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The erosion of autonomy in online consumer transactions

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ABSTRACT

Online businesses influence consumer behaviour by means of a wide range of technologies that determine *what* information is displayed as well as *how* and *when* it is displayed. This creates an unprecedented power imbalance between the transacting parties, raising questions not only about the permissible levels of procedural exploitation in contract law, together with the adequacy of existing consumer protections but also about the impact of technology on consumer autonomy. There is, however, no *single* technology that threatens the latter. It is the *combined, mutually-enforcing* effect of multiple technologies that influence consumer choices at different stages in the transacting process, creating an environment of ambient and pervasive manipulation. It starts the moment consumers enter a search term (autocomplete), proceeds through the display of search results (search engine bias), the speed with which a website appears on the screen (traffic management) and concludes with the layout of elements on a website (interface design), to name a few.

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KEYWORDS e-commerce; consumer protection; technological nudges; behavioural advertising

If you can control where someone is going to look, you can control where they are going to go.¹

1. Introduction

Online commerce takes place in technology-mediated environments. The online consumer depends on manipulated information that shapes his perception of the marketplace and influences his purchasing decisions. The online business designs the transacting environment to promote certain behaviours and to discourage others, to prioritise certain content while making other content more difficult to access or less prominent. Consumer attention,

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¹Jesse Schell, *Art of Game Design* (CRC Press 2008).

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an increasingly scarce resource in itself, is directed towards specific products or services, away from others.² *Prima facie*, technology is used to 'optimise user experience' or create a 'friction-less transacting process'. It is rarely recognised, however, that such optimisation is undertaken to benefit the business, not the consumer. Paradoxically then, the very environment that was supposed to empower consumers with more choices, more information and lower prices, seems to limit choices, restrict access to information and to reduce consumer surplus.

Online businesses influence consumer behaviour by means of a wide range of technologies that determine *what* information is displayed and *how* and *when* it is displayed. This creates an unprecedented power imbalance between the transacting parties, raising questions not only about the permissible levels of procedural exploitation in contract law, together with the adequacy of existing consumer protections but also, on a broader level, about the impact of technology on the autonomy of the consumer. Technology is, after all, never neutral: depending on how it is used, it can preserve, enhance or diminish autonomy. It enhances autonomy when it improves the ability of making informed choices, of shaping and fulfilling individual preferences. It diminishes autonomy when it interferes with or pre-empts such choices and imposes preferences.

Legal literature expresses a recurring concern over technological dominance of computers over humans, commonly associated with developments in artificial intelligence. Such concerns are generally premature. The real problem lies in the technological dominance of some humans over others, or – in the context of online commerce – one transacting party over the other. Such dominance derives from intelligence amplification: the use of technology to extend the information processing capabilities of humans. The rising tide of technological innovation does not lift all boats but, in many instances, increases inequalities and leverages the economic advantage of some market participants.³ In the context of business-to-consumer online commerce, technology augments the decision-making capabilities of businesses and enables them to exert more influence over consumer choices than in traditional transactional settings. Online consumers make decisions in increasingly rich and complex information environments;⁴ their ability to make choices (or: exercise their autonomy) is decreased not only by the information overload and cognitive strain imposed by the online setting but also by deliberate attempts by online businesses to manipulate such.⁵

²Frank Pasquale, *The Black Box Society* (Harvard University Press 2015) 5; Consumer Insights, Microsoft Canada (Spring 2015) established that the average attention span in 2013 is eight seconds.

³Frank Pasquale, 'Technology, Competition and Values' (2007) 8 *Minnesota Journal of Law, Science & Technology*. 607, 608.

⁴Louis Rosenfeld et al, *Information Architecture* (4th edn, O'Reilly 2015) 15.

⁵Carol Brennan and Martin Coppack, 'Consumer Empowerment' (2008) 32 *International Journal of Consumers Studies* 306, 306.

The problem must not be trivialised. As more commerce moves online, consumer choices are not limited to books or gadgets but involve more complex transactions like insurance plans and financial products. Consequently, the manipulation of choice by technological means exceeds temporary frustrations concerning overpayment for a book bought on Amazon. It must also be emphasised that in most instances, the problem does not concern the substance of a transaction but the very ability to choose the transaction.

The following discussion aims to describe a problem that has been sporadically recognised by legal scholarship but which, judging by the pace of technological development, will increase in importance: the use of technology to influence behaviour in a commercial context. The problem of technological influence, or, technology-enabled transactional imbalances, has many manifestations, ranging from online price discrimination or behavioural advertising to less perceptible practices, such as search engine bias or adaptive web design. It has, at least partially, been addressed in such areas as competition law or data protection. In the context of commerce, however, it has attracted only minimal attention.

The discussion commences with some observations concerning the concepts of autonomy and technology. After presenting the current scholarship on the importance of preserving choice, it sketches certain aspects and examples of technological influence. The paper describes new forms of information asymmetry, overt and covert forms of choice manipulation as well as personalisation techniques. There is, admittedly, a substantial degree of overlap between the foregoing examples, yet different aspects of one phenomenon can have different legal implications. Before discussing potential solutions, it is attempted to pre-empt arguments that question the novelty of the problem. As online businesses technologically steer consumers towards transactions resulting in *prima facie* enforceable agreements, the accompanying problems can be addressed from the perspective of contract law. Objectively, the contract looks valid. Yet, the process leading to its conclusion challenges most assumptions underpinning traditional contract formation. This paper does not, however, analyse the validity of contracts formed between online businesses and consumers, but seeks to establish reasons not to enforce such contracts. Consequently, we are not looking for prerequisites of autonomy or contractual liability, but for reasons to grant relief.⁶ After exploring the contractual doctrines that could be used to provide protection from technological manipulations of choice, the focus is shifted to regulatory solutions. It is assumed that given the relative novelty and complexity of the problem, no existing regulatory instrument is capable of providing adequate

⁶HLA Hart, 'The Ascription of Responsibility and Rights' (1948–1949) 49 *Proceedings of the Aristotelian Society* 171, 179.

protections. Nonetheless, it seems worthwhile to explore one such instrument, the Directive on Unfair Commercial Practices, with its potential adaptation in mind.

Two points before proceeding: first, the word ‘erosion’ in the title seems more appropriate (although less striking) than a technology-related term *du jour*. ‘Erosion’ captures the gradual and subtle character of the technological influences that shape online consumer behaviour. It also fits in with the line of scholarship that laments the *degradation* of consent in standardised, mass-market transactions.⁷ While the latter concerns the fictitious character of ‘agreement’ in light of the consumer’s inability to negotiate or even comprehend the terms of the transaction, the erosion of autonomy concerns the very fact of entering such agreements. Second, the web, in its commercial application, is an interconnected ecosystem of vendors, advertisers, content and service providers as well as technical intermediaries. The predominant business models rely on advertising, not on selling goods or services. Money is made (directly or indirectly) not only when consumers purchase books on Amazon or subscriptions to Spotify, but also when they click on advertisements or otherwise interact with content.⁸ For the sake of brevity, I refer to the commercial entities utilising technologies to influence consumer behaviour as ‘online businesses’.

2. General observations: autonomy and technology

The present discussion does not concern criminal liability or moral culpability but consumption decisions culminating in an obligation to pay. Hence, the concept of autonomy need not be explored in its philosophical or physiological origins. Similarly, we do not need to discuss broader aspects of the relationship between humans and technology as our interest is limited to the commercial uses of technology.

2.1. Autonomy

Autonomy is broadly associated with intention, consent and self-determination. As autonomy is difficult to define, legal literature often describes its prerequisites in negative terms as, for example, the ‘absence of external influences in the context for action’⁹ or the absence of ‘limitations on

⁷Margaret Jane Radin, *Boilerplate, The Fine Print, Vanishing Rights, and the Rule of Law* (Princeton University Press 2013).

⁸For a succinct description of the online advertising ecosystem see Richard Warner and Robert H Sloan, ‘Behavioral Advertising: From One-Sided Chicken to Informational Norms’ (2012) 15 *Vanderbilt Journal Entertainment & Technology Law* 49, 57–60.

⁹Roger Brownsword, ‘Agents in Autonomic Computing Environments’ in M Hildebrandt and A Rouvroy (eds), *Law, Human Agency and Autonomic Computing: The Philosophy of Law meets the Philosophy of Technology* (Routledge 2011) 68, 69.

informational self-determination'.¹⁰ In particular, autonomy is frequently equated with the ability to make choices¹¹ and further one's interests.¹² The close connection between choice and autonomy is also recognised in computer science.¹³ Logically, irrespective of whether we adopt a philosophical or practical approach and whether we recognise the inherent value of choice, we must assume that any manipulation or reduction of choice negatively affects individual autonomy.¹⁴ As it is assumed that the ability to make choices requires an awareness of the available options,¹⁵ autonomy is affected not just by a direct manipulation of the act of choosing but also by a manipulation of the context in which choices are made.

Additional controversies concern the very 'possibility' of autonomy. Although autonomy is not synonymous with free will, the two concepts are interrelated and often interchangeably described as prerequisites of liability. It has become fashionable to observe that the existence of free will (and thus autonomy) appears questionable in light of recent scientific findings.¹⁶ Seemingly, we are less in control of our actions and decisions than it is commonly believed. A total denial of free will on the basis that neither our motives nor our decisions are the product of rational thinking and clear mental processes is, needless to say, impractical.¹⁷ Theories emphasising that human decisions are the result of deterministic forces of neurological origin not only fail to distinguish between actions (such as raising one's hand) and decisions (such as buying insurance) but also between 'legal' and 'psychological' free will.¹⁸ More importantly, Farahany observes the frequent conflation of *dispositions*, which may be the underlying causes of decisions, with control over such decisions. An addictive personality predisposes to compulsive shopping. That compulsion is, however, distinct from the act of shopping. An absence of control over dispositions does not translate into an absence of

¹⁰P Schwartz, 'Internet Privacy and the State' (2000) 32 *Connecticut Law Review* 815, 823.

¹¹MJ Radin, 'Humans, Computers and Binding Commitment' (2000) 75 *Indiana Law Journal* 1125.

¹²Ryan Calo, 'Digital Market Manipulation' (2014) 82 *George Washington Law Review* 995, 1034.

¹³Batya Friedman and Helen Niessenbaum, 'Software Agents and User Autonomy' AGENTS '97 Proceedings of the First International Conference on Autonomous Agents, 466, www.vsdesign.org/publications/pdf/friedman97softwareagents.pdf (accessed 30 November, 2015).

¹⁴TM Scanlon, 'Promises and Contracts' in Peter Benson (ed), *The Theory of Contract Law* (Cambridge University Press 2001) 112–14.

¹⁵Yochai Benkler, 'Of Sirens and Amish Children: Autonomy, Information and Law' (2001) 23 *New York University Law Review* 76, 110.

¹⁶K Burns and A Bechara 'Decision-making and Free Will: A Neuroscience Perspective' (2007) 25(2) *Behavioral Sciences and the Law* 26; B Libet 'Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action' (1985) 8(4) *Behavioral and Brain Sciences* 529.

¹⁷Jos de Mul and Bibi van den Berg, 'Remote Control, Human Autonomy In The Age Of Computer-Mediated Agency' in Hildebrandt and Rouvroy (n 9) 51, 52.

¹⁸Contrary to the claim implicit from Libet's study that an initial event potential signaled by neural activity predetermines subsequent actions, it appears that when choices are made, alternative possibilities for action are kept open, see Stephen M Fleming et al, 'When the Brain Changes Its Mind: Flexibility of Action Selection in Instructed and Free Choices' (2009) 19 *Cerebral Cortex* 2352, 2353.

control over actions.¹⁹ Although our choices may derive from influences that we are neither aware nor in control of, we cannot assume that the average person has no control at all.²⁰ Such a view would annihilate the very possibility of legal liability.

