Harvard Journal of Law & Technology
Volume 35, Number 1 Fall 2021

MARKET POWER PARASITES: ABUSING THE POWER OF DIGITAL INTERMEDIARIES TO HARM COMPETITION

*Noga Blickstein Shchory & Michal S. Gal**

ABSTRACT

Some digital information intermediaries, such as Google and Facebook, enjoy significant and durable market power. Concerns regarding the anti-competitive effects of such power have largely focused on conduct engaged in by the infomediaries themselves, and have led to several recent, well-publicized regulatory actions in the United States and elsewhere. This Article adds a new dimension to these concerns: the abuse of such power by other market players, which lack market power themselves, in a way which significantly harms the competitive process and undermines the integrity of the relevant information market. We call such abusers "market power parasites."

This separation between power and conduct in the case of market power parasites creates an unwarranted lacuna which is not addressed by existing laws aimed at preventing abuses of market power. Antitrust law does not capture such parasites because it only prohibits unilateral anti-competitive conduct if such conduct is engaged in by a monopolist. At the same time, fraud torts require proof of specific reliance and are therefore limited to a particular wrong, disregarding the broader competitive concerns resulting from parasitic conduct.

To bridge this gap, we suggest a fraud-on-the-online-information-markets rule, akin to the fraud-on-the-market rule in securities law. We propose to eliminate the rigid fraud tort requirement to prove reliance, and replace it with a presumption of reliance that will apply once the plaintiff proves harm to the integrity of an online "infomediary." Our proposal strengthens competitors' cause of action, increasing enforcement against the anti-competitive acts of market power parasites which harm the integrity of information in digital markets.

---

* Noga Blickstein Shchory is a doctorate candidate at the University of Haifa, a member of the Center for Cyber, Law and Policy at the University of Haifa, and an Attorney at the District Attorney's Office in Tel Aviv (Fiscal and Economy); Michal S. Gal is Professor and Director of the Center of Law and Technology, University of Haifa Faculty of Law, and the President of the International Association of Competition Law Scholars (ASCOLA). We would like to thank Aimee Almeleh Smith, Oren Bar-Gill, Margherita Colangelo, Dale Collins, Anton Dinev, Joey Lightstone, Mariateresa Maggioliano, Miriam Marcowitz-Bitton, Mattan Meridor, Giorgio Monti, Omer Pelled, Danny Sokol, Ram Shchory, Spencer Weber Waller, Nicolo Zingales, and participants in the ASCOLA yearly conference for their useful comments. This work was supported by the Center for Cyber, Law and Policy at the University of Haifa and by the Israel Science Foundation (grant No. 2737/20). Any mistakes or omissions remain the authors'.

TABLE OF CONTENTS

I. INTRODUCTION 74

II. IDENTIFYING THE PROBLEM: THREE CASE STUDIES OF MARKET POWER PARASITES 78
A. Exclusion by Market Power Parasites 79
1. Black Hat Search Engine Optimization ("SEO") 79
2. Information Misrepresentation via Fraudulent Ratings or Reviews 82
3. Click Fraud 84
B. Market Power of Infomediaries 85
C. The Failure of the Market Response 88
1. Limitations on Competitors' Reactions: "Black Box" Algorithms of Infomediaries 89
2. Limitations on Infomediaries' Reactions: The High Cost of Fighting Parasites 90

III. THE INABILITY OF CURRENT LAW TO DEAL WITH MARKET POWER PARASITES 92
A. Section 2 of the Sherman Act 92
B. Business Torts 96
C. Section 5 of the FTC Act and Other Consumer Protection Laws 100

IV. PROPOSAL: FRAUD ON THE ONLINE INFORMATION MARKET 103
A. Fraud on the Market in Securities Law 104
B. Fraud-on-the-Online-Information-Market 108
1. Application 108
2. Justifications 112

V. CONCLUSION 115

I. INTRODUCTION

Some digital information intermediaries (hereinafter "infomediaries"), such as Google or Facebook, enjoy significant and durable market power. Concerns regarding the anti-competitive effects of such power have largely focused on conduct engaged in by the infomediaries themselves,[1] which have recently led to several well-publicized

1. *See, e.g.*, Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search,* 93 CORNELL L. REV. 1149, 1164–67 (2008); Ariel Ezrachi & Maurice E. Stucke, *The Fight Over Antitrust's Soul*, 9 J. EUR. COMPETITION L. & PRAC. 1, 1–2 (2018). *See generally* FRANCESCO DUCCI, NATURAL MONOPOLIES IN DIGITAL PLATFORM MARKETS (2020); Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710 (2017); Maurice E. Stucke, *Should We Be Concerned About*

regulatory actions in the United States[2] and elsewhere.[3] This Article adds a new dimension to such concerns: the abuse of such power by other market players that lack market power themselves, in a way that can significantly harm competition and undermine the integrity of the relevant information market. We call such abusers "market power parasites."[4]

A small firm wishing to enter or expand in its market must normally compete on its merits. Any unilateral anti-competitive conduct it might engage in, it is presumed, will not affect competition. This is

---

Data-opolies?, 2 GEO. L. TECH. REV. 275 (2018); Maurice E. Stucke, *When a Monopolist Deceives*, 76 ANTITRUST L.J. 823 (2010) [hereinafter Stucke, *When a Monopolist*]. Scholars have also examined the effects of powerful infomediaries on privacy and free speech. *See, e.g.*, Gregory Day & Abbey Stemler, *Infracompetitive Privacy*, 105 IOWA L. REV. 61 (2019); SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER (2018).

2. *See, e.g.*, MAJORITY STAFF OF SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF H.R. COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS, at 46–77 (2020), https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf?utm_campaign=4493-519 [https://perma.cc/9HCW-9QX5] [hereinafter HOR REPORT]; Complaint, United States v. Google L.L.C., No. 1:20-cv-03010 (D.D.C. Oct. 20, 2020) [hereinafter Google Complaint]; FED. TRADE COMM'N, STATEMENT OF THE FEDERAL TRADE COMMISSION REGARDING GOOGLE'S SEARCH PRACTICES *IN THE MATTER OF GOOGLE INC.*, FTC File Number 111-0163 (Jan. 3, 2013) [hereinafter FTC RE GOOGLE SEARCH PRACTICES]; Press Release, Fed. Trade Comm'n, FTC Sues Facebook for Illegal Monopolization: Agency Challenges Facebook's Multi-Year Course of Unlawful Conduct (Dec. 9, 2020), https://www.ftc.gov/news-events/press-releases/2020/12/ftc-sues-facebook-illegal-monopolization [https://perma.cc/73VV-6K37]; Complaint for Injunctive and Other Equitable Relief, FTC v. Facebook, Inc., No. 1:20-cv-03590 (D.D.C. Jan. 13, 2021) [hereinafter Facebook Complaint].

3. *See, e.g.*, European Commission Press Release IP/17/1784, Antitrust: Commission Fines Google €2.42 Billion for Abusing Dominance as Search Engine by Giving Illegal Advantage to Own Comparison Shopping Service (June 27, 2017), http://europa.eu/rapid/press-release_IP-17-1784_en.htm [https://perma.cc/Q327-CYTY]; European Commission Press Release IP/18/4581, Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine (July 18, 2018), https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581 [https://perma.cc/P9AW-GDRL]; European Commission Press Release IP/19/1770, Antitrust: Commission Fines Google €1.49 Billion for Abusive Practices in Online Advertising (Mar. 20, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770 [https://perma.cc/5NRK-JMWP]; U.K. COMPETITION & MKTS. AUTH., ONLINE PLATFORMS AND DIGITAL ADVERTISING: MARKET STUDY FINAL REPORT (2020), https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf [https://perma.cc/BCY3-3B3X]; *Proposal for a Regulation of the European Parliament and of the Council on a Single Market for Digital Services (Digital Services Act) and Amending Directive 2000/31/EC*, at 57, COM (2020) 825 final (Dec. 15, 2020), https://eur-lex.europa.eu/legal-content/en/TXT/?qid=1608117147218&uri=COM%3A2020%3A825%3AFIN [https://perma.cc/UX7E-LKWL] [hereinafter *DSA*].

4. *See also* Margherita Colangelo & Mariateresa Maggiolino, *Manipulation of Information as Antitrust Infringement*, 26 COLUM. J. EUR. L. 63 (2020). They acknowledge that entities may engage in exclusionary conduct regardless of their market power, *id.* at 72–73; however, they are less concerned with the competitive harm of such conduct, focusing instead on information manipulation as an antitrust violation. *Id.* at 84, 89.

because substantial market power is needed to influence market conditions — power that small firms lack by definition.[5] Accordingly, antitrust laws[6] — designed to protect consumer welfare by ensuring that market players do not erect artificial barriers to the competitive process — focus on the behavior of firms with significant market power. Unilateral anti-competitive conduct engaged in by smaller firms is thus not prohibited.[7]

But what if a small firm can free-ride on the market power of another to significantly affect competition in its market? We provide three examples of parasitic conduct in online information markets. Such conduct challenges the basic assumption of a link between the market power of the entity engaged in anti-competitive conduct and its competitive effects. As we show, a small market player might nonetheless cause substantial harm to competition by abusing the market power of another. As discussed below, this concern increases when the parasite abuses the market power of dominant digital infomediaries. The cumulative effect of such attacks by a large number of small market players might distort the integrity of online information markets.

Dealing with such parasitic abuses of market power requires reevaluation of our legal tools. The separation between power and conduct creates an unwarranted lacuna that is not addressed by existing laws aimed at preventing abuses of market power. Antitrust law does not capture such parasites because it only prohibits unilateral anti-competitive conduct if such conduct is engaged in by a monopolist. At the same time, fraud torts require proof of specific reliance and are therefore limited to a particular wrong, which disregards the broader competitive concerns resulting from parasitic conduct.

To bridge this gap, we suggest a fraud-on-the-online-information-markets rule, akin to the fraud-on-the-market rule in securities law. We propose to eliminate the rigid fraud tort requirement to prove reliance and to replace it with a presumption of reliance that will apply once the plaintiff proves harm to the integrity of an online infomediary. Our proposal strengthens competitors' cause of action, releasing them from the arguably ill-fitting need to prove specific reliance, thereby increasing enforcement against the anti-competitive acts of

---

5. U.S. DEP'T OF JUST., COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT (2008), ch. 1, https://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-1 [https://perma.cc/Z2M6-VH2H] [hereinafter DOJ, COMPETITION AND MONOPOLY]; *Monopolization Defined*, FTC, https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/monopolization-defined [https://perma.cc/9ZL2-6TKK] [hereinafter FTC, *Monopolization Defined*].

6. *See, e.g.*, 15 U.S.C. § 2.

7. Colangelo & Maggiolino, *supra* note 4, at 72–73.

market power parasites that harm the integrity of information in digital markets.

The Article proceeds as follows. In Part II, we identify the problem by demonstrating how parasites can abuse digital infomediaries' market power in order to exclude competitors and to harm competition and market integrity. We analyze three case studies exemplifying different parasitic methods of exclusion via (mis)information. The first example is black hat search engine optimization — manipulative methods for artificially improving a website's ranking in search results, such as cloaking, keyword stuffing, link scheming, and scraping or auto-generating content. The second example is fake ratings and reviews, which distort information in the markets. Our last example is click fraud — using fake clicks to artificially increase a rival's advertising costs and distort his data on consumers' preferences. Clearly, an exclusionary effect does not occur every time such conduct takes place. However, as elaborated below, a relatively easy and costless attack through a digital infomediary that enjoys substantial market power can potentially create a significant exclusionary effect. We also show that in many cases, market forces cannot be relied upon to correct such information distortions.

In Part III, we analyze the existing legal tools that might be used to address the harms caused by parasitic manipulation of infomediaries, including antitrust, tort, and consumer protection laws. Antitrust laws, which are specifically designed to deal with harms to competition resulting from distortions to the competitive process, would have been an obvious choice. Yet application of these laws is hampered by the de-linkage of market power and parasitic conduct. Tort laws provide a partial remedy for some parasitic conduct. In particular, prohibitions of fraudulent conduct,[8] false designations of origin and false descriptions,[9] tortious interference in contractual or business relationships,[10] and defamation and commercial disparagement[11] may apply in some situations. However, the need to prove reliance on a specific fraudulent misrepresentation often creates a high burden of proof and disregards the broader, market-wide distortions created by parasitic conduct. Consumer protection laws suffer from the same limiting requirement to prove reliance, as well as from administrative failures and limited remedies.

To remedy this situation, Part IV proposes the adoption of a fraud-on-the-online-information-market rule, akin to the rule adopted in securities law. Because evidence of reliance on fraudulent information by each and every investor in financial markets is difficult to

8. RESTATEMENT (SECOND) OF TORTS § 525 (AM. L. INST. 1965).
9. 15 U.S.C. § 1125(a).
10. RESTATEMENT (SECOND) OF TORTS §§ 708–816 (AM. L. INST. 1965).
11. RESTATEMENT (SECOND) OF TORTS §§ 558–623 (AM. L. INST. 1965).

obtain, the fraud-on-the-market rule for securities creates a presumption that investors did in fact rely on fraudulent information that was publicly available in the market in their decisions regarding trade in securities.[12] This presumption forms a broader, market-based cause of action, which aims to protect and vindicate the integrity of markets, rather than to compensate victims for their losses. By implementing a similar concept in fraud suits against parasitic attacks on infomediaries, competitors who suffer from exclusion will not be required to prove reliance on the misrepresentation by each and every consumer. This may transform fraud torts as well as some consumer protection laws into more suitable tools for fighting the wider market influences of parasitic exclusionary practices, regardless of whether the wrongdoer possesses or is likely to gain significant market power. By strengthening such a private cause of action, courts can relieve competitors from the burden imposed in antitrust law of proving that the wrongdoer had market power.

Part V concludes the Article and touches upon the possible expansion of this proposal beyond digital information markets.

II. IDENTIFYING THE PROBLEM: THREE CASE STUDIES OF MARKET POWER PARASITES

To make the case that parasitic abuse of market power can harm competition as well as the integrity of the information market, we first introduce three case studies (Section II.A). In all three, the infomediary holds significant market power, but is neither a party nor an accomplice to the anti-competitive scheme. The parasite does not hold market power in any market, yet engages in unilateral anti-competitive conduct that could significantly reduce or distort competition in its market by free-riding on the market power of the infomediary. After reviewing these examples, we briefly explore the conditions necessary for parasitic conduct and argue that the characteristics of infomediaries increase both the prevalence of such conduct and its anti-competitive effects (Section II.B). These characteristics also partly explain why we cannot simply rely on the market to prevent such conduct (Section II.C).

