



BEHAVIORAL ECONOMICS AND THE REGULATION OF TECHNOLOGY



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BEHAVIORAL ECONOMICS AND THE REGULATION OF TECHNOLOGY

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Behavioral economics has increasingly become a key part of the toolkit of many policymakers and regulators, with applications across a range of policy fields. Many technology firms also use behavioral economics concepts extensively - however, there has been relatively little application in the field of technology regulation. This article explains what behavioral economics is and how it can be applied to issues in the technology space, and highlights some of the nascent work by regulators to tackle technology-related behavioral issues. It closes by suggesting some potential future avenues for regulation.

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INTRODUCTION

Since the publication of Nudge in 2009,² behavioral economics (also referred to as behavioral insights or behavioral science) has increasingly become a key part of the toolkit of many policymakers and regulators. It has been applied in policy fields as varied as health, education, taxation, justice, and consumer behavior. This demonstrates a growing recognition that human behavior is complex and varied, and that traditional policy approaches have often failed to adequately reflect this. However, whilst behavioral economics has seen significant uptake among, for example, financial regulators, it is still relatively new in the field of technology regulation. This article will explain what behavioral economics is, how it can apply to technology, how regulators are already using behavioral economics, and then consider where the future might lie for the use of behavioral economics in technology regulation.

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WHAT IS BEHAVIORAL ECONOMICS

Behavioral economics arose in response to the failure of traditional economic models to accurately predict human behavior in a range of situations. Traditional economic models assume that consumers make optimal choices all the time, carefully considering all factors and canvassing a wide

range of options. In addition, traditional models assume that consumers are not influenced by seemingly irrelevant factors such as the behavior of others, or the way that the choice set is presented.

However, significant empirical work (and indeed, most people's lived experiences) demonstrate that this is not the case. Behavioral economics aims to more accurately model human behavior, by recognizing that decision making is often subject to a series of biases and heuristics, which cause consumers to act in ways that consistently defy traditional models. Rather than assuming perfectly rational behavior, behavioral economics instead assumes that behavior is guided by "bounded rationality" – that is, rational behavior within certain constraints.^{3,4} Below are three examples of behavioral biases that can affect consumer behavior when engaging with technology.

A. Ordering Effects

A common bias that drives behavior is the primacy bias - we tend to recall (and often favor) the information that is presented to us first. This can lead to better recall of the first ad in a set of ads,⁵ or favoring candidates at the top of an election ballot.⁶ This tendency persists, and may even be stronger, when online or interacting with technology - a review by the UK Competition and Markets Authority ("CMA") concludes that the tendency of those searching online to disproportionately select the top results is, in part, driven by the order in which they are presented.⁷ This trend is consistent across search engines and digital comparison tools, with the first three links accounting for 40-65 percent of total clicks on desktop devices and more than 70 percent of total clicks on mobile devices.⁸ Importantly, it appears that this is not driven by the relevance of these links; it is due to their position on the page - when the order of the links was randomly changed in one study, consumers were still more likely to click on the top three links.⁹

2 Richard H. Thaler & Cass R. Sunstein, *Nudge* (2009).

3 Herbert A. Simon, *Rationality in Psychology and Economics*, *JOURNAL OF BUSINESS*, 59, S209-S224, (1986).

4 Daniel Kahneman, *Maps of Bounded Rationality: Psychology for Behavioural Economics*, *AMERICAN ECONOMIC REVIEW*, 93(5), 1449-1475, (2003).

5 Cong Li, *Primacy effect or recency effect? A long-term memory test of Super Bowl commercials*. *JOURNAL OF CONSUMER BEHAVIOUR: AN INTERNATIONAL RESEARCH REVIEW*, 9(1), 32-44 (2010).

6 Jonathan G. Koppell & Jennifer A. Steen, *The effects of ballot position on election outcomes*, *THE JOURNAL OF POLITICS*, 66(1), 267-281, (2004).

7 Competition and Markets Authority, *Online search: Consumer and firm behaviour*. CMA REPORT (7 April 2017), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/607077/online-search-literature-review-7-april-2017.pdf.