It is important to distinguish between different types of *internal* influences, or predispositions, while at the same time acknowledging the presence of *external* influences that affect choices. As a total absence of external influences is impossible, as sterile and isolated transacting environments do not exist, the challenge lies in establishing what types or degrees of external influences are unacceptable due to the degree with which they affect decisions.²¹ In other words, acknowledging the difficulty of establishing the internal origins of a decision, the focus must be placed on those influences, which are capable of objective observation. We may not have full autonomy in the neurological or psychological sense, but *whatever autonomy we have* should not be further limited by external factors without our awareness. Baldwin emphasises that the question is not whether the decision is influenced but whether the context in which it is made is manageable.²² The decision-making environment may not be devoid of external influences but when the consumer is capable of recognising and neutralising such, his autonomy is preserved. The problem lies in identifying those influences that *cannot be managed* and therefore affect autonomy to an unacceptable degree. Irrespective of the foregoing, it must be emphasised that even if humans have sufficient autonomy to be held liable for their choices, we cannot assume that they will make *rational* choices.²³

2.2. Technology

There is no *single* technology that threatens the autonomy of the online consumer. It is the *combined, mutually-enforcing* effect of multiple technologies that influence consumer decisions at different stages in his path-to-purchase, creating an environment of ambient and pervasive manipulation.²⁴ In effect, consumers can be ‘steered’ towards specific *websites* and/or specific *products* on websites. Although it cannot be claimed that consumers are

¹⁹Nita A Farahany, ‘A Neurological Foundation For Freedom’ (2011) 11 *Stanford Technology Law Review* 1, 29–30.

²⁰Jos de Mul and Bibi van den Berg (n 17) 52.

²¹See, A Wertheimer, *Exploitation* (Princeton University Press 1996) 64–65, who distinguishes between internal and external autonomy, the former being associated with maturity and competence, the latter with absence of means, information or presence of influences.

²²R Baldwin, ‘From Regulation to Behavior Change: Giving Nudge the Third Degree’ (2014) 77 (6) *Modern Law Review* 831, 849.

²³Dan Ariely, *Predictably Irrational: The Hidden Forces that Shape our Decisions* (Harper Collins 2008).

²⁴Peter-Paul Verbeek, ‘Ambient Intelligence and Persuasive Technology: The Blurring Boundaries Between Human and Technology’ (2009) 3 *Nanoethics* 231; Susan W Brenner, ‘Law In An Era Of Pervasive Technology’ (2006) 15 *Widener Law Journal* 667, 670.

technologically *coerced* or *pressured* into transactions, it can be claimed that online consumers (a) encounter an increased difficulty to exercise choice or become aware of the range of available choices and (b) are exposed to novel forms of exploitation.

The technologies that influence online choices can be broadly divided into those relating to the *selection* of information and those relating to its *presentation*. In both instances, online businesses benefit from developments in machine learning and processing power to collect and analyse data pertaining to consumer behaviour. Their decisions as to what content to display to a consumer are best described as data-driven, as they rely on statistical, empirically tested information from millions of prior interactions. As businesses communicate with consumers through the graphical user interfaces of websites, most influences occur at the level of website design. One specific area, Human Computer Interaction or 'HCI', focuses on *designing* interactions between humans and computer systems to facilitate specific outcomes. As computer interfaces constitute artificial environments that lack traditional physical clues (such as buttons or door knobs), HCI aims to balance usability and functionality with the constraints introduced by limited screen space and the two-dimensional character of the online environment. The line between functionality and usability on one hand and influence on the other may become blurred when websites are engineered to promote or increase the likelihood of certain actions. It must be acknowledged that interface design *in itself* may facilitate certain choices and discourage others, irrespective of and *in addition to* the fact that choices are generally determined by what is presented.²⁵

The degree to which consumer behaviour can be influenced by means of colours, shapes and general layout²⁶ is difficult to appreciate. Such appreciation can only be gained from the realisation that detailed design decisions relating to discrete elements of a website are frequently based on empirical findings from lab experiments involving fMRI, eyeball tracking and heat maps. The effectiveness of alternative versions of a webpage is measured in real-time on actual users until the most effective (in terms of eg conversions) version is found.²⁷ As indicated in the opening quote, the ability to guide one's attention towards particular elements often translates into the ability to direct the next action. In sum, as it has become possible to observe and analyse not only behaviour but also, to a large extent, the *actual* decision-making process preceding such behaviour at a neurological level, technological influences are not based on intuitive speculations but on actual empirical findings.

²⁵Julie Jacko, *The Human-Computer Interaction Handbook* (3rd edn, 2012 CRC Press) 78–83.

²⁶Natalie Nahai, *Webs of Influence* (Pearson 2012) 72.

²⁷Stephen Wendel, *Designing for Behavior Change* (O'Reilly 2014) 256.

The resulting dangers are expressly recognised in competition law, with regulators paying increasing attention to the manner in which companies like Google present (speak: promote) their own content alongside that of their competitors.²⁸ From the perspective of the online consumer, however, the influence of technology is difficult to appreciate. Technological interventions often remain hidden or difficult to detect as they are designed to be transparent *in the computing sense*: functioning without those affected being aware of their operation. Transparency increases potency: it is easier to influence people if they are not aware of being influenced. An awareness of influence generally translates into an ability to ignore or to counteract. As indicated by Baldwin, external influences are objectionable if they cannot be managed. Logically, such is the case with influences that are not perceived. To complicate matters, the *actual* technological capacity of online businesses to influence consumer choices is difficult to estimate as most research into consumer behaviour is proprietary. In fact, some technologies have reached a level of sophistication that has necessitated measures to hide their effectiveness for fear of public backlash.²⁹ The general public gains infrequent insights into the technological abilities of online companies when, for example, it is revealed that Facebook experimented on its unwitting users to establish the extent to which their mood can be affected by the selective display of negative messages³⁰ or that Google tested 40 shades of blue to increase the likelihood of link activation.³¹ It is therefore important to distinguish between what we know – or assume – to be possible from what can be actually possible.

2.3. *Autonomy and technology*

The relationship between autonomy and technology formed an integral part of the scholarship that developed around so-called ‘electronic agents’, ie sophisticated computer systems or programs operating without human supervision. It was argued that once an electronic agent attained a high level of complexity, often associated with artificial intelligence,³² it would become autonomous. Autonomy derived from technological sophistication and the accompanying ability to make one’s own decisions. The main concern was that autonomous agents would produce output that was not only

²⁸See European Commission Statement of Objections on comparison shopping service, 15 April 2015, http://europa.eu/rapid/press-release_MEMO-15-4781_en.htm (accessed 30 November, 2015).

²⁹Samual Greengard, ‘Advertising Gets Personal’ (2012) 55 *Communications of the ACM* 8, 18.

³⁰Adam D.I. Kramer, Jamie E. Guillroy, Jeffrey T. Hancock, ‘Experimental Evidence of Massive Scale Emotional Contagion through Social Networks’, (2014) 111 (24) *Proceedings of the National Academy of Science of the United States of America* 8788.

³¹Alex Hern, ‘Why Google has 200m reasons to put engineers over designers,’ *The Guardian*, 5 February, 2014, www.theguardian.com/technology/2014/feb/05/why-google-engineers-designers

³²SJ Russell and P Norvig, *Artificial Intelligence: A Modern Approach* (Prentice Hall 1995) 31; for current state of development see, Nick Bostrom, *Superintelligence, Paths, Dangers, Strategies* (Oxford University Press 2014) 19.

unforeseeable or commercially undesirable for their operators, but potentially harmful for others. The resulting inquiry sought to establish at what level of autonomy law should (a) absolve operators from liability for the agent's actions and (b) recognise the independent personhood of electronic agents.³³ Logically, if operators were to be relieved from liability, electronic agents needed legal capacity.

Although the debate relied on a more mechanistic understanding of autonomy, some of its aspects remain relevant. The 'electronic agent' scholarship associated autonomy with the ability to make decisions and emphasised the relationship between autonomy and liability: if a computer is autonomous it should be liable for its actions. The debate focused on protecting persons *deploying* the technology, its operators.³⁴ More recently, academic concern has shifted from the protection from unplanned output to the express recognition that technology may negatively influence the autonomy of its operator.³⁵ If a computer *reduces* the autonomy of its operator, such reduction should also affect his liability. If we map the 'electronic agent' debate onto online commerce, it becomes apparent that the concept of 'operator' only fits one transacting party: the online business. It is the latter who designs, deploys and controls the operation of the 'agent'. It is important to recognise that technology may affect the autonomy of those who deploy it and, more importantly, those who interact with it. The online consumer falls into the latter category: although he *uses* the technology, he does not operate or control it. It is his autonomy that requires protection, not that of the online business.

3. The preservation of choice

To date, the use of technology to influence behaviour has been discussed under the label of 'normative technologies', ie technologies used with normative intent to affect or control behaviour.³⁶ Popular examples are speed bumps, which prevent drivers from exceeding the legally prescribed speed limits without damaging their cars, automatic gates limiting entry to public transportation systems to those in possession of tickets and digital rights management technologies, which preclude the unauthorised reproduction of protected content. Normative technologies are predominantly addressed in the area of public regulation, particularly criminal law and public safety. Although different technologies vary in their effectiveness, scholarship unequivocally acknowledges their ability to influence behaviour and affect choices.

³³LE Wein, 'The Responsibility of Intelligent Artifacts: Towards and Automation Jurisprudence' (1992) 6 *Harvard Journal Law & Technology* 103; T Allen and R Widdison, 'Can Computers Make Contracts?' (1996) 9 *Harvard Journal Law & Technology* 25.

³⁴LE Wein (n 33) 106, 107; Allen and Widdison (n 33) 36.

³⁵Brownsword, 'Agents' (n 9) 68.

³⁶Roger Brownsword, *Rights, Regulation, and the Technological Revolution* (Oxford University Press 2013) 11.

The use of normative technologies is generally regarded as acceptable *if* (a) they are deployed by a public actor and/or (b) they enforce (or implement) an existing, democratically sanctioned norm. Interestingly, even when normative technologies are deployed to monitor compliance with or to enforce laws advancing social welfare, concerns are expressed with regard to the degree of choice left to human actors. If a particular technology prevents or significantly limits the possibility of engaging in a certain behaviour, then there is no choice but to follow the law.

To clarify: the problem does not lie in the quality of the underlying norm but in the lack of choice whether to comply. There is a marked difference between prohibiting something and making something impossible (or very difficult) to do.³⁷ The question is always one of degree: the height of a barrier translates into the difficulty of unauthorised entry, the strength of an encryption algorithm translates into the difficulty of circumventing technological copyright protection. Irrespective of the context and the purpose of the technological limitation, whenever choice is restricted, concerns are expressed about ‘the authenticity of moral decision-making’ and the ‘corrosive effect on constitutional values of accountability, transparency and participation’.³⁸ Even in socially beneficial and legally sanctioned contexts and even if a technology is deployed by a public actor, limitations of choice are perceived as undesirable or outright impermissible.³⁹

The importance of preserving choice is also recognised in the areas of behavioural economics and regulatory theory. It is recognised that the manner of presenting choices (‘choice architecture’) affects what is chosen.⁴⁰ Decisions can be influenced by manipulating the order of available alternatives, their attributes and the selection of defaults, amongst others.⁴¹ Thaler and Sunstein call this activity ‘nudging’ and define a nudge as any aspect of design ‘that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives’.⁴² The theory behind nudges, libertarian paternalism, relies on findings in behavioural science and cognitive psychology and emphasises that many individuals make inferior decisions concerning their own welfare—decisions that would change if they had complete information, unlimited cognitive abilities and strong willpower.⁴³ Consequently, as too many choices decrease decision-

³⁷Roger Brownsword, ‘In the Year 2061: From Law to Technological Management’ (2015) 7(1) *Law, Innovation & Technology* 1.

³⁸Brownsword, *Rights, Regulation* (n 36) 116.

³⁹*ibid.*

⁴⁰R Thaler and C Sunstein, *Nudge: Improving Decisions About Health, Wealth And Happiness* (Yale University Press 2008).

⁴¹Eric J Johnson et al, ‘Beyond Nudges: Tools of Choice Architecture’ (2012) 23 *Mark Lett* 487, 488.

