Artificial Intelligence, Neuroscience and Emotional Data. What Role for Private Autonomy in the Digital Market?

Tommaso De Mari Casareto dal Verme*

Abstract

Within the context of mass production, consumers represent a vulnerable category since they are the weaker contracting party due to the existing information asymmetry between companies and customers. Moreover, consumers suffer from new forms of vulnerability due to the combination of new technological phenomena – such as Artificial Intelligence (AI) and Big Data – and the latest findings in neuroscience, which allows businesses to have a monopoly on the newly acquired knowledge on consumers' purchase decision-making. This article aims at analysing the new technological trends in digital marketing that show the increasing role of 'AI emotional marketing' as a tool to access the inner and unconscious layers of consumers' mind to redirect their economic choices. In this respect, the article will focus on the legal notion of 'autonomy' within the EU legislation on consumer protection and contract law, in order to investigate whether the current legal framework is well equipped to counteract the new form of algorithmic manipulation in the digital market.

Keywords: Artificial Intelligence, private autonomy, contract law, consumer vulnerability, emotions.

1 Introduction

The latest developments in the fields of Artificial Intelligence (AI) and neuroscience, combined with emerging technological phenomena such as Big Data, give businesses – especially Big Tech companies – a monopoly on new forms of knowledge previously inaccessible to humankind. This gives rise to new forms of information asymmetry between businesses and consumers, compounded by technological complexity capable of generating new types of vulnerability. In fact, consumers are currently part of a vulnerable group where they are the weaker party compared to the strength of businesses, both from an economic and a technological perspective. Consumers suffer from a situation of imbalance due to the lack of information related to the contracts they conclude, together with the sophistication of the products they purchase. When it comes to the digital market and the use of very complex technologies, such situation is even exacerbated. In this respect, the law – and EU law in particular – has always taken consumers' vulnerability into special account. Therefore, the emergence of new forms of vulnerability calls for investigating if existing law is well equipped to cope with the new challenges posed to private autonomy by the digital age. To that end, it is first necessary to spend a few words on the legal concept of 'vulnerability', in order to contextualise the vulnerability of the so-called digital consumer. The legal concept of 'vulnerability' can be observed and described from two different perspectives. On the one hand, 'universal' vulnerability is a characteristic of the human being as such and pertains to the constant and inevitable possibility of being harmed by several natural and non-natural occurrences.[1] In this respect, vulnerability constitutes an intrinsic and innate component of each individual, who bears the risk of suffering the consequences of such a condition at any time. On the other hand, vulnerability is 'particular' as it relates to the condition of particular groups of people who are more likely to be adversely affected by that condition.[2] Neither the European Convention on Human Rights nor the European Union primary and secondary legislation expressly define vulnerability per se. Accordingly, it has been shaped progressively by the case law brought by the European Court of Human Rights (ECtHR) and the Court of Justice of the European Union (ECJ), but never with regard to universal forms of vulnerability.

The ECtHR has paid peculiar attention to group vulnerability[3] especially with respect to people with disabilities who can suffer considerable discrimination,[4] asylum seekers[5] and people living with HIV.[6] For its part, the ECJ

* Tommaso De Mari Casareto dal Verme, Ph.D. , Research Fellow in Private Law, University of Trento.

1 M. Fineman, 'The Vulnerable Subject: Anchoring Equality in the Human Condition', 20 *Yale Journal of Law and Feminism* 1, at 8 (2008).

2 L. Peroni and A. Timmer, 'Vulnerable Groups: The Promise of an Emerging Concept in European Human Rights Convention Law', 11(4) *International Journal of Constitutional Law* 1056, at 1056 (2013).

3 *Ibid.*, at 1064. In this view, group vulnerability is a relational concept, as 'it concerns the relation between the person or a group of persons and the circumstances or the context'. See F. Luna, 'Elucidating the Concept of Vulnerability: Layers Not Labels', 2(1) *International Journal of Feminist Approaches to Bioethics* 121, at 129 (2009).

4 See, for instance, *Alajos Kiss* v. *Hungary*, App. No. 38832/06.

5 *M.S.S.* v. *Belgium and Greece*, App. No. 30696/09.