8 *Id.*

9 Nick Craswell et al, *An experimental comparison of click position-bias models* in WSDM '08: PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON WEB SEARCH AND WEB DATA MINING (2008).

B. Choice Overload

Although people may claim to express a preference for more options, the reality is that in practice people ultimately prefer to choose from a smaller set.¹⁰ Indeed, too many choices can be overwhelming, leading to poorer choices or not making any choice at all.¹¹ When dealing with technology or operating online, consumers face an almost unfathomable number of options when looking to make a choice, and so often fall back on mental shortcuts. This can mean, for example, that consumers are more likely to rely on brand familiarity, rather than product features, when making a choice online.¹²

C. Framing Effects

Changing the way that information is presented can heavily influence the way a decision is made, even though the underlying information stays the same. Beyond the basic presentation of options, there is contextual information that firms can present that inform consumer perception of the options and market as a whole. Some of these are marketing techniques that provide certain information which is true, but highlights certain features. For example, many travel websites will seek to motivate consumers to purchase by highlighting that there are a limited number of rooms or seats left at a particular price (even though there may be many rooms or seats available at other prices). This is designed to not only create a sense of scarcity, but also seeks to exploit our desire to see social proof that others are making similar choices to us.

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WHY BEHAVIORAL ECONOMICS MATTERS FOR TECHNOLOGY REGULATION

Behavioral economics is an important concept for any policy or regulatory environment, but it is particularly relevant for technology and online behaviors because there is substantial evidence that many behavioral biases are exacerbated online or when using a screen. For example, multiple studies have shown that consumers have poorer comprehension when reading information on a screen as opposed to on printed paper^{13,14} – even when the studies feature modern screens that are often of higher quality than some printed materials. Hence, if consumers are absorbing information poorly, they may be more likely to rely on behavioral biases.

Similarly, the excess of choices available online means that choice overload is far more likely, and there is evidence that consumers are much more sensitive to small “frictions” in a process,¹⁵ such that they will generally only tolerate very low search costs (much lower than in offline environments). Indeed, smaller screens mean that the top few links are even more valuable, and there is some evidence that consumers are even less likely to scroll down to lower parts of the results page when viewing on a mobile phone.¹⁶

More broadly, consumers may be more likely to spend money on products through technology or online – evidence shows that consumers are more likely to spend, and to spend more, when they are using digital payment methods (as compared to using physical cash).¹⁷ Psychologi-

10 Dilip Soman, *THE LAST MILE: CREATING SOCIAL AND ECONOMIC VALUE FROM BEHAVIOURAL INSIGHTS* 54-61, (2015).

11 Alexander Chernev et al., *Choice overload: A conceptual review and meta-analysis*, *JOURNAL OF CONSUMER PSYCHOLOGY*, 25(2), 333-358 (2015).

12 Michael R. Baye et al. *What's in a name? Measuring prominence, and its impact on organic traffic from search engines*, *INFORMATION ECONOMICS AND POLICY*, 34, pp44–57, (2016).

13 Anne Mangen et al, *Reading linear texts on paper versus computer screen: Effects on reading comprehension*, *INTERNATIONAL JOURNAL OF EDUCATIONAL RESEARCH*, 58, 61-68 (2013).

14 Daniel M. Oppenheimer et al, *Instructional manipulation checks: Detecting satisficing to increase statistical power*, *JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY*, 45(4), 867-872 (2009).

15 Christopher Holland & Julia Andrea Jacobs, *An Analysis of Consumer Search Behaviour in the US and Germany using Online Panel Data*, *ACADEMY OF MANAGEMENT PROCEEDINGS* (Vol 2014, No 1, p11764) (2014).

16 Anindya Ghose et al, *How is the Mobile Internet Different? Search Costs and Local Activities*, *INFORMATION SYSTEMS RESEARCH*, 24(3), 613–631 (2013).