⁴²Thaler and Sunstein (n 40) 6.

⁴³C Sunstein and R Thaler, ‘Libertarian Paternalism is not an Oxymoron’ (2003) 70 *University of Chicago Law Review* 1159, 1167.

making capacity and increase transaction costs, regulators, who are regarded as choice architects, are not only permitted but *required* to create decision environments that promote specific choices. Although Thaler and Sunstein insist that nudges must preserve choice, it is acknowledged that some nudges are not designed to promote informed and rational decision-making, but to exploit behavioural biases on a subconscious level.⁴⁴ In particular, Baldwin distinguishes between nudges depending on their degree of influence and expressly recognises that nudges can shape preferences to the point of preventing individuals from determining their true preferences and obstruct informed decision-making.⁴⁵ Providing information to enable rational choices differs from *presenting* information in a manner that encourages a specific choice on a subconscious level. While the promotion of socially desirable choices (eg increased savings, organ donations) by means of nudges constitutes a common regulatory strategy,⁴⁶ it remains controversial whether regulators should be allowed to take advantage of cognitive biases. Even if such ‘cognitive exploitations’ aim to benefit the regulatee, they limit autonomy by promoting choices that may not be consistent with his preferences.

The limitation of choice and the accompanying threat to autonomy assumes a different dimension when ‘technological nudges’ are deployed by commercial actors, ie when choice architects no longer act for the benefit of the person being influenced, but exclusively for their own. It is often not appreciated that technology can be used not only to enforce legal norms,⁴⁷ but also for private, commercial purposes.⁴⁸ We can no longer speak of public welfare or rely on legislative supervision. When online businesses use technologies to influence consumer choices, our concern is not the ‘morality of decisions’ or the ‘limits of legal paternalism’ but the *legally permissible levels of transactional exploitation*.

The problem is not, however, limited to the type of actor and the shift from the public to the private, profit-oriented sphere. Normative technologies and nudges are predominantly discussed in the context of physical environments. The tenor of the debate surrounding the preservation of choice changes once technological influences occur in an online environment. The threat to autonomy increases once we move from a setting where *some* elements can be

⁴⁴See generally Evan Selinger and Kyle Whyte, ‘Is there a Right Way to Nudge? The Practice and Ethics of Choice Architecture’ (2011) 5(10) *Sociology Compass* 923.

⁴⁵Baldwin (n 22), 835, 836; see also P Guldborg Hansen and A Jespersen, ‘Nudge and the Manipulation of Choice’ (2013) 4 *European Journal of Risk Regulation* 3.

⁴⁶The Behavioural Insights Team EAST, Four Simple Ways to Apply Behavioural Insights, who focus on ways of steering the behaviour of regulates, 50.

⁴⁷Lawrence Lessig ‘The Zones of Cyberspace’ (1996) 48 *Stanford Law Review* 1403, 1408.

⁴⁸Colin Scott, ‘Regulatory Innovation and the Online Consumer’ (2004) 26 *Law and Policy* 453; see also Bibi van den Berg and Ronald E Leenes, ‘Abort, Retry, Fail: Scoping Techno-Regulation and Other Techno-Effects’ (2013) 25 *IUS Gentium* 67, 69, 75.

designed to influence behaviour to a setting where *most* elements can be designed to exert such influence. Lessig famously stated that, online, behaviour is predominantly structured by code and that code is more effective in regulating behaviour than law or physical architectures.⁴⁹ The abstract notion of ‘code regulates’ finds its practical embodiment in the manner in which online businesses code and thus control the entire interaction. The code underlying websites defines what can or cannot be done, it predetermines the range of possible actions.⁵⁰ Online consumers become ‘pathetic dots’ who unwittingly enter an environment that makes *them* more regulable and susceptible to ‘technological management’.⁵¹

Most commercial websites can be seen as choice architectures designed to exploit every known cognitive bias of consumers. Online businesses can promote certain actions (speak: transactions) by making them easier and design entire navigation patterns to guide consumers towards certain outcomes.⁵² In the words of one author: when we go online, we are following ‘scripts written by others’.⁵³

It is, of course, acknowledged that *all* commerce takes place in artificial environments. Leaving aside barter exchanges in early hunter-gatherer societies, there is always a physical, man-made architecture creating the transactional settings. Seemingly, the fact that the online environment is made of code does not add anything new. After all, both websites and department stores are artificial constructs designed to influence purchasing behaviour for the profit of its owners. The difference lies in the sheer range and potency of various technological tools at the disposal of online businesses. The technologies constituting the online setting create new possibilities, or ‘affordances’, to influence behaviour.⁵⁴

4. A new type of information asymmetry

Online commerce has been popularly associated with consumer empowerment deriving from increased access to market information and increased retail options.⁵⁵ While it cannot be denied that online consumers have access to more information than their offline counterparts, the availability of information does not translate into the ability to process it. Consequently, access to more information need not result in improved decision-making and

⁴⁹Lawrence Lessig, *Code Version 2.0* (Basic Books 2006).

⁵⁰Dan Saffer, *Microinteractions* (O’Reilly 2013) 69.

⁵¹Brownsword, *Rights, Regulation* (n 36) 15, 26.

⁵²Stephen Wendel, *Designing for Behavior Change* (O’Reilly 2014) 126, 127.

⁵³Nicholas Carr, *The Shallows* (Atlantic Books 2010).

⁵⁴Dan Lockton, ‘Persuasive Technology and Digital Design for Behavior Change’, papers.ssrn.com/sol3/papers.cfm?abstract_id=2125957 (accessed November 30, 2015).

⁵⁵Lauren L Labreque and others, ‘Consumer Power: Evolution in the Digital Age’ (2013) 27 *Journal of Interactive Marketing* 257.

better choices.⁵⁶ What is more important in the present context is that online consumers themselves constitute a source of information.

This phenomenon, this problem, is predominantly discussed in the context of privacy protection. The focus is traditionally placed on the ethical aspects of collecting personal information, the concern being the invasion of privacy, less so the actual subsequent commercial utilisation of such information and the potential loss of autonomy. Privacy concerns aside, it must be recognised that the information generated by consumers during their online activities places businesses in a position of unprecedented *transactional* advantage deriving from a new type of ‘information asymmetry’. Traditionally, the term denotes a situation where the vendor knows more about a product than the buyer. In online transactions, it denotes a situation where the vendor also *knows more about the buyer* than the buyer himself. Such information may include not only basic items as name, age and gender but also past and current online behaviour, including consumption habits, social connections etc. Technology enables online businesses to construct detailed models of each consumer, not just on the basis of information derived from their own websites but also from the customer’s general online activities, including his non-commercial, hedonic or professional use of the Internet. Consumer profiles are compiled from multiple data sources to create a database of ‘intentions, desires and preferences’.⁵⁷ While the online business knows (almost) everything about the consumer, the consumer has very limited information about the business. For the consumer, the other party is a black box. In most instances, such asymmetry creates a unique transactional advantage for the online business and affects the customer’s ability to pursue her own self-interest.⁵⁸ The business’ information superiority translates into the capacity to influence the customer and to direct his actions towards outcomes beneficial to the business.⁵⁹ According to Calo,

the consumer is shedding formation that, without her knowledge or against her wishes, will be used to charge her as much as possible, to sell her a product or service she does not need or needs less of, or to convince her in a way that she would find objectionable were she aware of the practice.⁶⁰

What is more disconcerting, however, is that personal information is leveraged not only to detect consumption preferences but also certain *states*, of

⁵⁶Paul Burrows, ‘Contract Discipline: In Search of Principles in the Control of Contracting Power’ (1995) 2 *European Journal Law & Economics* 127, 137, 138.

⁵⁷Ira S Rubinstein and others, ‘Data Mining and Internet Profiling: Emerging Regulatory and Technological Approaches’ (2008) 75 *University of Chicago Law Review* 261, 272.

⁵⁸Calo (n 12) 999; Neil M Richards and Jonathan H King, ‘Three Paradoxes of Big Data’ (2013) 66 *Stanford Law Review Online* 41, 42–43; Dirk Van den Poel and Wouter Buckinx, ‘Predicting Online-purchasing Behavior’ (2005) 166 *European Journal of Operational Research* 557.

⁵⁹Neil M Richards, ‘The Dangers of Surveillance’ (2013) 126 *Harvard Law Review* 1934, 1955; Jarron Lanier, *Who Owns the Future?* (Penguin 2013) 56.

⁶⁰Calo (n 12) 1029.

both permanent and temporary nature. Some of those states resemble the aforementioned ‘dispositions’, such as depression-prone and addictive personalities. Logically, online businesses are not responsible for their existence. The consumer’s physiological or psychological state is attributable to occurrences in his life, such as divorces, promotions, deaths in the family, etc. His dispositions may be hereditary. Businesses are capable of discovering these states or dispositions and turning them into bargaining advantages. I deliberately refer to the states of the consumer as ‘vulnerabilities’ as they are used to his disadvantage. Were it not for technology, they would have remained undetected and ‘transactionally neutral’.

Offline, the consumer’s state would have been observable only in the most obvious instances (extreme grief, advanced pregnancy) or by the most perceptive of sales persons. In a traditional setting, an intimate knowledge of a consumer *including his vulnerabilities* derives from a longstanding relationship that the business may be reluctant to abuse. In an online setting, such knowledge is based exclusively on access to large amounts of consumer data and pure computing power.

The mere knowledge of vulnerability, just like the mere presence of a bargaining advantage, is not legally reprehensible. Arguably, neither is its detection (leaving aside privacy concerns). What is objectionable, however, is its commercial exploitation.⁶¹ It seems inherently unfair to take advantage of the fact that somebody is grief-stricken or more likely to succumb to ‘special offers’ due to his addictive personality. Arguably, in the context of criminal liability, some of those states could result in temporary incapacity. In a purely commercial context, however, such ‘incapacities’ would be too subtle to affect the consumer’s liability despite the fact that at the moment of transacting the consumer’s decision-making ability was compromised *and* taken advantage of. To re-emphasise: the online business does not *create* states or dispositions but exploits their accompanying decreases in rational decision-making. Technologies leveraging personal information largely obliterate the distinction between ordinary and vulnerable consumers.⁶² All online consumers are potentially vulnerable, *each* in its own way. It is critical to understand that vendors can take advantage not only of generally known cognitive biases and dispositions, but also exploit temporary and idiosyncratic biases of specific consumers.

5. Overt influence: advertising

The most overt (and hence well-known) forms of technological influence in online commerce concern advertising and, in particular, online behavioural

⁶¹See Nathan Newman, ‘Search, Antitrust and the Economics of the Control of User Data’ (2014) 31 *Yale Journal on Regulation* 401, 444, 445, which describes the profiling of Internet users to detect financial ignorance and exploit such.

⁶²Calo (n 12) 999.

advertising. The latter concept is understood as the practice of selecting advertisements – or entire advertising campaigns – on the basis of consumer online behaviour. Online advertising illustrates how technology can amplify, or change, a longstanding commercial practice and exacerbate pre-existing risks to consumer autonomy. Traditional advertising is characterised by limited effectiveness, which is attributable to its reliance on crude demographic differentiations, such as gender, age, family status or income. In contrast, online advertising caters to the heterogeneity of the audience, targeting individuals on the basis of their distinct characteristics.⁶³ Online businesses are capable of directing their commercial messages to fine-grained, *ad hoc* segments, specific consumers or even so-called ‘transient intra-individual variations’, caused by differences in personal situation or physiology.⁶⁴ In the latter instance, advertisements can be tailored to the various states a consumer goes through during the day. Advertising strategies are also becoming increasingly sensitive to differences in neuro-anatomy and physiology (so-called neuro-segmentation), which underpin individual decision-making and shopping habits.⁶⁵

Online advertising relies on two discrete technological capabilities: to identify consumers with specific characteristics and to dynamically adapt the content (including the manner of its presentation) to such consumer.⁶⁶ A consumer’s individual susceptibility to different persuasion strategies can be monitored in real-time so that he can be targeted more effectively during the same online session, in later sessions or even on different websites.⁶⁷ Alternatively, businesses can not so much tailor their persuasion strategy to the consumer but find the consumer who is most susceptible, ie likely to respond, to a particular strategy.⁶⁸ It is worth pointing out that the actual effectiveness of behavioural advertising in comparison to its traditional counterpart remains controversial.⁶⁹ Technology-enabled influence must, however, be regarded as a broader concept than advertising. After all, we do not associate the layout of a mall or supermarket with advertising although both are aimed at influencing shopping behaviour.