All three examples relate to exclusion via misinformation. Two of the three relate to information presented to consumers. In the black hat search engine optimization example, exclusion is achieved through artificial demotion of a rival in "organic" search results. In the false ratings or reviews example, the conduct excludes by misrepresenting the relative qualities of competing products or services (referred to together hereinafter as "products"). The third example relates

12. Basic Inc. v. Levinson, 485 U.S. 224, 245–46 (1988).

to information presented to competitors: by fraudulently increasing the number of clicks on competitors' ads, click fraud raises rivals' costs and distorts their ability to learn from data gathered on the behavior of their potential customers.

In all cases explored, the anti-competitive effects occur in two stages. In the first, the conduct distorts the information available in the market. Such information is key to the market's proper functioning, especially in online information markets.[13] In the second stage, the distortion translates into harm to the end-product market in which the parasite competes. While the economic loss to a competitor takes place only in the second phase, the harm to competition and to market integrity occurs in both phases.[14]

A. Exclusion by Market Power Parasites

1. Black Hat Search Engine Optimization

The abundance of commercial information spread across countless web pages has created a challenge of navigation. To meet this challenge, search engines provide navigation services that attempt to match users' queries with appropriate content. To do so, they extract information from the web and index it in a manner enabling them to employ algorithms that prioritize search results for the user. This process typically takes into account similarities between the query and the result, the popularity of some results over others,[15] and the personal characteristics of the user, as observed by the search engine.[16] To better characterize websites, search engines use "crawlers" to explore and solicit information, including the contents of webpages, links connecting to them,[17] or their "metadata" (information about the webpage that is invisible to the user, such as its age, how many links it contains, keywords that its creator used to describe it, etc.).[18]

Because users tend to consider only the top-ranked results supplied in response to a query, market players have an interest in influ-

13. Colangelo & Maggiolino, *supra* note 4, at 86.

14. *See* MARK R. PATTERSON, ANTITRUST LAW IN THE NEW ECONOMY: GOOGLE, YELP, LIBOR, AND THE CONTROL OF INFORMATION 16 (2017) (discussing treatment of information as a good by itself).

15. *See* PERRY MARSHALL, MIKE RHODES & BRYAN TODD, ULTIMATE GUIDE TO GOOGLE ADWORDS 196–98 (5th ed. 2017).

16. ANNA BERNASEK & D.T. MONGAN, ALL YOU CAN PAY: HOW COMPANIES USE OUR DATA TO EMPTY OUR WALLETS 92–95 (2015).

17. *See, e.g.*, Google Complaint, *supra* note 2, ¶¶ 20–22; Standard Process, Inc. v. Banks, 554 F. Supp. 2d 866, 871 (E.D. Wis. 2008) ("[S]earch engines today primarily use algorithms that rank a website by the number of other sites that link or point to it.").

18. *See, e.g.*, James Grimmelmann, *The Structure of Search Engine Law*, 93 IOWA L. REV. 1, 10 (2007).

encing a search engine's results.[19] One way to do so is by engaging in search engine optimization ("SEO") practices — namely, "techniques for ensuring that a website is ranked highly by search engines."[20] Practitioners often draw a distinction between white hat and black hat SEO practices.[21] White hat practices align with the search engine's guidelines; they include, for example, the creation of unique and accurate content or page descriptions, and appropriate meta tags.[22] Black hat practices, by comparison, distort the search engine's performance and are banned by its guidelines. For example, "cloaking" refers to the practice of programming a webpage's metadata to show different content to the search engine than to end users, such as by entering a word into the code accessed by a search engine an excessive number of times relative to its appearance in the actual website.[23] Similarly, "keyword stuffing" entails adding redundant information to a website in order to increase its attractiveness to search engines. Such information can be made invisible by using tiny letters or letters printed in the same color as the webpage's background, or it may be posted clearly but misleadingly (e.g., mentioning the Super Bowl on the day it is played, with no genuine connection to the website's content).[24]

---

19. *See, e.g.*, Ira S. Nathenson, *Internet Infoglut and Invisible Ink: Spamdexing Search Engines with Meta Tags*, 12 HARV. J.L. & TECH. 43, 45–46 (1998).

20. DANIEL CHANDLER & ROD MUNDAY, *SEO*, A DICTIONARY OF SOCIAL MEDIA (1st ed. 2016) [hereinafter DICTIONARY OF SOCIAL MEDIA]; *see also* Grimmelmann, *supra* note 18, at 13.

21. *See black hat SEO*, DICTIONARY OF SOCIAL MEDIA, *supra* note 20; *white hat SEO*, DICTIONARY OF SOCIAL MEDIA, *supra* note 20; Victor T. Nilsson, Note, *You're Not from Around Here, Are You? Fighting Deceptive Marketing in the Twenty-First Century*, 54 ARIZ. L. REV. 801, 806 (2012). Note that white hat SEOs could, at times, raise legal concerns. For example, the use of a registered trademark by a competitor may raise trademark law concerns, although it could be allowed by the infomediary's rules. *See generally* Sarah J. Givan, *Using Trademarks as Location Tools on the Internet: Use in Commerce?* UCLA J.L. & TECH., Spring 2005, at 1.

22. *See* Nilsson, *supra* note 21, at 806; *see also Help Google (and Users) Understand Your Content*, GOOGLE SEARCH CENTRAL, https://developers.google.com/search/docs/beginner/seo-starter-guide?hl=en&ref_topic=9460495&visit_id=637682021690219525-1316925656&rd=1#understand_your_content [https://perma.cc/KPF8-DZHV].

23. *Cloaking*, GOOGLE SEARCH CENTRAL, https://developers.google.com/search/docs/advanced/guidelines/cloaking?hl=en&ref_topic=6001971&visit_id=637682020628845416-3657122425 [https://perma.cc/W3UA-MP3R]; Nilsson, *supra* note 21, at 809.

24. *See Irrelevant Keywords*, GOOGLE SEARCH CENTRAL, https://developers.google.com/search/docs/advanced/guidelines/irrelevant-keywords?hl=en&visit_id=637682014028275552-3944125709 [https://perma.cc/P8B3-WEC9]; *Keyword Stuffing (Keyword Stacking)*, DICTIONARY OF SOCIAL MEDIA, *supra* note 20; Nilsson, *supra* note 21, at 809–10. *See also, e.g.*, David Segal, *Fake Online Locksmiths May Be Out to Pick Your Pocket, Too*, N.Y. TIMES (Jan. 30, 2016), https://www.nytimes.com/2016/01/31/business/fake-online-locksmiths-may-be-out-to-pick-your-pocket-too.html [https://perma.cc/XD2X-2UPH]; *Hidden Text and Links*, GOOGLE SEARCH CENTRAL, https://developers.google.com/search/docs/advanced/guidelines/hidden-text-links?visit_id=637682024476173338-1664182561 [https://perma.cc/Q4U5-PLSV].

Another example involves link schemes — creating an artificial link network (a "link farm") or paying other websites to link to one's site in order to create an impression of relevance or authority for search engines.[25] Other black hat practices include scraping (copying content from other websites)[26] and article spinning (rewriting copied content using synonyms).[27] These practices often create "doorway pages," which redirect consumers to the parasite's website.[28]

Accordingly, various SEO practices can be used to climb up the results page, inherently demoting competitors to a lower search ranking without competing on the merits. Such practices, which "trick" the search algorithm, need not be costly or sophisticated. This is especially true if the practices aim to change the ranking of results in limited-scope product markets for which other sources of online information are limited.

Where the search engine constitutes the main source of information regarding a specific end-market, the effects of such a scheme on consumers' decisions may be especially significant. Patterson found that content providers value a demotion from the first to the second position in Google search results as 27% less efficient, and a demotion from the second to the third position as 24% less efficient.[29] Such differences in placement can significantly affect traffic to a website, with a substantial impact on consumer choice and competition. The Federal Trade Commission ("FTC") highlighted this effect in its investigation of Google's practice of demoting competing websites:

> Demoting comparison shopping properties had the effect of elevating to page one certain merchant and other websites. These changes resulted in significant traffic loss to the demoted comparison shopping

25. *See Link Schemes*, GOOGLE SEARCH CENTRAL, https://support.google.com/webmasters/answer/66356?hl=en&ref_topic=6001971 [https://perma.cc/LE44-SYAT]; Grimmelmann, *supra* note 18, at 13; Nilsson, *supra* note 21, at 807–08.

26. *See Scraped Content*, GOOGLE SEARCH CENTRAL, https://support.google.com/webmasters/answer/2721312?hl=en&ref_topic=6001971 [https://perma.cc/T76P-G2DR]; *Automatically Generated Content*, GOOGLE SEARCH CENTRAL, https://support.google.com/webmasters/answer/2721306?hl=en [https://perma.cc/K74S-LR2C]; *Scraping (Content Scraping, Site Scraping, Web Scraping, Screen Scraping, Data Scraping)*, DICTIONARY OF SOCIAL MEDIA, *supra* note 20; *Scraper Site (Content Scraper)*, *id.*; *Duplicate Content*, *id.*; *Thin Content*, *id.*

27. *See* Qing Zhang, David Y. Wang & Geoffrey M. Voelker, *DSpin: Detecting Automatically Spun Content on the Web*, Network and Distributed System Security Symposium (Feb. 2014) at 5.

28. *See Doorway Pages*, DICTIONARY OF SOCIAL MEDIA, *supra* note 20.

29. Mark R. Patterson, *Google and Search-Engine Market Power*, 17 HARV. J.L. & TECH. (OCCASIONAL PAPER SERIES), Jul. 2013, at 1, 21.

> properties, arguably weakening those websites as rivals to Google's own shopping vertical.[30]

Given that the ranking of search results affects the information actually viewed by consumers, black hat SEO practices result in *exclusion from information.*[31] The dominance of some infomediaries in their respective markets makes it easier and less costly to affect consumer choice, as manipulating information on a single target affects the entire market. Further, victims of such conduct cannot easily neutralize the effect of such information distortions, not only because they may not be aware of this conduct (especially if it is invisible to users), but also because there are no other infomediary search results that can serve as a comparable benchmark. Additionally, as we later show, even if harmed competitors suspect such conduct, they may not have access to the search algorithm's criteria for placement decisions.

2. Information Misrepresentation via Fraudulent Ratings or Reviews

Developments in digitization and communication enable consumers to immediately and easily share their purchase experience publicly, thereby directly influencing a product's reputation.[32] As studies show, in many markets consumer ratings and reviews ("R&Rs") play an important role in purchase decisions.[33] For example, a one-star increase in Yelp ratings may "[lead] to a 5–9 percent increase in revenue for independent restaurants, depending on the specification."[34]

First, a seller can influence R&Rs in favor of his product ("promotional" R&Rs)[35] or against a competitor's product,[36] either by encouraging real reviews or by planting false ones. We focus on the latter. False R&Rs can be particularly effective due to two characteris-

---

30. FTC RE GOOGLE SEARCH PRACTICES, *supra* note 2, at 2–3.

31. *See also* Council Regulation 1/2003, art. 102, 2017 O.J. (CASE AT.39740) 106, 123–62 (EC).

32. *See* Wayne R. Barnes, *Social Media and the Rise in Consumer Bargaining Power*, 14 U. PENN. J. BUS. L. 661, 693–96 (2012).

33. Shih Yung Chou, Sergio Picazo-Vela & John M. Pearson, *The Effect of Online Review Configurations, Prices, and Personality on Online Purchase Decisions: A Study of Online Review Profiles on eBay*, 12 J. INTERNET COM. 131, 135–36 (2013); Max N. Helveston, *Regulating Digital Markets*, 13 N.Y.U. J.L. & BUS. 33, 58 (2016).

34. Michael Luca, *Reviews, Reputation, and Revenue: The Case of Yelp.com* 4 (Harv. Bus. Sch., Working Paper No. 12-016, 2016).

35. Helveston, *supra* note 33, at 61–64 (reviewing promotional reviews with varying degrees of legality); David Smith, *Amazon Reviewers Brought to Book*, THE GUARDIAN (Feb. 15, 2004, 8:33 PM), https://www.theguardian.com/technology/2004/feb/15/books.booksnews [https://perma.cc/RTH7-QZWZ].

36. For example, a recent study found a correlation between increased competition faced by a restaurant and unfavorable fake reviews. Michael Luca & Georgios Zervas, *Fake It Till You Make It: Reputation, Competition, and Yelp Review Fraud*, 62 MGMT. SCI. 3412, 3414 (2016).

tics of online information. First, individuals can upload information with relative ease and without cost. A small number of new R&Rs added by a single hand may make a substantial difference in a product's overall rating if it has few or infrequent reviews. To achieve a similar result with frequently reviewed products, a competitor might use "sock puppet" accounts — pseudonymous identities employed online to promote oneself anonymously[37] — to post reviews or to reshare fraudulent reviews.[38] Virtual echo chambers can further increase the reach of misinformation online.[39] Furthermore, changes to rankings can affect many competitors at once. Recent evidence indicates that many infomediaries suffer from an increasing number of false R&Rs on their sites.[40]

Second, as with black hat SEO practices, victims of such conduct may find it quite difficult to neutralize the effect of information distortions arising from fraudulent R&Rs. This is, *inter alia*, because consumers often evaluate for themselves the actual quality of the product at a much later stage — if they do so at all.[41] Additionally, infomediaries themselves lack the tools to easily verify the truthfulness of reviews. Therefore, victims have little recourse when trying to persuade infomediaries to remove unflattering information posted. Often, their only option is to plant their own promotional reviews to neutralize the impact of unduly critical reviews.[42] Discovery of such conduct, however, could create its own reputational damage.

The distortion of information through false R&Rs leads to *exclusion by information misrepresentation*.[43] Such conduct may result in the distortion of a product's online appearance, potentially dissuading consumers from purchases they would have otherwise made. As noted above, the presence of a dominant infomediary further motivates these practices, given that the attack does not require dealing with the complexity of ranking across various infomediaries as well as adapting to multiple unique mechanisms for verifying and uncovering fake R&Rs.

---

37. Srijan Kumar & Neil Shah, *False Information on Web and Social Media: A Survey*, ARXIV, Apr. 2018, 5–6, https://arxiv.org/pdf/1804.08559.pdf [https://perma.cc/B75X-P7YV].

