

USING ANTITRUST LAW TO CHALLENGE TURING'S DARAPRIM PRICE INCREASE

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ABSTRACT

In 2015, notorious pharmaceutical entrepreneur Martin Shkreli made worldwide headlines. As CEO of Turing Pharmaceuticals, Shkreli increased the price of pyrimethamine (Daraprim) 5000 percent. Although Turing's price hike on the unpatented drug was met with widespread outrage, few recognized that the company had recently changed its distribution system from one in which the drug was widely available to one in which supplies could be obtained from only a single source. This Article contends that Turing's restricted distribution scheme for pyrimethamine, with its apparent lack of legitimate justifications, could form the basis of an antitrust violation. Turing appears to have monopoly power in engineering and maintaining a 5000 percent price increase, preventing hospitals from obtaining pyrimethamine, and ensuring the absence of FDA-approved substitutes for the drug. The company also appears to have engaged in exclusionary conduct when it changed its distribution system in a way that only made sense by blocking generic competition. Because the combination of monopoly power and exclusionary conduct is the hallmark of a monopolization claim, Turing's behavior warrants close antitrust scrutiny.

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I. INTRODUCTION

Notorious pharmaceutical entrepreneur Martin Shkreli made worldwide headlines in 2015. As CEO of Turing Pharmaceuticals, Shkreli obtained U.S. marketing rights to pyrimethamine (Daraprim) and quickly increased the price 5000 percent, from \$13.50 to \$750 per pill. Pyrimethamine is a decades-old drug used primarily to treat toxoplasmosis, a fatal parasitic brain infection that usually occurs in patients with weakened immune systems, such as those with end-stage HIV infection.

Turing's price hike was met with widespread outrage among the public and in the medical and public health communities, with the episode leading to censure by other drug companies, congressional hearings seeking ways to address the problem, and policy proposals from Republican and Democratic presidential candidates. Despite the fact that there were no patents or other forms of market exclusivity protecting the drug, Turing was able to raise the price because the relatively small market in the United

States for pyrimethamine had attracted no other generic manufacturers. Indeed, Shkreli later lamented that he did not raise the price even higher.¹

In addition to increasing price, Turing initiated another less widely understood move—it changed the distribution scheme for the drug. Before its acquisition by Turing, pyrimethamine was available without restriction to patients seeking to fill prescriptions at local pharmacies and to hospitals seeking to stock the product for inpatient use. But in the months before the price hike, apparently as a condition of the sale to Turing, pyrimethamine was switched to a controlled distribution system called Daraprim Direct, in which prescriptions or supplies of the product could be obtained only from a single source: Walgreen’s Specialty Pharmacy.² As a result, hospitals could no longer obtain the drug from a general wholesaler, and patients could no longer find it at a local pharmacy. Instead, Turing required institutions and individuals to set up accounts through Daraprim Direct, and outpatients were only able to receive the drug by mail order.³ Comments from Turing executives suggest that a primary goal of the Daraprim Direct system was to make it impossible for anyone other than registered clients to obtain the drug, including generic manufacturers wishing to obtain samples for use in bioequivalence studies needed to obtain Food and Drug Administration (FDA) approval of their applications for generic versions.⁴

The central thesis of this Article’s analysis is that Turing’s restricted distribution scheme for pyrimethamine, with its apparent lack of legitimate justifications, could form the basis for an antitrust violation, especially if the scheme was established to prevent subsequent entrants into the market from undercutting the newly established high price for the drug. While the pyrimethamine restricted distribution scheme may be unethical and could be bad for public health, this Article addresses the question of whether it violates the antitrust laws. Part II describes the typical distribution systems in the pharmaceutical industry. Part III examines monopoly power and considers whether Daraprim possessed such power. Part IV considers the

1. Kate Gibson, *Martin Shkreli: “I Should’ve Raised Prices Higher,”* CBS NEWS (Dec. 4, 2015), <http://www.cbsnews.com/news/martin-shkreli-i-shouldve-raised-prices-higher/> [https://perma.cc/TSF9-QAWE].

2. Andrew Pollack & Julie Creswell, *The Mercurial Man Behind the Drug Price Increase that Went Viral*, N.Y. TIMES, Sept. 23, 2015, at B1.

3. Monica V. Mahoney, *New Pyrimethamine Dispensing Program: What Pharmacists Should Know*, PHARM. TIMES (July 17, 2015), <http://www.pharmacytimes.com/contributor/monica-v-golik-mahoney-pharmd-bcps-aq-id/2015/07/new-pyrimethamine-dispensing-program-what-pharmacists-should-know> [https://perma.cc/DHY4-YDGC].

4. See *infra* text accompanying note 116.

second element of monopolization claims, exclusionary conduct, and explores whether Turing engaged in such behavior. Part V then reaches beyond pyrimethamine to offer additional examples of similar conduct. Given that the Federal Trade Commission⁵ and N.Y. Attorney General⁶ are currently conducting antitrust investigations of this behavior, this Article offers a framework for analysis.

II. GENERIC DRUG APPROVAL AND DISTRIBUTION SYSTEMS

Pyrimethamine was originally approved by the FDA in 1953 and was made by its original sponsor, GlaxoSmithKline, and sold for about \$1 per pill.⁷ In 2009, GlaxoSmithKline sold the rights to pyrimethamine to a small, private firm, CorePharma,⁸ which raised the price to \$13.50 per pill.⁹ With about 10,000 prescriptions per year in the United States, sales increased from \$667,000 to \$6.3 million from 2010 to 2011.¹⁰ In 2014, just before Turing bought the rights to pyrimethamine, more than 8,000 prescriptions were written, resulting in sales of \$9.9 million.¹¹

5. *FTC Mounts Antitrust Probe of Shkreli's Ex-Firm Turing: Lawyer*, REUTERS (Jan. 22, 2016), <http://www.nbcnews.com/business/business-news/ftc-mounts-antitrust-probe-shkreli-s-ex-firm-turing-lawyer-n502241> [<https://perma.cc/L4V5-3N2H>].

6. Andrew Pollack, *New York Attorney General Examining Whether Turing Restricted Drug Access*, N.Y. TIMES (Oct. 12, 2015), <http://www.nytimes.com/2015/10/13/business/new-york-attorney-general-examining-if-turing-restricted-drug-access.html?> [<https://perma.cc/C63X-ADYK>].

7. J. Jennings Moss, *With a 5,000 Percent Cost Increase on One Drug, Is This Entrepreneur a Biotech Maverick or Opportunistic Profiteer*, N.Y. BUS. J. (Sept. 21, 2015), <http://www.bizjournals.com/newyork/news/2015/09/21/with-a-5-000-percent-cost-increase-on-one-drug-is.html>.

8. *CorePharma Signs Agreement with GSK to Acquire Dexedrine US NDAs*, PHARMACEUTICAL BUS. REV. (2010), http://contractservices.pharmaceutical-business-review.com/news/corepharma-signs-agreement-with-gsk-to-acquire-dexedrine-us-ndas_251010 [<https://perma.cc/V88L-8X7B>].

9. Jonathan D. Alpern, William M. Stauffer & Aaron S. Kesselheim, *High-Cost Generic Drugs: Implications for Patients and Policymakers*, 371 NEW ENG. J. MED. 1859, 1859–62 (2014).

10. Jennings Moss, *supra* note 7.

11. *Id.* Given that the number of prescriptions did not change during the time period and the costs of production did not increase, it would appear that Turing's profits on this drug also skyrocketed.

Though pyrimethamine was eligible for generic competition by the 1970s, no generic version of the product has yet been approved.¹² The Hatch-Waxman Act of 1984 formalized an abbreviated process for approval of generic drugs based on *in vitro* data as well as pharmacokinetic and pharmacodynamic studies that a manufacturer must conduct between its product and the so-called Reference Listed Drug.¹³ The Reference Listed Drug is the brand-name version designated by the FDA against which a potential generic entrant must test its drug.¹⁴ Upon successful completion of these studies, the FDA can designate a generic drug as bioequivalent and approve its sale in the market, which will then occur as long as the brand manufacturer has no patents or market exclusivities in place.¹⁵ The version of pyrimethamine now owned by Turing is the Reference Listed Drug against which generic manufacturers must test their products to be certified as bioequivalent.¹⁶

Completing bioequivalence studies therefore requires generic manufacturers to obtain samples of the brand-name Reference Listed Drug. Generic manufacturers do that by directly contacting the brand-name manufacturer or working through a wholesaler or other middleman.¹⁷ These transactions are completed without a prescription and with supplies shipped in a bulk form suitable for clinical testing rather than patient use.

After a generic drug is approved and made available for sale, state drug product selection laws permit automatic substitution of FDA-certified

12. FDA, *Drugs@FDA: Daraprim*, <http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm> (search “Daraprim”) (noting that “[t]here are no Therapeutic Equivalents”) (last visited Apr. 24, 2016).

13. See Aaron S. Kesselheim & Jonathan J. Darrow, *Hatch-Waxman Turns 30: Do We Need a Re-designed Approach for the Modern Era?*, 15 YALE J. HEALTH POL’Y L. & ETHICS 293, 302 (2015) (“The ANDA bioequivalence process permitted approval of generic drugs scientifically proven to work similarly well to their brand-name versions without subjecting those generic drugs to the same clinical trial requirements already completed by the brand-name manufacturer.”).