17 Elizabeth C. Hirschman, *Differences in Consumer Purchase Behavior by Credit Card Payment System*, *JOURNAL OF CONSUMER RESEARCH*, 6(1), 58-66, (1979).

cally, consumers have an aversion to parting with cash, as the “pain” of spending is more real - however, when paying through digital methods that “pain” does not exist, and in fact even the cost may be deferred if the consumer uses a credit card.¹⁸

Hence, there are a broad range of ways that technology and online interactions can lead to detrimental consumer outcomes, often more so than in other contexts. As such, it is no accident that regulators are increasingly taking a keen interest in the ways in which behavioral economics influences consumer behavior with regards to technology, but also when thinking about potential interventions and regulatory measures.

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HOW BEHAVIORAL ECONOMICS IS BEING APPLIED TO TECHNOLOGY REGULATION

A number of recent activities by regulators have been clearly driven by an understanding of behavioral economics. Some behavioral economists have highlighted the emerging concepts of “sludge” - essentially, using behavioral concepts to make certain behaviors more difficult to complete. When used by technology or online firms, this is often referred to as “dark patterns.” The classic example in an online context is the asymmetry between subscription and cancellation - the subscription process is made to be easy to find and as streamlined free as possible. In contrast, the process to cancel is typically far more hidden, more complex, and can even involve extra effort such as calling during certain hours or filling out a detailed form.

These frictions in the cancellation process are deliberate - even the friction involved in canceling just a trial subscription is enough to discourage many people. This is strikingly illustrated in a natural experiment following a 2007 U.S. Federal Trade Commission (“FTC”) decision to close down a company charging ongoing fees for worthless subscriptions. Customers enrolled for more than six months before the ruling were required to take action (by mailing a form or making a phone call) to cancel their memberships, while more recent customers were told their subscriptions would be canceled, unless they took action for their subscriptions to continue. Cancellations increased from 63.4 percentage points among those required to take an action, to 99.8 percent among those who were required to do nothing.¹⁹

A number of regulators have already flagged this and other examples of dark patterns as a specific concern - for example, the Australian Consumer and Competition Commission’s recent Digital Platform Services Inquiry specifically identified a number of dark patterns, such as the difficulty of canceling paid subscriptions and managing privacy settings.²⁰ Similarly, the FTC recently issued an enforcement policy statement that warned companies against using illegal dark patterns, after having conducted a number of related enforcement activities.²¹

Perhaps the most notable jurisdiction to take action, however, is Germany, where the recent Fair Consumer Contracts Act (“FCCA”) made significant changes to the way that consumers interact with online subscriptions. To combat the impact of cancellation frictions, the FCCA includes a provision that requires cancellation of subscriptions to be possible in effectively two clicks - the link to the cancellation page must be prominently displayed and clearly labeled. On this page, the FCCA specifies what information the business can collect (including a means of identification and reasons for termination), and that there must be a confirmation button that is clearly labeled and allows consumers to cancel once clicked.²²

However, the law goes beyond just cancellations. Recognizing that inertia - the tendency to stick with the *status quo* - is one of the most powerful forces that drives behavior,

18 Dilip Soman, *The Effect of Payment Transparency on Consumption: Quasi-Experiments from the Field*, *MARKETING LETTERS*, 14(3), 173-183, (2003).

19 Robert Letzler et al, *Knowing When to Quit: Default Choices, Demographics and Fraud*, *THE ECONOMIC JOURNAL*, 127(607), 2617-2640 (2017).

20 Australian Competition and Consumer Commission, *Updating competition and consumer law for digital platform services*, *DIGITAL PLATFORM SERVICES INQUIRY DISCUSSION PAPER NUMBER 5*, <https://www.accc.gov.au/system/files/Digital%20platform%20services%20inquiry.pdf>.

21 Press release, U.S. Federal Trade Commission, *FTC to Ramp up Enforcement against Illegal Dark Patterns that Trick or Trap Consumers into Subscriptions* (October 28, 2021).