6 *Kiyutin* v. *Russia*, App. No. 2700/10, 53 Eur. H.R. Rep. 26. In the literature on the topic see, inter alia, Peroni and Timmer, above n. 2, at 1057.

doi: 10.5553/ELR.000257

adopts a 'situational' approach,[7] in that it is a specific subject (a woman, a migrant, a minor) to be characterised as 'vulnerable' in relation to a specific situation – such as pregnancy, asylum-seeking, application for family reunification – rather than a particular group.[8]

The situational approach adopted by the ECJ strongly emerges with respect to the relationship between consumers and free market.[9] In fact, the idea of vulnerability is at the core of EU consumer protection law where the imbalance is driven by the information asymmetry that exists between businesses and consumers, since the latter most often cannot access all the information regarding production and marketing processes implemented by the former.[10] That is why the concept of consumer as the 'weaker party' has emerged as a general principle of EU law in order to protect them against unfair contractual terms and excessively asymmetrical exchanges.[11] In this respect, consumer's vulnerability derives from them being 'economically weaker and less experienced in legal matters than the other party to the contract'.[12]

The condition of consumers in the EU law seems to be placed halfway between universal and particular vulnerability condition. On the one hand, it appears to be a universal condition of human beings, since everyone can potentially be a consumer and accordingly be affected by such information asymmetry; on the other hand, consumers' vulnerability emerges only in relation to the context – the free market – where the vulnerability of the group is the imbalance itself, rather than specific individual frailties.

Nowadays the information asymmetry between consumers and businesses is further exacerbated by the advent of 'modern' AI[13] and the 'black box' phenomenon, which makes it difficult to understand how algorithms work.[14] In fact, the use of techniques like machine learning (ML) and deep learning (DL) allows software systems to make very complex inferences that would be unconceivable to human beings, thus creating a whole new level of knowledge[15] accessible only to businesses. Such phenomena appear further heightened in the online digital context, where the so-called dark patterns affect consumers' choices thus infringing on user autonomy, which can be defined as self-governance that leads to independent choices and the expression of free will among users.[16] Such situation has led some scholars to hypothesise the existence of a vulnerability condition common to all the so-called digital consumers due to the sole fact of them accessing the digital market.[17]

In conclusion, the one related to the digital consumer appears to be a new form of universal vulnerability related to a new and deeper level of information asymmetry, whose main aspects will be shown in the next section.

The article is structured as follows. In Section 2 we will show how advances in neuroscience, combined with the use of AI in the digital marketing, are able to generate a new form of 'universal' vulnerability related to the exploitation of consumers' emotions. In Section 3 we will provide an introduction on the main ethical and legal issues posed by such technologies to consumers' autonomy. Section 4 will analyse the existing and upcoming EU public regulatory tools relevant to algorithmic manipulation of consumers' emotions, while Section 5 will deal with EU contract law, both at supranational and national levels.

7 C. Mackenzie, W. Rogers & S. Dodds, 'Introduction: What Is Vulnerability and Why Does It Matter for Moral Theory?', in C. Mackenzie, W. Rogers & S. Dodds (eds.), *Vulnerability. New Essays in Ethics and Feminist Philosophy* (2014) 1, at 7.

8 V. Lorubbio, 'Vulnerability as Universal Ecosystem Condition: A European Comparative Perspective', 22 *Federalismi.it* 154, at 164 (2021).

9 See Case C-226/16 *Eni SpA and Others* v. *Premier ministre and Ministre de l'Environnement, de l'Énergie et de la Mer* [2017] ECLI:EU:C:2017:1005; Case C-265/08 *Federutility and Others* v. *Autorità per l'energia elettrica e il gas* [2010] ECR I-03377; Case C-547/14 *Philip Morris Brands SARL e a.* v. *Secretary of State for Health.* [2016] ECLI:EU:C:2016:325; Joined Cases C-503/13 and C-504/13 *Boston Scientific Medizintechnik GmbH contro AOK Sachsen-Anhalt – Die Gesundheitskasse e Betriebskrankenkasse RWE* [2015] ECLI:EU:C:2015:148.

10 The fact that consumer contract law is dominated by information asymmetries is well known. In any case, for a brief yet exhaustive reconstruction of information asymmetry as one of the main kinds of market failures, see S. Grundmann, 'Information, Party Autonomy and Economic Agents in European Contract Law', 39 *Common Market Law Review* 269, at 279 (2002), who observes that unequal bargaining power of consumers and sellers is explained as being founded on a problem of information asymmetries, since the party of the contract who acts professionally in the market possesses considerably more relevant information, while the gathering of the same information is excessively costly for those players in the market who use it only occasionally.