14. 21 C.F.R. § 314.94(a)(3) (2015); see also FDA, ORANGE BOOK PREFACE (2015), <http://www.fda.gov/Drugs/DevelopmentApprovalProcess/ucm079068.htm> [<https://perma.cc/3MGB-EGYW>] (“By designating a single reference listed drug as the standard to which all generic versions must be shown to be bioequivalent, FDA hopes to avoid possible significant variations among generic drugs and their brand name counterpart.”).

15. Kesselheim & Darrow, *supra* note 13, at 303.

16. FDA, Search Results, *Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations* (Jan. 7, 2016), http://www.accessdata.fda.gov/scripts/cder/ob/do cs/obdetail.cfm?Appl_No=008578&TABLE1=OB_Rx [<https://perma.cc/92SW-LUY6>].

17. See, e.g., Pharmaceutical Buyers, MANTA, <http://www.manta.com/c/mmlh5vy/pharmaceutical-buyers> (last visited Feb. 23, 2016) (“We are an International Company that can provide you with an extended variety of pharmaceutical products for a good price.”).

bioequivalent generic drugs at the pharmacy level. Unless the prescription is marked “dispense-as-written” (which occurs about 5 percent of the time), such substitution can occur even if the prescriber writes the name of the brand-name drug.¹⁸ Because of automatic substitution, patients do not know which company has supplied their generic prescription drug, and generic manufacturers compete largely on the basis of the lowest price they can offer suppliers.¹⁹ The prices at which generic drugs are sold are heavily dependent on the number of manufacturers. In fact, FDA studies show that generic drug prices fall to about 52 percent of the brand price when two generic competitors are in the market, 33 percent when there are five, and 13 percent when there are fifteen.²⁰

Most prescription drugs are available through a standard pharmaceutical distribution chain: from manufacturer to wholesaler, then to retail or mail-order pharmacy, and then to consumer.²¹ The goal is to distribute the drug as widely as possible, because widespread distribution tends to increase manufacturers’ revenues by making drugs available to be prescribed to as many people as possible. The parties contract with one another and hand off control of the drug until it reaches the consumer. Atorvastatin (Lipitor), for example, is manufactured by Pfizer, is distributed by wholesalers such as McKesson, and is available through retail pharmacies such as CVS or Walgreens. In this model, Pfizer relinquishes its control of atorvastatin to McKesson, which then sells the drug to its network of retail pharmacies, with the pharmacies then selling the drug to consumers with valid prescriptions from their physicians. Pfizer is not directly involved at the retail level.

Drugs with limited distribution schemes, by contrast, are not available through standard retail or mail-order pharmacies. Instead, the manufacturer eliminates the wholesaler and distributes the drug only through specialty pharmacies selected by the manufacturer. Manufacturer-sponsored programs like Turing’s Daraprim Direct facilitate the distribution of drugs

18. William H. Shrank et al., *The Consequences of Requesting “Dispense as Written”*, 124 AM. J. MED. 309, 309–10 (2011) (identifying five percent of prescriptions as dispense-as-written in large claims database of prescriptions).

19. Kesselheim & Darrow, *supra* note 13, at 313–14 (“The state DPS laws helped lead to rapid uptake of bioequivalent generic drugs in practice without the time and expense needed to encourage physicians to change their prescribing practices.”).

20. FDA, ANALYSIS OF RETAIL SALES DATA FROM IMS HEALTH, IMS NATIONAL SALES PERSPECTIVE, 1999–2004 (2005).

21. KAISER FAMILY FOUNDATION, FOLLOW THE PILL: UNDERSTANDING THE U.S. COMMERCIAL PHARMACEUTICAL SUPPLY CHAIN (2005), http://avalere.com/research/docs/Follow_the_Pill.pdf [https://perma.cc/H3KJ-8YE8].

from specialty pharmacy to patient. For example, mecasermin (Increlex) is a biologic drug manufactured by Ipsen Pharmaceuticals to treat growth failure and severe primary insulin-like growth deficiency.²² Patients must enroll in Ipsen's "Ipsen Cares" program before receiving the drug. Ipsen then coordinates the delivery of the drug through its specialty pharmacy network.²³ Actelion Pharmaceuticals has a similar program called "Actelion Pathways" for its drug iloprost (Ventavis), a treatment for pulmonary arterial hypertension.²⁴ In this case, physicians must enroll patients in this program through the manufacturer for a specialty pharmacy to deliver the drug.²⁵

When safety issues arise in the clinical trials supporting approval of a drug, the FDA may require the use of Risk Evaluation and Mitigation Strategies (REMS) to ensure that a drug's benefits outweigh its risks.²⁶ The FDA can require REMS that take the form of medication guides, patient package inserts, communication plans, or elements to assure safe use (ETASU) (with this last category including restrictions on how drugs are distributed to patients).²⁷ Restricted distribution in these cases may be justified because it allows manufacturers to track prescriptions and monitor patients. For example, lenalidomide (Revlimid), a treatment for multiple myeloma, is believed to cause serious birth defects. To avoid embryo-fetal exposure, it is available only through restricted distribution to ensure that the drug is prescribed only to women who are not pregnant or trying to conceive.²⁸

22. FDA, HIGHLIGHTS OF PRESCRIBING INFORMATION: MECASERMIN RECOMBINANT (INCRELEX) (2014), http://www.accessdata.fda.gov/drugsatfda_docs/label/2014/021839s0161bl.pdf [<https://perma.cc/5RRM-VZTA>].

23. IPSEN CARES (2016), <http://www.ipsencares.com/#about-ipsen-cares> [<https://perma.cc/XZ5K-FMEG>].

24. FDA, HIGHLIGHTS OF PRESCRIBING INFORMATION: ACTELION PHARMS LTD., ILOPROST (VENTAVIS) (2013), http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/021779s0141bl.pdf [<https://perma.cc/XT8U-6PW6>].

25. *Working with a Specialty Pharmacy*, ACTELION PATHWAYS, <https://www.actelionpathways.com/ventavis-and-specialty-pharmacies> [<https://perma.cc/V32J-HS72>] (last visited Feb. 24, 2016).

26. *See* 21 U.S.C. § 355-1(a)(1) (2012).

27. FDA, CENTER FOR DRUG EVALUATION AND RESEARCH, HOW TO OBTAIN A LETTER FROM FDA STATING THAT BIOEQUIVALENCE STUDY PROTOCOLS CONTAIN SAFETY PROTECTIONS COMPARABLE TO APPLICABLE REMS FOR RLD: GUIDANCE FOR INDUSTRY (Dec. 2014), <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM425662.pdf> [<https://perma.cc/KP47-NCBV>].

28. Ameet Sarpatwari et al., *Using a Drug-Safety Tool to Prevent Competition*, 370 NEW ENG. J. MED. 1476, 1477 (2014) (listing key dangerous side effects of lenalidomide).

At the same time, however, limiting sales of a product through one particular wholesaler also gives the manufacturer complete control over the distribution chain. In public forums, some manufacturers of limited distribution drugs have emphasized that they can provide patient-centered programs as part of their restricted distribution schemes. These programs use the narrow distribution pool to monitor patients and provide certain types of adherence support, such as assistance with refilling, the ability to ask questions to manufacturer representatives, and connecting patients with one another to provide social support.²⁹ But limited distribution also can allow brands to restrict access to samples needed by generics in their bioequivalence studies. In particular, moving supply through a single source can allow the brand to take steps to prevent the supply of the product to a generic that might otherwise have gone to pharmacies for use in filling patient prescriptions. As a result, limited distribution systems create a market environment in which anticompetitive behavior can thrive.

III. MONOPOLY POWER

The relevant antitrust law in considering the actions of Turing is monopolization, which focuses on the conduct of a single company. To prove a monopolization claim, a plaintiff must show monopoly power and exclusionary conduct. This Part will analyze monopoly power and Part IV will address exclusionary conduct.

Monopoly power has been defined as “the power to control prices or exclude competition.”³⁰ It can be shown in one of two ways. First, it can be proved indirectly by examining a defendant’s market share along with barriers to entry that could entrench that market position.³¹ Second, it can be proved directly,³² such as when a brand firm is able to “maintain the price of [a drug] at supracompetitive levels without losing substantial sales.”³³ In addition to these antitrust requirements, Part III addresses the most potent

29. Yifei Liu et al., *Greater Refill Adherence to Adalimumab Therapy for Patients Using Specialty Versus Retail Pharmacies*, 27 *ADVANCES IN THERAPY* 523, 523–30 (2010).

30. *United States v. E.I. duPont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

31. HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* ¶ 6.2b, at 359–60 (5th ed. 2016).

32. ABA SECTION OF ANTITRUST LAW, *ANTITRUST LAW DEVELOPMENTS* 69–70 (7th ed. 2012) (noting that “direct proof has provided the basis for findings of substantial anticompetitive effects in some prominent cases”).

33. *In re Nexium (Esomeprazole) Antitrust Litig.*, 968 F. Supp. 2d 367, 387 (D. Mass. 2013); *see also In re Aggrenox Antitrust Litig.*, 94 F. Supp. 3d 224, 241 (D. Conn. 2015).

argument against monopoly power in this case: the existence of an inexpensive “compounded version” of the drug.