A greater threat to autonomy is posed by those technologies that influence consumer choices in an imperceptible manner. Once specific content is

⁶³Maurits Kaptein and Dean Eckles, ‘Heterogeneity in the Effects of Online Persuasion’ (2012) 26 *Journal of Interactive Marketing* 176, 186; Dustin D Berger, ‘Balancing Consumer Privacy with Behavioral Targeting’ (2011) 27 *Santa Clara Computer & High Technology Law Journal* 3, 4.

⁶⁴Kaptein and Eckles (n 63) 183.

⁶⁵Leon Zurawicki, *Neuromarketing, Exploring the Brain of the Consumer* (Springer 2010).

⁶⁶John Hauser and others, ‘Website Morphing’ (2009) 28(2) *Marketing Science* 202.

⁶⁷Kaptein and Eckles (n 63) 186; see also BJ Fogg, *Persuasive Technology: Using Computers to Change What We Think and Do* (Morgan Kaufmann 2003).

⁶⁸Bala Deshpande, *Predictive Analytics and Data Mining* (O’Reilly 2014).

⁶⁹See Avi Goldfarb and Catherine E Tucker, ‘Privacy Regulation and Online Advertising’ (4 August 2010), <http://ssrn.com/abstract=1600259>, who established that in Europe, where privacy laws have been implemented, banner ads are reduced in effectiveness by 65% in terms of changing purchase intent. Their data is, however, based on consumer surveys, not on actual conversions.

identified as advertising, the average person displays some form of psychological resistance, recognising a ‘threat to behavioural freedom’.⁷⁰ The influence of advertising is thus generally limited by its easy detection. Unsurprisingly, traditional advertising regulation is directed at disclosing the fact that certain content is promotional or sponsored. Consumers are generally capable of detecting information bias and persuasive efforts in online advertisements, like banner ads, even if the latter are targeted. Consumers may, however, face difficulties when influence and information biases are embedded into news, media, artistic content and social activity.⁷¹ The problem is aggravated when consumption choices are influenced by some parts of the Internet infrastructure or seemingly neutral online services. Two examples concern the most important Internet services: search and, to a certain extent, connectivity. Both illustrate the fact that consumer choices can be shaped, to an unexpected extent, by the sequence of presentation of available alternatives and the ease of accessing such alternatives.

6. Hidden influence: search

Search engines constitute gateways to the commercial use of the Internet, for consumers and vendors alike.⁷² In fact, search engines may be regarded as more important than the domain name system as consumers are more likely to ‘Google’ a company or product than to type in the name of a particular website.

Originally, search services were *not* designed to represent commercial interests but to assist in locating information.⁷³ However, with the evolution of the web into a commerce-driven environment and the crystallisation of Google’s business model, search has gradually morphed from a relatively neutral service of information discovery to one of content promotion. The manner of presenting search results shapes the consumers’ view of the online marketplace and directly affects which websites they visit and what products they buy. As consumers generally consider only the top few search results, even small differences in ranking may promote one business at the expense of another or nudge consumers towards specific products. Being listed past the first page of results makes a website virtually invisible. To clarify: search results do not hide websites. The links to websites remain

⁷⁰Peter S Menell, ‘Brand Totalitarianism’ (2014) 47 *UC Davis Law Review* 787, 790.

⁷¹*ibid* 787; see also Ellen P Goodman, ‘Stealth Marketing and Editorial Integrity’ (2006) 85 *Texas Law Review* 83.

⁷²For a technical description of search engines see Martin Cave and Howard Williams, ‘The Perils of Dominance: Exploring the Economics of Search in the Information Society, Initiative for a Competitive Online Marketplace’ (ICOMP) March 2011, www.i-comp.org/wp-content/uploads/2013/07/Economics-of-Search.pdf

⁷³See generally Oren Bracha and Frank Pasquale, ‘Federal Search Commission? Access, Fairness, and Accountability in the Law of Search,’ (2008) 93 *Cornell Law Review* 1149.

accessible but their positioning decreases the likelihood of the website being visited. In online commerce, 'one click away' is a huge distance.

As mentioned in the context of choice architectures, the manner of presenting alternatives directly affects which alternative is chosen. Consumers generally do not know how search results are determined and that search engines favour certain sites.⁷⁴ Two problems arise: first, consumers may find it difficult to distinguish between paid and organic results, ie between results that constitute 'search advertising' and those that are supposed to constitute the natural output of search algorithms. Search advertising refers to the paid placement of links to websites at the top of the results list. Unlike banner ads, which are graphically distinct from website content, search advertising is not always easily distinguishable from organic results. At the same time, it constitutes the most effective form of advertising as it targets the so-called 'moment of intent', ie consumers who overtly display a desire for a particular product. The average consumer may not, however, understand that a vendor ranks high because he has paid for the particular search term. He may mistake the prominence for relevance, or worse, treat it as an implied recommendation.

The second problem concerns so-called 'search engine bias', ie the prioritisation of certain websites in organic results.⁷⁵ Contrary to popular belief, search algorithms are not objective.⁷⁶ Although their automatic operation creates a semblance of impartiality, search engines exercise editorial control over the sequence of results.⁷⁷ The criteria deployed by the search algorithm are the page's popularity and the number of pages linking to it. While either criterion may be criticised as catering to majority interests and promoting sites that are already popular due to prior advertising expenditure, at least there is consistency or minimal objectivity. The algorithm designed to produce organic results is, however, not neutral but displays the 'best' or 'most relevant' results. What is 'best' or 'most relevant' is a subjective decision made by the search engine operator, ie Google. Given the importance of search advertising revenues, it is increasingly suspected that even organic results favour sites that are more profitable from an advertising perspective.⁷⁸ As the main customers of companies like Google are not its users but advertisers, the interests of the search engine operator and online consumer are *not*

⁷⁴Cave and Williams (n 72) 33.

⁷⁵I omit Search Engine Optimisation, as it is performed by website owners to improve their ranking in the search results.

⁷⁶See generally Stanford Encyclopedia of Ethics, 'Search Engines and Ethics', <http://plato.stanford.edu/entries/ethics-search/#SeaEngBiaProOpa> (accessed November 30, 2015); LM Hinman, 'Esse Est Indicato in Google: Ethical and Political Issues in Search Engines' (2005) 3 *International Review of Information Ethics* 19.

⁷⁷Eric Goldman, 'Search Engine Bias and the Demise of Search Engine Utopianism' (2006) 8 *Yale Journal of Law and Technology* 188.

⁷⁸A Diaz, 'Through the Google Goggles: Sociopolitical Bias in Search Engine Design' in A Spink and M Zimmer (eds), *Web Search: Multidisciplinary Perspectives* (Springer-Verlag 2008) 11, 21.

aligned. In addition, search engines also ‘personalise’ results to the user, creating a similar effect as behavioural advertising.⁷⁹ To add to the confusion, Google has been displaying its own products and services in prominent positions alongside organic results. From a cognitive perspective, such presentation implies that the underlying selection mechanisms are equivalent. Consequently, consumers assume that they are choosing from a range of similar, if not identical, options.

7. Hidden influence: connectivity

The original Internet provided a uniform, best-effort transmission of all content and could not distinguish between the different applications carried by individual data packets. Technological developments have subsequently enabled Internet access providers to detect the type of content carried on their networks and to differentiate between its delivery times (‘traffic management’). As access providers have the ability to prioritise certain packets, they influence not just the quality of services (eg video streaming) but also the popularity of websites.

Traffic management is commonly discussed under the label of ‘network neutrality’, the controversy being whether access providers are allowed to discriminate between types of traffic and, in particular, whether they are allowed to charge for prioritising certain applications or content.⁸⁰ The common concern is that such discrimination could create fast and slow lanes on the network, undermine competition and the open character of the Internet. For present purposes, it must be noted that users abandon websites with slower load times.⁸¹ In e-commerce, download times correlate with conversion rates. Microseconds count: faster-loading websites have more visitors and more revenue. Unsurprisingly, the network neutrality debate recognises that if some vendors were able to pay for their websites to display faster, vendors without such resources would be sidelined. Unlike the influence inherent in the operation of search engines, which concerns the sequence and manner of presenting content, traffic management concerns the ease of retrieving content.

Although, in the US, the recently enacted network neutrality rules prohibit paid prioritisation,⁸² two problems remain. First, network neutrality principles do not extend to private networks, such as corporate networks or

⁷⁹Google discretely introduced ‘personalised search’ in December 2009.

⁸⁰For a recent discussion, see Barbara van Schewick, ‘Network Neutrality and Quality of Service: What a Nondiscrimination Rule Should Look Like’ (2015) 67 *Stanford Law Review* 1.

⁸¹Radware, ‘Ecommerce Page Speed and Web Performance’, *State of the Union*, Summer 2015, www.radware.com/assets/0/314/6442478110/bfc32d1a-890e-4fcc-9801-648ef5087b3d.pdf (accessed November 30, 2015).

⁸²Federal Communications Commission, Protecting and Promoting the Open Internet, Final Rule, April 13, 2015, Federal Register vol 70, rule 18, 19740.

those provided in eg coffee shops or malls. Consumers using complimentary Wi-Fi provided by Google in Starbucks are potentially exposed to techniques that discriminate between types of traffic *and* between websites. Second, network neutrality rules prohibit discrimination *on the core and access network* but do not prohibit technologies that prioritise content delivery *on the edges of the network*. One such example is that of Content Distribution Networks ('CDN'), which store copies of content at multiple physical locations in the Internet, accelerating access to that content.⁸³ Although CDNs provides as much opportunity to discriminate performance as traffic management on access networks, they enable 'preferential access' to content without violating network neutrality principles.⁸⁴ While online businesses do not have the capacity to decelerate the websites of their competitors,⁸⁵ those with more financial resources can distribute their content using CDNs and accelerate their websites' load times. Again, consumer choices are affected by a 'technicality' – the number of *seconds* a website takes to appear on the screen.

8. The dangers of personalisation

The discussion would not be complete without a description of 'personalisation': the tailored, user-specific display of information. Personalisation is known to increase the effectiveness of other technologies as it enables the selection or adaptation of a persuasion strategy (in terms of content and presentation) to specific consumers.⁸⁶ Personalisation techniques are common not only in advertising but also, more generally, in recommender systems, information retrieval systems, shopping assistants and many other online services. Different consumers are presented with different content despite having entered the same search term or requested the same information.⁸⁷ The extreme effect of personalisation is that each online consumer sees a customised view of the marketplace.⁸⁸ Personalisation is usually justified in terms of 'optimising content' or 'increasing relevance'.⁸⁹ After all, the

⁸³See generally Christopher S Yoo, 'The Evolution of Internet Architecture: Innovations in the Internet's Architecture that Challenge the Status Quo' (2010) 8 *Journal Telecommunications & High Technology Law* 79.

⁸⁴Dirk Grunwald, 'The Internet Ecosystem: The Potential for Discrimination' (2011) 63 *Federal Communications Law Journal* 411, 413, 425.

⁸⁵Unless we examine Google Fibre in more detail ...

⁸⁶Shlomo Berkovsky, Jill Freyne, Harri Oinas-Kukkonen, 'Influencing Individually: Fusing Personalisation and Persuasion' (2012) 2(2) *ACM Transactions on Interactive Intelligent Systems*, Article 9; Maurits Kaptein and Dean Eckles, 'Selecting Effective Means to Any End: Futures and Ethics of Persuasion Profiling' in Thomas Ploug and others (eds), *Persuasive Technology: Lecture Notes in Computer Science* (Springer 2010) 82.