22 Konstantin Ewald & Philipp Sümmerrmann, *A new termination button and other rules for Germany under the Fair Consumer Contracts Act*, *VIDEO GAMES LAW BLOG* (October 14, 2021), <https://gameslaw.org/a-new-termination-button-and-other-rules-for-germany-under-the-fair-consumer-contracts-act/>.

the new law also prohibits automatic extensions of a year after the first two years. Instead, contracts can be extended indefinitely, with consumers having the right to cancel with notice of no more than one month. Alternatively, firms can enter into a new contract or gain express permission to extend the contract by a further year.²³

This targets firms that rely on inattentive or busy consumers who may forget to cancel a subscription in time, and then find themselves stuck paying for another year of a contract that they were not interested in. In this situation, it is not uncommon for consumers to continue the subscription as they believe the money will be “wasted” otherwise (an example of a behavioral bias known as the sunk cost fallacy)²⁴ - only to forget to cancel before the next renewal. Now, consumers can opt out of a subscription after two years with just a month’s notice.

Other regulators have considered issues beyond dark patterns, and focused on behavioral economics tactics that could be considered misleading or deceptive. The CMA has previously taken action against travel booking websites, specifically focusing on some of the framing issues discussed above. Some of the practices that the CMA focused on included highlighting that other consumers were looking at the same hotel (even though they may be searching for different dates), strategically placing sold out hotels within search results to create a sense of urgency and scarcity, and promoting discounts that included comparisons with prices that weren’t relevant to a customer’s search (for example, comparing a weekend room rate with a weekday room, or comparing the price of luxury suite with a regular room).²⁵

“*These frictions in the cancellation process are deliberate - even the friction involved in cancelling just a trial subscription is enough to discourage many people*”

23 *Id.*

24 Hal R. Arkes & Catherine Blumer, *The psychology of sunk cost*, ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES, 35(1), 124-140 (1985).

25 Press release, UK Competition and Markets Authority, Hotel booking sites to make major changes after CMA probe (February 6, 2019).

26 Elisabeth Costa and David Halpern, *The behavioural science of online harm and manipulation, and what to do about it*, BEHAVIOURAL INSIGHTS TEAM REPORT (April 15, 2019), https://www.bi.team/wp-content/uploads/2019/04/BIT_The-behavioural-science-of-online-harm-and-manipulation-and-what-to-do-about-it_Single.pdf.

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WHAT THE FUTURE COULD HOLD

There are many potential avenues for regulators to incorporate behavioral economics into the way that they regulate technology firms. A recent report from the Behavioral Insights Team covering online harms and manipulations lists a number of potentially behaviorally informed interventions to combat the issues discussed above, as well as a wider range of technology challenges.²⁶ Below, we highlight a small sample of some of the potential directions that regulators might take.

A. Symmetry by Default

Similar to the approach taken in Germany, it is likely that more regulators will scrutinize subscription services more closely. We would expect that the overarching principle that “it should be as easy to cancel as it is to subscribe” will be applied more widely - whether for mailing lists, subscriptions or just engaging in a platform generally. This could be done through prescriptive regulation setting out exactly how it is to be operationalized, but could also be done with a more principled approach. Regardless, technology firms will need to invest effort in ensuring that their cancellation processes are easy and low-friction (and in some cases, may need to actively undo deliberate frictions that they have introduced).

B. Broader Choice Architecture Changes

Building on the concept of making cancellations as easy as subscriptions, it is also likely that regulators will consider the broader choice architecture of online environments. For example, another area where dark patterns seem apparent is with respect to control over personal data and settings on online platforms. It can be notoriously difficult to find and adjust settings for privacy and data sharing, with the process often changing. We have already seen regulators take action in this space – the EU’s General Data Protection Regulation sets out detailed rules and regulations for how data is to be handled, and similar provisions have already been

adopted in several U.S. states.^{27,28} In future, more jurisdictions are likely to take up similar regulations, and regulators might consider specifying exactly the type of information that should be available to consumers, how it needs to be presented, and how easily consumers can change settings (similar to the requirements for cancellation process in Germany being no more than two clicks away).