38. *Id.* at 2.

39. *Id.* at 9.

40. Luca & Zervas, *supra* note 36, at 3414–15 (showing that 16% of Yelp reviews are filtered as suspicious).

41. *See* Colangelo & Maggiolino, *supra* note 4, at 68–69.

42. Luca & Zervas, *supra* note 36, at 3413 (showing that a restaurant is more likely to commit review fraud after several bad reviews or if it has only a small number of reviews).

43. PATTERSON, *supra* note 14, at 124–28. Other types of online exclusion by information misrepresentation include, *inter alia*, distorting the manner in which information is presented (e.g., making it difficult to click on a link or to read a webpage) or tying to other low-quality products (e.g., placing a high-end brand in the same category as inferior brands).

3. Click Fraud

The most common way infomediaries generate revenue is by selling advertising space to content providers.[44] The digital advertising market is growing exponentially, reflecting the growing importance of this mode of reaching consumers. In 2019, for example, this market generated an estimated $125 billion, reflecting an increase of 16% from the previous year.[45] Nearly two-thirds (62.9%) of these revenues were generated from a performance pricing model.[46] The typical performance pricing model is based on a "pay-per-click" principle, where the advertiser pays each time a user clicks on a certain link. Though sometimes this price per click is set as a flat fee, more often it operates on a bidding principle in which the spot goes to the advertiser willing to pay the highest price per click on an ad or a sponsored search result.[47]

Click fraud involves the artificial production of clicks (either by using bots or by employing a click-farm with human clickers) to increase traffic to a competitor's ads, causing him to incur additional costs for advertisements that do not actually reach potential customers.[48] Such attacks are often executed automatically.[49]

Click fraud exemplifies a strategy of *raising rivals' costs*.[50] It dilutes a rival's resources, given that he will need to invest more in advertising to reach the number of consumers he is interested in reaching. It also muddies his data regarding which consumers are most likely to be interested in his products, thereby reducing the effectiveness of his future advertising campaigns. Furthermore, given the perceived ineffectiveness of the ad campaign, the rival might exit the bidding process for ads or sponsored search results in his area of operation. This, in turn, might reduce the price that his competitor would need to bid to win the advertising space. Click fraud constitutes

---

44. Grimmelmann, *supra* note 18, at 11–12; Google Complaint, *supra* note 2, ¶ 25.

45. PWC, INTERNET ADVERTISING REVENUE REPORT 11 (2020), https://www.iab.com/wp-content/uploads/2020/05/FY19-IAB-Internet-Ad-Revenue-Report_Final.pdf [https://perma.cc/3XL9-E8GF].

46. *Id.* at 20.

47. MARSHALL ET AL., *supra* note 15, at 130.

48. *See Click Fraud*, DARREL INCE, A DICTIONARY OF THE INTERNET (Darrel Ince ed., 4th ed. 2019); *see also* Grimmelmann, *supra* note 19, at 12–13, 46; Sajjad Matin, *Clicks Ahoy! Navigating Online Advertising in a Sea of Fraudulent Clicks*, 22 BERKELEY TECH. L.J. 533, 533 (2007); ALEXANDER TUZHILIN, THE LANE'S GIFTS V. GOOGLE REPORT 15–21 (2006), https://googleblog.blogspot.com/pdf/Tuzhilin_Report.pdf [https://perma.cc/S26R-3QF6] (produced as part of a click fraud settlement); Kenneth C. Wilbur & Yi Zhu, *Click Fraud*, 28 MKTG. SCI. 293, 293 (2009).

49. Daniel L. Hadjinian, *Clicking Away the Competition: The Legal Ramifications of Click Fraud for Companies that Offer Pay Per Click Advertising Services*, 3 SHIDLER J.L. COM. & TECH. 1, ¶ 4 (2006).

50. Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267, 267 (1983).

a serious problem: the scope of such attacks is estimated to account for 30% of click traffic in ad networks.[51]

The effects of click fraud on competition are generally unparalleled in the brick-and-mortar economy for several reasons. First are the relatively low costs of mounting such an attack, especially relative to its negative effects on a rival. Of course, firms might attempt to increase their rivals' advertising costs by purchasing all available physical advertising space in a given area, or by forcing exclusivity advertising terms in their contracts. However, such conduct is costly and might also invoke antitrust scrutiny.[52] By contrast, click fraud can achieve the same ends unilaterally, easily, and inexpensively. Second, as elaborated below, the market power of infomediaries significantly increases the effects of such conduct. The more the rival depends on infomediaries for advertising, the more successful the scheme. The presence of a dominant infomediary facilitates this practice, because the attack need not deal with the complexity of adapting to various infomediaries' defenses against click fraud cyber-attacks.

This Section explored three practices that could distort information markets and harm competition in product markets by exploiting infomediaries' market power. Of course, an exclusionary effect does not necessarily occur every time false information is uploaded or distributed in the market. However, the market power of the infomediary constitutes an important factor in the extent of such effects and can result in a market-wide problem. We turn now to this point.

B. Market Power of Infomediaries

Information manipulations are common in the business world. Such manipulations are generally not considered to raise significant market-wide competition issues.[53] Dominant infomediaries may change this assumption, as parasites may leverage their substantial and durable market powers to launch a full market attack. Indeed, infomediaries can significantly increase the extent and scope of the

---

51. Shishir Nagaraja & Ryan Shah, *Clicktok: Click Fraud Detection Using Traffic Analysis*, 12 ACM CONF. ON SEC. & PRIV. IN WIRELESS & MOBILE NETWORKS 105, 105 (2019). Estimates suggest click fraud will generate a 20% increase in ad-spend. *See* Lucy Handley, *Businesses Could Lose $16.4 Billion to Online Advertising Fraud in 2017: Report*, CNBC (Apr. 13, 2017), https://www.cnbc.com/2017/03/15/businesses-could-lose-164-billion-to-online-advert-fraud-in-2017.html [https://perma.cc/X27V-5XYB]. *But see* Krisztina Rita Dörnyei, *Marketing Professionals' Views on Online Advertising Fraud*, 42 J. CURRENT ISSUES & RSCH. IN ADVERT. 156, 156 (2021) (estimating that click fraud raises publishers' digital advertising expenses by 10%); White Ops & ANA, *2018–2019 Bot Baseline: Fraud in Digital Advertising*, ANA 1, 8 (May 2019), https://www.ana.net/miccontent/show/id/rr-2019-bot-baseline [https://perma.cc/DW4H-7VD3] (arguing that fraud attempts comprise 20–35% of all ads but that a lower amount actually succeed).

52. *See* 15 U.S.C. § 1.

53. *See infra* notes 95–102 and accompanying text.

harmful effects of parasitic conduct to competition and to the integrity of online information.[54] To understand why, we briefly explore the relevant characteristics of such infomediaries.

Infomediaries are platforms designed to match two sides of a market. Infomediaries such as Google and Yelp, for example, match online content with the queries of users seeking information.[55] They play two important roles in our economy. First, they offer consumers a primary gateway by which to access information distributed throughout the internet.[56] Second, they offer content providers access to users seeking information, *inter alia*, through their large user base, their high level of personalization, their ability to tailor advertisements to relevant users,[57] and their "long tail" (the ability to distribute information to remote and otherwise unattainable consumers).[58] Amazon performs an additional task, as it enables e-commerce by matching consumers with products they seek.[59] All the aforementioned infomediaries constitute "two-sided platforms": they serve two distinct groups of users, and create symbiotic and reciprocal relations between them.[60]

Online information markets tend to be highly concentrated, and some exhibit a "winner-take-all" dynamic.[61] This is mainly due to economies of scale and scope in data collection and analysis,[62] strong network effects,[63] and limited multi-homing (the limited tendency of

54. *See, e.g.*, HOR REPORT, *supra* note 2; STIGLER CTR. FOR THE STUDY OF THE ECON. & THE STATE, STIGLER COMMITTEE ON DIGITAL PLATFORMS FINAL REPORT (2019), https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf [https://perma.cc/P9J8-C35H]; COMPETITION & MKTS. AUTH., THE COMMERCIAL USE OF CONSUMER DATA: REPORT ON THE CMA'S CALL FOR INFORMATION (2015), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/435817/The_commercial_use_of_consumer_data.pdf [https://perma.cc/L749-VHJY].

55. *See* Grimmelmann, *supra* note 18, at 6, 8–9.

56. Google Complaint, *supra* note 2, ¶¶ 89–90; *see* FLEISHMAN-HILLARD, UNDERSTANDING THE ROLE OF THE INTERNET IN THE LIVES OF CONSUMERS 10–12 (2012), http://push.fleishmanhillard.netdna-cdn.com/dii/2012-DII-White-Paper.pdf [https://perma.cc/N885-7ZPC] (stating that in 2012, 90% of U.S. consumers used an internet search engine to become informed about brands and products).

57. ARIEL EZRACHI & MAURICE E. STUCKE, VIRTUAL COMPETITION 85–89 (2016).

58. *See generally* CHRIS ANDERSON, THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE (2006).

59. HOR REPORT, *supra* note 2, at 85; PATTERSON, *supra* note 14, at 8.

60. Two-sided markets were recognized by the Supreme Court in *Ohio v. American Express Co.*, 585 U.S. 1, 2 (2018); *see also* Daniel L. Rubinfeld & Michal S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, 357–59 (2017).

61. HOR REPORT, *supra* note 2, at 37–39.

62. *Id.* at 57; MAURICE E. STUCKE, BIG DATA AND COMPETITION POLICY 160 (2016).

63. *See* STUCKE, *supra* note 62, at 162–216. These cross-network effects are the result of the increase in users' utility when other content providers use the infomediary and the increase in content providers' utility when other users join it.

users to compare information found in several infomediaries).[64] Add in first-mover advantages, and the market could tip. Indeed, a single big player frequently dominates an entire digital information market. For example, the Department of Justice has recently alleged that Google dominates the search market with an 88% market share;[65] and Facebook dominates the social networking market with at least 60% market share.[66] Such power often tends to be durable.[67] Specialized infomediaries such as TripAdvisor may also enjoy substantial market power, although in much narrower markets.[68] This implies that a single fraudulent campaign affecting search results or rankings can affect a significant proportion of consumers and many rivals at once.

Importantly, most users consider online information to be highly credible. Studies have shown that users trust Google's ability to rank unsponsored results by their true relevance to the query,[69] and that R&Rs are considered second in credibility only to friend and family recommendations.[70] This trust in online information may derive from several factors, including infomediaries' separation between information and product. Such separation creates an expectation that independent infomediaries do not have a personal stake in a specific product and therefore have an incentive to provide truthful information in order to retain their market position. Furthermore, such separation reinforces information asymmetries that limit users' ability to verify the truthfulness of the information provided in real time.[71] Not only do users often accept false information as true, some types of false information spread more quickly than true information.[72]

As was demonstrated in Section II.A, a key element of the parasites' conduct lies in their ability to disseminate misleading infor-

---

64. *See* Google Complaint, *supra* note 2, ¶ 3. As studies have shown, in online information markets, users often choose one infomediary for each query purpose (single-homing), rather than using several infomediaries for the same query (multi-homing). The tendency to single-home makes search engines less likely to act as substitutes for one another. Maurice E. Stucke & Ariel Ezrachi, *When Competition Fails to Optimize Quality: A Look at Search Engines*, 18 YALE J.L. & TECH. 70, 99–100 (2016).

65. Google Complaint, *supra* note 2, ¶ 92.

66. HOR REPORT, *supra* note 2, at 137; *see also* Facebook Complaint, *supra* note 2, at 19.

67. *See* Facebook Complaint, *supra* note 2, at 19.

68. *See* HOR REPORT, *supra* note 2, at 178.

69. Bing Pan, Helene Hembrooke, Thorsten Joachims, Lori Lorigo, Geri Gay & Laura Granka, *In Google We Trust: Users' Decisions on Rank, Position, and Relevance*, 12 J. COMPUT.-MEDIATED COMMC'N 801, 816–18 (2007).

70. According to a Nielsen report dated September 2013, polling more than 29,000 online users in 58 countries, online R&Rs are the most trusted source of information after family and friends' recommendations; 68% of online users polled claimed they trust online R&Rs. *See* NIELSEN, GLOBAL TRUST IN ADVERTISING AND BRAND MESSAGES 3, 6 (2013), https://aana.com.au/content/uploads/2015/03/Nielsen-Global-Trust-In-Advertising-Report-September-2013-lowres.pdf [https://perma.cc/9CTA-66L7].

71. PATTERSON, *supra* note 14, at 10.

72. Soroush Vosoughi, Deb Roy & Sinan Aral, *The Spread of True and False News Online*, 359 SCIENCE, Mar. 9, 2018, at 1146–51.

mation broadly and inexpensively. The dominance of infomediaries in information markets exacerbates the problem because the attack can be targeted to a single infomediary, rather than several infomediaries with differing cyber protections. Moreover, consumers who use only one infomediary do not compare, and thereby do not second-guess, the information provided to them online. Consequently, an attack against a single infomediary, particularly a dominant one, may cause harm to the integrity of the relevant information market as a whole.

As shown in Section II.A, parasites can take advantage of infomediaries' market power to undermine the functioning of information markets by exploiting users' trust in the truthfulness of the information provided. We turn next to the failure of the market to respond.

C. The Failure of the Market Response

Parasitic conduct aims to harm competitors. However, it also harms infomediaries by reducing the quality of search results or rankings, or by diminishing the value of an infomediary's online advertising services. This, in turn, could lead users to reconsider their use of that infomediary.[73] This dynamic creates incentives for infomediaries to provide their own solutions to eliminate parasitic manipulations.[74] Infomediaries also seem best placed to provide such solutions by systematically detecting and preventing parasitic conduct. This, in turn, may also incentivize harmed users or competitors to seek evidence that might lead the infomediary to take action against such conduct.[75] Alternatively, competitors harmed by the fraudulent conduct might attempt to counter such conduct.

Should the market indeed provide its own solution, no regulation is needed. Yet, as elaborated below, market forces alone are insufficient to create such a disciplinary effect.