A. INDIRECT PROOF

Monopoly power can be demonstrated indirectly by defining a relevant market and examining the company’s share of the market. Courts regularly hold that a 90 percent market share supports market power, with several courts finding a 75 percent share to be sufficient.³⁴

Evidence that Turing has 100 percent of the relevant market is provided by the lack of effective, FDA-approved substitutes. Pyrimethamine is part of all widely accepted first-line therapeutic regimens for toxoplasmosis.³⁵ While toxoplasmosis has been treated without pyrimethamine and with alternative treatments, such as sulfamethoxazole-trimethaprim (Bactrim) and clindamycin (Cleocin), the efficacy of these approaches is currently based only on case reports³⁶ and other less rigorous data.³⁷ In fact, the American Society of Microbiology warned that the 5000 percent price increase would “negatively impact both health care costs and individual patient treatments.”³⁸ Nor, as discussed in detail below,³⁹ is a compounded version an effective substitute for pyrimethamine.

Regulatory barriers to entry cement the effect of this high market share. As discussed in greater detail below, generics can enter the U.S. market only after receiving FDA approval. Turing’s restriction of its distribution system entrenches its monopoly power by preventing generics from obtaining the samples needed for bioequivalence testing.

34. HOVENKAMP, *supra* note 31, ¶ 6.2a, at 357.

35. Sara Fazio, *Toxoplasmosis*, NEW ENG. J. MED. BLOG (Feb. 23, 2012), <http://blogs.nejm.org/now/index.php/toxoplasmosis/2012/02/23/> [<https://perma.cc/P66V-DWJS>].

36. *See, e.g.*, Deepak Madi et al., *Successful Treatment of Cerebral Toxoplasmosis with Clindamycin: A Case Report*, 27 OMAN MED. J. 411 (2012).

37. Pollack, *supra* note 6.

38. Memorandum from the Democratic Staff to Democratic Members of the Full House Comm. on Oversight and Gov’t Relations, at 5 (Feb. 2, 2016), <https://democrats-oversight.house.gov/sites/democrats.oversight.house.gov/files/documents/Memo%20on%20Turing%20Documents.pdf> [<https://perma.cc/CA9E-MFCF>].

39. *See infra* Section III.C.

B. DIRECT PROOF

Direct proof of monopoly power consists of observable effects on the market such as a price increase or output reduction.⁴⁰ Turing's conduct has revealed both types of direct evidence.

To begin, Turing's price increase has received unparalleled attention. Even though there has not been an increase in the costs of producing pyrimethamine (which costs pennies per pill to manufacture⁴¹), Turing has increased the price 5000 percent. In addition, Turing has been able to maintain that increase despite public outrage and substantial attention from the lay press, Congress, and Presidential candidates.⁴² Shkreli initially announced that Turing would lower the price for the drug in response to the negative publicity but later revealed that this reduction would be only 10 percent.⁴³ Ultimately, Shkreli decided not to lower the price at all, instead offering free samples, rebates to hospitals, and smaller bottle sizes.⁴⁴ Given the barriers to entry imposed by obtaining FDA review, the high prices will likely be maintained over an extended period of time.⁴⁵

Documents provided to the House Committee on Oversight and Government Reform offer numerous examples of price increases including patient copays in the thousands of dollars. The Director of Specialty Pharmacy Development at Walgreens recounted anecdotes of patients having difficulty obtaining pyrimethamine, including one who was forced to make a \$6,000 copay.⁴⁶ An internal presentation reported that “[p]atients with commercial/private insurance [are] experiencing increased co-pays,

40. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307 (3d Cir. 2007).

41. See Karthick Arvinth, *Daraprim: Generic Version of Drug Costs Less than £0.07 in India*, INTERNATIONAL BUSINESS TIMES (Sept. 25, 2015), <http://www.ibtimes.co.uk/daraprim-like-drug-costs-less-0-07-india-1521144> [<https://perma.cc/4RAZ-TRJH>].

42. Andrew Pollack, *Drug Goes From \$13.50 a Tablet to \$750, Overnight*, N.Y. TIMES, Sept. 21, 2015, at B1.

43. Andrew Pollack, *Turing Commits to Modest Price Reduction on a Drug*, N.Y. TIMES, Nov. 4, 2015, at B3.

44. Sam Thielman, *Martin Shkreli Walks Back on Pledge to Lower Price of HIV Drug Daraprim*, THE GUARDIAN (Nov. 25, 2015), <http://www.theguardian.com/business/2015/nov/25/martin-shkreli-hiv-drug-daraprim-turing> [<https://perma.cc/XLX5-WT7X>]. Turing documents reveal a methodical campaign to increase price by anticipating the reactions of HIV/AIDS groups and doctors. See Comm. Memorandum, *supra* note 38, at 3 (“Physician community less sensitive to price increases, but need to determine the price point at which payers start to increase cost-sharing with patients, which could result in physician switching.”).

45. See, e.g., *Star Fuel Marts, LLC v. Sam’s E., Inc.*, 362 F.3d 639, 654 (10th Cir. 2004).

46. Comm. Memorandum, *supra* note 38, at 4.

delays in claims approval[,] and rejections,” with one facing a copy of \$16,830.⁴⁷

Output reductions are another direct indicator of monopoly power. After pyrimethamine’s price increase, hospitals complained that they were not able to obtain the drug.⁴⁸ Turing’s own press release conceded that hospitals and clinics “were having trouble accessing the product.”⁴⁹

The combination of a price increase and output reduction is a hallmark of monopoly power, and the Democratic Staff memorandum synthesizing 250,000 pages of Turing documents revealed just such effects:

Daraprim has now become prohibitively expensive, hospital budgets are straining under the huge cost increases, patients are being forced to pay thousands of dollars in co-pays and are experiencing major challenges obtaining access to the drug, and physicians are considering using alternative therapies.⁵⁰

C. MONOPOLY POWER NOT NEGATED BY COMPOUNDED VERSION

On October 22, 2015, Imprimis Pharmaceuticals announced that it was planning to make available for \$1 a compounded coformulation of pyrimethamine and leucovorin (a folic acid derivative usually coprescribed with pyrimethamine as a separate pill to help protect against its side effects of bone marrow suppression).⁵¹ Thus, a counterargument to the conclusion of monopoly power would be that the compounded version serves as a substitute. Such an argument would point to certain patients taking this version instead of the FDA-approved version sold by Turing. If patients are in fact able to substitute the compounded version, then that could conceivably show a lack of market power.

47. *Id.* at 5.

48. Letter from Stephen B. Calderwood & Adaora Adimora to Tom Evegán & Kevin Bernier (Sept. 8, 2015), <http://www.hivma.org/uploadedFiles/HIVMA/HomePageContent/PyrimethamineLetterFINAL.pdf> [<https://perma.cc/8TZ9-KY3V>].

49. *Press Release: Important News about Daraprim (pyrimethamine)*, TURING PHARMACEUTICALS (Sept. 18, 2015), <http://www.turingpharma.com/media/press-release?headline=important-news-about-daraprim%25c2%25ae-%28pyrimethamine%29> [<https://perma.cc/8V3P-V4QS>].

50. Comm. Memorandum, *supra* note 38, at 1.

51. *Imprimis Pharmaceuticals to Make Compounded and Customizable Formulation of Pyrimethamine and Leucovorin Available for Physicians to Prescribe for Their Patients as an Alternative to Daraprim*, PR NEWSWIRE (Oct. 22, 2015), <http://www.prnewswire.com/news-releases/imprimis-pharmaceuticals-to-make-compounded-and-customizable-formulation-of-pyrimethamine-and-leucovorin-available-for-physicians-to-prescribe-for-their-patients-as-an-alternative-to-daraprim-300164514.html> [<https://perma.cc/5MFQ-VCMH>].

Such an argument is not persuasive. Imprimis's combination pill does not address the problem of costly pyrimethamine because the compounded drug is not an effective market substitute. Compounded drugs are synthesized at specially licensed pharmacies to respond to individual requests for variations of particular active ingredients that cannot be obtained through FDA-approved channels.⁵² Compounded drugs can include new formulations of products. For example, a compounding pharmacy might create a lozenge version of a medication available in pill form for a patient who has problems swallowing pills or a different concentration of an intravenous drug sold in only one strength.⁵³

Compounding pharmacies have historically not been permitted to distribute their products in bulk.⁵⁴ But a recent provision of the Food, Drug, and Cosmetics Act (FDCA) allows compounding pharmacies to register as outsourcing facilities, which permits the sale of compounded drugs in bulk and requires manufacturers to comply with current Good Manufacturing Practices.⁵⁵ Imprimis plans to register at least one of its compounding pharmacies as an outsourcing facility, which would allow mass production of pyrimethamine/leucovorin and sales to hospitals and physicians.⁵⁶

While compounded drugs produced by outsourcing facilities may resemble FDA-approved drugs, they are not. For starters, compounded drugs by definition cannot be a direct substitute for FDA-approved drugs.

52. Kevin Outterson, *Regulating Compounding Pharmacies after NECC*, 367 NEW ENG. J. MED. 1969, 1971 (2012) (“[T]raditional compounding was limited to a pharmacist or a physician serving a specific patient.”).

