SLOUCHING TOWARDS BEHAVIORAL ANTITRUST: THE (LIMITED) BRAZILIAN EXPERIENCE AND THE EUROPEAN GOOGLE CASES AS AN EXPERIMENT ON ONLINE CHOICE ARCHITECTURE

Rastejando em direção ao antitruste comportamental: a (limitada) experiência brasileira e os casos europeus contra o Google como experimento de arquitetura da escolha online

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Resumo: O direito concorrencial está dentre os campos do direito que mais se amparam em observações econômicas. A economia comportamental revolucionou o pensamento econômico no início do século XXI ao desafiar a premissa de que os agentes econômicos são plenamente racionais. Apesar disso, autoridades concorrenciais continuam a operar predominantemente sob os parâmetros da Escola de Chicago, o que inclui a premissa da racionalidade perfeita. Há, contudo, cada vez mais evidências de que essa abordagem é insuficiente para tratar dos desafios de uma era digital. Nesse contexto, este artigo apresenta uma visão geral das principais observações comportamentais e de economia da escolha (e seu lado negativo, as *dark patterns*), e explora seus impactos sobre publicações de autoridades concorrenciais, bem como decisões no Brasil e na União Europeia. A partir dessas análises, observa-se os remédios europeus em casos contra o Google como experimentos iniciais (que se utilizam de experiência passada com a Microsoft) de arquitetura da escolha por uma autoridade concorrencial, explorando suas possíveis lições, particularmente a necessidade de que autoridades considerem exercer um papel mais ativo na concepção de alternativas que preservem o poder de escolha.

Palavras-chave: Direito da concorrência; Economia Comportamental. Arquitetura da Escolha; *Dark Patterns;* Remédios em Abuso de Posição Dominante.

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Abstract: Competition law is among the legal fields that most rely on economic insights. Behavioral economics caused a revolution in economic thinking in the beginning of the 21st century by challenging the assumption that economic agents are fully rational. Competition authorities, nonetheless, continue to operate mostly under the Chicago School standards, including the perfect rationality assumption, despite ever-growing evidence that this approach is insufficient to address the challenges of a digital era. In this context, this paper provides an overview of behavioral insights and discussions on choice architecture (and its dark side, dark patterns). It then explores their impacts on competition authorities' publications on the subject, as well as decisions in Brazil and the European Union. Based on these analyses, it lays out the European remedies in the Google cases as initial experiments (learning from the previous Microsoft ones) on choice architecture by an antitrust authority, exploring their possible lessons, particularly the need for authorities to consider a more active role in designing choice-preserving solutions.

Keywords: Competition Law; Behavioral Economics; Choice Architecture. Dark Patterns; Remedies in Dominance Cases.

1. Introduction

Competition law goals have been heavily discussed in the past years, especially after the publishing of "Amazon's Antitrust Paradox" by Lina Khan[3], current chairwoman of the Federal Trade Commission. Critics have been ferocious on both sides to argue for the maintenance of the status quo in competition law, laid by the Chicago School, or for the inclusion of other concerns and agendas in the promotion of competition by the so-called Neo-Brandeisians. A third wave of critics, however, are most concerned

[3] KHAN, Lina M. *Amazon's Antitrust Paradox*. The Yale Law Journal, Vol. 126, no. 3, 2017, pp. 564-907. Available at: http://www.yalelawjournal.org/note/amazons-antitrust-paradox. Accessed on 8 September 2023.

with the assumptions of classical economic theory that overlook how consumer decisions are made in the real world.

Influenced by the findings of cognitive psychology theorists as Simon, Kahneman, Tversky, Thaler and Susstein, behavioral economics have been applied to antitrust thinking to advance the understandings of market participants behavior with empirical evidence. They focus on aspects of decision-making that show imperfect rationality, and thus challenge the Chicago School microeconomic assumptions. Given the extent to which antitrust authorities have relied on microeconomic insights, their findings beg the question: have antitrust authorities incorporated these well documented findings?

In order to answer this question, after this brief introduction, this paper proceeds as follows: section two provides a brief overview of the main behavioral findings and its resulting studies into choice architecture, including its dark side, dark patterns. The third section explores the extent to which antitrust authorities have incorporated behavioral insights, starting with an analysis of recent non-decisional publications and guidances, and proceeding to review the Brazilian practice. Upon a finding of limited decisional impact, it then focuses on the past decisions that have been argued to incorporate behavioral insights the most: the European Commission Google decision and remedies. The fourth section analyzes these remedies as experiments on choice architecture. The fifth and final section provides our conclusions.

2. Behavioral economics and its challenge on economic rationality

The classical microeconomic assumptions on demand, on which antitrust enforcement have long relied[4], assume that consumers will try to maximize their satisfaction at the minimum possible expense. This depends on users correctly predicting the outcomes of each possible scenario and

[4] COOPER, James C.. KOVACIC, William E. *Behavioral Economics and Its Meaning for Antitrust Agency Decision Making*, 8 J.L. Econ. & Pol'y 779, 2012. See also REEVES, Amanda P. STUCKE, Maurice E. *Behavioral antitrust.* Indiana Law Journal: Vol. 86: Iss. 4, Article 7, p. 1532.

weighing their potential returns, that is, being entirely rational and capable of assessing the costs and the benefits of each alternative that is presented to them.

Nonetheless, empirical examples abound to show that rationality is actually limited or bounded[5]: in certain cases, humans behave differently from the expected economic behavior, both due to emotional context[6] and mental shortcuts that alter their decision-making process. Behavioral economics became the field of economic science that, using "methods from neuroscience and social sciences, such as psychology and sociology"[7], focuses on understanding the limits to the perfect rationality assumption.

Mental shortcuts exist because decision-making is a complex and taxing process, and because human attention and information-processing capabilities are limited. Humans cannot make a complex decision on every minimal aspect of their days (such as recognizing someone on the street or picking up a ball from the floor). When faced with too much information or choices, "consumers can sometimes ignore possible choices, walk away from markets, or choose not to choose"[8], due to information and choice overload.

Behavioral studies argue that humans have two separate decision-making processes: the quick, instinct-based response (the one that tells us almost instantly that a person smiling is likely happy), and the long, rational-

[5] The concept of "bounded rationality" was introduced in 1957 by Herbert Simon, but some acknowledgement that perfect decision-making was an utopia already existed in some way before that. In spite of the fact that "bounded rationality" was conceptualized over 70 years ago, its incorporation in economic thinking has been somewhat slow. See KLAES, Matthias; SENT, Esther-Mirjam. *A conceptual history of the emergence of bounded rationality*. History of Political Economy (2005) 37 (1): 27–59.

[6] An example of an emotional influence is a strong leaning towards fairness. See PYNDYCK, Robert S. RUBINFELD, Daniel S. *Microeconomics*. 8th edition. Pearson: 2013, chapter 5.6.

[7] REEVES, Amanda P. STUCKE, Maurice E. *Behavioral antitrust.* Indiana Law Journal: Vol. 86: Iss. 4, Article 7, p. 1532.

