**The Dangers of Big Tech: From Antitrust to Posthumanism**

--Frank Pasquale

 According to Lord Acton, “Power corrupts, and absolute power corrupts absolutely.” Those prophetic words have led many to focus on the danger of government as the chief source of power—and, thus, of corruption. This focus was based on assumptions that government a) could enforce antitrust law to assure that no firm would exercise dominant power over significant portions of the economy, and b) could remain distinct from massive firms, deciding in a fair and impartial way how to settle the inevitable disputes that would arise as they grew in size and scope.

 The recent history of massive technology firms in the United States has undermined both of those assumptions. Regardless of administration, these firms have enjoyed special favors, regulatory forbearance, and cultural deference. This essay examines each of these problems, and concludes that these extraordinarily large and powerful firms pose a threat to free markets, fair governance, cultural integrity, and human dignity.

**The Political Power of Big Tech Firms**

Both the second Bush and Obama Administrations were remarkably friendly to big tech firms. Scott Cleland has argued that their actions and inactions have “enabled Google to become the biggest monopoly with the most antitrust problems in modern times.”[[1]](#footnote-1) For the technocratic antitrust establishment, this forbearance was the foreordained result of economic doctrine. However, competition authorities in other jurisdictions have spearheaded a more aggressive approach toward Google. The American story of tech domination cannot be told without a full acknowledgment of the role of political connections in making big tech’s power the “common sense” of the D.C. establishment.

 Personnel is policy, and in many key areas, Google has heavily influenced government staffing. For example, the Google Transparency Project “identified 258 instances of ‘revolving door’ activity. . . between Google or related firms, and the federal government, national political campaigns and Congress during President Obama’s time in office.”[[2]](#footnote-2) Apple, Facebook, Amazon, and Microsoft have also invested heavily in lobbying and other forms of influence.

 In critical areas of privacy and data protection law, big tech firms have had inordinate influence. The FTC has failed even to explain its inaction, after a long investigation, in the case of search bias that led to enormous fines and injunctive relief in Europe.[[3]](#footnote-3) The same agency has been pusillanimous in the face of Facebook’s Cambridge Analytica scandal and recent data breach (which compromised many websites well beyond Facebook). This is not the (in)action of a regulator on the beat. Rather, the FTC increasingly appears to be an agency that is playing favorites and picking winners, improvising an ad hoc industrial policy devoted to furthering big tech firms’ own corporate interests.[[4]](#footnote-4)

 This solicitude toward big tech makes sense, given the firms’ extraordinary political, cultural, and even psychological power. Research suggests that Facebook can exercise influence on personal decisions, including voting.[[5]](#footnote-5) The firm’s ability to gather information about individuals, and thus to understand exactly what might manipulate their emotional response to either brands or politicians, is enormous.[[6]](#footnote-6)

Those who are naïve about digital market structures often assume that persons can just opt out of being tracked by the likes of Google or Facebook. However, experts realize that “it is now virtually impossible to choose not to be tracked while consuming digital services.”[[7]](#footnote-7) “Even if you’re not logged in, the company can still associate the data with your IP address and all the websites you’ve been to that contain Facebook code.”[[8]](#footnote-8) Infrastructural internet services are embedded with their trackers, and they have become essential facilities for many forms of friendship, commerce, campaigning, and more.[[9]](#footnote-9) As one security expert recently lamented, “Google has transformed the question of consenting to data upload from something *affirmative* that I actually had to put effort into — entering my Google credentials and signing into Chrome — into something I can now do with a single accidental click. This is a dark pattern.”[[10]](#footnote-10) A storm of negative media may reverse that policy change, but journalists cannot guarantee a “privacy freakout” whenever big tech grabs another data stream. The stakes of the data gathering can be very high, labeling persons with stigma that are impossible to detect or correct.[[11]](#footnote-11)

Yes, a person can decide to buy a new computer, withdraw entirely from Facebook and Google log-ins, and hope for the best. However, there will be penalties of social isolation, or worse. As one commentator has observed, “I’ve found that withdrawing your name from Facebook’s massive public directory has a similar effect to deleting your entry from the phone book / Rolodex / e-mail address book / smartphone contact list of others.”[[12]](#footnote-12) There is enormous pressure to be part of extant networks. Big tech firms have far more power than their users. And as I argued in the George Mason Law Review in 2013, “imbalances of power, rather than efficiency or consent, ought to be the normative focus of antitrust and privacy law.”[[13]](#footnote-13)

**A Battle for the Soul of the Market**

When I started writing about search engines, I was excited about the new technology. One of my first articles urged courts to loosen some copyright protections, in order to ensure that firms like Google could better organize books, movies, newspapers, and more.[[14]](#footnote-14) My idea at the time was that information overload has been an unintended negative consequence of copyright law's success in incentivizing the production and distribution of expression. If courts granted content owners the right to veto categorizers' efforts to catalog expression, they would only exacerbate the problem.