53. See, e.g., Loyd V. Allen Jr., *Troches and Lozenges*, 4 SECUNDUM ARTEM 2, <http://www.perrigo.com/business/pdfs/Sec%20Artem%204.2.pdf> [<https://perma.cc/SQT4-68Z8>] (“Lozenges, or troches, are experiencing renewed popularity as a means of delivering many different drug products. They are used for patients who cannot swallow solid oral dosage forms . . .”).

54. Outterson, *supra* note 52, at 1970 (describing 2002 FDA compliance policy guide not permitting use of “commercial-scale manufacturing or testing equipment for compounding drug products”).

55. See Food Drug and Cosmetic Act §§ 503A, 503B. Section 503B, which created a new category of compounders called “outsourcing facilities,” was added to the Food Drug and Cosmetic Act by the Drug Quality and Security Act in 2013. See Pub. L. No. 113-54, § 102, 127 Stat. 587, 588 (2013) (amending 21 U.S.C. § 351 et seq.).

56. *Imprimis Pharmaceuticals Announces Plans to Register Its Texas Pharmacy with the FDA as an Outsourcing Facility*, PR NEWSWIRE (Oct. 29, 2015), <http://www.prnewswire.com/news-releases/imprimis-pharmaceuticals-announces-plans-to-register-its-texas-pharmacy-with-the-fda-as-an-outsourcing-facility-300168448.html> [<https://perma.cc/ZGU9-CNS7>]; FDA, *Outsourcing Facilities* (Oct. 6, 2015), <http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/PharmacyCompounding/ucm393571.htm> [<https://perma.cc/9DXP-8GPD>].

Indeed, one restriction on compounded drugs is that they not be “essentially a copy of a commercially available drug product,”⁵⁷ which is why Imprimis’s version of pyrimethamine contains leucovorin.

More important, the FDA does not verify the safety, effectiveness, or manufacturing quality of compounded drugs in traditional compounding pharmacies. Instead, they are regulated by state pharmacy boards.⁵⁸ Though compounding pharmacies registered as outsourcing facilities are inspected by the FDA and must report adverse events,⁵⁹ FDA regulation of compounding pharmacies has traditionally been secondary to oversight by state inspectors,⁶⁰ and there can be substantial state-to-state variations in state authority and resources dedicated to this area.⁶¹

In response to a 2012 meningitis outbreak originating from the New England Compounding Center, the FDA has increased oversight of compounding pharmacies. Still, the agency cautions that poor quality-control practices may result in compounded drugs that are “sub- or super-potent, contaminated, or otherwise adulterated.”⁶² Patients subject themselves to risk when they “use ineffective compounded drugs instead of FDA-approved drugs that have been shown to be safe and effective.”⁶³ With

57. 21 U.S.C. § 353a.

58. Roy Guharoy et al., *Compounding Pharmacy Conundrum: “We Cannot Live without Them But We Cannot Live with Them” According to the Present Paradigm*, 143 CHEST 896, 897 (2013).

59. FDA, GUIDANCE FOR INDUSTRY, ADVERSE EVENT REPORTING FOR OUTSOURCING FACILITIES UNDER SECTION 503B OF THE FEDERAL FOOD, DRUG, AND COSMETIC ACT (Oct. 2015), <http://www.fda.gov/ucm/groups/fdagov-public/@fdagov-drugs-gen/documents/document/ucm434188.pdf> [<https://perma.cc/DR9D-MQL8>].

60. Steven K. Galston, *Federal and State Role in Pharmacy Compounding and Reconstitution: Exploring the Right Mix to Protect Patients*, TESTIMONY BEFORE HEALTH, EDUCATION, LABOR, AND PENSIONS SENATE COMM. (Oct. 23, 2003), <http://www.fda.gov/NewsEvents/Testimony/ucm115010.htm> [<https://perma.cc/U8MY-4TBF>] (“FDA has historically exercised its enforcement discretion in a manner that defers to the states, as the regulators of the practice of pharmacy, to serve as the primary regulators of the practice of pharmacy compounding.”).

61. Jennifer Gudeman et al., *Potential Risks of Pharmacy Compounding*, 13 DRUGS R&D 1 (2013) (“The FDA regulates and regularly inspects pharmaceutical manufacturing facilities to ensure compliance with GMPs. In contrast, pharmacies are primarily under the authority of state Boards of Pharmacy . . . and only undergo FDA inspections in rare instances. As a result, there is less assurance of consistent quality for compounded preparations than there is for FDA-approved drugs.”).

62. FDA, *Compounding and the FDA: Questions and Answers*, <http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/PharmacyCompounding/ucm339764.htm> [<https://perma.cc/AP9N-2QGJ>] (last visited June 7, 2015).

63. *Id.*

regards to efficacy, there are no requirements for clinical testing of the potency of nonsterile compounded drugs (e.g., tablets, creams, lozenges).⁶⁴

Even though third-party testing of Imprimis's pyrimethamine/leucovorin revealed that the drug met FDA-recognized potency standards,⁶⁵ safety remains a concern, as contaminated compounded products have been implicated in public health crises.⁶⁶ A recent review evaluated 11 infectious outbreaks caused by contaminated compounded medications, affecting 207 patients and causing 17 deaths, and identified inadequate regulatory controls as the major underlying cause.⁶⁷ Not included in this total was a 2012 epidemic caused by fungal contamination of an injectable steroid prepared by a compounding pharmacy, which resulted in 749 serious infections in 20 states, including 229 cases of meningitis and 61 deaths.⁶⁸ And one study concluded that 41 percent of doctors considered the lack of FDA approval of a drug preventing preterm delivery as a deterrent to prescribing the medication, with 39 percent having professional liability concerns prescribing the compounded drug.⁶⁹

While efficacy and safety risks vary by the particular compounder and the specific product, these considerations make compounded drugs unlikely to achieve the same level of widespread acceptance among physicians and patients as FDA-approved drugs.

64. See *Pharmaceutical Compounding—Nonsterile Preparations*, U.S. PHARMACOPEIAL CONVENTION (Jan. 1, 2014), http://www.usp.org/sites/default/files/usp_pdf/EN/gc795.pdf [<https://perma.cc/MAV5-FFND>] (describing lack of potency testing in rules for creating nonsterile compounds); cf. *Pharmaceutical Compounding—Sterile Preparations*, U.S. PHARMACOPEIAL CONVENTION, at 42 (June 1, 2008), <http://www.pbm.va.gov/linksotherresources/docs/USP797PharmaceuticalCompoundingSterileCompounding.pdf> [<https://perma.cc/T4MY-GSJU>].

65. *Imprimis Pharmaceuticals Reports Results of Independent Third Party Potency Analysis of Its Compounded Pyrimethamine and Leucovorin Capsules*, PR NEWswire (Dec. 11, 2015), <http://www.prnewswire.com/news-releases/imprimis-pharmaceuticals-reports-results-of-independent-third-party-potency-analysis-of-its-compounded-pyrimethamine-and-leucovorin-capsules-300191649.html> [<https://perma.cc/2CN6-AXGM>].

66. Outterson, *supra* note 52, at 1971 (describing New England Compounding crisis).

67. C. Catherine Staes et al., *Description of Outbreaks of HealthCare Associated Infections Related to Compounding Pharmacies, 2000–2012*, 70 AM. J. HEALTH SYS. PHARM. 1301 (2013).

68. Rachel M. Smith et al., *Fungal Infections Associated with Contaminated Methylprednisolone Injections*, 369 NEW ENG. J. MED. 1598 (2013).

69. Andrei Rebarber et al., *A National Survey Examining Obstetrician Perspectives on Use of 17-Alpha Hydroxyprogesterone Caproate Post-US FDA Approval*, 33 CLINICAL DRUG INVESTIGATION 571, 573 (2013), <http://www.ncbi.nlm.nih.gov/pubmed/23800978> [<https://perma.cc/K56E-6BAK>].

In addition, it is often difficult for patients to have compounded drugs covered by their insurance company.⁷⁰ When pharmaceutical benefits manager ExpressScripts announced that it would reimburse Imprimis's version of pyrimethamine/leucovorin, the announcement was remarkable enough that it made the national news.⁷¹ ExpressScripts admitted that it would also continue to cover a "general prescription" of the drug and that patients could only obtain Imprimis's version by having their physician send a special prescription directly to Imprimis.⁷² Shkreli himself asserted that Imprimis's compounded drug "isn't really an alternative" to Turing's pyrimethamine.⁷³ In short, while compounded drugs may be sufficient for certain individual patients, they are not substitutes in the market as a whole.⁷⁴ Given that there are no FDA-approved substitutes for Turing's pyrimethamine and that Turing has been able to increase price significantly and reduce output, it has monopoly power.

IV. EXCLUSIONARY CONDUCT

To bring a successful monopolization claim, a plaintiff must show not only monopoly power but also exclusionary conduct. This Part first offers an overview of the case law on exclusionary conduct before more specifically exploring the law relating to the denial of drug samples in the context of FDA-required safety programs. It then applies this case law to Turing, showing how the restriction of its distribution system reveals exclusionary conduct.

70. See Ed Silverman, *Express Scripts Ends Coverage for 1,000 Compound Drug Ingredients*, WALL ST. J.: PHARMALOT (July 1, 2014), <http://blogs.wsj.com/pharmalot/2014/07/01/express-scripts-ends-coverage-for-1000-compound-drug-ingredients/> [https://perma.cc/B9VQ-ACXU].

