Constitution's vision for copyright law. Pam already had raised the ire of some corporate copyright owners for her work on software copyright. For those who know her, consider the image of Pam as the "Darth Vader of the software industry."⁸⁸ For her public advocacy during the run-up to the DMCA, Pam was said in multiple different ways to be "against copyright" or "anti-copyright." Some of this rhetoric had decidedly gendered valence. These memes continue to be repeated about her to this day.⁸⁹

I recognize that this rhetoric is hyperbolic and over-the-top. Still, it is so deeply wrong! As Parts I and II *supra* demonstrate, Pam's approach to

85. *Id.*

86. *Id.*

87. See, e.g., David Newhoff, *Copyright Principles & Consensus?*, ILLUSION OF MORE (May 17, 2013), <https://illusionofmore.com/copyright-principles-consensus/> (using hyperbolic language to criticize Pam's congressional testimony about the Copyright Principles Project for downplaying the effects of the difficulties for enforcing copyrights on the internet).

88. See Matt Richtel, *Cyberlaw's Deep Thinker Wins Big*, WIRED (June 18, 1997), <https://www.wired.com/1997/06/cyberlaws-deep-thinker-wins-big/>.

89. See *5 Reasons the EFF's New Board Chair is Terrifyingly Anti-Copyright*, CREATIVEFUTURE (Oct. 30, 2019) (accusing Pam of being "bent on destroying copyright protection."), <https://www.creativefuture.org/pamela-samuelsan/>; see also *Is the EFF's New Board Chair Anti-Copyright? We Stand By Our Facts*, CREATIVEFUTURE (Nov. 18, 2019) (claiming that its goal was not to write "snarky prose" and then asserting "We don't know Prof. Samuelson. But if she is as fair, kind, and generous as her supporters say, we'd like to see her rethink her positions, and the harm she and her followers are doing to creativity in America.").

copyright has been balanced, careful, thorough, and focused on its North Star, promoting the progress of science. It is for these reasons that I consider her work to exhibit the kind of principled commitment to copyright law's role in society that we should emulate. If she is "anti" anything, she is against proposals, arguments, and developments that would bend copyright law to serve powerful private interests at the expense of the public interest. She has stayed true to that role throughout her career.

Nevertheless, unlike some of her opponents, Pam can separate policy differences from *ad personam* incivility. For younger scholars who also want to play a role in public policy debates, Pam has been a role model in her ability to forge ahead notwithstanding the slings and arrows she has encountered in the public forum.

V. CONCLUSION

I want to close on a more personal note. Pam has been a generous mentor, colleague, and friend throughout my academic career. Along with the other founders of the Intellectual Property Scholars Conference, she helped grow that meeting into the large community gathering that it has become. As one of the "founding mothers" of our community, she has set a tone for curious, collegial, and warm engagement with the full range of issues and ideas that inspire our collective work.

In addition to conference participation, I have been fortunate enough to participate in some of the meetings Pam and Bob have hosted in St. Helena. Pam also invited me to join the Copyright Principles Project.⁹⁰ The latter effort was a substantial undertaking that was deeply rewarding. Pam led the group through wide-ranging, and sometimes intense, discussions that canvassed the whole landscape of copyright law. I formed professional and personal bonds with the other members of the group that I greatly value to this day.

I have learned over the years how unique our community is within the legal academy. Its most prominent members are approachable and are invested in nurturing the professional growth of all. While the size of our general works-in-progress meetings can be daunting at times, that scale also speaks to the open-door philosophy that characterizes the community. Those in my cohort give Pam and the other founders of this community credit for setting the tone and leading by example. It is on us to pay it forward and keep this culture vibrant and healthy.

90. See Jessica Litman & Pamela Samuelson, *The Copyright Principles Project: Directions for Reform*, 25 BERKELEY TECH. L.J. 1175 (2011) (with Members of the Copyright Principles Project).

Pam is not done, and I look forward to our future encounters, engagement and collaboration. The entire copyright field has to respond to a particularly dynamic period as the challenges and opportunities posed by generative artificial intelligence and other developments come into view. Pam will be where she always has been—right in the thick of it!