11 F. Galli, *Algorithmic Marketing and EU Law on Unfair Commercial Practices* (2022), at 181-2, observes that the main factor of consumer vulnerability lies in the imbalance in the level of knowledge between the two bargaining parties.

12 Case C-89/91 *Shearson Lehman Hutton* v. *TVB* [1993] ECR I-00139.

13 S. Russel and P. Norvig, *Artificial Intelligence. A Modern Approach* (2016).

14 One of the main objectives in regulating AI is 'opening the black box'. This is a central aspect in the matter of AI transparency, since those who regulate, employ or are affected by AI based systems should have an adequate understanding of the technology. Opening the black box appears indispensable to identify encroachments on user privacy, to detect biases and to prevent other potential harms. In this respect, see T. Wischmeyer, 'Artificial Intelligence and Transparency: Opening the Black Box', in T. Wischmeyer and T. Rademacher (eds.), *Regulating Artificial Intelligence* (2020) 75.

15 It has been observed that one of the main features of modern AI is its capacity of making inferences and extract patterns not possible to human beings thanks to ML and DL algorithms which generate forms of higher-order learning from raw data and self-generated experience, without relying on human expertise. In this respect, see A. De Bruyn, V. Viswanathan, Y. Shan Beh, J. Kai-Uwe Brock & F. von Wangenheim, 'Artificial Intelligence and Marketing: Pitfalls and Opportunities', 51 *Journal of Interactive Marketing* 91, at 102 (2020).

16 T. Kollmer and A. Eckhardt, 'Dark Patterns Conceptualization and Future Research Directions', 65 *Business & Information Systems Engineering* 201 (2023).

17 Galli (2022), above n. 11, at 192. See also L. Gatt and I.A. Caggiano, 'Consumers and Digital Environments as a Structural Vulnerability Relationship', 2 *European Journal of Privacy Law & Technologies* 8, at 12 (2022), who observes that 'the crucial point lies in the determination of a concept of vulnerability that is not linked to specific physical or psychological disabilities but is identified in the relationship between the physical person and the technological environment in which he/she operates', giving rise to an 'ontological vulnerability of human beings – in general – with respect to digital technology structures'.

doi: 10.5553/ELR.000257

2 AI Emotional Marketing: The State of the Art

As shown in the introduction, the concept of vulnerability in consumer law appears to be directly related to knowledge. The main factor of imbalance between businesses and consumers relates to the information asymmetry that exists between them. Among the main sources of this asymmetry is the complexity of the technology used by companies in their market strategies.

Advances in neuroscience research have significantly influenced today's market strategies. Understanding the structure of the human brain and its role in decision-making is crucial. After Paul Pierre Broca discovered in 1861 the left and right hemisphere functions, Charles Darwin in 1872 emphasised the universality and innate nature of human emotions, which was later deepened by the advances in neurotechnology in the early 1900s, including X-rays, non-invasive eye-tracking devices, electrocardiography (ECG) and electroencephalography (EEG).[18] These discoveries highlighted the emotional component of decision-making and its irrational nature. In the 1970s, Paul Donald MacLean proposed the 'triune brain' theory, dividing the brain into three parts: the reptilian brain (primal instincts), the limbic or paleomammalian brain (emotions), and the neocortical or neomammalian brain (rational thoughts).[19] Despite criticism,[20] later studies supported the predominance of emotions over rationality. Benjamin Libet in 1985 demonstrated that the brain activates 550 milliseconds before the person consciously decides to act;[21] Antonio Damasio showed in 1999 that the reactions of individuals to external stimuli follow the model '*feel-act-think*';[22] Joseph LeDoux showed in 1996 that the part of the human brain involved in the emotional process is the amygdala, while the rational reasoning occurs at the level of the cortex.[23]

The findings of neuroscience and psychology in the second half of the 20th century began to merge with economic and marketing research, leading to the birth of neuroeconomics and behavioural economics. Neuroeconomics seeks to discover the neurobiological mechanisms underlying decision-making,[24] while behavioural economics integrates insights from psychology into the understanding of economic behaviour.[25] Amos Tversky and Daniel Kahneman's 'Prospect Theory' in the 1970s played a key role in neuroeconomics and behavioural economics by considering decision-making under conditions of risk and emotional influence.[26] This integration paved the way for the field of 'Neuromarketing', which combines neuroscience and marketing to analyse how the brain processes and responds to marketing stimuli.[27] Neuromarketing employs brain imaging techniques such as functional magnetic resonance imaging (fMRI)[28] and electroencephalography (EEG)[29] to understand consumers' decision-making processes, preferences and emotional reactions that happen at a subconscious level. It also uses less invasive technologies such as eye-tracking[30] and facial coding[31] to extract consumers' emotional responses.