⁸⁷Eli Pariser, *The Filter Bubble: What the Internet is Hiding From You* (Penguin Press 2011); Joseph Turow, *The Daily You: How the New Advertising Industry Is Defining Your Identity and Your Worth* (Yale Press 2011) 88.

⁸⁸Pasquale, *The Black Box Society* (n 2) 80.

⁸⁹Eric Goldman, 'A Coasean Analysis of Marketing' (2006) *Wisconsin Law Review* 1151; see also Jerry Kang, 'Information Privacy in Cyberspace Transactions' (1998) 50 *Stanford Law Review* 1193.

average consumer is incapable of evaluating *all* the information available on the Internet due to time constraints and, more importantly, limited processing capabilities. Too many choices or an un-moderated access to information may decrease the quality of decision-making due to cognitive overload.⁹⁰

While some content moderation, or pre-selection, seems reasonable and advantageous to the consumer, the problem lies in *who* decides which content is 'optimal' or 'relevant' and *how* content is selected. With few exceptions, where websites allow consumers to customise certain display features, content is personalised by the online business. It must be borne in mind that personalisation techniques are directed at increasing profits for the online business not at facilitating consumer decisions. Personalisation creates a false sense of familiarity and friendliness to entice consumers into more transactions, not to enable them to pursue their individual interests. References to 'optimisation' or 'relevance' are particularly misleading as they not only imply that they occur for the consumer's benefit but also that online businesses are capable of establishing or actually *know* consumer preferences. In reality, businesses infer such preferences from previously collected data – not from direct instructions of the consumer.

Personalisation techniques often rely on predictive analytics, technologies that learn from observed experience (eg information about online activities) to predict future behaviour or, to be more precise, the likelihood of a particular consumer being influenced by a specific persuasion strategy.⁹¹ Predictive analytics utilise large data sets ('Big Data') acquired from the online activity of a particular customer, 'similar' customers and statistical data pertaining to a particular product.

The popular fascination with 'Big Data' overshadows a number of problems. First, the data is often of questionable quality in terms of currency, relevance and provenance. Quantity does not translate into quality.⁹² Second, predictive analytics establish correlations not causal relationships. Consequently, personalisation relies on the statistical likelihood of two events occurring together – not on the deduction of *actual* consumer preferences. To aggravate matters, the risk of false correlations increases with larger data sets. Apart from the data itself, there is no guarantee that the technology used to analyse it will correctly infer consumer preferences, make the optimal recommendations or display the most relevant content.⁹³ It cannot 'know' the long-term interests of the consumer, as apparent preferences at

⁹⁰Simona Botti and Sheena S Iyengar, 'The Dark Side of Choice: When Choice Impairs Social Welfare' (2006) 25 *Journal of Public Policy & Marketing* 24.

⁹¹E Siegel, *Prediction Effect: How Predictive Analytics Revolutionises the Business World* (Wiley & Sons 2013) 11, 200.

⁹²Mireille Hildebrandt, 'A Multifocal View of Human Agency in the Era of Autonomic Computing' in Hildebrandt and Rouvroy (n 9) 1.

⁹³For a critique of those systems see Kevin Miller, 'Total Surveillance, Big Data, and Predictive Crime Technology: Privacy's Perfect Storm' (2014) 19 *Journal of Technology Law & Policy* 105.

one point in time need not coincide with actual or long-term preferences.⁹⁴ An understanding of such preferences would require that predictive analytics were capable of establishing causal relationships. A false correlation based on inaccurate data may still result in a transaction if the consumer trusts a given recommendation. In effect, consumers who indiscriminately rely on the selection of options presented to them, may acquire suboptimal or squarely wrong products.⁹⁵ The benefits of 'Big Data', if any, do not accrue to the individuals whose data are collected, but to the businesses that utilise such data.⁹⁶ The personal information of the consumer is not used to discover his preferences but to increase the likelihood of a transaction or determine the maximum price he can be charged.

A classic example of personalisation is price steering and price discrimination.⁹⁷ In the former instance, customers are nudged towards more expensive items; in the latter, different consumers are presented with different prices for the same product.⁹⁸ The point is not that such practices are illegal. The point is that personalisation technologies do not operate to the consumer's advantage. Personalisation aims to increase the likelihood of consumers interacting with specific content or purchasing a particular product. It is therefore naïve to assume that Amazon *wants* or *is able to* recommend the *ideal* book or that Google can rank the *most relevant* website.⁹⁹

More generally, personalisation may lead to a reduction of options resulting from a gradual limitation of access to information. Admittedly, the line between facilitating and *reducing* choice is difficult to draw. As some information is prioritised and other becomes more difficult to find, customers are less likely to learn about the existence of alternatives. The information that is not displayed is not blocked or removed. The 'hidden' information (speak: products, services, vendors) remains available; but, unless the consumer specifically knows what he is looking for, it may be difficult to find. On a practical level, the consumer may be precluded from finding the best price or the product that best satisfies his preferences. On a theoretical level, his autonomy is limited as he is not given the opportunity to choose from – or become aware of – the full range of available options. To clarify: it is not claimed that more choices are necessarily better for decision-making. It is claimed, however, that the mere awareness of the full range of choices may affect the

⁹⁴Brownsword, 'Agents' (n 9) 70.

⁹⁵Paul Ohm, 'The Underwhelming Benefits of Big Data' (2013) 161 *University of Pennsylvania Law Review Online* 339.

⁹⁶Omer Tene and Jules Polonetsky, 'Big Data For All: Privacy and User Control in the Age of Analytics' (2013) 11 *Northwestern Journal Technology & Intellectual Property* 239, 244.

⁹⁷Aniko Hannak, Gary Soeller, David Lazer, 'Measuring Price Discrimination and Steering on E-commerce Web Sites' (2014) ACM 978-1-4503-3213-2/14/11.

⁹⁸For a detailed description of online discriminatory practices see Tal Z Zarsky, 'Mine Your Own Business!' Making the Case for the Implications of the Data Mining of Personal Information in the Forum of Public Opinion' (2002–2003) 5 *Yale Journal of Law & Technology* (Article 1) 19–22.

⁹⁹Victor Meyer-Schonberger and Kenneth Cukier, *Big Data* (John Murray 2013) 12.

manner in which choices are made, even if a consumer never intends to evaluate each available alternative. It is one thing to decide not to explore all possibilities, it is yet another not to know that many possibilities exist.

Interestingly, writing as early as 2002, Zarsky associated the customisation of information with the restriction of choice and the loss of autonomy.¹⁰⁰ He described a vicious circle, or ‘autonomy trap’,¹⁰¹ that forms when customers ‘provide’ their information and in return vendors customise information to the consumer’s perceived preferences. The information displayed *to* the consumer is chosen on the basis of the information collected *from* the consumer. The progressive narrowing of options may ‘push individuals towards certain products or services in which they initially were not interested’.¹⁰² Similarly, Hildebrandt observes that it is difficult to assess what preferences a person would have developed if her intent had not been pre-empted.¹⁰³

9. The ‘nothing new’ argument

I anticipate the argument that the commercial practices described above are not novel or that technological influences do not create new legal problems. My argument, however, does not rest on novelty but on scale, effectiveness and difference. It can be endlessly debated whether we are dealing with a new legal problem or an old legal problem that has assumed new dimensions. Arguably, even if we are ‘only’ dealing with more extreme forms of ‘old’ commercial practices, their increased effectiveness *in itself* should raise legal concerns.

We can concede that we have always been manipulated by advertisers and sales people, and that our choices have always been limited to what owners of malls or supermarkets decided to display. Malls, shops and the packaging of goods have always been designed to influence our purchasing decisions. Malls, shops and vending machines do not, however, change their layout and contents in real-time to match specific individuals at crucial moments related to their psychological or physiological states.¹⁰⁴ Traditional transacting environments cannot detect and exploit individual vulnerabilities.¹⁰⁵ There is fairness in the fact that everybody is presented with the same range of choices in the same way. Every sales person faces limits as to what she can directly observe from the interaction with the consumer. She does not know the consumer’s prior purchasing history with *other* shops, his circle of friends, his medical correspondence and his cognitive preferences. She

¹⁰⁰Zarsky (n 98) 35.

¹⁰¹P Schwartz, ‘Internet Privacy and the State’ (2000) 32 *Connecticut Law Review* 815, 823.

¹⁰²Zarsky (n 98) 43.

¹⁰³Mireille Hildebrandt, *Smart Technologies and the End(s) of Law, Novel Entanglements of Law and Technology* (Edward Elgar 2015) 69.

¹⁰⁴Zarsky (n 98).

¹⁰⁵Calo (n 12) 1033.

can adapt the sales strategy to a limited range of consumer characteristics but, leaving aside extreme examples, is unable to detect idiosyncratic vulnerabilities. In recommending specific products, the sales person relies on her intuition and experience – not on the combined experience derived from billions of transactions. Some shops pay higher rent for space in high-traffic areas, but once the spaces have been allocated mall operators cannot promote certain shops by making others more difficult to access.

Of course, it is always possible to force comparisons and devise improbable scenarios. For example, the mall owner could slow down the escalator to make certain shops less accessible or channel traffic to specific areas by means of promotions. Such scenarios can be regarded as desperate attempts to analogise and ignore the differences. An over-zealous recourse to analogy may constrain our reasoning and pre-empt the identification of a problem, especially if we focus on the familiar features of the online environment while ignoring those that we do not understand.¹⁰⁶ Unquestionably, commercial websites can be compared to shops or malls. We can focus on the similarities: in both instances a range of goods is presented for sale. We can also focus on the differences. Apart from the obvious ones, such as automation and lack of direct human contact, the cognitive and sensory experience of navigating web interfaces differs from walking around supermarkets. Browsing the Amazon app differs from browsing a physical bookstore. Amazon is not a shop but a symbolic abstraction of a shop. There is a tendency to conflate physical objects with their graphic representations, the ‘real thing’ with its model. Unsurprisingly, interface design often facilitates interactions by simulating off-line experiences with familiar clues, such as virtual shopping carts.¹⁰⁷ The web must be recognised as a discrete transacting environment, where consumers process and interact with information differently than offline, and where they are subject to different, more powerful influences.¹⁰⁸

Similarity is not equivalence and differences may be more important than similarities. Lessig famously parodies the debate: we can say that a cat *is like* a lion. But it *is not* a lion.¹⁰⁹ We let our children play with cats, but not with lions. Moreover, would we let our children play with genetically modified cats with longer claws and stronger jaws? Would such animals still be cats? Adding sharper claws to a ‘cat’ changes the assumptions we make about the safety of playing with them, although the main difference lies ‘only’ in

¹⁰⁶See, generally, Dan Hunter, ‘Reason is too Large: Analogy and Precedent in Law’ (2001) 50 *Emory Law Journal* 1197, 1216.

¹⁰⁷Andrew Hinton, *Understanding Context: Environment, Language and Information Architecture* (O’Reilly 2015) 219.

¹⁰⁸Sylvain Senecal, ‘Consumers’ Decision-Making Process and Their Online Shopping Behavior: A Click-stream Analysis’ (2005) 58 *Journal of Business Research* 1599, 1605.

¹⁰⁹Lawrence Lessig ‘The Law of the Horse: What Cyberlaw Might Teach Us’ (1999) 113 *Harvard Law Review* 501, 529.

effectiveness: the cat becomes better at killing mice (and scratching children). Similarly, ‘enhancing’ longstanding commercial practices with technology may destroy the traditional risk allocation between the transacting parties or challenge the original assumptions underlying the relevant legal principles.¹¹⁰ Offline, consumers are accustomed to a wide range of commercial influences, such as intrusive marketing campaigns. Such influences are widely recognised and, as most consumers develop the ability to ignore them, limited in their ability to affect choice. The shift online challenges the assumption that consumers can detect and thus neutralise persuasive intent or information bias, not just because of the *type* but also the *amount* of influences. In sum, there is nothing new in the fact that businesses try to influence consumption choices. It is the differences in the available tools and in the characteristics of the online environment that warrant legal attention.