---

73. PATTERSON, *supra* note 14, at 135; Nilsson, *supra* note 21, at 811; EZRACHI & STUCKE, *supra* note 57, at 159; Grimmelmann, *supra* note 18, at 44–45. For an analysis of the conditions under which reputation serves as a useful tool to discipline sellers to provide higher quality products, see Henry N. Butler & Jason S. Johnston, *Reforming State Consumer Protection Liability: An Economic Approach*, 2010 COLUM. BUS. L. REV. 1, 61–63 (2010); for an analysis of consumer empowerment via reputational feedback mechanisms in information technology, see Christopher Koopman, Matthew Mitchell & Adam Thierer, *The Sharing Economy and Consumer Protection Regulation: The Case for Policy Change*, 8 J. BUS. ENTREPRENEURSHIP & L. 529, 541–43 (2014).

74. A federal district court recognized in *Ascentive, LLC v. Opinion Corp.*, 842 F. Supp. 2d 450, 468 (E.D.N.Y. 2011), that "[i]f the search engines conclude that Pissed Consumer's SEO practices are indeed in violation of their terms of service or guidelines, they can take certain steps to punish Pissed Consumer including lowering the site's place in their search result lists or removing the site from their lists completely — the so called 'death penalty.'"

75. For example, the proposed EU Digital Services Act requires the infomediary to take steps against such behaviors. *See DSA*, *supra* note 3, ¶ 58.

1. Limitations on Competitors' Reactions: "Black Box" Algorithms of Infomediaries

One of the main limitations to competitors' reaction to market power parasites arises from the "Black Box" nature of algorithms used by infomediaries. Infomediaries' algorithms are confidential and carefully protected trade secrets. As famously framed by Frank Pasquale, the secrecy of these algorithms and the features they consider make them a "black box" for content providers, content-seeking users, and regulators.[76] This secrecy conceals parasitic behavior and limits the potential market response.

Looking first at black hat SEO practices, the "black box" character of search engines' selection and ranking processes means that content providers and information-seeking users have no access either to the features weighted or the specific data points used in the analysis. The highly concentrated nature of the search engine market makes it difficult to even identify a good benchmark for comparing a search engine's results before and after a parasitic attack. The fact that search results are often tailored to the user intensifies this issue, as it makes reverse engineering their composition almost impossible. If users or content providers cannot evaluate what the search results would have been absent black hat SEOs, they cannot pressure the search engine to address the vulnerabilities compromised by the parasite.

Combatting parasitic R&R behavior presents a similar challenge. The process by which sites accept and filter R&Rs, as well as the identity of R&R writers, are often confidential. As such, victims of a parasitic R&R attack may not be able to verify the authenticity of R&Rs,[77] or accurately estimate what their overall rating would have been absent the fraudulent R&Rs.

Finally, with click fraud, advertisers rarely receive any identifying information about the specific consumers whose clicks they are charged for. As a result, they cannot properly evaluate the occurrence of click fraud or the scope of harm from such conduct.

Despite the difficulty in uncovering parasitic schemes that prey upon these "black box" infomediaries, such activities occasionally come to light. Even if parties become aware of their competitor's fraudulent scheme, however, their ability to react to black hat SEO

---

76. FRANK PASQUALE, THE BLACK BOX SOCIETY 59–100 (2015); *see also* PATTERSON, *supra* note 14, at 74–75.

77. *See* Kumar & Shah, *supra* note 37, at 7–10. As then-New York Attorney General Eric T. Schneiderman explained, "[w]hen you look at a billboard, you can tell it's a paid advertisement — but on Yelp or Citysearch, you assume you're reading authentic consumer opinions, making this practice even more deceiving." David Streitfeld, *Give Yourself 5 Stars? Online, It Might Cost You*, N.Y. TIMES (Sept. 22, 2013), https://www.nytimes.com/2013/09/23/technology/give-yourself-4-stars-online-it-might-cost-you.html [https://perma.cc/79VP-28ST].

and fake R&R schemes may remain limited. As we will discuss in the following Part, complaining to the infomediary may not be enough given that infomediaries themselves are often ineffective in fighting these practices.

Another solution would have all competitors in a particular market employ more or less the same fraudulent tactics, in which case their individual efforts would potentially cancel out and produce an accurate response to the search query. But not all competitors are technologically savvy, and many might not wish to engage in fraudulent conduct. More importantly, engaging more competitors in fraudulent conduct is likely to cause additional distortions to information in the market, rather than cancel each other out and remedy the market's failure. Therefore, this approach could result in increased harm to consumer choice.

Where the risk of incidental exposure coupled with the substantial harm to the infomediary's reputation and monetary interests is significant, infomediaries may feel compelled to combat these harms more aggressively. However, as explained below, we can rely on them to fight this phenomenon only to a limited extent.

2. Limitations on Infomediaries' Reactions: The High Cost of Fighting Parasites

Infomediaries often impose strict guidelines for content providers and employ cutting-edge technological tools that detect and remove some attempts to manipulate their algorithms.[78] Yet infomediaries are in a perpetual race against parasitic manipulations that seek to distort their performance.[79] Some parasitic manipulations fly under their radar. For example, it might be easier to capture a simple click fraud scheme by detecting a common source of clicks, than to detect fraudulent reviews from multiple sources.[80] Additionally, fighting such manipulations is often difficult and costly.[81] Determining the validity of negative reviews can be extremely challenging and at times not worth the infomediaries' effort.

Moreover, even if infomediaries detect a parasitic manipulation, their ability to respond remains limited. Typically, they eliminate the manipulation and can permanently or temporarily remove the content promoted by the manipulator or, at a minimum, demote its position

78. *See* MARSHALL, *supra* note 15, at 49–53; Grimmelmann, *supra* note 18, at 56.

79. *See* TUZHILIN, *supra* note 48, at 21–46; Nilsson, *supra* note 21, at 812 (describing changes in Google's algorithm to fight link schemes and other deceptive SEO practices).

80. *See* Nilsson, *supra* note 21, at 813–15.

81. PATTERSON, *supra* note 14, at 137 (noting that fighting false reviews may be costly and lead to the accidental filtering of authentic reviews).

within the results.[82] But these sanctions are often insufficient, and in any case, fail to compensate the consumer or the competitor injured by such conduct. In the absence of efficient tools to fight parasitic manipulations, infomediaries themselves may turn to the government for help. For example, Google advises advertisers and users who suspect they were harmed by a black hat SEO attack to file a complaint with the FTC.[83] Infomediaries have also brought action against the offending firm themselves.[84] Yet such suits often entail prohibitive costs.

Another problem with relying on infomediaries to fight against parasitic manipulation lies in the infomediaries' interest in pursuing and advancing their own business outcomes. Importantly for our analysis, they are not always incentivized to fix the anti-competitive impacts of parasitic attacks. In some cases, infomediaries might actually be biased *in favor* of the parasitic scheme. For example, infomediaries may overlook distortions in their organic results page if they lead to an increased number of clicks on pay-per-click results;[85] they may overlook click fraud because it generates immediate revenues;[86] or they may condone overly generous reviews if these reviews increase traffic to their content providers (for example, a recent study found that almost all Airbnb stays received an "above average" ranking).[87] In order to protect their reputation, infomediaries may attempt to conceal the distortions caused by parasitic manipulations, rather than fight them and draw greater attention to the issue.[88] Finally, infomediaries may be reluctant to punish parasites by removal or demotion due

82. Nilsson, *supra* note 21, at 812–13.

83. *Do You Need an SEO?*, GOOGLE, https://support.google.com/webmasters/answer/35291?hl=en [https://perma.cc/29Q9-6LCD] ("If you feel that you were deceived by an SEO in some way, you may want to report it. . . . The Federal Trade Commission (FTC) handles complaints about deceptive or unfair business practices.")

84. *See, e.g.,* Google, Inc. v. Auction Expert Int'l, No. 1-04-CV-030560, 2004 WL 2826489 (Cal. Super. Ct. Nov. 15, 2004); Yelp Inc. v. Hadeed Carpet Cleaning, 742 S.E.2d 554 (Va. App. 2014).

85. Nilsson, *supra* note 21, at 814–15; Wilbur & Zhu, *supra* note 48; *see* PATTERSON, *supra* note 14, at 10.

86. For example, two settlements were reached in a class action which claimed that search engines were not taking enough precautions against click fraud. *See* Final Order Approving Settlement, Lane's Gifts & Collectibles, L.L.C. v. Yahoo! Inc., No. CV-2005-052-1, 2006 WL 5908372 (Ark. Cir. Ct. App. July 26, 2006) (reaching a settlement with Google); Lane's Gifts L.L.C. v. Yahoo! Inc., No. 05-cv-04027 (W.D. Ark. Sep. 13, 2005), https://www.docketalarm.com/cases/Arkansas_Western_District_Court/4--05-cv-04027/Lane%27s_Gifts_LLC_et_al_v._Yahoo%21_Inc._et_al/ [https://perma.cc/L7CL-NCP8] (reaching a settlement with Yahoo!); *see also* FindWhat Inv'r Grp. v. FindWhat.com, 658 F.3d 1282, 1292 (11th Cir. 2011); Brodsky v. Yahoo! Inc., 592 F. Supp. 2d 1192, 1196 (N.D. Cal. 2008).

87. Georgios Zervas, Davide Proserpio & John Byers, *A First Look at Online Reputation on Airbnb, Where Every Stay Is Above Average*, 32 MKTG. LETTERS 1, 1 (2021).

88. *See* Helveston, *supra* note 33, at 75.

to concerns over antitrust scrutiny of their behavior,[89] or over public condemnation of actions that could be perceived as harming freedom of speech.

In short, consumers and users cannot expect infomediaries to fully protect markets against anti-competitive parasitic market power manipulations. We thus turn to regulatory solutions to remedy this market failure. As we will argue, many of the costs explored above also affect the ability of a competitor or a consumer whose choice was altered to bring suit.

III. THE INABILITY OF CURRENT LAW TO DEAL WITH MARKET POWER PARASITES

By abusing the market power of infomediaries, parasites can negatively affect consumer choice, competitors' chances of success, and market-wide competition. In so doing, they can bring about all the ills of exclusionary conduct, including increased prices and lower rates of innovation, with no redeeming justification.[90] By harming the quality of information, parasites also harm the integrity of these information markets.

Existing laws can be applied to some degree to reduce the harm created by market power parasites. However, as this Part shows, current laws are both insufficient and inefficient when it comes to limiting market-wide anti-competitive effects resulting from parasitic abuse of the market power of infomediaries.

We first explore the most natural area of law to deal with such exclusionary effects — antitrust law. We then explore the limited ability of business tort law and consumer protection law to provide a regulatory solution.

A. Section 2 of the Sherman Act

Anti-competitive effects, both in information markets and beyond them, are normally dealt with through antitrust law. Indeed, some of the practices explored above have been specifically condemned as antitrust offenses when engaged in by monopolists. Yet, as we will argue, the de-linkage between the two elements of unilateral exclusionary behavior, namely market power and conduct, means that antitrust laws fail to capture parasitic abuse of market.

---

89. Lauren Feiner, *Google Spars with Barry Diller's IAC on Marketing Practices*, CNBC (Dec. 7, 2020), https://www.cnbc.com/2020/12/07/google-hesitates-to-crack-down-on-allegedly-deceptive-practices-by-iac-wsj.html [https://perma.cc/2TTT-P76S].

90. *See* Colangelo & Maggiolino, *supra* note 4, at 69; Stucke, *When a Monopolist*, *supra* note 1, at 825.

Section 2 of the Sherman Act prohibits certain types of unilateral conduct. The plaintiff must prove an act of monopolization and monopoly power.[91] We explore both.

Monopolization refers to the act of gaining a competitive advantage in a manner other than competing on the merits.[92] Antitrust law recognizes exclusion from information, such as black hat SEO practices, as such a technique.[93] It also recognizes attempting to raise rivals' costs, as in the case of click fraud, as an exclusionary practice.[94] However, exclusion by information misrepresentation, as in the case of fraudulent R&Rs, does not enjoy the same consensus.[95]

At one extreme, Judge Frank Easterbrook of the Seventh Circuit argued that antitrust laws cannot be applied to information misrepresentations, as false information does not affect supply in the product market, but rather takes the competition into the realm of advertising, where it can be resolved by "more speech — the marketplace of ideas."[96]

Other circuits have declined to adopt Easterbrook's rigid interpretation. Several circuits have, instead, adopted Areeda & Hovenkamp's view.[97] Under this theory, though information misrepresentation should often be considered *de minimis*, it could nevertheless be litigated as antitrust violation if the plaintiff proves that the representations were clearly false, clearly material, clearly likely to induce

---

91. 15 U.S.C. § 2 (designating monopolizing trade a felony) ("Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize . . . shall be deemed guilty of a felony . . . ."); *see* FTC, *Monopolization Defined*, *supra* note 5; DOJ, COMPETITION AND MONOPOLY, *supra* note 5.

92. The phrase "competition on the merits," as suggested by antitrust scholar Philip Areeda, was famously quoted by the Supreme Court in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 n.32 (1985); *see also* FED. TRADE COMM'N, OECD ROUNDTABLE ON COMPETITION ON THE MERITS – NOTE BY THE UNITED STATES (2005), https://www.ftc.gov/sites/default/files/attachments/us-submissions-oecd-and-other-international-competition-fora/2005--Roundtable%20on%20Competition%20on%20the%20Merits.pdf [https://perma.cc/XV2D-F6Y8].

93. For example, the Indiana Federation of Dentists promulgated a rule which forbade dentists from providing x-rays when submitting insurance claims. The Supreme Court approved the FTC's approach, according to which denying information to insurers was deemed a violation of antitrust laws. *See* FTC v. Indiana Fed'n of Dentists, 476 U.S. 447 (1986); *see also* PATTERSON, *supra* note 14 at 116–22, 138–45 (analyzing exclusion from search results as exclusion from information).

94. *See* Salop & Scheffman, *supra* note 50.

95. For an overview, *see, e.g.,* Colangelo & Maggiolino, *supra* note 4, at 68–71.

96. Schachar v. Am. Acad. of Ophthalmology, 870 F.2d 397, 400 (7th Cir. 1989); *see also* Sanderson v. Culligan Int'l Co., 415 F.3d 620, 623 (7th Cir. 2005).