The aforementioned advances in the field of neuroscience have represented a breakthrough in the way we understand consumer economic behaviour and, therefore, market research. The role of emotions in human decision-making, and thus of the irrational and unconscious part of the brain, has challenged the assumption of the consumer as the so-called *homo oeconomicus* who acts rationally in the market driven only by utilitarian considerations. This model, typically adopted by neoclassical economics, was replaced by what Herbert A. Simon called 'bounded rationality', where rationality is tailored to cognitively limited agents.[32]

18 The proposed reconstruction is offered by C. Garofalo, F. Gallucci & M. Diotto, *Manuale di Neuromarketing* (2021), at 3.

19 For further insights, see P.D. MacLean, T.J. Boag & D. Campbell, *A Triune Concept of the Brain and Behaviour: Hincks Memorial Lectures* (1973).

20 J. Cesario, D.J. Johnson & H.L. Eisthen, 'Your Brain Is Not an Onion with a Tiny Reptile Inside', 29(3) *Current Directions in Psychological Science* 255 (2020).

21 B. Libet, 'Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action', 8(4) *Behavioral and Brain Sciences* 529 (1985).

22 A. Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (1999).

23 J. LeDoux, *The Emotional Brain* (1996).

24 P.W. Glimcher and A. Rustichini, 'Neuroeconomics: The Consilience of Brain and Decision', 306 *Science* 447 (2004).

25 E. Cartwright, *Behavioral Economics* (2014), at 4.

26 D. Kahneman and A. Tversky, 'Prospect Theory: An Analysis of Decision Under Risk', 47(2) *Econometrica* 263 (1979).

27 Neuromarketing describes a field of study defined as applying neuroscientific methods to analyse and understand human behaviour concerning markets and marketing exchanges. See A. Martinez-Levy, P. Cherubino, D. Rossi, M. Herrero Ezquerro, A. Trettel & F. Babiloni, 'Advances in Neuroscience and Its Application in Economics and Marketing Research', 3 *Micro & Macro Marketing* 521, at 522 (2021); N. Lee, A.J. Broderick & L. Chamberlain, 'What Is "Neuromarketing"? A Discussion and Agenda for Future Research', 63 *International Journal of Psychophysiology* 199 (2007).

28 fMRI is an imaging technique that measures changes in cerebral blood flow, which can indicate activation of specific brain areas. This allows researchers to identify which areas of the brain are activated when an individual is exposed to a specific marketing stimulus.

29 EEG records electrical activity in the brain using electrodes placed on participants' scalps. This allows researchers to monitor changes in brain activity, such as brain waves, while participants are exposed to advertising and marketing stimuli.

30 Eye tracking involves several techniques to extract data from the position and movement of eyeballs, in order to better understand the relationship between the brain and the visual system. Eye-tracking techniques are employed in marketing research since it can provide insight on consumer's attention to various forms of advertising. See S. Białowąs and A. Szyszka, 'Eye-tracking in Marketing Research', in R. Romanowsi (ed.), *Managing Economic Innovations* (2019) 91.

31 According to the definition provided by D.A. Dragoi, 'Facial Coding as a Neuromarketing Technique: An Overview', XXI *"Ovidius" University Annals, Economic Sciences Series* 681, at 683 (2021), facial coding represents one of the six neuromarketing research tools (facial coding, facial electromyography, implicit association test, skin conductance, eye tracking, physiological responses' measurement) that do not focus on recording brain activity and it is done employing a video recording of the facial expressions, which are spontaneous and provide real-time data.