[8] OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022, p. 8. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on August 27, 2023.

thinking process (such as the one for solving a complex mathematical problem). The latter is reserved for the most important decisions[9].

In order to make decision-making easier, humans have developed "mental shortcuts", also called "heuristics", that work as "rules of thumb" to simplify the understanding of reality. Although generally useful, these heuristics can amount to biases, which in turn lead to errors in judgment, even among experienced researchers[10], and to failures to predict the outcomes and prospects of each scenario[11].

2.1. Decision-making mistakes and biases

Many heuristics and biases have already been described by behavioral economics[12]. Among them, the heuristic of availability indicates that people tend to misrepresent results based on information that is more readily available on their memory. And, in turn, they tend to overestimate the likelihood of an uncertain event by basing their assessment on this small number of available examples (such as an increased fear of flying after large plane crashes, in spite of these having little impact in overall long-term plane safety statistics)[13]-[14].

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[9] KAHNEMAN, Daniel. *Thinking: fast and slow*. Farrar, Straus and Giroux: 2013.

[10] KAHNEMAN, Daniel; TVERSKY, Amos. *Judgment under Uncertainty: Heuristics and Biases*. Science, New Series, Vol. 185, No. 4157. (Sep. 27, 1974), pp. 1124-1131.

[11] KAHNEMAN, Daniel; TVERSKY, Amos. *Advances in Prospect Theory: Cumulative Representation of Uncertainty*. Journal of Risk and Uncertainty , 1992, Vol. 5, No. 4 (1992), pp. 297-323.

[12] For a simplified overview of the main ones, see REEVES, Amanda P. STUCKE, Maurice E. *Behavioral antitrust.* Indiana Law Journal: Vol. 86: Iss. 4, Article 7. Nonetheless, more than one hundred biases have already been described. See OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on 27 August 2023.

[13] KAHNEMAN, Daniel. *Thinking: fast and slow*. Farrar, Straus and Giroux: 2013, chapter 10.

[14] Another example is anchoring, which notes that an initial value suggestion ends up adjusting the final response: for instance, if asked to estimate the distance from São Paulo to Sydney by choosing from a list with "10,000 km", "20,000 km", "30,000 km" and "Other", people are more likely to choose one out of the three already-provided numbers than inputting a different value, as their response has been anchored by the three alternative options. KAHNEMAN, Daniel; TVERSKY, Amos. *Judgment under Uncertainty: Heuristics and Biases*. Science, New Series, Vol. 185, No. 4157. (Sep. 27, 1974), pp. 1124-1131.

Prospect theory, particularly, focuses on anomalies on how humans predict the outcome of future events and their incorrect internal assessments of the resulting gains and losses in each situation due to heuristics and biases. Prospect theory has described, for example, the phenomena of loss aversion, indicating that, for most people, "losses loom larger than gains"[15], so they tend to take less risk when faced with a potential loss of something than a potential gain of the same value. This also leads to framing effects: depending on how a problem is presented, people may choose differently between the presented options, particularly to avoid perceived losses[16].

The recognition that humans are averse to loss has led prospect theory to a further acknowledgement, that of status quo bias: people are less likely to switch between two equivalent options (or even to a better option) when they have already been offered and made a choice for one of them. Because they overestimate the losses caused from dropping their current choice, they avoid switching to the new one. This is particularly the case when more alternative options are presented (thereby increasing the difficulty in accurately predicting the outcome of each alternative)[17].

2.2. Nudges and choice architecture: directing human behavior

Acknowledging limitations on human rationality has also led to studies on how to explore these limitations to improve or direct human behavior towards a given desired outcome. Authors have argued that, by

[15] KAHNEMAN, Daniel; TVERSKY, Amos. *Advances in Prospect Theory: Cumulative Representation of Uncertainty*. Journal of Risk and Uncertainty , 1992, Vol. 5, No. 4 (1992), pp. 297-323, p. 298. See also THALER, Richard H. *Toward a Positive Theory of Consumer Choice*. Journal of Economic Behavior & Organization, Volume 1, Issue 1, March 1980, Pages 39-60.

[16] For instance, if a person has to choose between a risk of losing $200 of their salary or a chance of winning $200 on a lottery ticket, even if the probability of success on both is the same, they are more likely to choose the chance of winning the lottery ticket even if the odds for both are exactly the same (meaning that they should be economically indifferent). KAHNEMAN, Daniel; TVERSKY, Amos. *Advances in Prospect Theory: Cumulative Representation of Uncertainty*. Journal of Risk and Uncertainty , 1992, Vol. 5, No. 4 (1992), pp. 297-323.

[17] See KAHNEMAN, Daniel. KNETSCH, Jack L. THALER, Richard H. *Anomalies: the endowment effect, loss aversion and status quo bias.* The Journal of Economic Perspectives, Vol. 5, No. 1., 1991, pp. 193-206.

switching the way in which a problem is presented, humans can respond differently and lean towards a given outcome, even if no alternatives are restricted or prohibited and absent changes to economic incentives. These basic changes in how problems are presented in order to direct behavior have been called "nudges"[18].

While nudge-based approaches are sometimes criticized as paternalistic[19], they are rooted in the finding that the alternatives to directing people towards a given outcome usually leave all those involved worse-off than doing so (and are thus welfare enhancing)[20].

Choice architecture arises from a finding that most people can be expected to react in a certain way when faced with a given option, and that these options can be better designed to avoid confusion and improve overall outcomes. Nudges and default settings can also be explored in policy design, such as in the fields of organ donation, optional fee payments and data-sharing obligations[21].Choice architecture studies also notes that many usual activities and decisions involve some level of choice architecture: whether in

[18] "A nudge [...] is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not". THALER, Richard H. SUNSTEIN, Cass. Nudge: Improving Decisions About Health, Wealth, and Happiness. Penguin Books, 2008, p. 8. One traditional example of a nudge is painting a fly on men's urinals at an airport, thereby directing their aim towards the fly and improving overall bathroom hygiene.

[19] Although the advocates of nudge usually frame this type of influence as benign, there is much discussion on its negative impacts. For instance, Kuyer and Gordijn systematically review the critics on nudging and catalogue four main ethical issues: (i) autonomy, (ii) welfare, (iii) long-term adverse effects, and (iv) democracy and deliberation. See KUYER, Paul. GORDIJN, Bert. *Nudge in perspective: A systematic literature review on the ethical issues with nudging.* Rationality and Society, 35(2), 2023, 191-230. Available at: https://doi.org/10.1177/10434631231155005.

[20] BALZ, John P. SUNSTEIN, Cass. THALER, Richard H. Choice architecture. In: SHAFIR, Eldar (ed.). *The Behavioral Foundation of Policy*. Princeton: Princeton University Press, 2012, chapter 25.

[21] THALER, Richard H. SUNSTEIN, Cass. Nudge: Improving Decisions About Health, Wealth, and Happiness. Penguin Books, 2008.

a doctor presenting treatment option to a patient, or a restaurant owner choosing how to place food on a buffet[22].