97. *See, e.g.*, Nat'l Ass'n of Pharm. Mfrs., Inc. v. Ayerst Labs., 850 F.2d 904, 916 (2d Cir. 1988); Am. Prof'l Testing Service Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, 108 F.3d 1147, 1152 (9th Cir. 1997); Innovation Ventures, L.L.C. v. N.V.E., Inc., 694 F.3d 723, 740–41 (6th Cir. 2012); Am. Council of Certified Podiatric Physicians & Surgeons v. Am. Bd. of Podiatric Surgery, 323 F.3d 366, 371 (6th Cir. 2003); Conwood Co. v. U.S. Tobacco Co., 290 F.3d 768, 784 (6th Cir. 2002). For criticism, *see* PATTERSON, *supra* note 14, at 124–25.

reasonable reliance, made to uninformed buyers, continued for a prolonged time, and not readily neutralized by the disinformation's victim.[98] Other leading scholars also argue that information misrepresentation may amount to an antitrust offense under some circumstances. Stucke suggests that an antitrust violation can be found if "the monopolist's conduct is actually deceptive" and "capable of significantly contributing to its attaining or maintaining monopoly power."[99] Finally, Colangelo and Maggiolino suggest a middle ground, proposing that an antitrust violation may be found when "a false representation, performed intentionally, was deemed essential and aimed at creating a reasonable expectation of reliance by consumers."[100] Irrespective of the particular tests applied, there is a clear trend towards acknowledging information misrepresentation as exclusionary conduct.

Once exclusionary conduct by a monopolist is proven, the defendant may be able to defend himself by proving a legitimate business justification.[101] The parasitic schemes discussed here involve misinformation designed to harm competition, and it is difficult to attribute any legitimate business justification to them.[102]

Another element of the offense is monopoly power. As explored above, some infomediaries have significant market power in the sense that they affect the content of information in the market. But parasites often lack such power. Black hat SEOs, false R&Rs, and click fraud require nothing more than a working internet connection and some basic technological understanding of how the systems behind searches, rankings, and clicks operate. Far-reaching attacks are blind to the size of the attacker. The question thus arises whether parasite attackers violate the Sherman Act. As will be argued below, the language of the Sherman Act may be broad enough to reach market power parasites, but such an interpretation is unlikely to prevail under the existing case law.

Theoretically, the wording of Section 2 of the Sherman Act, which prohibits "monopolization," is sufficiently broad to include unilateral conduct that erects artificial barriers to trade by abusing the market power of another entity. Nothing in the language itself man-

98. PHILLIP E. AREEDA & DONALD F. TURNER, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION 278 (2d ed. 1978); PHILLIP E. AREEDA & HERBERT J. HOVENKAMP, ANTITRUST LAW 326–27 (3d ed. 2008).

99. Stucke, *When a Monopolist*, *supra* note 1, at 841–42.

100. Colangelo & Maggiolino, *supra* note 4, at 71, 84–89; *see also* Note, *Deception as an Antitrust Violation*, 125 HARV. L. REV. 1235 (2012).

101. FTC, *Monopolization Defined*, *supra* note 5; *see also* Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 605 n.32 (1985). For example, the FTC ended its investigation into Google's exclusion of search engine competitors, despite finding possible harm, due to the existence of a business justification; *see* FTC RE GOOGLE SEARCH PRACTICES, *supra* note 2.

102. PATTERSON, *supra* note 14, at 127–28.

dates that the owner and abuser of the market power be the same entity.[103] Furthermore, the goal of the Act, which is to prohibit unilateral acts that can significantly distort competition by abusing market power,[104] may be fulfilled in the case of parasitic abuse of another's market power. Accordingly, at least in theory, such an interpretation might be allowed.

Yet such an interpretation would meet high hurdles. The main hurdle involves more than a century of case law, which requires that the monopolizing act be conducted by a monopolist. Accordingly, unilateral anti-competitive conduct constitutes a violation of antitrust law only if the actor engaging in such conduct possesses or acquires significant market power because of such conduct.[105] Because antitrust laws assume that only monopolists can substantially influence competition, all other forms of unilateral conduct are allowed. Colangelo and Maggiolino articulate this point well: "History dictates, and economic theory reinforces, that organizations that do not have a notable amount of market power rarely succeed in altering the competitive landscape, because they cannot produce the aggregate effects necessary to significantly alter market function."[106] Indeed, at the time the Sherman Act was enacted in 1890, it was hard to imagine how one market player could easily abuse the market power of another without the latter's consent. Online information markets challenge this basic premise. Today, digital means make it possible for one entity to abuse the market power of another and harm competition significantly.

Given that an attempt to monopolize does not require pre-existing significant market power, the prohibition of "attempt to monopolize," also referenced in Section 2 of the Sherman Act, could also potentially capture market power parasites. However, such an attempt requires proof of intent to monopolize, and the consequent dangerous probability of gaining monopolistic market power.[107] As a result, an "attempt to monopolize" claim requires proof of post-conduct market power of the one engaged in the conduct.[108] Because market power parasites

---

103. The section explicitly applies to "[e]very person." *See* 15 U.S.C. § 2.

104. *See generally* Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J. L. & ECON. 7 (1966); George J. Stigler, *The Origin of the Sherman Act*, 14 J. LEGAL STUD. 1 (1985).

105. *See* Copperweld Corp. v. Indep. Tube Corp., 467 U.S. 752, 775–76 (1984), *aff'd*, Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993); PATTERSON, *supra* note 14, at 129–30. *See generally* Jeffrey L. Harrison, *Comments on Richard Markovits's Claim that the Requirement of Possession of Pre or Post Market Power Is Unnecessary in Monopolization and Attempt to Monopolize Cases and a Proposed Second-Best Reconciliation of the Per Se and Conventional Approaches to Dangerous Probability*, 61 ANTITRUST BULL. 155, 157 (2016).

106. Colangelo & Maggiolino, *supra* note 4, at 72.

107. *See* Swift & Co. v. United States, 196 U.S. 375, 396, 402 (1905); *Spectrum*, 506 U.S. at 459.

108. Harrison, *supra* note 105, at 157.

are usually smaller entities that rarely succeed in monopolizing a sector, the use of this alternative generally does not apply to our case.

In summary, because antitrust law requires that unilateral anticompetitive conduct be carried out by an entity holding market power, existing antitrust laws do not offer an appropriate remedy for market power parasites.

B. Business Torts

Business torts provide an alternative path to reaching market power parasites. Such torts are often considered part of unfair competition law, a field that encompasses "causes of action arising out of business conduct that is contrary to honest practice in industrial or commercial matters."[109] Below we analyze the applicability of several business tort laws to market power parasites and their failure to offer an appropriate solution. As we will show, the focus of such laws on a specific piece of misinformation rather than harm to market-wide informational integrity — and the resultant requirement to prove a causal link between the specific misinformation and the harm to a specific consumer — limits their ability to effectively deal with parasitic abuses of market power.

The common law tort of fraud requires proof of five elements: (1) material misrepresentation, (2) reliance, (3) injury, (4) scienter (the defendant's knowledge of the falsity of the misrepresentation), and (5) intent to cause the plaintiff's reliance.[110] This tort could potentially capture the fraudulent component in the parasite's conduct, as all the examples discussed in Section II.A include a misrepresentation either to the user (a distorted order of search results or fake R&Rs) or to the infomediary (fake clicks). Yet the plaintiff must be the one who relied on the misinformation. Therefore, the fraud tort is better suited for consumers or infomediaries, not competitors. The motivation of an individual consumer to bring such a case is likely to be relatively small and is further reduced by the insistence of many courts on proof of damage beyond proof of injury, in order to avoid *de minimis*

109. Am. Heritage Life Ins. Co. v. Heritage Life Ins. Co., 494 F.2d 3, 14 (5th Cir. 1974); BUSINESS TORTS AND UNFAIR COMPETITION HANDBOOK pt. I, ch. III.A (Am. Bar Ass'n ed., 3d ed. 2014) [hereinafter ABA BUSINESS TORTS HANDBOOK].

110. RESTATEMENT (SECOND) OF TORTS § 525 (AM. L. INST. 1965); ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at ch. VI.B; John C.P. Goldberg & Benjamin C. Zipursky, *The Fraud-On-The-Market Tort*, 66 VAND. L. REV. 1755, 1760 (2013); PATTERSON, *supra* note 14, at 26, n.7. A related tort is negligent misrepresentation, which offers remedies for misrepresentations that were made negligently. This tort is usually limited to firms in the business of supplying information and is therefore not suitable. ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at ch. VI.C.

claims.[111] As discussed above, the motivation of the infomediary in bringing such suits is also limited.[112] The reliance requirement creates another significant hurdle, as courts require proof that the misinformation caused the plaintiff's conduct. As a result, the common law tort of fraud focuses on a single misrepresentation and the specific business decision affected by it. This limited focus does not effectively deal with the wider concern over the integrity of information markets resulting from the abuse of infomediaries' market power by a parasite.

False advertising laws were historically enacted to relieve the heavy burden of the reliance requirement in tort fraud and allow a broader cause of action.[113] Various statutes regulate this cause of action in the private sphere, most importantly Section 43(a) of the Lanham Act, which prohibits the dissemination of false information either by creating confusion in commerce between the plaintiff and the defendant, or by proof of a material misrepresentation in commercial advertising or promotion.[114] False R&Rs fall under this prohibition. Courts have also been willing to consider the possibility that search results are statements actionable under the law,[115] opening the gate for causes of action against black hat SEO practices. However, as in the common law tort of fraud, courts require that the false information be material in nature, in the sense of being likely to influence the purchasing decision. This creates a challenge for plaintiffs,[116] especially since courts have rejected the argument that manipulating code is actionable on its own and instead demanded proof that misrepresentation was material to consumer decisions.[117] By requiring such proof,

111. Goldberg & Zipursky, *supra* note 110, at 1771–77. Usually, the plaintiff is entitled to "benefit of the bargain" damages, and in some courts, the plaintiff can recover only "out of pocket" damages. *See* ABA BUSINESS TORTS HANDBOOK, *supra* note 105, at ch. VI.B.

112. *See supra* Section II.C.2.

113. *See* PATTERSON, *supra* note 14, at 26–27.

114. *See* 15 U.S.C. § 1125(a).

115. LegalForce RAPC Worldwide P.C. v. UpCounsel, Inc., No. 18-cv-02573-YGR, 2019 WL 160335, at *15 (N.D. Cal. Jan. 10, 2019).

116. *See* Novartis Consumer Health, Inc. v. Johnson & Johnson-Merck Consumer Pharms. Co., 290 F.3d 578, 590 (3d Cir. 2002); John R. Allison, *Private Cause of Action for Unfair Competition Under the Lanham Act*, 14 AM. BUS. L.J. 1, 12 (1976); ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at ch. III.B.

117. In one SEO parasite case, a federal district court found that because false content provided to the search engine was not in fact disseminated to consumers, it could not constitute "advertisements" as the act requires. Gen. Steel Domestic Sales, L.L.C. v. Chumley, 129 F. Supp. 3d 1158, 1175 (D. Colo. 2015). In another case, a federal district court found that "software code and HMTL [sic] page source are not actionable statements," and can only serve, in the appropriate circumstances, as evidence to prove the defendant's intent in "making the statements, namely to mislead consumers." *LegalForce,* 2019 WL 160335, at *9. Again, a consumer — and not only a search engine — must have seen the misrepresentation. *Id.* Indeed, in scraping or autogenerating content, a Section 43(a) claim is possible if the content in the non-genuine websites is false. However, when the SEO practice merely

courts effectively restored the reliance requirement and focused the Lanham Act on particular misrepresentations with their specific injury, rather than on market protection more broadly.[118] Accordingly, the Lanham Act is also too narrow to effectively remedy most parasitic behaviors.

Tortious interference claims also require five elements: (1) a business relationship between the plaintiff and a third party (either a contractual relationship or a prospective business relationship); (2) awareness of that relationship on the part of the defendant; (3) behavior that causes an unjustified breach of that relationship; (4) intent to cause the breach; and (5) damages caused by the wrongful behavior.[119] Parasitic conduct arguably interferes with a plaintiff's business relationship with the infomediary, and thereby qualifies for remedies under this tort. Click fraud schemes can be pled as tortious interferences.[120] Yet tortious interference is less likely to be applied to black hat SEO practices or false R&Rs, because the content providers that may bring these claims have no contractual relationship with the intermediary as the tort requires,[121] and it seems unlikely that courts will find a prospective business relationship based solely on a consumer's internet search for a product.[122] Tortious interference in the form of R&Rs is also unlikely because the plaintiff must prove the per se falsity of the statement, and R&Rs may be viewed as opinions.[123]

Click fraud suits under this tort, although possible, are also limited. To prove tortious interference, the plaintiff must show causality between the wrongful behavior and interference in the relationship. Like the reliance element, causality narrows the application of the tort to the specific plaintiff who was harmed by a particular piece of misinformation. If, for example, the parasite conducted a market-wide attack against all his competitors using several infomediaries, multiple suits would have to be brought to cover the entire scope of the attack. Even when applicable, tortious interference generally does not pro-

---

leads to a demotion in search results, misrepresentation harms the market, but harm to consumers is harder to prove.

118. Rudolf Callmann, *False Advertising as a Competitive Tort*, 48 COLUM. L. REV. 876, 883, 885–86 (1948); *see also* PATTERSON, *supra* note 14, at 26–30.

119. ABA BUSINESS TORTS HANDBOOK, *supra* note 105, at chs. V.B and V.D; Charles M. Hosch & Lauren T. Becker, *Business Torts,* 60 SMU L. REV. 713, 722 (2007).

120. WeBoost Media S.R.L. v. LookSmart Ltd., No. C 13–5304 SC, 2014 WL 2621465, at *2 (N.D. Cal. June 12, 2014).

121. This is because they have no formal contract with regard to organic results, but only a tacit understanding with the infomediary that is based on the unilaterally articulated terms published, involving no monetary payments. Such relationships are not deemed contractual under the tort. *See* ABA BUSINESS TORTS HANDBOOK, *supra* note 105, at ch. V.B, n.30, and accompanying text.

122. *Id*. at ch. V.D, nn.194, 203–10.

123. RESTATEMENT (SECOND) OF TORTS § 772 (AM. L. INST. 1965); ABA BUSINESS TORTS HANDBOOK, *supra* note 105, at chs. V.B, V.D, n.215 and accompanying text.

vide an efficient remedy for manipulative strategies employed by market power parasites against the entire market.