32 The reference goes to H. Simon, *Models of Man* (1957). For a later reconstruction, see L.A. Reisch and M. Zhao, 'Behavioural Economics, Consumer Behaviour and Consumer Policy: State of the Art', 1(2) *Behavioural Public Policy* 190 (2017).

doi: 10.5553/ELR.000257

The development of the so-called emotional marketing[33] was further reinforced by the growing interest in modern AI, which found in marketing – and especially online marketing – one of its primary fields of application. AI, indeed, is used both to detect emotions and for marketing goals. On the one hand, among the most common uses of 'emotional AI' is affective computing,[34] a multidisciplinary research area relying on contributions from different fields, such as psychology, physiology, engineering, sociology, mathematics, computer science, education and linguistics.[35] Detecting emotions through AI is possible through employing many techniques that allow emotional AI to achieve the capacity to see, read, listen, feel, classify and learn about emotional life.[36] For instance, a DL approach can be used to detect emotions from audio-visual emotional Big Data achieving an accuracy degree of 99.9%.[37] But emotions can emerge also by analysing text through the so-called sentiment analysis that makes it possible to interpret users' state of mind in real time from their written online text.[38]

On the other hand, AI started to be increasingly employed in marketing, giving rise to 'Artificial Intelligence Marketing' (AIM) that uses ML techniques to collect and process Big Data and turn it into new information and knowledge about consumers' needs and wants.[39] In addition, the combination of AI techniques and neuromarketing information appears to be the current scope of businesses. The application of ML and DL to neuromarketing studies is capable of increasing the accuracy and reliability of the results[40] and, at the same time, of generating a whole new level of knowledge by aggregating the results from data related to consumers' unconscious reactions using AI, and specifically DL.[41] The main feature of modern AI is its capacity of making inferences and extract patterns not possible to human beings thanks to ML and DL algorithms which generate forms of a higher-order learning from raw data and self-generated experience, without relying on human expertise.[42] AI generates autonomously new knowledge structures, and, consequently, companies are increasingly investing in such new technology in the process of knowledge creation to strengthen their marketing capabilities by automating customer targeting with personalised digital advertising.[43] At the same time, several big companies and tech giants – such as Google and Facebook – have recognised the importance of emotions in consumers' choices and started using neuromarketing research services to gather information about their perceptions of their advertisements or products.[44] Online sentiment analysis, especially in social networks,[45] has increasingly developed as an application of ML to evaluate and classify users' online attitudes and opinions for marketing purposes, allowing marketers to automatically ex-

33 Based on the studies showing that the emotional conditions influence every stage of decision-making in purchasing processes, emotional marketing refers to market strategies that focus on arousing emotions in people to induce them to buy a particular product or service and to create an emotional link between the company and the consumer. See D. Consoli, 'A New Concept of Marketing: The Emotional Marketing', 1(1) *BAND. Broad Research in Accounting, Negotiation, and Distribution* 1 (2010), and M.N. Khuong and V.N. Bich Tram, 'The Effects of Emotional Marketing on Consumer Product Perception, Brand Awareness and Purchase Decision – A Study in Ho Chi Minh City, Vietnam', 3(5) *Journal of Economics, Business and Management* 524 (2015).

34 First coined by R.W. Picard, *Affective Computing* (1997); according to the definition provided by A. Saxena, A. Khanna & D. Gupta, 'Emotion Recognition and Detection Methods: A Comprehensive Survey', 2 *Journal of Artificial Intelligence and Systems* 53, at 54 (2020), 'Affective computing is a science under which methods are being developed that can not only replicate but also process, identify and understand human emotions.'

35 S.B. Daily, M.T. James, D. Cherry, J.J. Porter, S.S. Darnell, J. Isaac & T. Roy, 'Affective Computing: Historical Foundations, Current Applications, and Future Trends', in M. Jeon (ed.), *Emotions and Affect in Human Factors and Human-Computer Interaction* (2017) 213.

36 A. McStay, *Emotional AI: The Rise of Empathic Media* (2018), at 3.

37 M.S. Hossain and G. Muhammad, 'Emotion Recognition Using Deep Learning Approach from Audio-Visual Emotional Big Data', 49 *Information Fusion* 69 (2019).

38 Saxena, Khanna & Gupta, above n. 34, at 64.

39 For a definition of Artificial Intelligence Marketing, see K.A. Yau, N. Mat Saad & Y. Chong, 'Artificial Intelligence Marketing (AIM) for Enhancing Customer Relationships', 11 *Applied Sciences* 8562 (2021), who define it as the use of AI 'to automate the curation of a massive amount of data and information related to marketing mix in order to create knowledge'. For deeper and more technical insights, see S. Struhl, *Artificial Intelligence Marketing and Predicting Consumer Choice* (2017). See also R. Venkatesan and J. Lecinski, *The AI Marketing Canvas* (2021), at 12, who outline a roadmap to supercharge each moment of the customer relationship journey with AI composed of five stages: Foundation, Experimentation, Expansion, Transformation and Monetization.