A default option is a type of nudge, since users will tend to choose that option: "if, for a given choice, there is a default option—an option that will obtain if the chooser does nothing—then we can expect a large number of people to end up with that option, whether or not it is good for them"[23]. Default options have been found to be greatly powerful. For instance, the use of default to presume consent of organ donors has been proved effective to increase donation rates in several countries. Instead of requesting potential organ donors to explicitly express their consent by opting-in, countries such as Austria, Belgium, France, Hungary and Portugal rely on the opt-out system, leading to organ donation rates of more than 90% that avoid organ donation shortages[24].

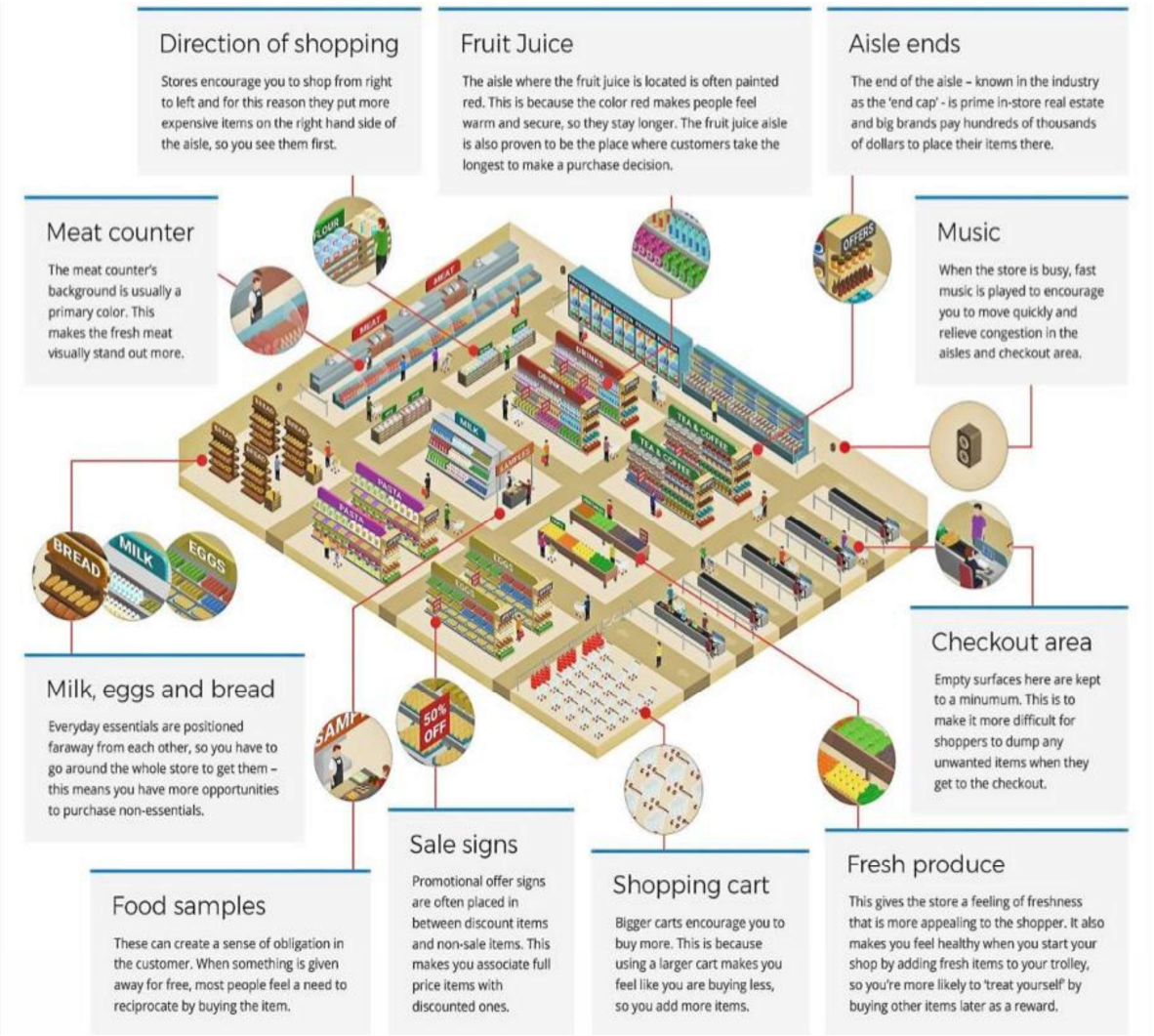
For illustration purposes, the image below shows several ways that nudges are explored in the offline world:

[22] BALZ, John P. SUNSTEIN, Cass. THALER, Richard H. Choice architecture. In: SHAFIR, Eldar (ed.). *The Behavioral Foundation of Policy*. Princeton: Princeton University Press, 2012, chapter 25.

[23] BALZ, John P. SUNSTEIN, Cass. THALER, Richard H. Choice architecture. In: SHAFIR, Eldar (ed.). *The Behavioral Foundation of Policy*. Princeton: Princeton University Press, 2012, chapter 25.

[24] LI, Jessica. NIKOLKA, Till. *The Effect of Presumed Consent Defaults on Organ Donation*. CESifo DICE Report 4/2016. December, 2016, 90-94. Available at: https://www.ifo.de/DocDL/dice-report-2016-4-li-nikolka-december.pdf. Access on 10 September 2023.

Figure 1. Nudges in grocery stores[25]



A 2018 quantitative and qualitative analysis of past literature on the effectiveness of nudging found that, while nudging may be partially less effective than originally proclaimed, its effects depend significantly on the context in which they are applied (e.g., finances, environment, health, privacy etc.) and the nudge category (e.g., reminders, defaults, disclosures, simplifications, warnings etc.). This review found that "default nudges seem

[25] BECKETT, Samantha. Why your local grocery store is designed like a casino. *The Oakland Press*: January 2018, available at: https://www.theoaklandpress.com/2018/01/09/why-your-local-grocery-store-is-designed-like-a-casino/. Access on 8 September 2023.

to be more effective than any other nudge category", a result which "can be explained by the status quo bias […] and decision inertia"[26].

2.3. Dark patterns: the dark side of choice architecture

Not all choice architectures are, however, promoting the best interest of those making choices: "the menu designer may want to push profitable items or those about to spoil by printing them in bold print"[27], even if these options are less healthy or more expensive. Richard Thaler, one of the founders of nudge theory, coined the term "sludge" to differentiate the nudges that were used for "less benevolent purposes". In Thaler's definition, sludges can either "discourage behavior that is in a person's best interest" or "encourage self-defeating behavior"[28].

In digital environments, sludges have been addressed by many names. The most prominent designations in the last few years are "dark patterns" and "deceptive design", popular in the User Experience Design (UX) and User Interface Design (UI) fields and Human-Computer Interaction (HCI) research. "Dark pattern" was an expression coined by UX expert Harry Brignull to frame "tricks used in websites and apps that make you do things that you didn't mean to, like buying or signing up for something"[29].

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[26] HUMMEL, Dennis; MAEDCHE, Alexander. *How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies*. Journal of Behavioral and Experimental Economics Volume 80, June 2019, page 56.