71. Jonathan D. Rockoff, *Express Scripts Turns to a Compounder to Avoid a Turing Drug*, WALL ST. J. (Dec. 1, 2015), <http://www.wsj.com/articles/express-scripts-seeks-lower-price-alternative-to-daraprim-1448946061> [https://perma.cc/Y4JF-VHMF].

72. *Id.*

73. Lucas Matney, *Turing CEO Defends \$750 Pill in Reddit AMA, Says Scandal Has Been "Best Possible Way to Get Girls,"* TECHCRUNCH (Oct. 25, 2015), <http://techcrunch.com/gallery/turing-ceo-defends-750-pill-in-reddit-ama-says-scandal-has-been-best-possible-way-to-get-girls/slide/20/> [https://perma.cc/R6CL-EMTA].

74. Jeremy A. Greene et al., *Role of the FDA in Affordability of Off-Patent Pharmaceuticals*, 315 JAMA 461–62 (Jan. 4, 2016), <http://jama.jamanetwork.com/article.aspx?articleid=2480263&resultClick=3> [https://perma.cc/BCD4-7DJ6].

A. MONOPOLIZATION CASE LAW

To be liable for illegal monopolization, a company not only must have monopoly power but also must engage in exclusionary conduct. Courts often distinguish between the “willful acquisition or maintenance of [monopoly] power” and “growth or development as a consequence of a superior product, business acumen, or historic accident.”⁷⁵

This test is more difficult to apply than to state. Certain cases have served as landmarks to guide analysis. For example, in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, the owner of three downhill skiing facilities in Aspen, Colorado failed to offer a justification for withdrawing from a joint ticketing arrangement with the owner of the only other facility in the area. The Supreme Court defined exclusionary conduct as that which “tends to impair the opportunities of rivals” and which “either does not further competition on the merits or does so in an unnecessarily restrictive way.”⁷⁶ The Court found that the monopolist was guilty of anticompetitive conduct because it was willing to forego ticket sales and sacrifice profits to harm its smaller competitor.⁷⁷ As applied by commentators, this profit-sacrifice test offers a defendant-friendly approach that only punishes activity that has no justifiable reason other than harming competitors.⁷⁸

In a second classic case, *Otter Tail Power Co. v. United States*, the Supreme Court required a company to share electric power transmission with rivals.⁷⁹ The company “was already in the business of providing a service to certain customers,” and thus could not “refuse[] to provide the same service to certain other customers.”⁸⁰ In particular, there were “no engineering factors that prevented Otter Tail from selling power at

75. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966).

76. 472 U.S. 585, 605 n.32 (1985).

77. *Id.* at 608.

78. E.g., A. Douglas Melamed, *Exclusive Dealing Agreements and Other Exclusionary Conduct—Are There Unifying Principles?*, 73 ANTITRUST L.J. 375, 392–93 (2006) (“anticompetitive intent” of firm willing to sacrifice profits can be “unambiguously inferred”); Gregory J. Werden, *Identifying Exclusionary Conduct under Section 2: The “No Economic Sense” Test*, 73 ANTITRUST L.J. 413, 415 (2006) (the test’s application “could not be simpler if . . . the conduct cannot possibly confer an economic benefit on the defendant other than by eliminating competition”); Steve D. Shadowen et al., *Anticompetitive Product Changes in the Pharmaceutical Industry*, 41 RUTGERS L.J. 1, 75–76 (2009) (profit sacrifice leads to natural inference that actor “was aware of and motivated solely to achieve that reduction”).

79. *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

80. *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410 (2004).

wholesale to those towns that wanted municipal plants or [transferring] the power.”⁸¹ Rather, its “refusals to sell at wholesale or to [transfer] were solely to prevent municipal power systems from eroding its monopolistic position.”⁸²

A third case underscored the importance of an effective regulatory regime that covered the conduct, reducing the need for antitrust. In *Verizon Communications v. Trinko*, the Supreme Court held that the Telecommunications Act of 1996 promoted competition by breaking up local phone service monopolies and effectively did so by imposing a regulatory regime that included penalties and reporting requirements.⁸³ The Supreme Court distinguished the *Aspen Skiing* and *Otter Tail* cases by noting that the defendants in those cases offered ski lift tickets and power transmission, respectively, which were services already available to the public.⁸⁴ By contrast, Verizon was required to share unbundled network elements, a “brand new” type of service that “exist[ed] only deep within the bowels” of the company.⁸⁵ These network elements were “offered not to consumers but to rivals, and at considerable expense and effort,” which played a role in the dismissal of *Trinko*’s claim.⁸⁶ The Court also worried about requiring a firm to share with its rivals, as such a remedy would “require[] antitrust courts to act as central planners” and could “facilitate the supreme evil of antitrust: collusion.”⁸⁷

Courts since *Trinko* have been skeptical of refusal-to-deal cases, worrying about the effects of forcing a company to collaborate with rivals. But as we discuss below, Turing’s conduct is closer to that in *Aspen Skiing* and *Otter Tail* than *Trinko*. The next section turns closer to the facts at issue with pyrimethamine.

B. RISK EVALUATION AND MITIGATION STRATEGY (REMS) CASE LAW

As discussed above, when safety issues arise in the clinical trials supporting approval of a drug, the FDA may require the use of Risk Evaluation and Mitigation Strategies (REMS) to ensure that a drug’s benefits outweigh its risks.⁸⁸ Although no antitrust case has analyzed issues

81. *Otter Tail Power*, 410 U.S. at 378.

82. *Id.*

83. 540 U.S. at 410–11.

84. *Id.*

85. *Id.*

86. *Id.*

87. *Id.* at 408.

88. See *supra* text accompanying notes 26–28.

of the restricted distribution of pharmaceuticals outside the REMS setting, several cases have considered similar issues in the REMS context. Decisions in these cases have revealed that refusing to sell pharmaceutical samples can constitute exclusionary conduct.

In the first case, Lannett sued Celgene, seeking samples of thalidomide (Thalomid), the infamous drug that was found in the 1960s to cause devastating birth defects when used as an anti-nauseant but was later found to be an effective treatment for leprosy and multiple myeloma.⁸⁹ Celgene had been selling the drug under an FDA-approved special distribution scheme called System for Thalidomide Education and Prescribing Safety (STEPS) that was designed to prevent the drug from being inadvertently prescribed to pregnant women.⁹⁰ STEPS included “prescriber and pharmacy certification, patient registration, and limitations on drug dispensing” that required patients and prescribers to complete a phone survey identifying risk-increasing behavior before a prescription could be issued.⁹¹ In denying the defendants’ motion to dismiss, the District of New Jersey court ruled that prior cases that “have considered the scope of the affirmative duty to deal suggest that a ‘prior course of dealing’ is relevant but not dispositive in determining whether such a duty applies.”⁹² In addition, the court made clear that “the question of whether a defendant sold its product at retail . . . is relevant to determining whether Section . . . 2 liability applies.”⁹³

In a second case, Actelion filed a declaratory judgment action against Apotex, Roxane, and Actavis to affirm that it did not have an obligation to supply samples of bosentan (Tracleer), a vasodilation drug used to treat pulmonary arterial hypertension.⁹⁴ Actelion argued that “its distribution of bosentan [was] restricted to pharmacies certified under the Tracleer Access Program, which require[d] education, counseling, and monthly follow-up of enrolled patients for liver function and pregnancy tests,” and thus that it “could not provide potential competitors with samples of the drug.”⁹⁵ In

89. Erin Coe, *Lannett Cuts Deal with Celgene in Thalomid Antitrust Case*, LAW360 (Dec. 7, 2011), <http://www.law360.com/articles/291483/lannett-cuts-deal-with-celgene-in-thalomid-antitrust-case> [<https://perma.cc/DSZ2-HB55>]; Sarpatwari et al., *supra* note 28, at 1477 (describing new uses of thalidomide).

90. Coe, *supra* note 89.

91. *Id.*

92. Transcript of Oral Opinion at 12–13, *Mylan Pharms. Inc. v. Celgene Corp.*, No. 2:14-cv-02094-ES-MAH (D.N.J. Dec. 22, 2014).

93. *Id.* at 12.

94. Sarpatwari et al., *supra* note 28, at 1476–77 (describing controversy over generic manufacturers’ ability to access samples of bosentan).

95. Sarpatwari et al., *supra* note 28.

announcing that it would allow the case against Actelion to proceed, the district court noted that the Supreme Court's refusal-to-deal decisions were "fact-specific" and "industry-specific" and that the generics "alleged a profit motive which did not exist in *Trinko*."⁹⁶ In addition, the court observed that "the FDA does not have the regulatory power to compel samples and . . . there is no other potential remedy to a defendant suffering anticompetitive conduct in that regulatory scheme."⁹⁷

In a third case, Mylan sued Celgene, challenging its denial of a follow-on variation of thalidomide, lenalidomide (Revlimid), which was sold under a similar program to STEPS.⁹⁸ Even after the FDA determined that Mylan's testing safety protocols were acceptable, Celgene stalled Mylan's efforts to obtain samples by imposing unnecessary requests for additional information. The court found that the plaintiffs had successfully pled a monopolization case by pointing to Celgene's lack of a "legitimate business reason" for its actions, which allegedly were "solely motivated by its goal to obtain long-term anticompetitive gain."⁹⁹

As of this writing, the *Mylan v. Celgene* case is ongoing, with the other two cases having settled after the courts refused to dismiss the plaintiffs' claims.¹⁰⁰ As a result, no final decisions on these issues have been rendered. But the cases chart a potential path to liability for a brand manufacturer's refusal to provide samples to generic rivals.