40 The accuracy and reliability of neuromarketing results brought by AI is reported in the literature. See, inter alia, Y. Mouammine and H. Azdimousa, 'Using Neuromarketing and AI to Collect and Analyse Consumer's Emotion: Literature Review and Perspectives', 12 *International Journal of Business & Economic Strategy* 34 (2019), who show how the combination of neuromarketing and AI can improve the former's technological tools to collect and measure the consumer's emotion with more accuracy and reliability, since 'an Artificial Intelligence based system can be effective enough to assure the extraction and recognition of all sort of emotions of individuals, regardless of gender and race'. Therefore, using AI can make some neuromarketing limitations disappear. For a specific application of machine learning to neuromarketing, see M. Ramirez, S. Kaheh & K. George, 'Neuromarketing Study Using Machine Learning for Predicting Purchase Decision', *IEEE 12th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference* (UEMCON) 560 (2021), who adopted machine learning algorithms, such as the k-nearest neighbour (kNN) and support vector machine (SVM), to ascertain consumer preferences and improve classification prediction accuracy.

41 B. Glova and I. Mudryk, 'Application of Deep Learning in Neuromarketing Studies of the Effects of Unconscious Reactions on Consumer Behavior', *2020 IEEE Third International Conference on Data Stream Mining & Processing* 337, at 340(August 21-25, 2020).

42 See De Bruyn et al., above n. 15.

43 In this regard, see F.S. Foltean and G.H. van Bruggen, 'Digital Technologies, Marketing Agility, and Marketing Management Support Systems: How to Remain Competitive in Changing Markets', in C. Machado and J.P. Davim (eds.), *Organizational Innovation in the Digital Age* (2022) 1, at 31.

44 F. Morton, 'Neuromarketing for Design Thinking: The Use of Neuroscientific Tools in the Innovation Process', in C. Machado and J.P. Davim (eds.), *Organizational Innovation in the Digital Age* (2022) 1, at 40-43.

45 An emerging field of research that is related to the detection of users' emotions expressed in social networks for marketing purpose. This research area has been called 'social network emotional marketing' and studies how social network activities are capable of increasing consumers' trust in brands and, consequently, improve the emotional link between them and the businesses. Not only that, some emerging studies also show the influence of social network emotional marketing in consumers' purchase behaviour. See S. Bin, 'Social Network Emotional Marketing Influence Model of Consumers' Purchase Behavior', 15 *Sustainability* 5001 (2023).

doi: 10.5553/ELR.000257

tract high-quality data on emotional expressions that appears measurable, objective and consistent.[46]

Given that machines could learn neuromarketing,[47] the combination of AI and emotional data can create a new form of information asymmetry, where businesses can use their exclusive knowledge of the human brain and advanced AI techniques to trigger consumers' emotions and, thus, affect their purchase decision. Since emotions and their expressions tend to exhibit universal features,[48] the knowledge, detection and exploitation of emotional data are susceptible to generate a new form of universal vulnerability where AI can generalise the basic understanding of small groups of subjects to a whole population.[49] Such scenario is not that far from being carried out, since many scientific articles show that AI applications to neuromarketing already exist and that detecting emotions derived from the so-called tacit knowledge[50] by using AI in the digital market should (and will) be the next step of the future AIM research.[51]

3 AI Emotional Marketing: Ethical and Legal Issues

The possibility for marketers and businesses to detect and exploit consumers' emotional data in real time raises important ethical and legal issues. On the one hand, the information asymmetry concerning AI and emotions is capable of infringing upon people's freedom of choice and, consequently, violating some constitutional rights common to all the EU Member States, as well as certain principles enshrined in the EU primary legislation such as the right to personal integrity[52] and the right to protection of personal data.[53] On the other hand, knowing and exploiting the inner and unconscious functioning of people's decision-making can affect the concept of consumers' private autonomy in bargaining. In this view, the notion of 'emotion' considered hereto refers to the basic emotions which are universally present in all humans (e.g. anger, disgust, fear, happiness, sadness, surprise, anxiety) as they represent the basis for most affective computing techniques.[54] At the same time, emotions become a new source of universal vulnerability[55] for the sole fact that they can be triggered and deployed by the information asymmetry inherent to the use of AI in the digital market.