[27] BALZ, John P. SUNSTEIN, Cass. THALER, Richard H. Choice architecture. In: SHAFIR, Eldar (ed.). *The Behavioral Foundation of Policy*. Princeton: Princeton University Press, 2012, p. 430.

[28] THALER, Richard H. Nudge, not sludge. *Science*, *361*(6401), 431-431.

[29] For years, Harry Brignull has been feeding a website to raise awareness on the phenomenon, providing a taxonomy and real-life examples ("hall of shame") of dark patterns with the collaboration of many others. The first version of the website could be reached at http://darkpatterns.org/. The most updated version of the website is now available at https://www.deceptive.design/, with the contribution of Harry Brignull sided with Dr. Mark Leiser (VU-Amsterdam), Dr. Cristiana Santos (Utrecht University) and Kosha Doshi (Symbiosis Law School) The new naming choice is attributed to "*a commitment to avoiding language that might inadvertently carry negative associations or reinforce harmful stereotypes"*.

These design patterns are significantly widespread on the Internet and their frequency has been investigated both by academia and governmental bodies in several instances. As shown by the OECD[30] in its aggregation of several sources that investigate the use of dark patterns, research has been laid on the occurrence of dark patterns in e-commerce; cookie consent notices; targeted research regarding major online platforms conducted by consumer authorities; search engines and browsers; games. Although the figures may vary, such investigations are in unison when identifying that dark patterns are widespread - "far from a niche practice"[31].

Product positioning that exploits human biases is not limited to digital markets, as the classic visual merchandising principle indicates "eye level is buy level". However, the success of dark patterns in digital environments is essentially due to the high degree of customization that can be tailored to each user[32]. Simple access on an interface is capable of generating a large amount of data and metadata that when processed, serve as a basis for identifying the audience (audience profiling) and directing the product or service to consumption aligned with the public (audience targeting). Add to this the fact that digital players can test the effectiveness of interface design choices through A/B testing, a methodology in which multiple versions of the same content are presented to different groups.

For economic organizations, dark patterns can lead to significant profits for many and, eventually, they can also be used to facilitate anticompetitive behavior to the extent they increase barriers to entry or foreclose

[30] OECD. *Dark Commercial Patterns: OECD Digital Economy Papers No. 336,* 2022. Available at: https://www.oecd-ilibrary.org/docserver/44f5e846-en.pdf?expires=1694340686&id=id&accname=guest&checksum=56968832CC0618F5B7135E2CB1357104. Access on 3 September 2023.

[31] OECD. *Dark Commercial Patterns: OECD Digital Economy Papers No. 336,* 2022, , p. 19. Available at: https://www.oecd-ilibrary.org/docserver/44f5e846-en.pdf?expires=1694340686&id=id&accname=guest&checksum=56968832CC0618F5B7135E2CB1357104. Access on 3 September 2023.

[32] ZINGALES, Luigi; ROLNIK, Guy; LANCIERI, Filippo Maria. Final Report, Stigler Committee on Digital Platforms, *Stigler Center for the Study of the Economy and the State*, 2019, p. 58. Available at: https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf. Access on 10 September 2023.

rivals' access to consumers[33]. One example is the use of defaults, also treated as a "preselection" dark/deceptive pattern, which can result in impacts in competition:

> "[O]ne outcome of default bias may be inertia, with consumers switching between firms on the basis of better offers less frequently than traditional models may predict. Competition may theoretically 'only be a click away' but if consumers have biases towards defaults or risk aversion, then this competition may never take place, at which point being the default option becomes a very valuable asset [...] firms can also exacerbate or exploit the existence of the default bias"[34].

3. "Behavioral antitrust" and its recognition by competition authorities

Behavioral antitrust is a call for antitrust agencies to drop the traditional Chicago School thinking that includes perfect rationality assumptions and start acknowledging the real-life impacts of bounded rationality, heuristics and biases[35].

Advocates of behavioral antitrust argue that while, on the one hand, authorities themselves may have their decision-making processes impacted by heuristics and biases[36], on the other hand their failure to even acknowledge behavioral insights on the first place may lead them to fail to

[33] FLETCHER, Amelia. *The EU Google Decisions:* extreme enforcement or the tip of the behavioral iceberg? *Competition Policy International*. January 2019. Available at: https://www.competitionpolicyinternational.com/the-eu-google-decisions-extreme-enforcement-or-the-tip-of-the-behavioral-iceberg/. Access on 3 September 2023. See also STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012.

[34] OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022, p. 9. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on August 27, 2023.

[35] REEVES, Amanda P. STUCKE, Maurice E. *Behavioral antitrust.* Indiana Law Journal: Vol. 86: Iss. 4, Article 7, p. 1532.

[36] COOPER, James C. KOVACIC, William E. Behavioral Economics and Its Meaning for Antitrust Agency Decision Making, 8 J.L. Econ. & Pol'y 779, 2012.

acknowledge phenomena of antitrust importance or to adopt incorrect neoclassical assumptions[37].

This section explores the second aspect, that is, how antitrust authorities have incorporated behavioral insights in their practice. It starts with an overview of global guidelines and reports on the subject, and then continues to assess their impact in the Brazilian antitrust authority's decision-making. Upon a finding of limited decision incorporation in Brazil, it then moves on to discuss the main competition decisions worldwide that have been argued to incorporate behavioral insights: the European Commission decisions in the Google cases[38].

3.1. Guidelines and reports

Although lacking in force in comparison with positive law or past practice, guidelines and reports have been an important resource for competition authorities when dealing with complex themes and frontier markets. For instance, competition agencies and other public bodies around the world have issued or commissioned expert reports on the challenges raised by digital markets, including Australia, Canada, France, Japan, United Kingdom, the European Commission, among others - many of which were reviewed by Brazil's antitrust authority, the Administrative Council for Economic Defense ("CADE").

Most of these reports pinpoint the relevance of behavioral economics insights to understand the market dynamics in digital environments, describing the ways by which digital platforms can explore human biases and heuristics, as well as how digital platforms use nudges and sludges (dark patterns) to shape user behavior.

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[37] *Id*. See also STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012, and AZEVEDO, Paulo F. *Economia comportamental e antitruste: deu match?* In: ZINGALES, Nicolo. FARANI, Paula A. (org.) *A aplicação do direito antitruste em ecossistemas digitais*. Rio de Janeiro: FGV Direito Rio, 2022, pp. 111-137.

[38] As identified by the OECD. See OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022, p. 9. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on 27 September 2023.

For instance, the Norwegian Consumer Council (Forbrukerrådet) published in 2018 the report "Deceived by Design: how tech companies use dark patterns to discourage us from exercising our rights to privacy"[39], which analyzes GDPR pop-ups of three of the largest digital service providers with dominant market positions: Facebook, Google, and Microsoft, which contained different types of dark patterns. Dark patterns, according to Forbrukerrådet, are deemed as ethically problematic "because they mislead users into making choices that are not in their interest and deprive them of their agency".