What I did not expect at the time was how ruthlessly Google would use that liberty to gain the upper hand in a power struggle with publishers and content providers over the terms of access to creative work. Nor did I anticipate how Amazon and Apple would use their power to bring creative industries to heel. In part to atone for that past work, I have promoted recent proposals to reform antitrust laws, in order to help media better bargain for fair payment from big intermediaries.[[15]](#footnote-15) But in the meantime, I have also identified several ways in which certain laws (or interpretations of law) have given big tech an unfair advantage over other firms.

For example, big tech firms use Section 230 of the Communications Decency Act to avoid responsibility for their actions online. Such harms include unfair or defamatory (but high-ranking) results relating to persons, or exclusion from high-ranking results that persons (often trademark owners) claim they are due to appear on. In the first case (deemed inclusion harm), I proposed a right not to suppress the results, but merely to add an asterisk to the hyperlink directing web users to them, which would lead to the complainant's own comment on the objectionable result.[[16]](#footnote-16) In the latter case (deemed exclusion harm), I think complainants should have some right to a limited explanation of why they did not appear in highly ranked results. These rights are based on consumer protections guaranteed by the Fair Credit Reporting Act (FCRA, in the case of inclusion harm), and trademark law (in case of exclusion).

The unequal application of FCRA in the digital economy shows how big tech can gain an unfair advantage. Whereas credit bureaus have accepted their responsibilities under FCRA and bear the burden of them, big search gets away with offering little or no publicly accountable relief to persons unfairly affected by results. You can get a bankruptcy wiped off your credit years after a decade—but just try doing that to the Google search results on your name. That is an unlevel playing field—the law should be uniform here, not systematically slanted to help already massive firms. Europe’s “right to be forgotten” applies such responsibilities in a more equitable way.

Troubling patterns of suppressed speech have also emerged on big tech platforms. They may marginalize (or entirely block) potential connections between audiences and speakers. Consumer protection concerns arise, for platforms may be marketing themselves as open, comprehensive, and unbiased, when they are in fact closed, partial, and self-serving. Responding to protests, the accused platform either asserts a right to craft the information environment it desires, or abjures responsibility, claiming to merely reflect the desires and preferences of its user base. That leads to what I call a convenient identify crisis.[[17]](#footnote-17) When they want to assert First Amendment protection, big tech firms tend to claim that what they primarily generate (such as newsfeeds and search results) is speech, guaranteed protection as free expression. But when they are blamed for disseminating pirated contraband, abusive images, or dangerously misleading medical hoaxes online, they claim to merely be conduits, the “pipes” of a communicative infrastructure.

The main problem here is that old media classifications do not work well in a digital age. Large online platforms take on features of both conduits and content providers. Some basic norms from each are necessary, and would help defuse the twin specters of monopolization and total surveillance, which threaten freedom of expression.

Another massive problem posed by large tech firms is an opportunistic combination of trade secrecy and free speech protection. When individuals are suspicious of biased search results or news feeds, big tech firms tend to reply: “sorry, our processes for ranking and rating information are trade secrets.”[[18]](#footnote-18) The only way such complainants can practically gain access to such processes is to sue (on defamation, tort, unfair competition, or consumer protection theories, among other causes of actions). At that point, the tech firms tends to say: “whatever we produce is our speech, and we have a First Amendment right to say it, without legal consequences.” So whatever goes into their black boxes is trade secret protected, and whatever comes out is First Amendment protected. The result is a perfect recipe for freedom from legal accountability.