As already highlighted, the findings in neuroscience during the 19th and 20th centuries showed the primary role played by emotions – and thus by the irrational part of the brain – in people's daily decision-making. Besides the simultaneous intersection between brain science and legal practice that gave rise to the so-called Neurolaw,[56] around 2002 some scholars started to address the potential ethical problems linked to mindreading, giving rise to 'Neuroethics'. Neuroethics is concerned with two main issues: on the one hand, the use of advanced neurotechnology creates privacy problems; on the other hand, the very concepts of free will and autonomy are challenged.[57] Therefore, neuroethics has to do with the philosophical debate about the fine line between the concepts of persuasion and manipulation, since progress in neuroscience is revealing the relation between mind and brain and making it possible to monitor and manipulate the human mind.[58] Such debate soon became central in consumer ethics with particular regard

46 M. Rambocas and B.G. Pacheco, 'Online Sentiment Analysis in Marketing Research: A Review', 12(2) *Journal of Research in Interactive Marketing* 146, at 147 (2018).

47 A. Hakim, S. Klorfeld, T. Sela, D. Friedman, M. Shabat-Simon & D.J. Levy, 'Machines Learn Neuromarketing: Improving Preference Prediction from Self-Reports Using Multiple EEG Measures and Machine Learning', 38 *International Journal of Research in Marketing* 770 (2021).

48 See P. Ekman, *Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life* (2007), who has shown that basic emotions are universally expressed by everybody in any place, time and culture through similar methods, such as facial expressions that are not culturally specific but universal and have biological origin. In this regard, see also Consoli, above n. 33, at 2.

49 Hakim et al., above n. 47, at 773.

50 The concept of 'tacit knowledge' derives from the well-known expression of Michael Polanyi in *The Tacit Dimension* (2009) according to which 'we can know more than we can tell' and refers to knowledge that is difficult to articulate or express explicitly through language or formal documentation. For deeper insights, see N. Gascoigne and T. Thornton, *Tacit Knowledge* (2013).

51 De Bruyn et al., above n. 15, state that AI systems are already capable of capturing tacit knowledge to improve the effectiveness of marketing efforts and build new explicit or formal knowledge, while others believe that the state of the art does not enable AI to process tacit knowledge, on which is based the largest part of the efforts in improving customer relationship. Therefore, further investigation could be pursued to enable AIM to learn tacit knowledge for enhancing customer relationship. See Yau, Mat Saad & Chong, above n. 39, at 11-12.

52 According to Art. 3 of the Charter of Fundamental Rights of the European Union (CFREU), 'Everyone has the right to respect for his or her physical and mental integrity'. The right is further specified in para. 2 in the fields of medicine and biology, with regard to the free and informed consent of the person concerned, the prohibition of eugenic practices and so on.

53 Under Art. 8 CFREU, 'everyone has the right to the protection of personal data concerning him or her.'

54 A. Häuselmann, A.M. Sears, L. Zard & E. Fosch-Villaronga, 'EU Law and Emotion Data', https://arxiv.org/abs/2309.10776.

55 *Ibid.*

56 Although most scholars pinpoint the birth of neurolaw to 1991, when Lawyer J. Sherrod Taylor coined the term to describe the 'converging courses' of neuropsychology and the legal system (S.K. Erickson, 'Blaming the Brain', 11(1) *Minnesota Journal of Law, Science and Technology* 27, at 35 (2010), the relationship between brain science and law began much earlier. As Francis X. Shen has pointed out, there is a series of four important 'moments' in the history of neurolaw to be highlighted: (1) the foundational medico-legal dialogue in the 19th and early 20th centuries; (2) the introduction of electroencephalography evidence into the legal system in the mid-20th century; (3) the use of psychosurgery for violence prevention in the 1960s and 1970s; (4) the development of neurolaw in personal injury litigation in the late 1980s and 1990s (F.X. Shen, 'The Overlooked History of Neurolaw', 85(2) *Fordham Law Review* 667, at 668 (2016).

57 See, inter alia, M.J. Farah, 'Emerging Ethical Issues in Neuroscience', 5(11) *Nature Neuroscience* 1123, at 1127 (2002), and N. Levy, 'Neuroscience, Free Will, and Responsibility: The Current State of Play', in J. Clausen and N. Levy (eds.), *Handbook of Neuroethics* (2015) 203.