The French administrative regulatory body of data protection, Commission nationale de l'informatique et des libertés (CNIL), published in 2019 the report "Shaping Choices in the Digital World - From dark patterns to data protection: the influence of UX/UI design on user empowerment"[40]. CNIL's report assumes that technology has never been neutral, and neither is its design. As such, it is of prime importance to investigate the ways by which user interface design shapes human-machine interaction and affects the implementation of rights and promotion of competition. The report borrows insights from studies on behavioral economics on the attention economy added to the development of persuasive technologies to argue that a "vicious struggle to control attention and its economic, social and cognitive mechanisms" is ongoing[41], and "taking advantage of all cognitive biases

[39] FORBRUKERRÅDET. *Deceived by Design: How Tech Companies Use Dark Patterns to Discourage Us from Exercising Our Rights to Privacy,* 2018. Available at: https://www.forbrukerradet.no/undersokelse/no-undersokelsekategori/ deceived-by-design. Access on 3 September 2023.

[40] CNIL. Shaping Choices in the Digital World - From dark patterns to data protection: the influence of UX/UI design on user empowerment, 2019. Available at: https://www.cnil.fr/sites/cnil/files/2023-06/cnil_ip_report_06_shaping_choices_in_the_digital_world.pdf. Access on 3 September 2023.

[41] CNIL. Shaping Choices in the Digital World - From dark patterns to data protection: the influence of UX/UI design on user empowerment, 2019, p. 14. Available at: https://www.cnil.fr/sites/cnil/files/2023-06/cnil_ip_report_06_shaping_choices_in_the_digital_world.pdf. Access on 3 September 2023.

... is one of the fundamental levers in the race to capture attention of Internet users"[42].

The United Kingdom Competition & Markets Authority (CMA) published in 2022 an extensive discussion paper on "Online Choice Architecture: How digital design can harm competition and consumers"[43] and, more recently in 2023, the joint position paper along with the Information Commissioner's Office on "Harmful design in digital markets: How Online Choice Architecture practices can undermine consumer choice and control over personal information"[44]. In the first discussion paper, the UK authority posits that Online Choice Architecture "can weaken or distort the competitive process by shifting the incentive to compete on product attributes that benefit the consumer, such as quality and price, towards less relevant or beneficial attributes such as salience"[45]. In the second joint paper, the UK authority stresses the harms imposed by choice online architecture on competition merits regarding personal data processing, for instance, by "using OCA [online choice architecture] to collect more personal data from consumers than they would be willing to give by choice and by preferencing data collection for the firm'' own services over its competitors"[46].

[42] CNIL. Shaping Choices in the Digital World - From dark patterns to data protection: the influence of UX/UI design on user empowerment, 2019, p. 15. Available at: https://www.cnil.fr/sites/cnil/files/2023-06/cnil_ip_report_06_shaping_choices_in_the_digital_world.pdf. Access on 3 September 2023.

[43] CMA. *Online Choice Architecture: How digital design can harm competition and consumers*, 2022. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1066524/Online_choice_architecture_discussion_paper.pdf. Access on 3 September 2023.

[44] CMA; ICO. Harmful design in digital markets: How Online Choice Architecture practices can undermine consumer choice and control over personal information, 2023. Available at: https://www.drcf.org.uk/__data/assets/pdf_file/0024/266226/Harmful-Design-in-Digital-Markets-ICO-CMA-joint-position-paper.pdf. Access on 3 September 2023.

[45] CMA. *Online Choice Architecture: How digital design can harm competition and consumers*, 2022, p. 29. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1066524/Online_choice_architecture_discussion_paper.pdf. Access on 3 September 2023.

[46] CMA; ICO. Harmful design in digital markets: How Online Choice Architecture practices can undermine consumer choice and control over personal information, 2023, p. 10.. Available at: https://www.drcf.org.uk/__data/assets/pdf_file/0024/266226/Harmful-Design-in-Digital-Markets-ICO-CMA-joint-position-paper.pdf. Access on 3 September 2023.

Other examples of reports on digital markets that explore behavioral economics include the Netherlands guidelines "Protection of the online consumer: Boundaries of online persuasion"[47], the Sweden report "Barriers to a well-functioning digital market: effects of visual design and information disclosures on consumer detriment"[48], the European Commission study "Behavioural study on unfair commercial practices in the digital environment: dark patterns and manipulative personalisation"[49], among others.

Digital markets, however, are not the only field in which behavioral economics are applied. The financial sector has been a target of the Occasional Paper no. 1 "Applying behavioural economics at the Financial Conduct Authority" published in 2013[50], in which it addresses how the United Kingdom Financial Conduct Authority (FCA) can apply behavioral economics in its practice. The organization defines three steps to this task: (i) identify and prioritize risks to consumers; (ii) understand root causes of problems; and (iii) design effective interventions. According to the FCA, this integration can lead to impacts on "policy - i.e. creating our rules and guidance; analysing firms' business models, behaviour and products when authorising or supervising firms; building evidence for enforcement cases; and shaping FCA and firm communications with customers"[51].

[47] ACM. *Protection of the online consumer: Boundaries of online persuasion,* 2020. Available at: https://www.acm.nl/sites/default/files/documents/2020-02/acm-guidelines-on-the-protection-of-the-online-consumer.pdf Access on 3 September 2023.

[48] KONSUMENTVERKET. *Barriers to a well-functioning digital market: effects of visual design and information disclosures on consumer detriment*, 2021. Available at: https://www.medvetenkonsumtion.se/wp-content/uploads/2021/05/Konsumentverket-underlagsrapport-barriers-digital-market.pdf. Access on 3 September 2023.

[49] EUROPEAN COMMISSION. *Behavioural study on unfair commercial practices in the digital environment Dark patterns and manipulative personalisation,* 2022. Available at:https://op.europa.eu/en/publication-detail/-/publication/606365bc-d58b-11ec-a95f-01aa75ed71a1/language-en/format-PDF/source-257599418. Access on 3 September 2023.

[50] FCA. *Applying behavioural economics at the Financial Conduct Authority*, 2013. Available at: https://www.fca.org.uk/publication/occasional-papers/occasional-paper-1.pdf. Access on 3 September 2023.

[51] FCA. *Applying behavioural economics at the Financial Conduct Authority*, 2013, p. 9. Available at: https://www.fca.org.uk/publication/occasional-papers/occasional-paper-1.pdf. Access on 3 September 2023.

The United Kingdom Department for Environment, Food and Rural Affairs (Defra), also in 2013, published the paper "Behavioural Economics in Defra: Applying Theory to Policy"[52], in which the organization discusses the literature in behavioral economics and bring these insights inside its policy practice. It states that "there is certainly a role for behavioural economics both in 'fine tuning' existing policies, and in thinking about how best to design new policies based on existing policy instrument selection."[53]

More general approaches can also be found in these reports. For instance, the Netherlands Authority for Consumers and Markets (ACM) published the document "Behavioural Economics and Competition Policy'' based on a study commissioned to Oxera on the subject[54]. Among other themes including consumer biases and firm biases, the document brings a discussion on markets with "pockets of market power". This happens when "consumers are found to focus mainly (only) on the primary price when comparing competing product offerings and are less price sensitive to the price of add-ons".[55] Although the rules against abuse of dominant position may apply, this phenomenon may call for an integrated response of consumer protection and policy initiatives when the exploration of consumer biases is persistent – as was the case of ACM decision on the practice of drip-pricing by Ryanair.