 Specialization obscures the big picture in digital markets, and law can succumb to this as easily any other field. For example, in the case of internet companies, cyberlawyers too often confine themselves to saying: “Google and Facebook should win key copyright cases, and subsequent trademark cases, and antitrust cases, and get certain First Amendment immunities, and not be classified as a ‘consumer reporting agency’ under relevant privacy laws.” They may well be correct in any particular case. But what happens when a critical mass of close cases combines with network effects to give a few firms incredible power over our information about (and even interpretation of) events? We must develop new forms of competition or regulation to level the playing field, lest beneficiaries of a series of legal windfalls leverage their power to control more and more of the economy. The same principles which led to a separation of banking and commerce in the US should also lead lawmakers to consider a separation of social utility from newsfeed (in the case of Facebook), or a separation of platform from product sales (in the case of Amazon or Google).

Remarkably, most American technocrats in charge of the relevant agencies have gone in exactly the opposite direction for at least a decade. Agencies that should be guarding markets from interference by big tech, have instead opted to line up behind such firms, effectively defining their dominance as a solution to economic stagnation (rather than its cause). Thus the Federal Trade Commission voted to help Google in a dispute with its advertisers, and to help Uber when its drivers tried to negotiate collectively. Such decisions can only be explained by reckoning with a third dimension of big tech’s power: its cultural influence.

**Cultural Deference**

Adam J. White recently described the close connections between Google and the Obama administration:

For eight years, Google and the Obama administration forged a uniquely close relationship. Their special bond is best ascribed not to the revolving door, although hundreds of meetings were held between the two; nor to crony capitalism, although hundreds of people have switched jobs from Google to the Obama administration or vice versa; nor to lobbying prowess, although Google is one of the top corporate lobbyists.

Rather, the ultimate source of the special bond between Google and the Obama White House. . . has been their common ethos. Both view society’s challenges today as social-engineering problems, whose resolutions depend mainly on facts and objective reasoning. Both view information as being at once ruthlessly value-free and yet, when properly grasped, a powerful force for ideological and social reform. And so both aspire to reshape Americans’ informational context. . . .[[19]](#footnote-19)

White’s analysis resonates with my own experience with both Google and certain members of the Obama Administration. I remember once debating at a dinner with a Google lobbyist, about disclosure regulation to label paid search results more clearly. He condescendingly remarked to the effect, “well, as soon as you start taking font size or the color of the screen, I win.” He seemed to be dismissing the ability of anyone to truly enforce clear U.S. law requiring clear sponsorship disclosures, insisting that these decisions were Google’s and Google’s alone to make. For him, regulation would always be too slow, too clumsy, too inefficient. My conversations with political appointees or high-level staff at agencies have led me to believe that they, too, had internalized this idea.

 That stance may resonate with those who are broadly hostile to excessive government interventions in the economy. However, for many in big tech firms, a religion of “disruption” eerily echoes the Italian futurists’ religion of speed. There is a common sense that *all* human institutions, cultures, and traditions are made to be replaced, or perhaps improved or improvised out of existence. Machine learning and artificial intelligence (AI) are seen as “master algorithms,” first replicating, and then transcending and replacing, human thought.

“At some point, it's like explaining Shakespeare to a dog,” a Columbia University roboticist once remarked after being asked to assess demands for computer scientists to make their AI systems more transparent to humans. When it comes to predicting weather or even killing cancer cells, Lipson may have a point: we do not need to understand the exact mechanism of an AI tool in order to empower it to solve our problems. But when it comes to important decisions about people (for example, who is hired, fired, given credit, or fined), inexplicable methods are inappropriate.[[20]](#footnote-20) And the same type of demands for transparency and accountability should be made about the programming and algorithms now dominating our culture and our public sphere.

 The stakes are high. The algorithmic ranking (and occasional algorithmic generation) of content on YouTube, for example, has shocked parents and children’s advocates. One newspaper reported, “Kids left traumatized after sick YouTube clips showing Peppa Pig characters with knives and guns appear on app for children.” As James Bridle has observed, this goes beyond ordinary decency concerns: “what is concerning to me about the Peppa videos is how the obvious parodies and even the shadier knock-offs interact with the legions of algorithmic content producers until it is completely impossible to know what is going on.”[[21]](#footnote-21) Bridle observes further disturbing features of a growing industry of computational content generation on YouTube:

The first is the level of horror and violence on display. Some of the times it’s troll-y gross-out stuff; most of the time it seems deeper, and more unconscious than that. . . . The second is the levels of exploitation, not of children because they are children but of children because they are powerless. Automated reward systems like YouTube algorithms necessitate exploitation. . . . What we’re talking about is very young children, effectively from birth, being deliberately targeted with content which will traumatize and disturb them, via networks which are extremely vulnerable to exactly this form of abuse.[[22]](#footnote-22)

An ordinary television station broadcasting such dreck would bear some real consequences via viewership declines or sponsorship boycotts. But YouTube can call itself a mere platform, blaming an ever-shifting crowd of content creators, programmers, and search engine optimizers for anything that goes wrong.[[23]](#footnote-23)

Both authors and artists have explored the possible effects of such behavioristic manipulation of individuals by firms with little grounding in any robust tradition of virtue or right conduct.[[24]](#footnote-24) I have called the end result “algorithmic selfhood,” where our ultimate sense of ourselves becomes encoded in various data points, rather than enframed in some greater spiritual tradition, civic identity, or quest.[[25]](#footnote-25) When we are processed by computers as mere streams of data, a good deal of our humanity is lost or suppressed.[[26]](#footnote-26)

 It is not surprising that Facebook is betting on a massive shift of individuals to virtual reality, or that its Oculus Rift division reportedly has given the juvenile adventure tale *Ready Player One* to each new employee. The ultimate ethos of the company is Peter Pan-ish, mistaking the shallow camaraderie of a videogame screen-share for genuine community. Its CEO, Mark Zuckerberg, has achieved vast riches and influence by trying to corner the market on everyday social interaction, rather than solving truly difficult problems in the production of real goods and services. And even in the core areas of its supposed expertise, Facebook has made socially unacceptable trade-offs. As Evan Osnos observed in a revealing profile of Mark Zuckerberg, “Between scale and safety, he chose scale.”[[27]](#footnote-27) Children, dissidents, content moderators, hacked account holders, and other victims bear the brunt of that decision daily, as they endure the predictable externalities of social network gigantism.

 Nor is a firm like Google likely to distinguish itself in maintaining humane sources of value and meaning. Its top leaders have long employed Ray Kurzweil, a futurist with a decidedly transhumanist view of the nature and purpose of humankind. According to Kurzweil, our destiny is to merge with, and ultimately be replaced by, machines.[[28]](#footnote-28) We saw a small facet of this ambition in the recent demonstration of “Google Assistant,” a human-sounding voice with the potential to deceive receptionists and other schedulers into thinking that an actual person was trying to make an appointment. Kurzweil’s team is also apparently behind the “Smart Reply” feature in Gmail—something which readily replicates a canned response to emails, but which (in my experience) stumbles badly when trying to compose more complex thoughts.[[29]](#footnote-29) The ultimate purpose of his vision, and an uncomfortably common teleology of AI, is a replacement of (rather than support for) human beings.

 Anthony Galluzzo has observed that for Kurzweil and many other futurists, “human perfection necessitates the supersession of the human.”[[30]](#footnote-30) And he quotes Kurzweil’s own words to this effect: “The Singularity will represent the culmination of the merger of our biological thinking and existence with our technology, resulting in a world that is still human but that transcends our biological roots. There will be no distinction, post-Singularity, between human and machine or between physical and virtual reality. If you wonder what will remain unequivocally human in such a world, it’s simply this quality: ours is the species that inherently seeks to extend its physical and mental reach beyond current limitations.”[[31]](#footnote-31) If you have a more robust or stable vision of the human, you will likely be out of luck in this future: left behind in the wake of a technological rapture. As Francis Fukuyama has warned, this lack of a common human identity could be very threatening to democratic politics.

**The Master Algorithm**

 Pedro Domingos’s book *The Master Algorithm,* spotted on the shelves of Xi Jinping during one of his recent speeches, outlines the foundations of an artificial intelligence that could replace, and perhaps surpass, human thought. The title is evocative: imagine having an algorithmic boss at work, or confronting a robotic policeman or IRS official. Each of these would be a software master, and a prelude to rule by machines, rather than persons.[[32]](#footnote-32)

The Chinese government seems to be on the verge of implementing such a system, via the innocuously named “Social Credit Score” system (SCS). As with financial credit scores used by many lenders, the system rewards people for repaying debts promptly. But the SCS doesn’t stop with credit; it factors in court judgments, criminal records, academic dishonesty, jaywalking, moving violations, and failing to pay transit fares. Surveillance, software, and relatively simple AI can supply a fearsomely panoptic dossier. But this monitoring alone does not address the concern of Chinese Communist Party authorities that cornerstones of their authority are eroding. Thus the SCS will also dent your score for posting “unreliable” information or engaging in nebulously defined negative interactions online. Conversely, the system will reward volunteer activity and “filial piety”—devotion to one’s parents, grandparents, and perhaps other relatives.