Finally, false R&Rs may trigger the tort of defamation or of business disparagement. Defamation requires (1) proof of a false statement made without adequate research into the truthfulness thereof; (2) a publication, either spoken or in another medium; (3) harm; and (4) causation between the statement and harm.[124] The elements of a business disparagement suit resemble those of defamation, namely proof of falsity, intent, and actual damages.[125] But defamation and disparagement are inefficient tools to deal with parasitic R&Rs because the plaintiff must first prove the falsity of the statement.[126] This is potentially difficult given that most R&Rs can be considered opinions, which generally do not fall within this tort.[127] Second, defamation and disparagement suits are usually expensive and thus rarely filed.[128] If the plaintiff is a victim of a wide anti-competitive scheme that has been implemented broadly and consistently to distort the information in the market, bringing a suit for each harmful statement will be far too expensive to efficiently address the damage. Additionally, many states have enacted short statutes of limitation for defamation suits.[129] As a result, false R&Rs may be actionable only for a brief time after their publication, limiting the ability to address the cumulative effect of a continuous attack in the information market.

Tort law's ability to limit parasitic abuses of market power is thus limited in three main respects. First, torts generally require causation between the misrepresentation and the specific harm. In cases of parasitic conduct, such proof is made more difficult because the plaintiff must prove causation with regard to both the infomediary and each and every end consumer in order for the full scope of the wrong to be included. As a result, tort laws cannot deal with broader competitive concerns and harm to the integrity of the information market.[130] Second, torts that engage with misinformation typically require that the misrepresentation be directed at the plaintiff. This prevents a competitor from bringing a case. Third and relatedly, torts give no weight to important competitive factors, such as market power, competitive en-

---

124. Rawn Howard Reinhard, *The Tort of Disparagement and the Developing First Amendment,* 1987 DUKE L.J. 727, 728–30.

125. *Id.* at 730–31.

126. EUGENE VOLOKH, THE FIRST AMENDMENT AND RELATED STATUTES: PROBLEMS, CASES, AND POLICY ARGUMENTS 56–60 (2008).

127. RESTATEMENT (SECOND) OF TORTS § 566 (AM. L. INST. 1965); PATTERSON, *supra* note 14, at 35–36, 128.

128. *See* Ashu M.G. Solo, *Combating Online Defamation and Doxing in the United States*, 2019 INT'L CONF. ON INTERNET COMPUT. & INTERNET THINGS 75.

129. Reinhard, *supra* note 124, at 732.

130. *See* PATTERSON, *supra* note 14, at 26, 29–33; Goldberg & Zipursky, *supra* note 110, at 1761–62; Grimmelmann, *supra* note 18, at 45–46.

try barriers, and other characteristics of the market. As a result, tort law offers only narrow solutions to parasitic abuses of market power.

C. Section 5 of the FTC Act and Other Consumer Protection Laws

For markets to function properly and maximize consumer welfare, consumers must be able to properly exercise choice between competing products.[131] To exercise such choice, consumers need to acquire accurate information. Parasitic conduct in the form of black hat SEOs and false R&Rs diminish the quality of information available to consumers, and click fraud does so to an interim consumer (the advertiser). Therefore, consumer protection laws may be invoked.[132]

The most significant legislation in this regard is Section 5(a) of the Federal Trade Commission Act, which prohibits both "unfair methods of competition" and "unfair or deceptive acts or practices in or affecting commerce."[133] Under the first prong, Section 5 may be used to address violations of the Sherman Act. Potentially, its application could be far broader.[134] Yet under its current interpretation, condemnation of unilateral conduct requires that the entity engaged in the conduct enjoy significant market power, or at least market power in its incipiency (like the Sherman Act prohibition of attempt to monopolize).[135] As explained, parasitic scenarios do not fulfill this requirement.

---

131. Neil W. Averitt & Robert H. Lande, *Consumer Sovereignty — A Unified Theory of Antitrust and Consumer*, 65 ANTITRUST L.J. 713, 714 (1997); Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information & Power*, 117 COLUM. L. REV. 1623, 1674 (2012).

132. *See* Timothy J. Muris, Chairman, Fed. Trade Comm'n, Remarks before the Aspen Summit, Cyberspace and the American Dream: The Federal Trade Commission and the Future Development of U.S. Consumer Protection Policy (2003) (arguing that "the core of modern consumer protection policy is to protect consumer sovereignty by attacking practices that impede consumers' ability to make informed choices, such as fraud, unilateral breach of contract, and unauthorized billing"); Averitt & Lande, *supra* note 131, at 713–14 (noting that "[t]he consumer protection laws are then intended to ensure that consumers can choose effectively from among those options, with their critical faculties unimpaired by such violations as deception or the withholding of material information"); Rory Van Loo, *Helping Buyers Beware: the Need for Supervision of Big Retail*, 163 U. PA. L. REV. 1311, 1325–26 (2015) (discussing what information informed consumers would need); PATTERSON, *supra* note 14, at 23–25 (presenting the complimentary manner in which consumer protection laws work with antitrust laws to protect market function).

133. 15 U.S.C § 45(a)(1) (2006).

134. FED. TRADE COMM'N, THE ANTITRUST LAWS, https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/antitrust-laws [https://perma.cc/W5QJ-WPB5] [hereinafter: *FTC, Antitrust*] ("The FTC Act also reaches other practices that harm competition, but that may not fit neatly into categories of conduct formally prohibited by the Sherman Act."); Herbert Hovenkamp, *The Federal Trade Commission and the Sherman Act*, 62 FLA. L. REV. 871, 872–73 (2010).

135. *FTC, Antitrust*, *supra* note 134; Hovenkamp, *supra* note 134, at 871; FED. TRADE COMM'N, STATEMENT OF ENFORCEMENT PRINCIPLES REGARDING "UNFAIR METHODS OF COMPETITION" UNDER SECTION 5 OF THE FTC ACT (Aug. 13, 2015),

Under the "unfair or deceptive acts or practices" prong, the FTC regulates behaviors that may also be considered business torts.[136] Deceptive practices are defined as involving a material representation, omission, or practice that is likely to mislead a consumer acting reasonably in the circumstances.[137] A material misrepresentation is one that is likely to affect a consumer's choice of a product.[138] An act or practice is unfair if it "causes or is likely to cause substantial injury to consumers that is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers or to competition."[139] These requirements focus the legal prohibition on a direct causal link between the infringement and a particular harm to a plaintiff and disregard its market-wide effects, just like the business torts reviewed above. Although the law may, theoretically, be sufficiently broad to capture such parasitic conduct,[140] until now the FTC has exercised its authority in the digital realm to prohibit "unfair or deceptive" acts such as identity theft, privacy violations, and advertising in a fraudulent or misleading manner,[141] but never to condemn unilateral deceptive practices by parasites.

Two main factors further limit the use of Section 5 to systematically prevent parasitic conduct. First, the Act can only be enforced by the FTC.[142] The FTC's hands are already full with cases involving fraudulent digital practices. According to a recent report, in 2019 the FTC Consumer Sentinel Network received 3.2 million reports, "including nearly 1.7 million fraud reports as well as identity theft and other reports,"[143] and the number of consumer complaints is growing

---

https://www.ftc.gov/system/files/documents/public_statements/735201/150813section5enforcement.pdf [https://perma.cc/99ZK-6H56].

136. Hovenkamp, *supra* note 134, at 872.

137. FED. TRADE COMM'N, POLICY STATEMENT ON DECEPTION (Oct. 14, 1983), https://www.ftc.gov/system/files/documents/public_statements/410531/831014deceptionstmt.pdf [https://perma.cc/9FWS-CSLS].

138. *Id.* at Section IV.

139. 15 U.S.C. § 45(n) (2006).

140. Nathenson, *supra* note 19, at 93–106 (exploring the application of the FTC Act on black hat SEO practices).

141. FED. TRADE COMM'N, FTC POLICY STATEMENT ON DECEPTIVE ACTS AND PRACTICES (Oct. 14, 1983), https://www.ftc.gov/public-statements/1983/10/ftc-policy-statement-deception [https://perma.cc/AY84-8HCZ]; FED. TRADE COMM'N, ADVERTISING AND MARKETING ON THE INTERNET: RULES OF THE ROAD (2000), https://www.ftc.gov/tips-advice/business-center/guidance/advertising-marketing-internet-rules-road [https://perma.cc/L54Q-TDPN]; Calo & Rosenblat, *supra* note 131, at 1673; Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 COLUM. L. REV. 583, 598–602 (2014).

142. FED. TRADE COMM'N, THE ANTITRUST LAWS, *supra* note 134; *see* Moore v. N.Y. Cotton Exch., 270 U.S. 593, 603 (1926); Stephanie L. Kroeze, *The FTC Won't Let Me Be: The Need for a Private Right of Action Under Section 5 of the FTC Act*, 50 VAL. U. L. REV. 227, 244–51 (2015); ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at ch. III.C nn. 199–204 and accompanying text.

143. Press Release, Fed. Trade Comm'n, New FTC Data Shows that the FTC Received Nearly 1.7 Million Fraud Reports, and FTC Lawsuits Returned $232 Million to Consumers

continuously.[144] Considering the high volume of such complaints, it is unreasonable to expect the FTC to investigate the numerous instances of parasitic abuse of market power.[145]

This extensive backlog is partly remedied by the fact that many states have enacted so-called "little FTC Acts." Each of these slightly modify the federal law, some affording a private right of action.[146] Some private claims against parasitic conduct brought under such laws have succeeded, and courts have found that a parasite's manipulation leading to exclusion from the market can constitute a violation.[147] However, these laws usually entitle the plaintiff only to injunctive relief, not to damages or non-restitutionary disgorgement.[148] This reality reduces the incentive to bring such cases, especially if the costs of bringing such suits are high.

The lack of guidance on how to apply the prohibition in parasitic abuse of market power scenarios poses a second limiting factor. A wide range of actions can be deemed "unfair or deceptive." Since the guidelines issued by the Commission provide only general principles[149] and the parasite problem was never reviewed by the Commission, it is hard to know what the FTC may condemn and how a private cause of action under the little FTC Acts should be pled. The rare uses of the "little FTC Acts" to condemn parasitic behavior are too occasional to formulate a consistent standard.[150] To remedy this problem,

---

in 2019 (Jan. 23, 2020), https://www.ftc.gov/news-events/press-releases/2020/01/new-ftc-data-shows-ftc-received-nearly-17-million-fraud-reports [https://perma.cc/J7YS-MBX8].

144. FED. TRADE COMM'N, CONSUMER SENTINEL NETWORK: DATA BOOK 2019 (Jan. 2020), https://www.ftc.gov/system/files/documents/reports/consumer-sentinel-network-data-book-2019/consumer_sentinel_network_data_book_2019.pdf [https://perma.cc/U4KD-JMB4].

145. *See* Kroeze, *supra* note 142, at 262–65.

146. ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at ch. III.C n. 206 and accompanying text; Kroeze, *supra* note 142, at 240–42; *see also* Jeff Sovern, *Private Action Under the Deceptive Trade Practices Acts: Reconsidering the FTC Act as Rule Model*, 52 OHIO ST. L.J. 437, 437–38 (1991) (explaining the limits of private actions under "little FTC Acts").

147. In particular, in *Satmodo, LLC v. Whenever Communications, LLC*, No. 17-cv-0192, 2017 WL 1365839 (S.D. Cal. Apr. 14, 2017), the court reviewed the application of California Unfair Competition Law and found an unfair practice where the defendants engaged in a click fraud scheme, which takes "one of its main competitors, out of the marketplace for a period of time, all to the Defendants' benefit." *Id.* at *8. The alleged conduct violates "the spirit of antitrust laws and significantly threatens competition. Moreover, the Court believes the alleged click fraud scheme is the type of conduct the Legislature intended to protect against." *Id.* The court granted only injunctive relief.

148. *See, e.g.*, *id.*

149. *See* FED. TRADE COMM'N, POLICY STATEMENT ON DECEPTION, *supra* note 137.

150. For example, in *Weboost Media SRL v. LookSmart Ltd.*, No. 13-5304, 2014 WL 2621465 (N.D. Cal. June 12, 2014), and in *Satmodo*, 2017 WL 1365839, the Court acknowledged the plaintiffs' claim that click fraud violated California's Unfair Competition Law, but clarified that plaintiffs were not entitled to recover damages or non-restitutionary disgorgement and were limited to injunctive relief. In New York, Attorney General Schneiderman entered an agreement with firms disseminating fake online reviews and employing black hat SEOs, based, *inter alia*, on the New York Executive Law § 63(12). *See* Press Release, N.Y. State Office of the Att'y Gen., A.G. Schneiderman Announces Agreement

a carefully articulated and efficient framework for applying the Act and its parallels to parasitic action is needed. In the next Part, we suggest a first step in this direction.

Observe that the challenges involved in prohibiting parasitic abuse of market power via the FTC Act follow those observed with regard to other laws. Application of the first prong of Section 5 suffers from the same limitations as the Sherman Act, as both are currently based on the assumption that only unilateral conduct engaged in by a player with significant market power can harm competition.[151] The second prong suffers from some of the limitations of business torts, mainly the need to prove causation.[152]

Consumer protection laws enacted at the industry level to protect consumers from particularly hazardous deceptions, which are deemed crucial to their safety, may also be relevant.[153] However, these laws do not protect against the economy-wide problems created by market power parasites because they focus on preventing particular information from entering the market (e.g., information promoting cigarettes) or require the supply of particular information (e.g., calorie labeling rules). Accordingly, they do not capture distortions created by most types of commercial information that the parasite may attempt to harm.

IV. PROPOSAL: FRAUD-ON-THE-ONLINE-INFORMATION-MARKET

As observed, existing laws do not offer sufficient protection against the parasitic abuse of market power and the resulting harm to competition and to the integrity of information markets. While antitrust prohibitions could have been the best locus for enforcement, such prohibitions do not apply in our case due to the de-linkage between unilateral conduct and market power. And while business torts may be useful in addressing certain narrow situations, their focus on each particular misrepresentation does not allow for considerations of the implications for the market as a whole. Consumer protection laws

---

With 19 Companies To Stop Writing Fake Online Reviews And Pay More Than $350,000 In Fines (Sep. 23, 2013), https://ag.ny.gov/press-release/2013/ag-schneiderman-announces-agreement-19-companies-stop-writing-fake-online-reviews [https://perma.cc/9D2A-YLVY]. The problem is that specific examples found in several state laws do not support extrapolation to a standard for a national trend of parasitic behavior. As put by Matin, *supra* note 48, at 553: "Recent click fraud litigation has included state unfair competition claims along with other contract-based causes of action. On the whole, however, advertiser concerns are not likely to differ over state boundaries and the federal government is in a better position to deal with the global nature of the internet than individual states."

151. *See supra* notes 134–135.

152. *See supra* notes 137–141.