[52] DEFRA. *Behavioural Economics in Defra: Applying Theory to Policy,* 2013. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/223835/pb13986-behavioural-economics-defra.pdf. Access on 3 September 2023.

[53] DEFRA. *Behavioural Economics in Defra: Applying Theory to Policy,* 2013, p. 12. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/223835/pb13986-behavioural-economics-defra.pdf. Access on 3 September 2023.

[54] ACM. *Behavioural Economics and Competition Policy*, 2013. Available at: https://www.acm.nl/sites/default/files/old_publication/publicaties/11586_acm-behavioural-economics-competition-policy.pdf. Access on 3 September 2023.

[55] ACM. *Behavioural Economics and Competition Policy*, 2013, p. 12. Available at: https://www.acm.nl/sites/default/files/old_publication/publicaties/11586_acm-behavioural-economics-competition-policy.pdf. Access on 3 September 2023.

3.2. Brazil's limited recognition of behavioral economics in decision-making

CADE has been sparsely taking measures to include behavioral economics in its agenda, adding to its commissioned report mentioned above in which behavioral economics have been described as the "key" to understand some competition dynamics between digital services[56] . In October 5, 2020, CADE promoted a webinar to discuss "The role of behavioral economics in antitrust analysis" with United Kingdom professor Amelia Fletcher and and U.S. professor Stephen Martin[57]. In April 2022, CADE's Department of Economic Studies launched a competitive process for hiring a specialized consultant to conduct a review of studies on behavioral economics[58].

In spite of these initiatives, CADE has not incorporated behavioral insights to a large extent in its past decisions, with some of its authorities arguing against doing so at the current stage of studies on the topic[59]. Nonetheless, some majority decisions by CADE's Tribunal reference behavioral economics' contributions as part of their findings. A few minority decisions

[56] LANCIERI, Filippo. SAKOWSKI, Patricia A. M. *Concorrência em mercados digitais: uma revisão dos relatórios especializados*. CADE, Documento de Trabalho nº 005/2020. Brasília: 2020. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2020/documento-de-trabalho-n05-2020-concorrencia-em-mercados-digitais-uma-revisao-dos-relatorios-especializados.pdf. Access on 3 September 2023.

[57] CADE. *Papel da economia comportamental nas análises antitruste é tema de seminário do Cade*. 30 September 2020, available at: https://www.gov.br/cade/pt-br/assuntos/noticias/papel-da-economia-comportamental-nas-analises-antitruste-e-tema-de-seminario-do-cade. Access on 3 September 2023.

[58] CADE. *Termo de Referência*. Proceeding No. 08700.002020/2022-53, 2022.

[59] CADE's Chief Economist has argued that the findings of behavioral economics do not justify a change to traditional antitrust approach. See RESENDE, Guilherme M. *Antitruste comportamental: pronto para o palco principal?* Consultor Jurídico, 6 September 2021, available at: https://www.conjur.com.br/2021-set-06/defesa-concorrencia-antritruste-comportamental-pronto-palco-principa. Access on 27 August 2023. CADE's current Commissioner Luis Braido has further noted that there are challenged to overcome before incorporating behavioral insights into antitrust policy, and that "*behavioral economics, at its current stage, is not capable of orienting a violation-fighting policy choice. It would require designing and running experiments on those issues*". BRAIDO, Luis H. B. *Desafios à utilização da economia comportamental no antitruste*. In: ZINGALES, Nicolo. FARANI, Paula A. (org.) *A aplicação do direito antitruste em ecossistemas digitais*. Rio de Janeiro: FGV Direito Rio, 2022, pp. 111-137.

have relied to a greater extent on behavioral economics - although their findings were not ultimately followed by the majority of CADE's Tribunal.

In a 2012 decision on a cartel investigation against gas stations in the municipality of Caxias do Sul/RS, Commissioner Eduardo Pontual Ribeiro argued that even cartels among small players can harm competition, since, due to imperfect information and behavioral biases, consumers may take time to react to a price increase[60]. Other decisions in cartel cases have also made minor references to behavioral economics to support ancillary arguments[61].

In a 2017 case that discussed abuses in intellectual property rights in the auto parts aftermarket, Commissioner Paulo Burnier da Silveira referenced behavioral biases to argue that consumers would tend to underestimate their need for spare parts due to their tendency to overestimate their performance in caring for their vehicles, and thus competition in the market for original vehicles did not exert significant rivalry over the aftermarket. This finding contributed to the Commissioner's understanding that enforcing intellectual property rights on the aftermarket harmed consumers, who were locked into a given manufacturer[62]. His opinion was, however, a minority one, and the case was ultimately closed without penalties.

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[60] CADE. *Commissioner Eduardo Pontual Ribeiro's vote in Administrative Procedure No. 08012.010215/2007-96* (Defendants: Ademir Antônio Onzi, Darci José Tonietto, Deunir Luis Argenta, Evaristo Antônio Andreazza and others), 2012, p. 48.

[61] For instance, in one case, Commissioner Cristiane Alkmin argued that it would not be rational for a public entity to enter into an individual agreement with each company participating in the bid, as this would go against behavioral economics and game theory's propositions on human behavior. In another case, CADE's Chairman Alexandre Barreto used behavioral economics to challenge the assumption that businessmen would engage in cartels with a perfectly rational goal to win economic profit, and thus that penalties should not be calculated strictly based on a player's profits with a cartel. See CADE. *Commissioner Cristiane Alkmin Junqueira Schmidt in Administrative Procedure No. 08012.006667/2009-35* (Defendants: Cial Comércio e Indústria de Alimentos Ltda.; Comissária Aérea Rio de Janeiro Ltda. and others), 2018, and CADE. *Chairman Alexandre Barreto de Souza's vote in Administrative Procedure No. 08700.000066/2016-90* (Defendants: Araguaia Indústria Comércio e Serviços Ltda. – EPP; Corning Comunicações Ópticas S.A.; Corning Incorporated and others), 2021.

[62] CADE. Commissioner Paulo Burnier da Silveira's vote in Administrative Procedure No. 08012.002673/2007-51 (Defendants: Volkswagen do Brasil Indústria de Veículos Automotivos Ltda.; Fiat Automóveis S.A.; and Ford Motor Company Brasil Ltda), 2017.

The longest analysis on behavioral issues in a past CADE decision comes from Commissioner Paula Farani's opinion in the Google Shopping case. The case concerned an accusation that Google was unfairly privileging its own comparison-shopping service, Google Shopping, by placing product ads in a more prominent position in the Google search results page than it ranked competing price comparison sites. Specifically, for certain queries, Google displayed product ads in a dynamic format with images for each product as the first option on the search results page, while price comparison sites were displayed in plain text among other search results (without the ability to also display their own product ads with images in the Google search results page).