 As China’s SCS approaches its full implementation around 2020, the scoring of activities will spread, assigning points for a wider range of anti-social and pro-social behaviors. Eventually China may make a Great Leap to Commensuration, in which every activity (or inactivity) is judged and converted to points, giving lived reality the feel of a never-ending video game. The Chinese government claims that the SCS simply reflects the values now embodied in Chinese families, schools, and courts. But with no appeal mechanism or public governance, the SCS’s relentless logic of commensuration threatens to supplant, rather than supplement, the authority of Chinese families, schools, and courts.

 The SCS may seem oppressive or bizarre to Americans. But each day we allow big tech firms to grow in influence and data-gathering, to link ever more sets of information about us in databases with greater scope and ultimate impact, we take a step toward something similar. The greater the power of a firm like Amazon, Facebook, or Google, the more it can affect our lives, channeling certain opportunities to us (or away from us).

Whatever the efficiency gains big tech firms bring, they have too much power, and need to be blocked from making significant horizontal acquisitions. Government policy needs to stop favoring them in other ways, too. Moreover, their cultural status must change. Families and schools need to question big tech’s influence on children. Their systems are more post-human than pro-human, the natural consequence of a commitment to “disruption” that eclipses more basic attachments to communities and institutional sources of meaning and values. Computational approaches are not always, or even usually, the best or ultimate way of understanding and affecting the world. We should not allow an illegitimate coalition of corporate chieftains and government officials to force them upon us.