C. Using Data to Predict Vulnerability

In a number of different regulated markets, there is an expectation that firms will treat consumers who are vulnerable or in hardship with extra care. For example, it is common to have requirements for utilities or financial services providers to take extra care for potentially vulnerable consumers. A similar regime could be applied to online behaviors and interactions with technology. For example, it is trivial for firms to identify if a consumer is spending large sums on gambling sites, consistently shopping online at odd hours, or showing addictive patterns of behavior. Indeed, many different technology firms will potentially be able to identify this behavior - banks, retailers, search engines, and arguably even social media platforms. However, at the moment, none of them have any obligations to identify these behaviors, nor to take any corrective action (indeed, some businesses arguably have an incentive to do the opposite). In future, technology firms and those that operate online might be required to take more active steps where harmful behavior is identified - for example, banks might prompt consumers to set up spending blocks, websites might prompt consumers to use self-exclusion tools, and search engines and platforms could promote results and links that help consumers combat negative behaviors.

Note, this does raise some ethical and privacy issues - who should decide when to intervene, and how? How will it be overseen? What is the threshold for intervention? These issues will also need to be explored and addressed.

D. Increasing Use of Online Testing

More innovation in the way that regulators work is likely to come as well. Regulatory experimentation and testing, using behavioral economics concepts and applying rigorous evaluations, are already common in other policy areas (for example, financial regulation). Regulators will conduct experiments in the field or using panels of consumers to test potential interventions. Given the target for tech regulation, however, online testing is a particularly useful tool - it can be used to mock up online environments and test the impacts of small changes and behavioral economics interventions. For example, similar experiments have already been used to test whether behaviors can be shifted for gamblers,²⁹ consumers using online shopping platforms,³⁰ or just individuals reading terms and conditions.³¹ In future, regulators are likely to take more active steps to test interventions in simulated environments before rolling them out to technology firms, especially if technology firms are uncooperative when it comes to testing regulatory interventions on their platforms.

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CONCLUSION

Behavioral economics has become a core part of many regulators' and policymakers' toolkits over the past decade, with jurisdictions across the world incorporating insights into their work. Many technology firms have also already incorporated behavioral economics concepts into their operations, either explicitly or implicitly - concepts such as manipulating frictions, using ordering and framing effects, and designing the choice architecture to encourage certain behaviors are all, at their heart, rooted in behavioral economics.

27 Sarah Rippy, *Colorado Privacy Act becomes law*, THE PRIVACY ADVISOR (July 8, 2021), <https://iapp.org/news/a/colorado-privacy-act-becomes-law/>.

28 Sarah Rippy, *Virginia passes the Consumer Data Protection Act*, THE PRIVACY ADVISOR (March 3, 2021), <https://iapp.org/news/a/virginia-passes-the-consumer-data-protection-act/>.

29 Aisling Ni Chonaire, *Defaulting deposits, limiting harm*, BEHAVIOURAL INSIGHTS TEAM BLOG (June 29, 2022), <https://www.bi.team/blogs/defaulting-deposits-limiting-harm/>.

30 Izzy Brenan & Natalia Shakhina, *Pre-owned: Using environmental and cost-saving messages to encourage buying second-hand*, BEHAVIOURAL INSIGHTS TEAM BLOG (December 21, 2021), <https://www.bi.team/blogs/pre-owned-using-environmental-and-cost-saving-messages-to-encourage-buying-second-hand/>.

31 Behavioural Insights Team, *Best Practice Guide: Improving consumer understanding of contractual terms and privacy policies: evidence-based actions for businesses*, BEHAVIOURAL INSIGHTS TEAM REPORT (August 2019), https://www.bi.team/wp-content/uploads/2019/07/BIT_WEBCOMMERCE_GUIDE_DIGITAL.pdf.

We have already seen regulators take action where they see clear behavioral harms and poorly designed choice architectures. As regulators and consumers become more aware of the impact that behavioral economics concepts can have on our behavior, especially online, it is likely that this focus on behavioral economics will grow further, and that regulators will start to look more closely at potential behavioral barriers or enablers when making regulatory decisions. ■

“*We have already seen regulators take action where they see clear behavioral harms and poorly designed choice architectures*”

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