10. A contractual perspective

Even a cursory review of the contract law literature reveals a persistent emphasis on self-determination and autonomy. Liberal individualism, the ideology underlying classical contract law, regards each individual as an independent agent who enjoys the right to freedom from interference by other individuals. The only qualification of the pursuit of one’s interests is the need to observe the similar right of others. At the same time, however, contract law is often regarded as a framework for individuals to maximise their welfare and achieve their *private* ends. There is thus an inevitable tension between the right to pursue one’s interests and the need to respect the autonomy of others. While it is assumed that existing law is generally capable of addressing most problems pertaining to technological change,¹¹¹ it must be acknowledged that technology-related transactional imbalances introduce an additional dimension to the aforementioned tension.

It is, of course, impossible to delineate where the autonomy of one transacting party starts to limit the autonomy of the other, but it must be assumed that ‘transgressions’ are more likely to occur when a transactional imbalance is present. In contract law, the problem is approached as one of *defective* consent. Although neither subjective nor informed consent are prerequisites of enforceability, its absence may entitle the aggrieved party to various forms of relief, including the reversal of the transaction. Arguably, some technological limitations of autonomy call for the availability of such relief. While it is tempting to bypass the protections available under contract law and move

¹¹⁰Other fitting examples are the technological challenges to the fourth amendment (protection from unreasonable searches and seizures): the sheriff may enhance his vision with spectacles but is he allowed to use x-ray vans?

¹¹¹L Bennet Moses, ‘Recurring Dilemmas: The Law’s Race To Keep Up With Technological Change’ (2007) *University of Illinois Journal Law Technology & Policy* 239, 244.

straight to regulatory solutions, it must not be forgotten that the latter should only be debated when existing rules are unable to provide a solution.¹¹² Moreover, new regulatory instruments should preserve the original allocation of rights and responsibilities and be clear about the values that require protection. It is thus necessary to identify the permissible degrees of influence, or transactional exploitation, in contract law.

At the outset, it must be emphasised that there is no single comprehensive legal doctrine that addresses fairness in the transacting process.¹¹³ The main, overriding principle is that the statements of the transacting parties are evaluated objectively and a contract comes into existence if both parties *appear* to have agreed on a given transaction.¹¹⁴ The objective theory of contract protects the reliance of those to whom the words and behaviour are directed and overrides any subjective defects in contractual intention. The need to protect commercial certainty generally trumps the desire to protect the autonomy of each transacting party. There are, however, a closed number of exceptions to the objective principle, popularly referred to as 'vitiating factors'. The latter can be regarded as circumscribing the fairness of the transacting process in negative terms or setting the limits on the permissible pursuit of self-interest in contract law.¹¹⁵ And so, the doctrines of duress, misrepresentation, unilateral mistake, undue influence and unconscionable dealings address distortions of transaction-related information or legally objectionable influences.

Some doctrines focus on deficiencies in knowledge, others on the context in which a decision was formulated.¹¹⁶ Given the lack of a clear differentiation between *informed* and *free* consent,¹¹⁷ contract law recognises that some deficiencies in the formation process do not concern information failures but more complex, cognitive factors that affect the origin of the decision.¹¹⁸ In particular, the doctrines of duress and undue influence are regarded as protecting the ability of 'autonomous beings' to 'make choices for him or herself without unjustifiable interference from others'.¹¹⁹ Although, theoretically, substantive unfairness of the resulting transaction need not be a prerequisite of intervention, relief is generally sought only when such unfairness is present. Each vitiating factor has developed independently, deals with a different aspect of transactional unfairness and, given that each is treated as an

¹¹²L Bennett Moses, 'Adapting the Law to Technological Change: A Comparison of Common Law and Legislation' (2003) 26 *University of New South Wales Law Journal* 394, 402.

¹¹³See Lord Denning MR in *Lloyd's Bank Ltd v Bundy* [1975] QB 326, 339, laid to rest by Lord Scarman in *National Westminster Bank Plc v Morgan* [1985] 1 AC 686, 708.

¹¹⁴Lord Diplock in *Paal Wilson & Co A/S v Partenreederei Hannah Blumenthal* [1983] 1 AC 854, 915.

¹¹⁵Rick Bigwood, *Exploitative Contracts* (OUP 2003) 92.

¹¹⁶Hart (n 6) 175, 176.

¹¹⁷Mindy Chen-Wishart, 'The Nature of Vitiating Factors in Contract Law' in Gregory Klass and others (eds), *Philosophical Foundations of Contract Law* (Oxford University Press 2014) 296.

¹¹⁸PS Atiyah, 'Contract and Fair Exchange' (1985) 35 *University of Toronto Law Journal* 1, 15.

¹¹⁹*Perre v Apand Pty Ltd* (1999) 164 *Australian Law Report* 606, 635 (McHugh J).

exception to the broader principle of objectivity, has its own narrowly formulated criteria of application that developed in a piecemeal fashion.

Before testing the possibility of subsuming problems of technological influence under one of the vitiating factors, some general observations are necessary to place such influences within the narrative of contract law. First, the number of intermediaries involved in an online transaction and the resulting multiplicity of influences creates difficulties in establishing those businesses that exert the most relevant technological influence. Once a contract is concluded, relief can be sought against the other party to the transaction, placing other intermediaries – even if they *caused* the decision – outside the purview of contract law. It may also be difficult to prove that *but for a specific influence*, the customer would have entered into a different transaction or abandoned his transactional intent altogether. Second, it is assumed that when evaluating the possibility of relief the focus must not be on the internal state of a consumer's mind but on the external indicia of influence: the *substance* of the transaction and/or the *process* that produced it. As it is generally assumed that a fair contracting process will lead to fair results,¹²⁰ the substance of a transaction may raise suspicions about the process.

Two problems arise with regard to substantive unfairness. First, leaving aside extreme cases of disproportionate bargains, substantive unfairness may be difficult to establish given the lack of objective standards and the fact that contract law relies on a purely subjective understanding of value. Equivalence of exchange is not required. Similarly, deviations from the market price need not evince transactional irregularities. Second, in many online transactions the problem lies in the very conclusion, or *presence*, of a transaction, not in its substance. The unfairness concerns the manipulation of choice, not the transaction resulting from such choice. The consumer buys X instead of Y or Z because X was presented in the most conducive manner and Y was concealed or rendered less 'discoverable'. X may constitute a reasonable bargain, yet the consumer's autonomy is compromised because he was precluded from evaluating and making other choices. In other words, the substance of the transaction *in itself* may not evince the presence of influence; rather, the latter will only become apparent once a consumer learns of the availability of other choices.

We must acknowledge, however, that it is equally problematic to establish *procedural* fairness as it is to describe substantive fairness.¹²¹ The traditional transacting process is far from ideal. Most contracts are formed in sub-optimal conditions characterised by imbalances in power and information. Relief is never granted on the ground that one party enjoyed a bargaining advantage. The contracting process is inherently adversarial and

¹²⁰Bigwood (n 115) 82, citing *Pao On v Lau Yiu Long* [1980] AC 614, 634.

¹²¹See, generally, Atiyah (n 118) 19.

antagonistic.¹²² There are relatively few norms delimiting what the parties can 'do to each other' during the interactions leading to contract formation. Contract law implicitly permits a certain level of advantage-taking, including a certain level of deception. Everything depends on the context, including the reasonable expectations of the parties. Absent a general duty of disclosure, some forms of misinformation can be regarded as bargaining techniques, which are expected to be countered with similar techniques and/or with an awareness that what is communicated may not be factually correct.¹²³ One party is also permitted to ignore the informational deficiencies or misconceptions of the other as long as he did not directly cause or is otherwise under a duty to repair them. It is, however, considered objectionable to deliberately manipulate the factual assumptions relied on by the other party in deciding whether to enter into a contract or to induce her to act on inaccurate or incomplete information. The difficulty lies in establishing the point at which the transacting process is compromised. While each party is allowed *and expected* to engage in its own bargaining tactics, it is also assumed that each party is able to *recognise* and, at least to an extent, counter the bargaining strategy of the other.

In online transactions, the consumer may be unable to recognise such 'tactics' and act under the false assumption that there are none. The average consumer can hardly be expected to understand that a particular colour was selected to induce him to proceed within the website or that his personal information is used to detect his predispositions. Neither can he be expected to counter the strategy of the online business. It must, however, be pointed out that bargaining advantages based on superior negotiation skills or access to better information, are permitted, especially if such advantages are attributable to a party's investment of resources to acquire such information. Objections are, however, more common when an advantage is obtained by technological (speak: artificial) rather than social or economic means.¹²⁴ After all, some technologies used by online businesses bring to mind pharmacological performance enhancements in sports or education. In the present context, it is not only the source of the transactional advantage in online transactions that is objectionable, but its specific aim. We must recall that online businesses invest in technological capabilities and amass consumer information (a) to detect idiosyncratic vulnerabilities and dispositions that would have (in most instances) remained hidden, and (b) to exploit the foregoing.

With the above in mind, we can examine the applicability of the individual vitiating factors to technological limitations of autonomy. It is assumed that

¹²²*Walford v Miles* [1992] 2 AC 128, 138 (Lord Ackner).

¹²³*Bigwood* (n 115) 49.

¹²⁴Lyria Bennet Moses, 'How to Think About Law, Regulation and Technology: Problems With Technology as A Regulatory Target' (2013) 5(1) *Law, Innovation and Technology* 1, 17.

duress is irrelevant as it requires the presence of a wrongful or illegitimate threat.¹²⁵ The latter will be absent in online transactions as most technologies operate imperceptibly, by influencing online consumers with friendly interfaces, not with overt pressure.

The doctrine of misrepresentation seems more suitable as it concerns situations where one party makes false statements of fact that induce the other to enter into a contract. The representation need not be express and may derive from the cumulative effect of statements and conduct.¹²⁶ The practical applicability of the doctrine is, however, limited by the requirement that the representation be material and affect the judgment of a reasonable person or induce such person to enter into the contract without making further inquiries. Inducement, or materiality, is judged objectively, according to the impact it may be expected to have on a reasonable addressee ‘in the position and with the known characteristics of the actual representee’.¹²⁷ If a representation is implied, it becomes necessary to establish what a reasonable person would have inferred from the words or conduct.¹²⁸ In principle, it appears possible to claim that a consumer was induced to rely on some information rather than on other by eg the manner of its presentation, especially if we allow for the fact that representations can be personalised to specific consumers with ‘known characteristics’. It may, however, be difficult to distinguish between active concealment of information and a ‘mere’ reduction of its visibility. In both scenarios, the consumer retains the ability to access other information and thus the ability to confirm the veracity of a representation. While the presence of an opportunity to discover the truth does not preclude relief,¹²⁹ in some circumstances the addressee may be reasonably expected to make further inquiries¹³⁰ or be regarded as having taken a deliberate risk as to the truth of matter.¹³¹ It must be acknowledged that while online businesses may provide information in a manner that renders it unlikely to be viewed, consumers may decide not to inform themselves or negligently assume that they are presented with best options. Everything will depend on the context and the website or online service in question. Where the consumer has a pre-existing contractual relationship with the business (eg Amazon) or service provider (Google), the contract may describe the exact terms on which information is provided or exclude liability for misrepresentations.¹³² In principle,

¹²⁵*The Siboen and the Sibotre* [1976] 1 Lloyd’s Report 293; *The Atlantic Baron* [1979] QB 705.

¹²⁶*Spice Girls v Aprilia* [2002] EWCA Civ 15.

¹²⁷*MCI Worldcomm International v Primus Telecommunications plc* [2004] EWCA Civ 957 [30]; *Reifeissen Zentralbank Osterreich v Royal Bank of Scotland* [2010] EWHC 1392 [8].

¹²⁸*F E Fund SA v Goldman Sachs International* [2007] EWCA Civ 811 [50].

¹²⁹*Redgrave v Hurd* (1881) 20 ChD 1.