1. Scott Cleland, “How Did Google Get So Big?” Lax Bush & Obama FTC Antitrust Enforcement, Precursor Blog, at http://www.precursorblog.com/?q=content/%E2%80%9Chow-did-google-get-so-big%E2%80%9D-lax-bush-obama-ftc-antitrust-enforcement. [↑](#footnote-ref-1)
2. Google’s Revolving Door, at <https://googletransparencyproject.org/articles/googles-revolving-door-us>. I should note here that the GTP appears to be funded by a corporate rival of Google, which raises yet another issue: why should it take a rival to highlight these problems? Facebook and Google play a part in creating that situation, too, by siphoning so much revenue away from journalism thanks to their near-duopolistic control of key advertising opportunities. [↑](#footnote-ref-2)
3. Frank Pasquale, Paradoxes of Digital Antitrust: Why the FTC Failed to Explain Its Inaction on Search Bias, Harvard Journal of Law and Technology Occasional Papers Series (2013). [↑](#footnote-ref-3)
4. Frank Pasquale, When Antitrust Becomes Pro-trust, Competition Policy International (2017). [↑](#footnote-ref-4)
5. Frank Pasquale, The Black Box Society (2015). [↑](#footnote-ref-5)
6. Frank Pasquale, Privacy, Autonomy, and Internet Platforms, in Privacy in the Modern Age: The Search for Solutions 165-174 (Marc Rotenberg, Julia Horwitz, and Jeramie Scott eds., New Press 2015). [↑](#footnote-ref-6)
7. European Data Protection Supervisor Opinion on Coherent Enforcement of Fundamental Rights in the Age of Big Data, Opinion 8/2016 of Sept. 23, 2016, 6. [↑](#footnote-ref-7)
8. Allen St. John, *How Facebook Tracks You, Even When You’re Not on Facebook*, Consumer Rep. (Apr. 11, 2018), <https://www.consumerreports.org/privacy/how-facebook-tracks-you-even-when-youre-not-on-facebook/>. [↑](#footnote-ref-8)
9. Frank Pasquale, Dominant Search Engines: An Essential Cultural & Political Facility, in The Next Digital Decade, Essays on the Future of the Internet, Chapter 7, p. 401 (2010). [↑](#footnote-ref-9)
10. Matthew Green, *Why I’m Done* *With Chrome*, A Few Thoughts on Cryptographic Engineering (Sept. 23, 2018), <https://blog.cryptographyengineering.com/2018/09/23/why-im-leaving-chrome/> (emphasis in original). [↑](#footnote-ref-10)
11. Frank Pasquale, The Dark Market for Personal Data, New York Times (2014); Frank Pasquale, Digital Star Chamber, Aeon Magazine (2015). [↑](#footnote-ref-11)
12. Shawn Knight, *Five Years Without Facebook*, Techspot (Mar. 19, 2018), <https://www.techspot.com/article/1415-five-years-without-facebook/>. [↑](#footnote-ref-12)
13. Frank Pasquale, Privacy, Antitrust, and Power, 20 Geo. Mason L. Rev. 1009, 1023 (2013). [↑](#footnote-ref-13)
14. Frank Pasquale, Copyright in an Era of Information Overload, Vanderbilt Law Review (2007). [↑](#footnote-ref-14)
15. David Cicilline, “Cicilline Introduces Journalism Competition and Preservation Act,” at <https://cicilline.house.gov/press-release/cicilline-introduces-journalism-competition-and-preservation-act>. [↑](#footnote-ref-15)
16. Frank Pasquale, Rankings, Reductionism, and Responsibility, Cleveland State Law Review (2006). [↑](#footnote-ref-16)
17. Frank Pasquale, Platform Neutrality, Theoretical Inquiries in Law (2016). [↑](#footnote-ref-17)
18. Frank Pasquale, Search, Speech, and Secrecy, Yale Law & Policy Review (2009); Frank Pasquale, The Troubling Consequences of Trade Secrecy Protections for Search Results, Handbook of Trade Secrecy Research (2010). [↑](#footnote-ref-18)
19. Adam J. White, Google.gov, The New Atlantis, at <https://www.thenewatlantis.com/publications/googlegov>. [↑](#footnote-ref-19)
20. Frank Pasquale, Reforming the Law of Reputation, Loyola Law Review (2015). [↑](#footnote-ref-20)
21. James Bridle, Something is Wrong on the Internet, Medium, at [https://medium.com/@jamesbridle/something-is-wrong-on-the-internet-c39c471271d2](https://medium.com/%40jamesbridle/something-is-wrong-on-the-internet-c39c471271d2). [↑](#footnote-ref-21)
22. Id. [↑](#footnote-ref-22)
23. For a critique of synergistic accounts of the interaction between “platform” and “crowd,” see Frank Pasquale, A Silicon Valley Catechism, Issues in Science and Technology (2017). [↑](#footnote-ref-23)
24. Brett Frischmann and Evan Selinger, Re-engineering Humanity (2017); C.S. Lewis, The Abolition of Man; M.T. Anderson, Feed. [↑](#footnote-ref-24)
25. Frank Pasquale, The Algorithmic Self, The Hedgehog Review (2015). [↑](#footnote-ref-25)
26. Jathan Sadowski and Frank Pasquale, The Spectrum of Control, First Monday (2015). [↑](#footnote-ref-26)
27. Evan Osnos, Can Mark Zuckerberg Fix Facebook Before It Breaks Democracy, New Yorker, 2018. [↑](#footnote-ref-27)
28. Ray Kurzweil, The Age of Spiritual Machines (2006) (“The Singularity will allow us to transcend these limitations of our biological bodies and brains. We will gain power over our fates. Our mortality will be in our own hands. We will be able to live as long as we want.”). For a critique of Kurzweil, see Charles T. Rubin, Eclipse of Man: Human Extinction and the Meaning of Progress (2014); Richard Jones, Against Transhumanism (2016). [↑](#footnote-ref-28)
29. Tom Simonite, What is Ray Kurzweil Up to at Google?, Wired, at <https://www.wired.com/story/what-is-ray-kurzweil-up-to-at-google-writing-your-emails/>. [↑](#footnote-ref-29)
30. Anthony Galluzzo, The Singularity in the 1790s: Toward a Prehistory of the Present With William Godwin and Thomas Malthus, b2o: An Online Journal (2018). [↑](#footnote-ref-30)
31. Kurzweil, Age of Spiritual Machines, quoted in Galluzzo, id. [↑](#footnote-ref-31)
32. Frank Pasquale, A Rule of Persons, Not Machines, George Washington Law Review (forthcoming, 2019). [↑](#footnote-ref-32)