96. Transcript of Motions Hearing at 115, *Actelion Pharm. Ltd. v. Apotex, Inc.*, No. 1:12-cv-05743 (D.N.J. Oct. 17, 2013).

97. *See id.* at 115–16. In contrast to the lack of FDA authority, the Court in *Trinko* highlighted the Federal Communications Commission's ability to control incumbent telephone carriers' entry into the long-distance market and its enforcement through oversight, penalties, and the revocation of approval to enter the long-distance market. *Verizon Comm'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 412 (2004).

98. *See* Transcript of Oral Opinion, *Mylan Pharms. v. Celgene Corp.*, No. 2:14-cv-02094-ES-MAH (D.N.J., Dec. 22, 2014).

99. *Id.* at 17. In a different setting, in which plaintiffs alleged that they were not able to obtain the samples needed for bioequivalency testing but that the brand firm refused to cooperate in setting up an FDA-required Single Shared REMS program (SSRS), the court dismissed the case. *See In re Suboxone Antitrust Litig.*, 64 F. Supp. 3d 665 (E.D. Pa. 2014).

100. Kurt R. Karst, *Another REMS Antitrust Lawsuit: Mylan Sues Celgene over THALOMID and REVLIMID to Obtain Drug Product Sample*, FDA LAW BLOG (Apr. 4, 2014), http://www.fdalawblog.net/fda_law_blog_hyman_phelps/2014/04/another-rems-anti-trust-lawsuit-mylan-sues-celgene-over-thalomid-and-revlimid-to-obtain-drug-product-.html [<https://perma.cc/6QHY-8PV7>].

C. APPLICATION TO TURING

In considering whether Turing's refusal to provide samples constitutes exclusionary conduct, the regulatory background is essential. The Supreme Court in *Trinko* explained that "antitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue."¹⁰¹ In particular, courts must take "careful account" of "the pervasive federal and state regulation characteristic of the industry," and the analysis must "recognize and reflect the distinctive economic and legal setting of the regulated industry to which it applies."¹⁰²

A central objective of the Hatch-Waxman Act is to encourage generic entry.¹⁰³ Congress sought to achieve this goal through several mechanisms, including formalizing the expedited pathway and allowing generic firms to experiment on a brand firm's drug before the end of the patent term (an otherwise impermissible use).¹⁰⁴ As previously discussed, the Hatch-Waxman scheme allows generic manufacturers to earn abbreviated approvals if they can show that their drugs are bioequivalent to the Reference Listed Drug by testing samples acquired from distributors or wholesalers.¹⁰⁵

This crucial element of competition in the pharmaceutical marketplace is possible only if the generic has access to the brand firm's samples.¹⁰⁶ But as evidenced above, monopolists can improperly design their restricted distribution systems to prevent distributors and wholesalers from selling the drug to competing manufacturers. And the brand itself then can refuse to sell to the generic. The combination of the restricted distribution system and the brand's refusal to deal with the generic would result in the generic lacking access to the samples needed for testing and not being able to

101. *Trinko*, 540 U.S. at 411.

102. *Id.*

103. See, e.g., Michael A. Carrier, *Unsettling Drug Patent Settlements: A Framework for Presumptive Illegality*, 108 MICH. L. REV. 37, 41–43 (2009).

104. See 35 U.S.C. § 271(e)(1) (2012); *Eli Lilly & Co., v. Medtronic, Inc.*, 496 U.S. 661, 669–70 (1990) (allowing experimentation before end of patent term would prevent "unintended distortion" of patent laws that would extend "de facto monopoly"); FTC, *GENERIC DRUG ENTRY PRIOR TO PATENT EXPIRATION: AN FTC STUDY 5* (2002), https://www.ftc.gov/sites/default/files/documents/reports/generic-drug-entry-prior-patent-expiration-ftc-study/genericdrugstudy_0.pdf [<https://perma.cc/4935-QRHF>].

105. See Lauren Battaglia, *Risky Conduct with Risk Mitigation Strategies? The Potential Antitrust Issues Associated with REMS*, ANTITRUST HEALTH CARE CHRONICLE 26, 28 (Mar. 2013).

106. Kesselheim & Darrow, *supra* note 13, at 340–41.

demonstrate the bioequivalence needed to file an application. This could lead to a significant weakening of the regulatory regime.¹⁰⁷

Restricting the typical expansive distribution scheme also tends to involve a sacrifice of the brand's profits. As mentioned above, most prescription drugs are available through a standard pharmaceutical distribution chain: from manufacturer to wholesaler, then to retail or mail-order pharmacy, and then to consumer.¹⁰⁸ The obvious reason for such a system is to distribute the drug as widely as possible, which naturally increases revenues by facilitating consumer access. Limited distribution schemes, in contrast, eliminate the wholesaler and involve distribution only through specialty pharmacies selected by the manufacturer.

Such a restriction entails the brand's sacrifice of potential profits. Absent a medical reason to limit distribution (for example, monitoring patients), this restriction does not make business sense but can only be explained by its effect on generic rivals. The brand's refusal to sell the drug similarly would involve profit sacrifice. In fact, the sacrifice of profits itself provides a simple way to determine whether a company's sole motive is to impair competition. Such a sacrifice, which is economically irrational absent reduced competition, leads to the inference that the actor "was aware of and motivated solely to achieve that reduction."¹⁰⁹

In the regulatory context, and considering profit sacrifice, the cases discussed above foreshadow liability. For example, a generic that offers to purchase samples at the full retail price can claim that, under *Aspen Skiing*, the brand that refuses sales that would have been profitable was "willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival."¹¹⁰ Similar to the setting in *Otter Tail*, in which the defendant was able to "sell[] power at wholesale to those towns that wanted municipal plants" but refused to sell "solely to prevent municipal power systems from eroding its monopolistic position," the brand already is voluntarily selling the drug but restricting its distribution system so that it would not need to sell to others.¹¹¹ In addition, the *Trinko* Court's concerns are less relevant because the brand already sells

107. See *supra* text accompanying notes 12–21.

108. KAISER, FOLLOW THE PILL, *supra* note 21.

109. Steve Shadowen et al., *Anticompetitive Product Changes in the Pharmaceutical Industry*, 41 RUTGERS L.J. 1, 76 (2009); see also *supra* text accompanying notes 76–78.

110. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 610–11 (1985).

111. *Otter Tail Power Co. v. United States*, 410 U.S. 366, 378 (1973); see Darren S. Tucker et al., *REMS: The Next Pharmaceutical Enforcement Priority?*, 28 ANTITRUST 74, 76 (2014).

at retail (reducing problems with “forced sharing”) and makes only a one-time sale (limiting judicial involvement).¹¹² At the same time, Turing’s change to the distribution scheme did not resemble the setting in *Trinko*, where “[t]he complaint d[id] not allege that Verizon voluntarily engaged in a course of dealing with its rivals,” but instead was similar to that in *Aspen Skiing*, where “[t]he unilateral termination of a voluntary (*and thus presumably profitable*) course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end.”¹¹³

The 2015 switch of pyrimethamine to a restricted distribution scheme as a condition of its sale to Turing could result in fewer sales and the sacrifice of profits. Turing left sales on the table by voluntarily cutting back its distribution scheme.¹¹⁴ Drug manufacturers typically have expansive distribution systems. Absent medical necessity, there is no reason to voluntarily restrict a distribution system, which would result in fewer sales. In this case in particular, there was no apparent reason to limit distribution 62 years after the FDA approved pyrimethamine and with no recent safety concerns. Turing would have no difficulty selling samples to any generic that requested them.¹¹⁵

If there were any doubt as to the reason for the change in the distribution system, it was dispelled by Turing itself. Jon Haas, the director of patient access at Turing, admitted that he “would block [a] purchase” of pyrimethamine if a generic manufacturer sought to order the pill and conceded that Turing “would like to do our best to avoid generic competition” and was “certainly not going to make it easier” for the generics.¹¹⁶ Turing’s insistence on behavior that lacks rational business sense provides strong evidence of blocking generic rivals. This is a powerful illustration of exclusionary conduct that violates the antitrust laws.

D. COUNTERARGUMENTS

There are four primary counterarguments that Turing did not engage in exclusionary conduct. First, there is no evidence that a generic has

112. *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004) (“Enforced sharing . . . requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.”); *see* Tucker et al., *supra* note 111, at 76.

113. *Trinko*, 540 U.S. at 409.

114. *See supra* text accompanying notes 21–25.

115. *See* HOW TO OBTAIN A LETTER FROM FDA, *supra* note 27, at 2.

116. Ed Silverman, *How Martin Shkreli Prevents Generic Versions of his Pricey Pill*, PHARMALOT (Oct. 5, 2015), <http://pharmalot.com/how-martin-shkreli-prevents-generic-versions-of-his-pricey-pill/> [https://perma.cc/4BWA-8AAF].

attempted to obtain samples. Second, a price increase does not automatically demonstrate monopolization. Third, a company should not be forced to share its product with rivals. Fourth, courts typically treat exclusive distributor agreements as procompetitive.