¹³⁰*Peekay v ANZ Group plc* (2006) 2 Lloyd’s Rep 511; *Smith v Eric Bush* [1990] 1 AC 831.

¹³¹Edwin Peel (ed), *Treitel: The Law of Contract* (12th edn, Sweet & Maxwell 2007) 370; *Avon Insurance Plc v Swire Fraser Ltd* [2000] 1 All ER (Comm) 573 [200].

¹³²*BSkyB v HP Enterprises Services UK Ltd* [2010] EWHC 86 (TCC).

misrepresentation requires factual falsity and seems less adaptable to deal with incompleteness, ambiguity, manipulative presentation formats or exploitations of cognitive biases. Also, relief can only be sought against the person who made the representation.

Another doctrine, mistake, deals with misconceptions and false assumptions entertained by one of the parties.¹³³ The mistake must pertain to the terms of the specific contract, not to the surrounding facts. It must also induce the contract: there is not relief if a party has taken the risk that the facts are not as he supposed them to be.¹³⁴ Unilateral mistake is thus unlikely to be of practical relevance in the present context. The consumer's belief that he was 'getting the best deal' or that he was provided with all available options will remain inconsequential. At the same time, everything may turn on the fine distinction between a vendor warranting that the price was the lowest or the selected content most relevant.¹³⁵ Relief may also be available when a mistake is negligently induced by eg the confusing presentation of a product in a situation where the buyer cannot be reasonably expected to discover the true state of affairs.¹³⁶ In the latter scenario, courts inquire whether the mistaken party made a 'natural inference' from the information presented.¹³⁷ Relief may also be available if the non-mistaken party knew (or should have known) of the other party's mistake. Such knowledge may, however, be difficult to establish despite the fact that the online business may have information about a particular consumer. Knowledge of a mistake need not automatically derive from knowledge of actual intentions or preferences. It is imaginable, however, that where an online business knows the consumer's purchase intent and induces him into a transaction that is inconsistent with such intent but more profitable for the business, it will not be protected by the objective principle.

Given its name, the doctrine of undue influence seems particularly attractive in context of online transactions, especially as it addresses cases where 'influence is acquired and abused'¹³⁸ and protects people from being 'tricked or misled'.¹³⁹ It does not deal with the question whether somebody knew what he was doing but how a decision was produced.¹⁴⁰ Although, *prima facie*, it appears to encompass technological influences, an examination of the cases reveals its restrictive application. Presumed undue influence requires the presence of a relationship of trust and confidence *and* a transaction that is not explicable by ordinary motives. It is, however, difficult to

¹³³*Bell v Lever Bros* [1932] AC 161, 217; it is assumed that only unilateral mistake may be of some relevance.

¹³⁴*Wales v Wadham* [1977] 1 WLR 199, 200.

¹³⁵*Smith v Hughes* (1871) LR 6 QB 597.

¹³⁶*Scriven Bros v Hindley & Co* [1913] 3 KB 564.

¹³⁷*ibid* 569.

¹³⁸*Smith v Kay* (1859) 7 HLC 750, 779.

¹³⁹*Allcard v Skinner* (1887) LR 36 ChD 145, 182.

¹⁴⁰*Daniel v Drew* [2005] EWCA Civ 507; *Hugvenin v Baseley* (1807) 14 Ves Jun 273.

establish the presence of such a relationship between online consumers and businesses as trust and confidence – and the corollary duty to safeguard the other party's interest – are uncommon in commercial relationships. It will also be difficult to meet the second prerequisite: the fact that a customer purchased one item instead of another hardly requires explanation. Actual undue influence, which requires neither a special relationship nor the presence of a transaction that 'requires explanation', presumes coercion or actual pressure. As indicated, both are absent.

While it is artificial to compare business-to-consumer transactions to relationships between husbands and wives, it must be acknowledged that online transactions often involve an abuse of influence and a deliberate suppression of information in a decision-making context.¹⁴¹ There may be no relationships of trust and confidence in online commerce but there are relationships of *dependence* for information – and dependence seems more prone to abuse than 'mere' influence. A more flexible approach to the type of relationship combined with a focus on the defendant's conduct, would acknowledge the business' *intention* not just to influence but to exploit the consumer. Given the complexity of the relationships in which abuses of influence can occur, one can only agree with Chen-Wishart that a multidimensional approach to evaluating such relationships is needed.¹⁴² Given the exceptional and equitable character of undue influence, the likelihood of its 'expansion' to technological influences is minimal.

A similar concern can be expressed with regard to the doctrine of unconscionable dealings, which is of limited significance, at least in England.¹⁴³ There is no general equitable jurisdiction to interfere with bargains on the basis of their unfairness, processual or substantive. Relief is circumscribed by the requirements of oppressiveness (ie substantive unfairness),¹⁴⁴ the customer suffering from certain types of bargaining weakness and the other party acting unconscionably by intentionally taking advantage of such weakness. The doctrine is less restrictive in Australia where it has shifted from the protection of weak individuals¹⁴⁵ towards the detection of exploitative conduct by stronger transacting parties.¹⁴⁶

¹⁴¹*Hewett v First Plus Financial Group Plc* [2010] EWCA Civ 312; *Royal Bank of Scotland v Chandra* [2011] EWCA Civ 192.

¹⁴²Mindy Chen-Wishart, 'Undue Influence: Beyond Impaired Consent and Wrongdoing towards a Relational Analysis' in Andrew Burrows and Lord Rodger (eds), *Mapping the Law* (Oxford University Press 2011) 201.

¹⁴³English courts formulated the equitable jurisdiction in very narrow terms: *Fry v Lane* (1888) 40 ChD 312; in *Hart v O'Connor* [1985] 1 AC 1000, the Privy Council described an unconscionable bargain as being one of an 'improvident character made by your poor or ignorant person acting without independent advice which cannot be shown to be fair and reasonable transaction'. More recently, see *Boustany v Pigott* (1993) 69 P&CR 298, 303; *Portman Building Society v Dusangh* [2000] 2 All ER (Comm) 221; *Jones v Morgan* [2001] EWCA Civ 995; See, generally, David Capper, 'The Unconscionable Bargain in the Common Law World' (2010) 126 *Law Quarterly Review* 403, 404–405.

¹⁴⁴*Lloyd's Bank v Bundy* [1975] QB 326.

¹⁴⁵*O'Rourke v Bolingbroke* (1877) 2 App Cas 814; *Beynon v Cook* (1875) LR Ch App 389.

¹⁴⁶See, in Australia, *Commercial Bank of Australia Ltd v Amadio* (1983) 151 CLR 447.

The preceding paragraphs have demonstrated that in most circumstances the technological influences and transactional imbalances encountered in online transactions are difficult to subsume under any of the vitiating factors. Contract law reveals an unexpected level of tolerance to practices that a reasonable man would find intuitively objectionable. Absent overt pressure, technological influences seem too subtle to be registered on the radar of traditional protective mechanisms – despite the fact that they affect (or: attack) one of the central values of contract law: autonomy. It is imaginable to combine certain elements from different vitiating factors to create a broader, more flexible protection against transactional exploitation. In principle, however, courts are unlikely to create new doctrines or commit ‘doctrinal jumps’ to provide relief for cases of technology-related influence – especially if no clear substantive unfairness is present.

11. A regulatory perspective

If technological influence and the accompanying problems concerning consumer autonomy are seen as a systemic problem, it appears more appropriate to approach them from a broader regulatory perspective. After all, we are not dealing with isolated incidents of transactional unfairness but with entire industries centred on designing, testing and deploying technologies that can erode or annihilate consumer autonomy.

Unfortunately, even if we agree that regulatory safeguards are needed, it may be difficult to devise such in practice. Intuitively, we would assume that endowing consumers with more *information about* and *control over* the technologies they encounter in online commerce would alleviate many problems of technological influence.¹⁴⁷ Knowing that one’s behaviour is being influenced decreases the impact of such influence. Moreover, understanding the operation of a particular technology enables the consumer to evaluate the implications and risks of its use.¹⁴⁸ Consumers with a minimal comprehension of search engines or recommender systems may appreciate their inherent bias and, accordingly, place less reliance on the sequence or presentation of results and, for example, skip the first pages or ignore the recommendations.

The picture is, however, more complex. Providing information about the functioning of a particular technology is synonymous with the imposition of disclosure requirements. Most regulatory instruments relying on disclosure assume that consumers, given the opportunity to inform themselves, will take this opportunity and make better decisions.¹⁴⁹ Such an assumption is

¹⁴⁷Friedman and Niessenbaum (n 13) 467.

¹⁴⁸de Mul and van den Berg (n 17) 53; ICOMP Imperatives for a Healthy, Secure and Competitive Internet at 4.

¹⁴⁹Lisa Waddington, ‘Vulnerable and Confused: The Protection of “Vulnerable” Consumers under EU Law’ (2013) 38 *European Law Review* 757, 776.

incorrect. It seems counterintuitive to provide the consumer with more information in an environment that is already information-rich and further contribute to his information overload.¹⁵⁰ Disclosing information explaining the functioning of an online service would suffer the same fate as terms of use, privacy policies and cookie notifications. Moreover, even if some features of online service can be controlled in the user settings, such customisations presume a pre-existing awareness of the problems inherent in its operation as well as a minimal level of IT literacy. Less technically inclined consumers will not benefit from greater levels of control. Control requires competence. Consequently, most consumers will retain the default settings provided by the business.

While it cannot be denied that transparency and control *theoretically* preserve autonomy, the practical limitations of both approaches must be appreciated. What is needed are actual prohibitions – not more information. Assuming that it may be easier to update an existing instrument than draft one ‘from scratch’, it is best to identify a ‘candidate’ for potential adaptation. Such a candidate would not rely on disclosure but restrict or ban certain practices. It appears that only one of the existing regulations affecting online commerce addresses *some* of the technology-related problems: the Directive on Unfair Commercial Practices (‘UCPD’).¹⁵¹

In contrast with other Directives concerning online transactions, which predominantly focus on the provision of information,¹⁵² the UCPD seeks to enable consumers to make not only informed but also *meaningful* choices¹⁵³ and it prohibits some practices without any qualifications. The UCPD governs all business-to-consumer commercial practices,¹⁵⁴ but only provides for public enforcement, as contract matters are excluded from its operation. Article 5 contains a general prohibition of unfair commercial practices. A practice is unfair if: (a) it is contrary to the requirements of professional diligence, *and* (b) materially distorts or is likely to materially distort the economic behaviour of the average consumer. ‘Professional diligence’ is associated with concepts like ‘honest market practice’ and ‘good faith’. Article 5 constitutes a stand-alone prohibition covering any unfair practice, which is not caught by other provisions. Its generality aims to ensure that

¹⁵⁰See, generally, Omri Ben-Shahar, *More Than You Wanted To Know: The Failure of Mandated Disclosure* (Princeton University Press 2014).

¹⁵¹Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market, adopted in the UK (almost verbatim) by the Consumer Protections from Unfair Trading Regulations 2008.

¹⁵²Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, see specifically: arts 5, 6, 7, 8.

¹⁵³See, generally, Report From The Commission To The European Parliament, The Council And The European Economic and Social Committee, Brussels, 14.3.2013 COM(2013) 139 final.