Commissioner Paula Farani described bounded rationality and decision-making biases to support her understanding that, by placing its own product ads in the first position of the Google search results page, Google was nudging consumers. She argued that antitrust intervention was necessary to build an effective architecture of choice, that is, a search results page that allowed users to freely choose among search results. Her opinion was nonetheless also a minority one; CADE decided to close the case without any penalties against Google because it did not find any actual empirical evidence that Google's conduct had harmed price comparison sites[63].

Behavioral economics have therefore had a marginal importance on past CADE decisions; the only ones that relied on them to a greater extent to justify a finding were not followed by the majority of CADE's Tribunal. This, however, should not be understood as an explicit rejection of behavioral economics – rather, the majority decisions on those cases focused on other aspects of the case. CADE has slowly been referencing behavioral economics in webinars and reports, but is still to incorporate it to a greater extent in its decisions.

[63] CADE. Commissioner Paula Farani Azevedo Silveira's vote in Administrative Procedure No. 08012.010483/2011-94 (Defendants: Google Inc. and Google Brasil Internet Ltda., 2019.

3.3. The European leading cases incorporating behavioral economics and the proposed remedies

In spite of Brazil's limited adoption of behavioral economics in decisions to date, a 2022 OECD report cites four leading global cases as examples of "exclusionary cases in which behavioural economics played a role"[64], all of which were decided by the European Commission: (i) its 2004 decision against Microsoft for tying Windows Media Player to its Windows operating system[65], (ii) its 2009 settlement with Microsoft after it challenged the company for tying its Internet Explorer browser to the Windows operating system[66]; (iii) its 2017 decision to fine Google for unfairly privileging its own product results over those of rival comparison shopping services[67] (a similar fact pattern to the case investigated in Brazil, explained above)[68]; and (iv) its 2018 decision fining Google for a series of practices concerning its Android mobile operating system, including tying its search application to access to the Google Play store[69].

In the Microsoft cases, however, the Commission did not explicitly refer to behavioral economics or biases to ground its decision; particularly in the first case, it found empirical evidence showing that users were less

[64] OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022, page 19. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on 27 August 2023.

[65] EUROPEAN COMMISSION. *Commission Decision* (Case COMP/C-3/37.792 - Microsoft), May 2004. See also STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012.

[66] EUROPEAN COMMISSION. *Commission Decision* (Case COMP/C-3/39.530 - Microsoft (Tying)), December 2009. See also STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012.

[67] In Brazil, these services are more commonly referred to as "price comparison sites" (*serviços de comparação de preços*). For the purposes of this section, we kept the "comparison shopping service" designation as used in the European Commission decision, but it should be read interchangeably with "price comparison site" as used in the section discussing the Brazilian case.

[68] EUROPEAN COMMISSION. *Commission Decision* (Case AT.39740 - Google Search (Shopping)), June 2017.

[69] EUROPEAN COMMISSION. *Commission Decision* (Case AT.40099 - Google Android), July 2018.

likely to switch from a default option (and thus "the use of empirical analysis implicitly incorporated the impact of the behavioural bias"[70]). The Google decisions, on the other hand, have been among the first to include explicit mention of behavioral biases to ground the decisions' market foreclosure theory[71], and thus "may represent a high-water mark for the use of behavioral economics in EU competition policy to date"[72].

The Commission also ordered Google to cease the infringements and communicate the specific measures it intended to apply to bring each one to an end – leaving to Google the design of the remedy.

In the Shopping case, Google started allowing products from rival comparison-shopping sites to compete with Google's own ads in an auction to be displayed in the high-ranking dynamic product results box[73]. Google's remedy did not change the architecture of its search results page, the Shopping box's position as the first search result, nor the remaining organic search algorithms[74]:

[70] OECD. *Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note*, 2022, page 19. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf. Access on 27 August 2023.

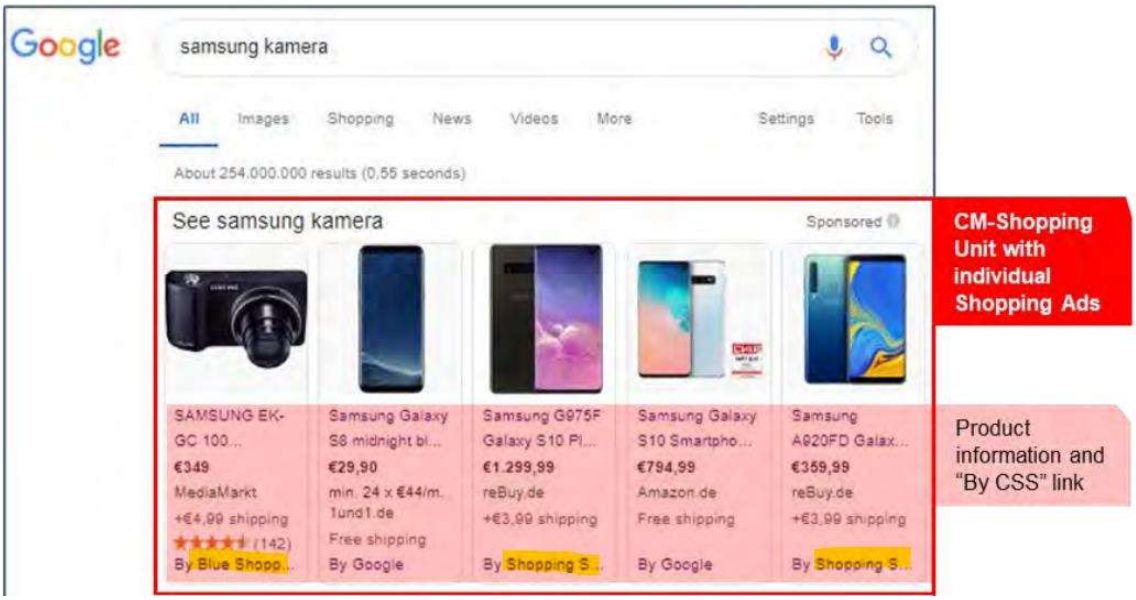
[71] "The EC Google Android case was … one of the first cases where behavioural biases appeared to play an explicit role. … Importantly the EC explicitly stated that a key driver of the abuse was the status quo bias … In the EC Google Shopping case … The EC found that … framing bias – where the way that a product is framed (in this case appearing at the top of the screen) has a disproportionate effect on consumers". OECD. Integrating Consumer Behaviour Insights in Competition Enforcement: OECD Competition Policy Roundtable Background Note, 2022, page 19. Available at: www.oecd.org/daf/competition/integrating-consumer-behaviour-insights-in-competition-enforcement-2022.pdf, p. 20. Access on 27 August 2023.

[72] FLETCHER, Amelia. *The EU Google Decisions:* extreme enforcement or the tip of the behavioral iceberg? *Competition Policy International*. January 2019. Available at: https://www.competitionpolicyinternational.com/the-eu-google-decisions-extreme-enforcement-or-the-tip-of-the-behavioral-iceberg/. Access on 3 September 2023.

[73] HECKMAN, Oliver. *Changes to Google Shopping in Europe*. Google Ads & Commerce Blog, 27 September 2017. Available at: https://blog.google/products/ads/changes-to-google-shopping-in-europe/.