153. *See* Helveston, *supra* note 33, at 81.

also suffer from these problems, and provide limited remedies at best. This situation calls for the development of new legal solutions.

One potential solution involves extending the FTC Act's prohibition of "unfair methods of competition" to scenarios where market power is held by one firm and abused by another. While theoretically this solution may be most fitting, as it captures both the deception and the abuse of market power to harm competition, it may be difficult to implement given how the Act has been interpreted.

Colangelo and Maggiolino recommend enactment of a sui generis law which prohibits unilateral information manipulation by market players whenever the market is unable to react to such manipulation, regardless of the size of the firms involved.[154] Such legislation may include imprisonment or criminal fines for intentional egregious misconduct and civil penalties for less egregious misconduct. It could also include statutory or actual damages for plaintiffs in private suits. Yet such a solution is fraught with hurdles, as it would require a significant legislative change creating a completely new body of law.

We suggest a judicial, rather than legislative, change in the existing law that would enable courts and regulators to more effectively address parasitic abuses of market power: the adoption of a presumption of fraud-on-the-online-information-market. Such a presumption would facilitate the pleading and proof of a proximate cause under the existing tort and consumer protection law. This presumption would also overcome the difficulty of proving causation or specific reliance by a specific consumer or competitor. By relieving plaintiffs of this burden, existing torts and consumer protection laws (rather than a completely new body of law) will become a tool to address market-wide anti-competitive effects created by misrepresentations, which harm the integrity of the information market. Our proposal also creates a legal framework for the elements to be pled in suits against parasitic abuses of market power.

The fraud-on-the-market rule in securities law formulated by the Supreme Court serves as the conceptual model for this proposal. We thus begin with a review of this rule.

A. Fraud on the Market in Securities Law

Section 10(b) of the Securities Exchange Act prohibits manipulative and deceptive conduct in the purchase and sale of securities.[155] The elements of the offense include use of any means of interstate commerce or of mail; misrepresentation or omission of facts; any act

154. Colangelo & Maggiolino, *supra* note 4, at 73.
155. 15 U.S.C. § 78j(b) (2018).

"which operates or would operate as a fraud or deceit"; materiality of the aforementioned statements; scienter; reliance; and causation.[156]

Liability under this prohibition is not limited to common law fraud and includes additional fraudulent conduct (e.g., a false promise to act in the future).[157] However, just as in the common law tort, mere negligence or a breach of fiduciary duty are insufficient to invoke the prohibition.[158]

As with the other torts discussed above, the requirement of reliance in securities fraud focused this cause of action on a particular wrong to a particular buyer or seller, excluding claims related to broader distortions in the market. *Basic Inc. v. Levinson* underlined the downside of this requirement.[159] In this class action suit, Basic argued that it sold its shares at depressed levels because of fraudulent statements made by the defendant.[160] The Supreme Court observed that "requiring proof of individualized reliance from each member of the proposed plaintiff class effectively would have prevented respondents from proceeding with a class action, since individual issues then would have overwhelmed the common ones."[161]

To resolve this problem, the Court adopted a new presumption: the fraud-on-the-market rule, which assumes that investors did in fact rely on fraudulent information in the market.[162] The Court stated that the typical "investor who buys or sells stock at the price set by the market does so in reliance on the integrity of that price."[163] Therefore, in any market transaction, "reliance on any public material misrepresentations . . . may be presumed for purposes of an SEC Rule 10b-5 action."[164]

The significance of the *Basic* decision lies in the shift it created in securities fraud from a transaction-based to a market-based cause of action. As Fisch explains, the *Basic* decision "began shifting the nature of private securities fraud claims from transaction-based claims to market-based claims . . . The consequence of this shift was to convert

156. *See* Nick Joynson, *Securities Fraud*, 57 AM. CRIM. L. REV. 1249, 1254–85 (2020); ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at pt. I, ch. VI.E, nn. 145–46 and accompanying text.

157. ABA BUSINESS TORTS HANDBOOK, *supra* note 109, at pt. I, ch. VI.E, nn. 150–51 and accompanying text.

158. *Id.*, nn. 152–53 and accompanying text.

159. Basic Inc. v. Levinson, 485 U.S. 224, 242 (1988).

160. *Id.* at 228.

161. *Id.* at 242.

162. *Id.* at 245.

163. *Id.* at 247.

164. *Id. See also* Dura Pharms., Inc. v. Broudo, 544 U.S. 336, 347 (2005) (finding that the plaintiff should prove both a price distortion and that trade in the distorted price caused the economic harm). Accordingly, non-market harms like the effect on the investor's autonomy are no longer actionable in a fraud-on-the-market rule.

the nature of the plaintiff's harm from a corruption of the investment decision to one of transacting at a distorted price."[165]

This focus on the harm to the functioning of the securities market as a whole, resulting from distortions in the relevant information market, has several implications. It protects investors that were harmed by the distortion of information in the market but not directly exposed to the deceit.[166] Furthermore, it is sensitive to intervening events that mitigate the change in stock price and therefore reduce the harm.[167]

The *Basic* Court did not establish any prerequisites for invoking the fraud-on-the-market rule. Years later, in *Halliburton Co. v. Erica P. John Fund, Inc.*, the Supreme Court clarified that a plaintiff arguing the fraud-on-the-market rule at the class certification stage is not even required to prove a "price impact."[168] Instead, the Court explained, the rule incorporates two constituent presumptions. Once a plaintiff proves misrepresentation, its materiality, its publicity, and the efficiency of the market (meaning proof of active trading in the market), he enjoys a presumption that the misrepresentation affected the stock price.[169] The rule does not limit the source of information that created the misrepresentation.[170] Once a plaintiff proves "that he purchased the stock at the market price during the relevant period," he enjoys a further presumption that he purchased the stock in reliance on the defendant's misrepresentation.[171]

According to *Basic*, the fraud-on-the-market presumption can be rebutted by "any showing that severs the link between the alleged misrepresentation and either the price received (or paid) by the plaintiff or his decision to trade at a fair market price."[172] *Halliburton* established that the presumption of fraud-on-the-market can be rebutted with evidence that the alleged misrepresentation had no impact on the price of a stock.[173] To enable such a rebuttal, litigation practice has utilized a methodology known as event studies,[174] under which single corporate disclosure events are studied by comparing fluctuations in

---

165. Jill E. Fisch, *The Trouble with* Basic: *Price Distortion After* Halliburton, 90 WASH. U. L. REV. 895, 895 (2013); *see* Goldberg & Zipursky, *supra* note 110, at 1757–59 (noting that this tort "fits within a well-established common-law tradition of recognizing torts . . . when misrepresentations cause injury without victim reliance").

166. Fisch, *supra* note 165, at 916, 930.

167. *Id.* at 917–18, 930.

168. Halliburton Co. v. Erica P. John Fund, Inc., 573 U.S. 258, 279 (2014).

169. *Id.*

170. *See id.*

171. *Id.*

172. Basic Inc. v. Levinson, 485 U.S. 224, 248 (1988).

173. *Halliburton*, 573 U.S. at 279–80.

174. *See* Jill E. Fisch, Jonah B. Gelbach & Jonathan Klick, *After Halliburton: Event Studies and Their Role in Federal Securities Fraud Litigation* 14–16 (Center for Financial Studies, Working Paper No. 552, 2016); Fisch, *The Trouble with* Basic, *supra* note 165, at 918.

the price of the stock after the event with fluctuations in the market as a whole.[175]

The fraud-on-the-market presumption is based on the hypothesis that in buying and selling stocks, investors rely on the integrity of the market price. This price, in turn, is based on the information disseminated in the market about the stock. Fraudulent information can distort stock prices and make investors' decisions inaccurate.[176] The Court emphasized that "it is hard to imagine that there ever is a buyer or seller who does not rely on market integrity."[177] It also emphasized the impersonal nature of trade in securities markets:

> In face-to-face transactions, the inquiry into an investor's reliance upon information is into the subjective pricing of that information by that investor. With the presence of a market, the market is interposed between seller and buyer and, ideally, transmits information to the investor in the processed form of a market price. Thus the market is performing a substantial part of the valuation process performed by the investor in a face-to-face transaction. The market is acting as the unpaid agent of the investor, informing him that given all the information available to it, the value of the stock is worth the market price.[178]

In financial markets the accuracy of information is considered to be of utmost importance in enabling the proper functioning of the market.[179]

The fraud-on-the-market rule has drawn criticism from some scholars, who argue primarily that markets cannot be assumed to be economically efficient.[180] The Supreme Court rejected this argument

---

175. *See generally* Ray Ball & Philip Brown, *An Empirical Evaluation of Accounting Income Numbers*, 6 J. ACCT. RSCH. 159 (1968).

176. *Basic*, 485 U.S. at 243–44.

177. *Id.* at 246–47. The Court continues: "Who would knowingly roll the dice in a crooked crap game?"

178. *Id.* at 243–44 ("The modern securities markets, literally involving millions of shares changing hands daily, differ from the face-to-face transactions contemplated by early fraud cases, and our understanding of Rule 10b-5's reliance requirement must encompass these differences.").

179. *In re* Carnation Co., Exchange Act Release No. 22214, 33 SEC Docket 1025, 1030 (1985) ("The importance of accurate and complete issuer disclosure to the integrity of the securities markets cannot be overemphasized"). *See also* Goldberg & Zipursky, *supra* note 110, at 1800.

180. Baruch Lev & Meiring de Villiers, *Stock Price Crashes and 10b-5 Damages: A Legal, Economic, and Policy Analysis*, 47 STAN. L. REV. 7, 20–21 (1994); *see also* Brief for Halliburton Co. as Amici Curiae Supporting Petitioners, Halliburton Co. v. Erica P. John Fund, Inc., 573 U.S. 258 (2014) (No. 13-317). *See generally* Frederick C. Dunbar & Dana

in *Halliburton*, emphasizing that implementation of the rule is based not on "how quickly and completely publicly available information is reflected in market price," but instead on the agreed-upon understanding that material information disseminated in the market affects the market price.[181]

In summary, the fraud-on-the-market rule solved the problems created by the strict demand for the plaintiff to prove reliance on the defendant's misrepresentation and instead created a requirement to show that the plaintiff relied on the proper functioning of the market. It therefore allowed plaintiffs to more easily claim economic loss resulting from securities market distortions. As Goldberg and Zipursky explain:

> Fraud-on-the-market claims are claims for a public or regulatory wrong, not a traditional tort or private wrong. They allege that the defendant has harmed a public resource — the market — by distorting prices. Securities fraud class actions, on this view, are primarily mechanisms for the protection of markets rather than particular investors.[182]

B. Fraud-on-the-Online-Information-Market

We argue for application of a similar rule to misrepresentations in online information markets through generally trusted infomediaries to be applied in business tort laws and consumer protection laws requiring reliance or a likelihood of being affected by the misinformation. By employing a fraud-on-the-online-information-market rule, as elaborated below, plaintiffs could employ such laws to bring cases over fraudulent behaviors — including parasitic practices — that harm the integrity of online information markets, without having to prove individual reliance on a particular fraudulent misrepresentation.

1. Application

Like the fraud-on-the-market rule, our proposal incorporates two underlying presumptions.[183] The first is the presumption that the misrepresentation affected the information in the market. As in securities fraud cases, to enjoy this presumption the plaintiff will have to prove

---

Heller, *Fraud on the Market Meets Behavioral Finance*, 31 DEL. J. CORP. L. 455, 532 (2006).

181. Halliburton Co. v. Erica P. John Fund, Inc., 573 U.S. 258, 271–72 (2014).

182. Goldberg & Zipursky, *supra* note 110, at 1757–58, 1799.

183. *See Halliburton*, 573 U.S. at 279, also described *supra* in the text accompanying footnotes 168–171.

the defendant's misrepresentation, its materiality, its publicity, and the efficiency of the market.

Misrepresentation can be proven by showing the falsity or deceptiveness of the information entering the market through the manipulative conduct. This may be fraudulent information presented to the infomediary (in the case of black hat SEO); false information entered into a product evaluation (in the case of R&Rs); or fake clicks on advertisements or sponsored links (in the case of click fraud).

Materiality can be proven by showing that the conduct materially affected market equilibrium variables (such as the purchase quantities of competing goods), rather than the choices of a small number of consumers. Such a showing can be met by demonstrating either the exclusionary anti-competitive effects of the misrepresentation or the distortion of consumer choice, both of which might harm competition in the market. Note that claims based on the former may widen the regulation of markets beyond claims focused on the latter.

Accordingly, the plaintiff will have to prove that the demotion in search results (in the case of black hat SEO) or reduced overall ranking (in the case of false R&Rs) likely had a substantial effect on his sales or that the extra clicks (in the case of click fraud) substantially drove up his advertising costs.

Several factors can be used to establish materiality, including showing that the misrepresentation distorted the performance of dominant and generally trusted infomediaries, how widely the misinformation was disseminated, how likely a purchaser is to take the misinformation (or its consequences, such as a search ranking) into account in making a purchase, and the frequency and duration of the parasite's manipulations.[184] Proof of materiality might also be aided by the presumption that express claims are material. As the Supreme Court stated in *Central Hudson Gas & Electric Co. v. Public Service Commission of New York*, "[i]n the absence of factors that would distort the decision to advertise, we may assume that the willingness of a business to promote its products reflects a belief that consumers are interested in the advertising."[185] The same can be applied, by way of analogy, to the publication of false R&Rs and to black hat SEO practices.

We suggest that the stronger the infomediary's market position, the less material the fraudulent conduct needs to be. This is because parasitic use of a dominant infomediary's market power might significantly influence competition, given how widely the statement is disseminated and how likely a purchaser is to take it into account in

184. Nathenson, *supra* note 19, at 98–99 (analyzing this question in the context of an FTC Act Section 5 claim).

185. 447 U.S. 557, 567–68 (1980).

making a purchase. The substantial influence of information distributed by powerful infomediaries is further strengthened by the fact that without strong competition, market forces will not be able to easily remedy the misinformation, and the competitor cannot easily overcome the results of the misinformation provided by the parasite (e.g., by advertising with a competing infomediary). In such situations, even a quasi-material misrepresentation could have dramatic effects and should suffice to invoke the presumption.

As to the requirement of *publicity*, we suggest it is sufficient to show that the parasitic conduct affected information that had been widely disseminated to potential buyers and sellers,[186] and thereby could influence the information provided in a market. Therefore, a cyber-attack designed to change the organic results viewed by a single consumer will not suffice. It is only an attack against the infomediary, as the information source, that will fulfill the publicity requirement.