¹⁵⁴UCPD art 2(d).

the Directive is ‘future proof’.¹⁵⁵ A material distortion occurs when a practice impairs the consumer’s ability to make an informed decision, ‘causing the consumer to take a transactional decision that he would not have taken otherwise’.¹⁵⁶ The term ‘transactional decision’ is interpreted broadly¹⁵⁷ and includes decisions that do not lead to transactions or result in actions, which have no legal consequences under national contract law.¹⁵⁸ For example, a practice may be considered unfair if it is likely to cause the consumer to enter a shop, spend more time engaged in an online booking process or decide not to switch to another trader or product.¹⁵⁹ Problems of establishing causation are alleviated as it is irrelevant whether the consumer’s economic behaviour has *actually* been distorted. The question is whether a practice is capable of having such effect.¹⁶⁰ Moreover, the material distortion requires neither actual economic loss nor substantive unfairness: the consumer need not prove that the commercial practice caused him to purchase something that he would have not purchased otherwise or that he is worse off after the transaction.¹⁶¹ ‘Distortion’ concerns the impairment of the ability to make decisions.¹⁶²

While the breadth of Article 5 appears to encompass even less extreme cases of technological influence, problems arise with regard to the assumptions underpinning the term ‘average consumer’. The latter is deemed to be reasonably well informed, reasonably observant and circumspect,¹⁶³ behaving ‘like a rational economic operator’ and making efficient choices.¹⁶⁴ Consequently, the effectiveness of the protections is diminished by false assumptions and unrealistic expectations about the information processing capabilities and rationality of online consumers. It is particularly disconcerting that the ECJ emphasised that the concept of ‘average consumer’ did not depend on statistical evidence of how consumers *actually* behave. In an environment where most decisions are data-driven, it seems counterintuitive not to take advantage of empirical findings to establish actual consumer behaviour. In its present form, the concept of ‘average consumer’ not only ignores the manner in which consumers act in practice¹⁶⁵ but also disregards

¹⁵⁵Giuseppe B Abbamonte, ‘The Unfair Commercial Practices Directive and its General Prohibition’ in Stephen Weatherill and Ulf Bernitz (eds), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29* (Hart 2007) 11.

¹⁵⁶UCPD art 2(e).

¹⁵⁷UCPD art 2(k).

¹⁵⁸European Commission Guidance on the Implementation/Application of Directive 2005/29/EC on Unfair Commercial Practices (‘Guidance’) 23.

¹⁵⁹Guidance, 24.

¹⁶⁰Guidance, 24.

¹⁶¹Abbamonte (n 155) 23.

¹⁶²UCPD art 2(e).

¹⁶³UCPD Recital 18.

¹⁶⁴Abbamonte (n 155) 24.

¹⁶⁵See, generally, R Incardona and C Poncibò, ‘The Average Consumer, the Unfair Commercial Practices Directive, and the Cognitive Revolution’ (2007) 30 *Journal of Consumer Policy* 21; J Stuyck, E Terryn and T Van Dyck, ‘Confidence through Fairness? The New Directive on Unfair Business-to-Consumer Commercial Practices in the Internal Market’ (2006) 43 *Common Market Law Review* 107; Law Commission

the very findings in behavioural economics and cognitive science that online businesses rely on to influence consumer behaviour. If certain cognitive biases are known to affect *most* market participants and if they are commonly exploited it is dangerous to pretend they do not exist.

Article 5(3) also requires specific protection of consumers who are particularly vulnerable due their mental or physical infirmity, age or credulity, if the commercial practice affects their economic behaviour in a way, which the trader could reasonably be expected to foresee. The problem is that the listed sources of vulnerability disregard the fact that ‘vulnerability’ can be a ‘dynamic state’ which affects consumers at different times and in different circumstances.¹⁶⁶ Vulnerability derives from a multitude of causes, both ‘endogenous’ and ‘exogenous’,¹⁶⁷ permanent and temporary. Waddington emphasises that it can arise out of specific interactions and be created by the environment in which the interactions occur.¹⁶⁸ To adapt Article 5 to actual market practice, regulators must acknowledge that: the ‘average’ consumer is far less knowledgeable and rational than assumed, that there is no ‘average consumer’ and/or that even an ‘average consumer’ can be rendered ‘vulnerable’. It must be also recognised that each consumer can be vulnerable in its own way and that vendors have the technological capacity to exploit temporary vulnerabilities – not just those caused by age, mental infirmity or credulity. In sum, the protections introduced in Article 5 are weakened by unrealistic expectations regarding consumer behaviour.

Article 6 prohibits the provision of false information or correct information presented in a manner that deceives or is likely to deceive. The misleading character of a commercial practice is assessed by reference to the current state of scientific knowledge, including recent findings in behavioural economics.¹⁶⁹ Accordingly, the UCPD addresses practices that are capable of deceiving consumers ‘in any way, including overall presentation’, even if the information is factually correct.¹⁷⁰ Unfortunately, the prohibition is restricted to information concerning the existence, nature or characteristics of *a product* or *a vendor*¹⁷¹ – it does not extend to information concerning the *range* of products or vendors and bypasses the process of choosing between options. At the same time, Annex 1 blacklists the provision of materially inaccurate

Consultation Paper No 199 ‘Consumer Redress for Misleading and Aggressive Practices’, para 2.46 quoting S Weatherill, ‘The Role Of The Informed Consumer In European Community Law and Policy’ (1994) 2 *Consumer Law Journal* 49.

¹⁶⁶Waddington (n 149) 768; see also T Wilhelmsson, ‘The Informed Consumer v the Vulnerable Consumer in European Unfair Commercial Practices Law: A Comment’ in G Howells and others (eds), *The Yearbook of Consumer Law 2007* (Ashgate 2007) 218.

¹⁶⁷Committee on the Internal Market and Consumer Protection, Report on a strategy for strengthening the rights of vulnerable consumers (2011/2272/(INI), May 8, 2012, A7-0155/2012).

¹⁶⁸Waddington (n 149).

¹⁶⁹Guidance, 32.

¹⁷⁰Guidance, 32.

¹⁷¹Art 6(1), 6(2).

information on market conditions or the availability of product ‘with the intention of inducing the consumer to acquire the product at conditions less favorable than normal market conditions’.¹⁷² Although the provision seems capable of broad interpretation, it seems to address the misrepresentation concerning the popularity or scarcity of specific products, not commercially biased search rankings or recommendations.

Article 7(1) refers to omissions of material information that causes, or that is likely to cause, a decision that would otherwise not have been taken. If interpreted as a standalone provision, it could address some forms of personalisation. Article 7(2) addresses manipulative ways of presenting information, including the failure to identify commercial intent.¹⁷³ Unfortunately, the omissions are confined to information concerning specific products, not the existence of other products.

Articles 8 and 9 prohibit aggressive commercial practices that impair or are likely to impair the average consumer’s freedom of choice with regard to the product and cause him or are likely to cause him to take a transactional decision that he would not have taken otherwise.¹⁷⁴ In particular, the provisions prohibit ‘undue influence’ and define it as an exploitation of power ‘so as to apply pressure, even without using or threatening to use physical force’.¹⁷⁵ Although Article 9(c) recognises that businesses may aim to exploit specific misfortunes or circumstances to influence the consumer’s transactional decision,¹⁷⁶ the provision is not likely to be of practical relevance as it is circumscribed by the definition of ‘undue influence’, which requires the presence of pressure.

In sum, the main weaknesses of the UCPD lie in the definitions and assumptions underlying the concepts of ‘average’ and ‘vulnerable’ consumers as well as the narrow definition of ‘undue influence’. While the Directive appreciates the importance of presenting information, it fails to address the problems inherent in misleading rankings and recommendations. Despite these deficiencies, which are largely attributable to the fact that the Directive was drafted before the technological capabilities of online businesses became apparent, it can be assumed that the UCPD can be adapted to accommodate even more subtle forms of manipulation.

The easiest approach would be to address the problems inherent in the concept of ‘average consumer’. Its redefinition alone would obviate the need to introduce more far-reaching or technology-specific changes. Although some shortcomings of the UCPD have been recognised by the Law Commission,¹⁷⁷ the European Commission stated that the Directive

¹⁷²UCPD Annex I, point 18.

¹⁷³See also UCPD Annex 1, point 22.

¹⁷⁴UCPD art 8.

¹⁷⁵UCPD art 2(j).

¹⁷⁶UCPD art 9(c), (d).

¹⁷⁷The Law Commission Consultation Paper No 199 ‘Consumer Redress for Misleading and Aggressive Practices’.

need not be updated as ‘no new practices which are not covered by the Directive have been identified’.¹⁷⁸ For the time being, consumers in the EU can resort to the right of withdrawal granted to them by the Directive on Consumer Rights.¹⁷⁹ Instead of seeking relief under private law doctrines or reporting specific practices to the relevant regulatory body, consumers have a period of 14 days to withdraw from the contract, without giving any reason. This ‘solution’ provides an indirect way to counterbalance the technology-related transactional imbalances inherent in the online environment. While the right of withdrawal cannot be regarded as a long-term solution, it can address the more egregious forms of exploitation, such as price discrimination or the targeting of consumers who are prone to compulsive purchases.

12. Final observations

It is often pointed out that we tend to tolerate certain practices online that we would never tolerate offline. A common example is the tracking of online user behaviour. It is observed, half-jokingly, that no sane adult would accept being followed and observed by dozens of people whenever he went to the supermarket. The same practice does not, however, seem to bother us if it happens online. What is more pertinent in the present context is that online businesses have the technological means not only to follow us but also to direct our behaviour towards certain outcomes. In real life, such practice would take the form of physically leading us towards certain aisles, pushing us in certain directions or hiding products from our view. Similar practices seem to be occurring in online business-to-consumer transactions. It is one thing to state that ‘code regulates behaviour’ in an academic article, it is yet another to see it in practice. The dangers of ‘regulating behaviour’ are, however, not universally recognised, particularly in the commercial context. Arguably, many technologies may not have reached a level of effectiveness, or intrusiveness, that translates into a direct manipulation of consumer choices and warrants the attention of the popular press. Many of the technological influences also seem too subtle to be caught by existing protections from unfair bargaining practices. Influences that do not involve overt pressure or coercion fall into a large grey zone. Transactional exploitation is, after all, not prohibited but only vaguely circumscribed by piecemeal solutions in the form of vitiating factors. Artificially created bargaining advantages seem objectionable but are not prohibited. It must not be forgotten, however, that ‘we are only at the dawn of’ Big Data, predictive analytics,

¹⁷⁸First Report on the application of Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market COM (2013) 139 final, 20.

¹⁷⁹Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, art 9.

recommender systems, behavioural advertising etc. Technological influences will become stronger and more pervasive, especially in light of the introduction of the Internet-of-things. Interconnected fridges will not only collect data about our eating habits but also order groceries on our behalf. Will such fridges follow our shopping instructions or helpfully recommend 'better' consumption choices? Will they attempt to change our preferences by pre-installed defaults?

We could endlessly debate whether courts should take the initiative to review the narrow boundaries within which transactional exploitation can be corrected by means of such doctrines as misrepresentation or undue influence. Needless to say, such debate would be primarily of academic interest. As indicated, courts are unlikely to perform 'doctrinal jumps' to address the risk of technology-based transactional exploitation in online commerce. Existing private law doctrines are complex, difficult to enforce and leave gaps in protection. It seems pointless to 'update' contract law to grant individual relief if a harmful commercial practice is prevalent and likely to affect most, if not all, online consumers. We can tolerate *some* unfairness at an individual level, especially if the online consumer fails to exercise basic diligence or otherwise acts unreasonably in exercising his autonomy. We cannot, however, tolerate unfairness at a systemic level – even if its manifestations are subtle to the point of being 'user-friendly'. It may take some time for consumers to realise that online commerce does not offer more choices or better prices and that the web is not an instrument of freedom or self-expression but, increasingly, a giant opaque vending machine designed to exploit every known or *detectable* cognitive bias. Unfortunately, it may also take more time for online consumers to realise that services like search engines or social networking platforms are provided by *businesses*, for commercial purposes. As it is impossible to rely on consumer education or protection by means of disclosure, the need for direct regulatory assistance seems indisputable. Apart from adjusting the UCPD, which seems remarkably future-proof for a regulatory instrument drafted in 2005, a large part of the problem could be addressed by implementing more restrictive privacy protections, thereby putting an end to the commercial surveillance that fuels not only behavioural advertising but most other technologies that influence transacting behaviour. It must be realistically assumed, however, that drastic changes in the area of privacy protection are improbable and that a sudden reversal of the trend to collect and mine consumer information is unlikely.

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Disclosure statement

I declare that the attached article is my original work and that I have no interest, financial or otherwise, in any technology or company mentioned in the article.

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