[74] Even though the Commission's finding that Google's organic search algorithms had demoted comparison shopping sites also in organic search results, with this finding composing part of the infringement.

Figure 2. Google's Product Ads in Europe after the European Commission Decision[75]



A study released in 2020 argued that the Shopping remedy failed to bring the infringement to an end, both from a legal and economic perspective. Most importantly, it found that the solution did not increase user traffic to competing comparison shopping services. It also raised rivals' costs due to the new auction prices, which were not offset by a comparable increase in profitability[76]. It therefore found that the remedy was not successful in promoting greater user traffic to rival services.

In the Android case, by its turn, Google changed its licensing agreements to remove provisions challenged by the Commission[77], and designed a choice screen that would allow users to choose their search provider when setting up a new phone. Google announced the first version of the choice screen in August 2019, which was auction-based (providers had to bid for a position on the screen). After consultations with the European

[75] HÖPPNER, Thomas, *Google's (Non-) Compliance with the EU Shopping Decision* (September 28, 2020). Study, Available at: https://ssrn.com/abstract=3700748. Access on 3 September 2023.

[76] HÖPPNER, Thomas, *Google's (Non-) Compliance with the EU Shopping Decision* (September 28, 2020). Study, Available at: https://ssrn.com/abstract=3700748. Access on 3 September 2023.

[77] LOCKHEIMER, Hiroshi. Complying with the EC's Android decision. Google Keyword, 16 October 2018, available at: https://blog.google/around-the-globe/google-europe/complying-ecs-android-decision/. Access on 3 September 2023.

Commission, in September 2021 Google updated the choice screen to remove the auction mechanism, and instead started to display up to 12 options in a random order[78]:

The Android Choice Screen is very similar to a previous remedy also offered to the European Commission in a tying case: in the Internet Explorer case, the terms of Microsoft's settlement required it to provide consumers with a Browser Choice Screen that would prompt them to decide whether they wanted a browser in the first place, and, if yes, which one.

The Microsoft Choice Screen was the Commission's learning upon a failure in the Media Player case: it had first simply ordered Microsoft to offer two versions of Windows, one with Media Player and one without it, but the absolute majority of consumers ended up still opting for the bundled option (i.e., the remedy was unsuccessful to prevent Media Player from becoming the user default). The failure of the remedy in the Media Player case was because of how it was framed as a loss for users, to which users tend to be highly averse:

> "The Commission's remedy was a perceived loss in two aspects: getting a "degraded" product (the Windows product without a media player) and effectively paying more for it. Under prospect theory, the perceived loss of one media player (in opting for the operating system without any media player) would hurt twice as much as the gain in adding a media player of one's choosing."[79]

The Choice Screen, however, also has its shortcomings. First, offering users too many choices can end up overpowering them and preventing them from making a choice. Second, choice screens are not informed by feedback loops, "whereby consumers can test the products and compare their performance"[80], because it does not offer metrics to allow users to objectively compare between options. Ultimately, users may end up choosing

[78] GOOGLE. About the choice screen. Android. 12 June 2023 (last update). https://www.android.com/choicescreen/. Access on 10 September 2023.

[79] STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012, p. 27.

[80] STUCKE, Maurice. *Behavioral antitrust and monopolization*. UTK Law Faculty Publications, 749, 2012, p. 31.

the service with which they are most familiar – which may in turn reinforce the dominance of the already dominating search provider, Google itself.

4. Conclusion

This paper provided an overview of the main behavioral findings on bounded rationality and the extent to which they challenge the Chicago School assumptions that have been the base of antitrust decision-making for many years. It particularly noted how bounded rationality can be explored to design an architecture that leads to a given choice, both in public interest ways such as promoting organ donation, and in self-centered ways such as increasing profit. It proceeded to show the darker side of the economic exploration of rationality limitations: the emergence of dark patterns, which condition user behavior online and may also limit competition - and could thus be relevant for antitrust decision-making.

It then analyzed the extent to which these insights have been actually incorporated into antitrust authorities' publications and decisions. It noted that, while several guidance publications acknowledge the importance of behavioral economics particularly to understand the challenges of an ever-increasingly digital world, its incorporation into Brazilian competition decisions has been limited. It then proceeded to review the two decisions globally recognized as the greatest examples of incorporating behavioral learnings: the European Commission's Google Shopping and Android decisions and corresponding remedies.

In the Google decisions, the European Commission made express references to behavioral findings to note that Google was steering user choices towards a given outcome, which it found had anticompetitive effects. It then ordered Google to cease the infringement and propose remedies, which came in the form of (a) allowing competitors to access shopping search results placed in the first position of its search results page; and (b) introducing a choice screen for users setting up a new Android phone to choose their preferred search engine.

Both solutions, however, have been the target of criticism. First, the Google Shopping remedy was shown to have limited effect in promoting user access to competing websites, and to arguably increase rivals' costs. Then, the Google Android remedies had to undergo consultation processes before the European Commission to remove a controversial auction process and can also result in information overload and users continuing to choose Google Search as the default, thereby having little competition-improving effects.

The shortcomings of the Google remedies (and of the prior Microsoft remedies, which bear many resemblances to the Google ones although without express behavioral acknowledgement) illustrate the conflict in assigning to the defendant the role to conceive a remedy: as private enterprises, defendants will continuously work to maximize their profits, which may include creating and maintaining behavioral biases. They cannot (and should not) be expected to work to maximize user choice and favor their rivals' entry into the market. Their incentives will always be to design a remedy that is barely compliant – to the detriment of more active pro-choice architectures that could arise out of more active authority intervention.

Behavioral antitrust is still a long way, particularly in Brazil. While the European Google prohibition decisions "may represent a high-water mark for the use of behavioral economics in EU competition policy to date"[81], they also posed an opportunity for antitrust authorities to start exploring the possibilities to create architectures that preserve user choice and competition. By assigning this role to the profit-seeking defendant, a conflict of interest arose, and this opportunity was arguably lost – and the resulting shortcomings of these remedies may provide an argument for authorities to adopt a more active role in this process.

If behavioral antitrust is to move forward - and authorities' guidance publications appear to indicate it will - future decisions could explore

[81] FLETCHER, Amelia. *The EU Google Decisions:* extreme enforcement or the tip of the behavioral iceberg? *Competition Policy International*. January 2019. Available at: https://www.competitionpolicyinternational.com/the-eu-google-decisions-extreme-enforcement-or-the-tip-of-the-behavioral-iceberg/. Access on 3 September 2023.

to a greater extent how authorities can design pro-choice solutions rather than hoping defendants will do so.

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CADE. *Commissioner Cristiane Alkmin Junqueira Schmidt in Administrative Procedure No. 08012.006667/2009-35* (Defendants: Cial Comércio e Indústria de Alimentos Ltda.; Comissária Aérea Rio de Janeiro Ltda. and others), 2018.

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Darci José Tonietto, Deunir Luis Argenta, Evaristo Antônio Andreazza and others), 2012.

CADE. Commissioner Paula Farani Azevedo Silveira's vote in Administrative Procedure No. 08012.010483/2011-94 (Defendants: Google Inc. and Google Brasil Internet Ltda., 2019.

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