Finally, the *efficiency* of the market requirement does not require proof that the market normally functions perfectly. Rather, as in securities law, it requires proof of an active and functioning market, regardless of "how quickly and completely publicly available information is reflected in [the] market price."[187] The plaintiff must therefore prove that information regarding his product is actually available online (or would have been available absent the abusive conduct), and that at least some consumers rely on such information in their purchase decisions. For example, the plaintiff might compare sales of a product before and after information about the product was uploaded. Plaintiffs might also compare the number of purchases before and after a change in the product's ranking in search results or in the content of reviews. Consumer behavior, such as single-homing, may also serve as an indirect indication that consumers rely on the integrity of information supplied to them.[188] Importantly, even if online information markets are less efficient than securities markets, these differences do not undermine our proposal so long as consumers rely on online information. The assumption that markets work better (even if not perfectly) with more accurate information applies to both efficient and inefficient markets. A fraud-on-the-online-market rule should stimulate greater trust in online information markets, making them more efficient. Therefore, the only proof that should be required is that the market is active and functioning, so that it will plausibly respond to an improvement in information quality.

Proof of these four elements will create a presumption that the misrepresentation affected information in the market — the first of the

186. With click fraud, we suggest that publicity not be required, or that it be met by the publicity of the advertisement to which the market power parasites respond.

187. Halliburton Co. v. Erica P. John Fund, Inc., 573 U.S. 258, 271–72 (2014).

188. *See* Stucke & Ezrachi, *supra* note 64, 99–100.

two conditions underlying both securities fraud-on-the-market and our proposed rule for online information markets.

The second presumption incorporated in the fraud-on-the-market rule in securities law is that the plaintiff "purchased the stock in reliance on the defendant's misrepresentation."[189] Establishing this presumption requires only showing that the plaintiff purchased the stock at the market price in the relevant time period. If both conditions are met, securities law creates a cause of action for a class action by investors in the securities market. A similar presumption of "reliance on the defendant's misrepresentation" can be established under our proposed rule by a showing that consumers sought either to buy or sell a relevant product during the time period in which purchasing decisions were made and when the above four requirements are satisfied.

Importantly, our proposal seeks to create a realistic cause of action not only for a class of consumers, but also for competitors harmed by the misinformation due to lost sales. We therefore suggested that where the plaintiff in a fraud-on-the-online-information-market suit is a competitor, he will be entitled to a presumption that he conducted his business in reliance on the integrity of the online information market. While this proposal takes securities fraud-on-the-market one step forward, we believe such an adaptation is necessary because both the consumer and the competitor rely on the dissemination of full and correct information in the online information markets. Furthermore, it is competition per se, and not a particular market player, that should be protected in order to improve the performance of markets by strengthening informational integrity. Note that in addition to expanding standing rights to include both purchasers and competitors, our proposed change also affects the nature of the suit. Suits filed by consumers are likely to be class actions, focusing on the direct damage caused to consumers whose product choice was distorted, akin to securities fraud-on-the-market class actions. In contrast, a competitor's suit is less likely to be a class action. Furthermore, remedies are more likely to resemble antitrust suits, since damages will be calculated in accordance to reduction of sales, and injunctive relief might be granted based on market effects as a whole.

Finally, our suggested presumption, just like the securities law presumption, should be rebuttable. As previously explained, the *Halliburton* Court stated that the defendant in a fraud-on-the-market case can rebut the presumption with evidence that the alleged misrepresentation had no impact on the price of a stock.[190] In the online information market, we suggest that the attacker may be allowed to prove

189. *Halliburton*, 573 U.S. at 279.

190. *Id.* at 280; *see also* Victor E. Schwartz & Christopher E. Appel, *Rebutting the Fraud on the Market Presumption in Securities Fraud Class Actions:* Halliburton II *Opens the Door*, 5 MICH. BUS. & ENTREPRENEURIAL L. REV. 33, 44 (2015).

that the misinformation had no impact on the choices of consumers or the conduct of its competitor.

In private damage actions, while plaintiffs may be able to establish a violation through the presumption, they will still be required to quantify damages to obtain relief. In the securities fraud-on-the-market case, damages can be established by the difference between the manipulated price and the "but for" price in the absence of the manipulation. Damages in an online market manipulation case are harder to prove. For competitors who lost sales due to the misrepresentations, damages are lost profits due to the lost sales, which may be difficult to quantify. Damages for consumers who made distorted choices due to the misrepresentations might also not be straightforward in most cases.

The adoption of a fraud-on-the-online-information-market presumption can be facilitated both by courts hearing cases of business torts that require reliance on misinformation — such as the common law fraud tort, Section 43(a) of the Lanham Act, or a tortious interference claim — and by government agencies. In particular, the FTC can play an important role in applying the presumption in relevant cases that come under either prong of Section 5 of the FTC Act. As an expert administrative agency, its interpretation of the statutes it enforces may receive *Chevron* deference.[191] Therefore, if the FTC employs the presumption — and better yet, if a court endorses it — there are better chances that it will be successfully imported into private actions under "little FTC Act" suits, rendering parasite behaviors illegal both as unfair or deceptive acts and as unfair methods of competition.

2. Justifications

We now turn to the legal basis for implementing our proposal. As we argue, the justifications offered by the Supreme Court in *Basic* for adopting the fraud-on-the-market principle in securities law can apply to the online information market, with necessary modifications.

First, in both cases, developments in technology — specifically, the creation of an important information intermediary — have engendered the need to adjust existing laws to the economic reality of markets.[192]

---

191. *See* Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984). *See* Royce Zeisler, Chevron *Deference and the FTC: How and Why the FTC Should Use* Chevron *to Improve Antitrust Enforcement*, 2014 COLUM. BUS. L. REV. 266 (analyzing whether the FTC is entitled to such deference).

192. Indeed, the wording of the Court, quoted above in the text accompanying note 178, almost perfectly fits the situation in online information markets. To see how easily it can be applied, we use the original wording with our modifications in the brackets: "[T]he market is interposed between seller and buyer and, ideally, transmits information to the [consumer] in the processed form of [organic or sponsored search results or rankings]. Thus, the market

Second, as in securities markets,[193] both buyers and sellers in information markets assume that information supplied to them is credible, and rely heavily on the integrity of information available through the dominant digital infomediaries.[194] Consumers' reluctance to second-guess the information supplied to them online, or to engage in multi-homing to verify its accuracy, strengthens this inherent reliance.[195] As noted, infomediaries markets are highly concentrated,[196] so an attack against a single infomediary can create externalities and harm users' trust in the online information market as a whole. The ease of manipulating these markets further supports the need to adopt such a rule.

Observe that this proposal also makes it easier to sanction the true wrongdoer: the parasite. By doing so, our proposal also overcomes limitations arising from Section 230 of the Communications Decency Act, which exempts the infomediary from liability for the publication of content or for the good-faith removal of content,[197] thereby also limiting their incentives to take action. As such, our proposal joins other proposals to increase the infomediaries' accountability to misrepresentation of information on their platform.[198] The fraud-on-the-online-information-market rule may promote such accountability for infomediaries who participated — by act or by omission[199] — in the parasites' scheme.

---

is performing a substantial part of the valuation process performed by the [consumer] in a face-to-face transaction. The market is acting as the unpaid agent of the [consumer], informing him that given all the information available to it, the value of the [product or service] is worth the market price." This quote was so easily modified because the impersonal trade that characterizes the securities market also applies to online information markets. *See supra* notes 62–64.

193. *See* Basic Inc. v. Levinson, 485 U.S. 224, 246–47 (1988).

194. *See supra* notes 69–71.

195. *See supra* note 41 and accompanying text.

196. *See supra* notes 69–71.

197. 47 U.S.C. § 230 (2018).

198. *See, e.g.*, Press Release, Competition & Mkts. Auth., UK Gov't Digit. Serv., CMA to Investigate Amazon and Google over Fake Reviews (June 25, 2021), https://www.gov.uk/government/news/cma-to-investigate-amazon-and-google-over-fake-reviews [https://perma.cc/G5S6-BQ4S] (state authority attempting to impose accountability on infomediaries over misrepresentation in ratings and reviews); *see also* EUR. L. INST., MODEL RULES ON ONLINE PLATFORMS 22–46 (2019), https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Model_Rules_on_Online_Platforms.pdf [https://perma.cc/EAC2-MZQN]. This does not preclude, of course, the imposition of infomediaries' fiduciary duties. Grimmelmann, *supra* note 18, at 48; Van Loo, *supra* note 132, at 1317–21, 1326–28; *DSA*, *supra* note 3, ¶ 60 of pmbl. and art. 20 "Measures and Protection Against Misuse".

199. Such omission could take place when the infomediary underinvests in the prevention of black hat SEOs, information misrepresentation, and click fraud. For an example of abuse by omission, see Frank Maier-Rigaud, Federica Manca & Ulrich von Koppenfels, *Strategic Underinvestment and Gas Network Foreclosure – The Eni Case,* 1 EC COMPETITION POL'Y NEWSL. 18 (2011).

Of course, our proposal is not without limitations. For example, it does not overcome the evidentiary challenge in proving the fraudulent act of the parasite. As explained above, plaintiffs are unlikely to have access to detailed information on the algorithms used by search engines or on the consumers who click on particular ads.[200] This creates a problem in identifying and uncovering the specific parasitic conduct that is harming one's business. In some cases, the plaintiff might prove such conduct indirectly, using data collected for marketing and strategy needs,[201] or through independent auditing of click counts and anti-fraud programs.[202] But in other cases the plaintiff will have to rely on the infomediary to provide him with such information.[203] So far, courts have been reluctant to impose such disclosure requirements on infomediaries.[204] The evidentiary challenges in bringing such cases further strengthen the justification for adopting the fraud-on-the-online-information-market rule we propose.

Admittedly, there is one substantial difference between the fraud-on-the-market rule in securities law and our proposal. In both *Basic* and *Halliburton* the court emphasized that the fraud-on-the-market rule "supports the congressional policy embodied in the [Securities Exchange Act]. In drafting that act, Congress expressly relied on the premise that securities markets are affected by information, and enacted legislation to facilitate an investor's reliance on the integrity of those markets."[205] In contrast, there is no clear support for the current proposal in the Sherman Act, the business torts, or the consumer protection laws reviewed above, in the form of congressional acknowledgment of the importance of the integrity of information in online information markets. Yet, when those laws were enacted, neither Congress nor the courts could have imagined the sorts of conduct now possible in the age of online information markets.[206] Additionally, as noted, the FTC Act's prohibition of "unfair methods of competition" was explicitly phrased to cast a wider net than the Sherman Act,[207] presumably to include practices not yet imagined at the time of en-

200. *See supra* Part II.C.1.

201. PATTERSON, *supra* note 14, at 141–42.

202. Grimmelmann, *supra* note 18, at 47.

203. Some propose to impose a duty of disclosure on the infomediary. Helveston, *supra* note 33, at 83–84. Such a proposal might harm the search engine by revealing information about its trade secrets which could both reduce its incentives to innovate and expose it to more advanced manipulations using the information disclosed. *See* Grimmelmann, *supra* note 18, at 56.

204. *See generally* Yelp Inc. v. Hadeed Carpet Cleaning, 742 S.E.2d 554 (Va. App. 2014).

205. Basic Inc. v. Levinson, 485 U.S. 224, 245–46 (1988); *see also* Halliburton Co. v. Erica P. John Fund, Inc., 573 U.S. 258, 269–70 (2014); Fisch, *supra* note 165, at 897 n.9.

206. *See* Colangelo & Maggiolino, *supra* note 4, at 72 (explaining that the digital age has made certain anti-competitive behaviors more dangerous in the context of the Sherman Act).

207. *See* Hovenkamp, *supra* note 134.

actment. Moreover, consumer protection laws, as well as business fraud torts, are based on an implied assumption of the role of information in market integrity. In securities law, courts stepped in to interpret a securities fraud tort cause of action to include changes in the dissemination of information. We suggest that courts do the same in business torts and consumer protection laws, based on the implied congressional intent to protect the integrity of information in the markets.

V. CONCLUSION

Online information markets have strengthened the ability to easily and relatively inexpensively abuse an infomediary's market power to harm the integrity of information markets. This Article explored such abuses as well as legal tools that can be applied to address them.

We identified three different cases of parasitic abuse of market power and analyzed the conditions that enable them to affect competition in the online information market. We then showed that existing laws are generally insufficient to address such harms. We therefore proposed a new cause of action, focused on the parasitic conduct, while taking into account the unique market features that enable such conduct and its harmful effects on information in the online information market and on competition in end product markets. By adopting a presumption that will relieve the burden of pleading and proving reliance or its analogous causation requirement, we expect that the relevant laws might be able to serve as a basis for class actions, which will advance market integrity and competition.

This Article focused on online information markets. However, a parasite may also abuse the market power of monopolies in other markets. To illustrate, a competitor might hire a hacker to infiltrate a monopolist's power station and deny service to (or simply raise the electricity bills of) its competitors. We left this example untouched because other rules in existing law may address such a competitive concern.[208] Finally, firms can piggyback on the enforcement power of the state. Take, for example, patent fraud by which a firm fraudulently registers a patent in the Patent Office. While the Patent Act offers

208. From a competition perspective, this example resembles the click fraud example: the competitor uses the market power of the power station, which implies that competitors have no other viable option, to exclude other market players. Nevertheless, such a scheme would be harder to execute, mainly because interference with the monopolistic power station requires control of its performance, rather than merely the supply of external inputs, as in online information markets. Additionally, access to the power station network may trigger the Computer Fraud and Abuse Act (CFAA), 18 U.S.C. § 1030 (1986), which prohibits conduct related to accessing a computer without authorization. *See generally* Thomas E. Kadri, *Digital Gatekeepers*, 99 TEX. L. REV. 951 (2021).

some protections against fraudulent behaviors,[209] the absence of market remedies led the Supreme Court to indicate that in appropriate circumstances, patent fraud could be seen as a violation of Section 2 of the Sherman Act.[210] However, these claims are not prevalent, and tend to fail in courts.[211] We leave the possibility of implementation in additional scenarios to further research.

209. Kenneth L. Spector, *Remedies for Fraud on the Patent Office*, 41 U. CHI. L. REV. 775, 775–76 (1974).

210. Walker Process Equip., Inc. v. Food Mach. Corp., 382 U.S. 172, 178 (1965).

211. Spector, *supra* note 209, at 780–81.