First, there is no available evidence that a generic has attempted to obtain samples from Turing. A monopolization claim based on a refusal to license typically includes a request for a license, so some might assert that the absence of a refusal precludes an antitrust claim. But monopolization case law makes clear that there need not always be a formal request and refusal.

The Supreme Court has explained that plaintiffs may be able to show causation if making a request would be futile. For example, in *Zenith Radio Corp. v. Hazeltine Research, Inc.*, the Court made clear that a company's "fail[ure] to make a formal request for a [patent] license . . . can properly be attributed to [its] recognition that such a request would have been futile," as the defendant "had made its position entirely clear, and under these circumstances the absence of a formal request is not fatal to [the plaintiff's] case."¹¹⁷ In *Continental Ore v. Union Carbide & Carbon*, the Court did "not believe that [defendants'] liability under the antitrust laws can be measured by any rigid or mechanical formula requiring [the plaintiff] both to demand materials from respondents and to exhaust all other sources of supply."¹¹⁸ And in *Hanover Shoe v. United Shoe Machinery*, the Court "agree[d] with the courts below that in the circumstances of this case it was unnecessary for [the plaintiff] to prove an explicit demand" to purchase the defendant's machines.¹¹⁹

Other courts have similarly applied the futility rule. For example, in *Sullivan v. NFL*, the First Circuit held that a team owner did not need to "call for a vote and obtain an official refusal from the NFL" on its public-ownership policy since "such a request would be futile."¹²⁰ In *Chicago Ridge Theatre Limited Partnership v. M & R Amusement Corporation*, the Seventh Circuit explained that when the defendant's policy of providing films was well known, "the formality of the [plaintiff's] demands or bids . .

117. 395 U.S. 100, 120 n.15 (1969).

118. 370 U.S. 690, 699 (1962).

119. 392 U.S. 481, 488 (1968).

120. 34 F.3d 1091, 1104 (1st Cir. 1994); *see also id.* ("[O]fficial request and official refusal is not necessary to establish causality . . . [where] there is other evidence showing that defendant's practice caused injury in fact to the plaintiff.").

. cannot be a decisive issue in light of the futility of the requests.”¹²¹ And in *Out Front Productions v. Magid*, the Third Circuit explained that “[a]ntitrust suits are subject to no prerequisite, such as that imposed . . . for shareholder derivative suits, requiring that the complaint allege a demand or show futility.”¹²²

In this case, generic firms could reasonably argue that making a request would have been futile. The director of patient access at Turing conceded that he “would block [a] purchase” of pyrimethamine if a generic firm sought to order the pill, and conceded that Turing “would like to do our best to avoid generic competition.”¹²³ Such evidence supports a claim of futility.¹²⁴

Even beyond the futility claim, a generic might be able to show harm based on its ability, incentive, and preparation to enter the market. Though no company has yet announced an intention to enter the U.S. market, in India alone more than 40 companies manufacture generic versions of pyrimethamine.¹²⁵ These firms include large manufacturers with an international presence, such as Lupin Laboratories and Torrent Pharmaceutical, which could be attracted by the increased price given that they sell the product domestically for as little as \$0.03 per tablet.¹²⁶ It would be straightforward for these firms to request a sample and begin preparations to enter the U.S. market. In fact, it is even possible that some

121. 855 F.2d 465, 470 (7th Cir. 1988); *see also id.* (deeming conclusion “consistent with the general rule that a rigid demand requirement is not appropriate in antitrust cases”).

122. 748 F.2d 166, 169 (3d Cir. 1984); *see also id.* (“Treating a ‘demand’ by an antitrust plaintiff as if it were a condition precedent to maintenance of the suit misdirects the relevant focus, which should be on whether plaintiff has adduced the requisite proof of causation [N]o persuasive reason has been suggested why evidence of a demand is the only way to prove causation.”).

123. *Id.* Such a response is similar to that in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.* See 472 U.S. 585, 594 n.14 (1985) (“When the Highlands official inquired why Ski Co. was taking this position considering that Highlands was willing to pay full retail value for the daily lift tickets, the Ski Co. official answered tersely: ‘we will not support our competition.’”).

124. Alternatively, a generic could make a request and be turned down. *See* European Commission, *Microsoft Case*, <http://ec.europa.eu/competition/sectors/ICT/microsoft/investigation.html> [<https://perma.cc/6TWJ-QERS>] (last visited Feb. 18, 2016) (European Commission case against Microsoft originated with complaint from Sun Microsystems alleging that Microsoft refused to supply it with necessary information to interoperate with Microsoft’s dominant PC operating system).

125. Samir K. Brahmachari & Nisha Chandran, *Affordable Healthcare Threatened! Concern for All Stakeholders*, 109 CURRENT SCIENCE 1375, 1375 (2015).

126. *Id.*

companies may have recently requested samples without publicizing such a request.¹²⁷

Second, a price increase may not constitute monopolization under U.S. law. Such an argument contends that U.S. courts do not regulate price and that antitrust law is ill equipped to referee these disputes. The critique falls short, however, because the behavior targeted by the antitrust analysis is not the price increase but the restriction of the distribution system.

Turing's price increase is useful in revealing monopoly power.¹²⁸ If Turing lacked such power, it would not be able to impose and (in the face of extreme pressure) maintain a 5000 percent price increase. But the antitrust analysis in this section has targeted Turing's restriction of pyrimethamine's distribution system. As a natural result of drug firms' attempts to maximize profits, expansive networks are the typical distribution scheme in the drug industry. A company's restriction of its distribution network—especially after the drug has been on the market for 62 years and there are no new safety issues motivating the change—provides strong evidence that the conduct is exclusionary.

Third, a rebuttal asserts that a company should not be required to share its product with rivals. Antitrust law has famously declared that a company has the right "freely to exercise [its] own independent discretion as to parties with whom [it] will deal."¹²⁹ But even that assertion often omits the crucial preface to the phrase: "In the absence of any purpose to create or maintain a monopoly."¹³⁰

The case law makes clear that if a company undertakes actions that do not make sense unless they harm a rival, it typically will form the basis for liability.¹³¹ That is especially the case when the company makes a change in an existing, profitable practice.¹³² So when a company changes a

127. In addition to a claim by a generic against Turing, consumers could also challenge Turing's behavior on the grounds that it increased price and reduced output. Such effects would demonstrate consumers' antitrust injury as it would fall squarely within the range of injuries "of the type the antitrust laws were intended to prevent" and that "flow[] from that which makes defendants' acts unlawful." *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977).

128. As discussed above, the price increase also reflects the antitrust injury suffered by consumers. *See supra* note 127.

129. *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919).

130. *Id.*

131. *See Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

132. *See Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 608 (1985).

distribution network in place for decades with no apparent reason other than harming rivals, it should be subject to antitrust liability.

Fourth, Turing selected Walgreen's as an exclusive distributor.¹³³ Courts that have reviewed the practice of channeling distribution through a single dealer and refusing to sell to others have found such arrangements procompetitive because manufacturers generally have legitimate reasons for appointing exclusive distributors. For example, a distributor given sole rights to sell a manufacturer's product could be expected to use its best efforts to promote the product widely.¹³⁴

But Turing's relationship with Walgreen's is not a typical exclusive-distributor agreement. For starters, such arrangements tend to be employed by manufacturers that lack "interbrand" market power (in a market consisting of manufacturers selling different brands of the same type of product).¹³⁵ By contrast, and as discussed in detail above, Turing has not only market power but also monopoly power. As a result, it has the ability to injure competition by "deny[ing] . . . a needed or valuable input . . . to a rival."¹³⁶ Turing's refusal to provide samples to potential generic competitors harms the overall market as it increases price and reduces output in a way that an "intra-brand" restraint (within a single brand) does not. In fact, courts have held that antitrust liability could be warranted when a generic drug firm enters into an exclusive supply agreement to harm a rival.¹³⁷

In addition, unlike exclusive distribution agreements that involve "a combining of complements . . . for [the] greater good,"¹³⁸ Turing's distribution agreement does not offer any apparent efficiencies. There was no evidence that pyrimethamine was underused before the arrangement was

133. HOVENKAMP, *supra* note 31, ¶ 11.6d, at 654.

134. *E.g.*, Republic Tobacco Co. v. N. Atl. Trading Co., 381 F.3d 717, 736 (7th Cir. 2004); *see also* Planetarium Travel, Inc. v. Altour Int'l, Inc., 622 F. App'x 40, 41 (2d Cir. 2015) ("[E]xclusive distributorship arrangements are presumptively legal.").

135. *See* Leegin Creative Leather Products, Inc. v. PSKS, Inc., 551 U.S. 877, 890 (2007); HOVENKAMP, *supra* note 31, ¶ 11.6d, at 655.

136. A. Douglas Melamed, *Exclusionary Vertical Agreements, Address Before the ABA Antitrust Section*, U.S. DEPT. OF JUSTICE ANTITRUST DIVISION (Apr. 2, 1998), <http://www.justice.gov/atr/speech/exclusionary-vertical-agreements> [<https://perma.cc/FF73-ANQY>]; *see also* HOVENKAMP, *supra* note 31, ¶ 11.6d, at 655 (noting that when there is interbrand market power, "there may be cases where threats to competition are plausible").

137. *See* Geneva Pharms. Tech. Corp. v. Barr Labs. Inc., 386 F.3d 485, 504 (2d Cir. 2004) (exclusive supply agreement showed generic firm's "intent to seize the sole supply" of an active ingredient to harm a rival and "monopolize the generic [blood thinner] market").

138. Melamed, *supra* note 136.

implemented. And there were no apparent safety concerns¹³⁹ that justified the exclusive relationship. The timing of the change supports this conclusion, with the new system implemented for the first time 62 years after the drug entered the market.

V. ADDITIONAL EXAMPLES

The pyrimethamine example is not the only one raising antitrust concern based on restricted distribution. This Part presents additional issues raised by the monopoly power inquiry and then turns to other instances of exclusionary conduct.

First, as discussed above, a plaintiff must show monopoly power. A high market share, significant price increase, or output reduction could demonstrate monopoly power. This is especially the case when the behavior has received public scrutiny.¹⁴⁰ The inquiry, most generally, is whether the company has the ability to control prices and exclude competition. In making this determination, care must be taken to ensure that what initially appears to be a substitute is in fact a substitute. Given the high degree of importance that patients, physicians, and payers place on FDA approval in maintaining safety and potency for prescription drugs, a compounded drug cannot function as a large-scale substitute for an FDA-approved drug.

A similar argument can be made about prescription drugs imported from Canada or other countries. Though individual patients are permitted by the FDA to import drugs from Canada or other countries for their personal use under certain circumstances,¹⁴¹ such drugs are not widely viewed as legitimate substitutes for prescription drugs because they have not been approved by the FDA. Indeed, policymakers who seek to enhance this pathway as a way of improving patient access to lower-cost drugs inevitably design systems in which the FDA or another trusted regulatory authority certifies the reliability of a particular non-U.S.-based supplier first before they can sell their foreign products in the U.S. market.

139. See *supra* text accompanying notes 26–28.

140. See Austin Frakt, *Even Talking about Reducing Drug Prices Can Reduce Drug Prices*, N.Y. TIMES (Jan. 18, 2016), http://www.nytimes.com/2016/01/19/upshot/even-talking-about-reducing-drug-prices-can-reduce-drug-prices.html?smprod=nytcore-iphone&smid=nytcore-iphone-share&_r=0 [<https://perma.cc/Z6V7-XE57>] (stating that mere attention to issue of high drug prices resulted in drug companies lowering their prices).

141. *Is It Legal for Me to Personally Import Drugs?*, FDA (Dec. 28, 2015), <http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194904.htm> [<https://perma.cc/NMY2-WFLN>].

Second, a plaintiff must show exclusionary conduct. The case law on monopolization sets the boundaries for such a determination. If a company makes a change to an existing profitable practice, that raises concern.¹⁴² So does the sacrifice of profits, which does not make sense absent its effect on competitors.¹⁴³ In particular, when a company restricts an existing, profitable distribution system without a pretense of promoting safety, careful scrutiny is warranted.

This analysis can be applied to other examples of restricted distribution schemes seemingly intended to forestall generic manufacturers. Two close precursors to the restricted distribution system in the pyrimethamine case arose with Shkreli's previous start-up company, Retrophin.

In 2014, Retrophin acquired chenodiol (Chenodal), another old, inexpensive drug used to treat a rare genetic disorder leading to deficiencies in cholesterol and bile acid breakdown that can cause neurologic dysfunction, cataracts, and cardiovascular disease.¹⁴⁴ Chenodiol was made available only through Retrophin's Chenodal Total Care Program that purports to assist patients with insurance needs, provides refilling and prescription delivery service, and offers adherence assistance to ensure that patients take medications as prescribed by their physicians.¹⁴⁵ When it established this program, Retrophin increased the price from \$9,460 to \$47,300 per 100 pills.¹⁴⁶ Chenodal now must be ordered over the phone from Retrophin's distribution partner, Dohmen Life Science Services. In fact, the company admitted that its "[c]losed distribution system does not allow for generics to access product for bioequivalence study."¹⁴⁷

142. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 610–11 (1985) (“[T]he evidence supports an inference that Ski Co. was not motivated by efficiency concerns and that it was willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival.”).

143. *See id.*

144. *Retrophin Completes Acquisition of Manchester Pharmaceuticals*, BUSINESS WIRE (Mar. 27, 2014), <http://www.businesswire.com/news/home/20140327005607/en/Retrophin-Completes-Acquisition-Manchester-Pharmaceuticals> [<https://perma.cc/7HBG-KCGX>].

145. *Chenodal*, RETROPHIN, <http://www.retrophin.com/content/products/chenodal.php> [<https://perma.cc/A9J4-MZTM>].

146. *Retrophin, Inc. Report*, U.S. SEC. EXCH. COMM'N (Apr. 3, 2014), <http://ir.retrophin.com/secfiling.cfm?filingID=1193805-14-689&CIK=1438533> [<https://perma.cc/BB2M-9PUV>].

147. Derek Lowe, *The Most Unconscionable Drug Price Hike I Have yet Seen*, IN THE PIPELINE (Sept. 11, 2014), http://blogs.sciencemag.org/pipeline/archives/2014/09/11/the_most_unconscionable_drug_price_hike_i_have_yet_seen [<https://perma.cc/C4TS-E5PQ>].

Retrophin also owns the rights to tiopronin (Thiola), an old, inexpensive drug used to treat a rare condition called cystinuria, which predisposes patients to a certain type of kidney stone. Retrophin created a “Total Care Hub” program and raised the price from \$1.50 per pill to \$30 per pill (patients often require multiple pills per day).¹⁴⁸ After increasing the price, Retrophin stated that it would, “[s]imilar to Chenodal, . . . move Thiola into closed distribution.”¹⁴⁹ Thiola is distributed only to patients who fax enrollment paperwork directly to Retrophin and arrange for delivery. The company admitted that “[e]xclusivity (closed distribution) creates a barrier and pricing power.”¹⁵⁰ Similar, otherwise-unexplained behavior in these settings reveals a pattern of profit sacrifice with Shkreli’s companies, making even more apparent the concern with Turing’s conduct in the pyrimethamine case.

An example of a potentially problematic restricted distribution program not related to a Shkreli-led company was presented by the New York Attorney General’s lawsuit against Actavis (now Allergan) and its subsidiary Forest Laboratories (together Forest).¹⁵¹ As market exclusivity for its twice-daily Alzheimer’s disease medication, memantine (Namenda IR), was ending, Forest sought to introduce a once-daily extended-release version, memantine XR (Namenda XR).¹⁵² Forest first announced that it would stop distribution of memantine entirely in order to forcibly switch all memantine patients to memantine XR before generic memantine became available,¹⁵³ attracting the Attorney General’s attention for potentially illegally interfering with generic competition.

Forest then proposed an exclusive distribution contract with the mail-order specialty pharmacy Foundation Care, requiring all patients seeking memantine to receive the product through this intermediary and additionally requiring a special medical necessity form.¹⁵⁴ At the same time, the reformulated memantine XR would be made available through normal

148. *Id.*; see also Lydia Ramsey, *The CEO Who Jacked up the Price of a Drug by 5,000% Has Done This Before*, BUSINESS INSIDER (Sept. 23, 2015), <http://www.businessinsider.com/martin-shkreli-history-of-price-hikes-2015-9> [<https://perma.cc/2NP5-RGPA>].

149. Lowe, *supra* note 147.

150. Comm. Memorandum, *supra* note 38, at 3.

151. New York *ex rel.* Schneiderman v. Actavis PLC, 787 F.3d 638, 647–48 (2d Cir. 2015); see generally Vincent C. Capati & Aaron S. Kesselheim, *Drug Product Life-Cycle Management as Anticompetitive Behavior: The Case of Memantine*, 22 J. MANAGED CARE & SPECIALTY PHARM. 1 (2016).

152. *Actavis*, 787 F.3d at 647–48.

153. *See id.*

154. *See id.* at 648.

distribution channels.¹⁵⁵ The Attorney General challenged this proposal as well, ultimately securing a preliminary injunction that required Forest to continue the routine distribution of memantine until the generic versions of that product became available.¹⁵⁶ Restrictions of distribution systems that lack safety justifications and that are designed to restrict generic competition present conduct falling comfortably within the realm of exclusionary behavior that has been found to constitute monopolization.

VI. CONCLUSION

Across public discourse and the political system, Turing's significant price increase received significant attention. But the restriction of Turing's distribution system provides more of a hook for a potential antitrust claim. For starters, Turing appears to have monopoly power in engineering and maintaining a 5000 percent price increase, preventing hospitals from obtaining pyrimethamine, and ensuring the absence of FDA-approved substitutes for the drug.

Turing also appears to have engaged in exclusionary conduct in changing its distribution system in a way that sacrificed profits and only made sense in blocking generic competition. The combination of monopoly power and exclusionary conduct is the hallmark of a monopolization claim. Turing's behavior warrants close antitrust scrutiny.

155. Capati & Kesselheim, *supra* note 151.

156. *New York v. Actavis PLC*, No. 14 CIV. 7473, 2014 WL 7015198, at *43–46 (S.D.N.Y. Dec. 11, 2014), *aff'd sub nom.* *New York ex rel. Schneiderman v. Actavis PLC*, 787 F.3d 638 (2d Cir. 2015).