58 M.J. Farah, 'Neuroethics: The Practical and the Philosophical', 9(1) *TRENDS in Cognitive Sciences* 34 (2005), observes that progress in neuroscience is revealing the relation between mind and brain and making it possible to monitor and manipulate the human mind.

to advertising, holding that while persuasion is deemed to be legitimate, manipulation violates consumer's private autonomy as the right to make autonomous decisions without any deceptive interference from third parties.[59]

The aforementioned issues led to some proposals for the development of documents proclaiming the so-called neurorights in order to promote neuroscientific activities inspired by a principle of 'non-manipulation by design'[60] and protect individuals' autonomy against illegitimate invasions and manipulations.[61] In particular, 'The Neurorights Initiative' project launched by Columbia University aims at highlighting the potentials and risks of the neurotechnology sector by developing a set of 'new' human rights – such as the right to personal identity, free will, mental privacy, equal access to mental augmentation and protection from algorithmic biases – that would ensure free and informed use of neurotechnology tools.[62] In 2019, this research group engaged in a partnership with the State of Chile, where two bills on the subject have been presented.[63] Therefore, Chile was the first country in the world to directly address the human rights challenges, for its constitution now requires that technological development respect people's physical and mental integrity, and it states that the law must especially protect brain activity and information related to it.[64]

Similar aspects are highlighted by the literature when dealing with ethical issues related to neuromarketing and, thus, to consumer protection. These problems arise from the possibility of accessing the unconscious and irrational part of the brain involved in emotions and influencing consumer's economic choices, possibly affecting consumer autonomy if neuromarketing reaches a critical level of effectiveness.[65] This may be problematic depending on whether the technology can be considered to manipulate consumer behaviour so effectively that it becomes impossible for consumers to be aware of the subversion of their emotions and thoughts with the aim to manipulate their purchase decisions.[66] Such issues are strongly linked to the debate on the difference between persuasion and manipulation, which reflects the debate between advocates and critics of neuromarketing. The former argue that neuromarketing research is limited to enabling consumers to understand what they really want and, therefore, serves them better.[67] Furthermore, advocates claim that such a thing as a 'buy button' in the human brain does not exist.[68] The latter assume that consumers' ability to make logical, informed decisions about purchases will be compromised,[69] since the goal of neuromarketers is to identify and activate the emotional triggers that drive consumers to make certain purchases. In this respect, these techniques can be a tool for overriding or circumventing rational consumer choice by using powerful stimuli to provoke emotional responses to products.[70] In fact, while traditional marketing techniques aim to persuade consumers by influencing the conscious part of the brain, neuromarketing techniques risk blurring into manipulation by acting on the unconscious part of the brain that is triggered before the rational part and is responsible for 95% of daily consumer thinking.[71] The research for a 'buy button' in the human brain is to be considered morally deplorable, so much to induce a consumer advocacy group in 2003 to state that the 'quest for a "buy button" in the human skull is an egregious violation of the very reason that a university exists'.[72]

59 For an exhaustive analysis of the ethical issues related to manipulative marketing, see V. Danciu, 'Manipulative Marketing: Persuasion and Manipulation of the Consumer Through Advertising', 2(591) *Theoretical and Applied Economics* 19 (2014).

60 Galli (2022), above n. 11, at 273.

61 Inter alia, P.R. Roelfsema, D. Denys & P.C. Klink, 'Mind Reading and Writing: The Future of Neurotechnology', 22(7) *Trends in Cognitive Sciences* 598 (2018), observe that the relevance, from a legal point of view, of neurotechnology relates to its ability to read the human brain and direct or condition it.

62 For deeper insights, see M.C. Errigo, 'Neuroscienze, tecnologia e diritti: problemi nuovi e ipotesi di tutela', 3 *Dirittifondamentali*.it 216 (2020).

63 The first bill proposed an amendment to the constitution to introduce the right to mental integrity, to be protected by regulation and not available or manipulable by anyone, not even for health reasons; the second bill, on the other hand, aims at regulating neurotechnology in order to protect the rights to personal identity, free will, mental privacy, equitable access to technologies that enhance human capabilities, and the right to protection against prejudice and discrimination.

64 A. McCay, 'Neurorights: The Chilean Constitutional Change', *AI and Society* (31st January 2022). See also A. Mollo, 'La vulnerabilità tecnologica. Neurorights ed esigenze di tutela: profili etici e giuridici', 1 *European Journal of Privacy Law & Technologies* 200, at 207 (2021), who observes that the premise of these legislative initiatives is a new and different concept of privacy that focuses on neural data and the information regarding our mental processes and states that can be obtained by analysing them, with the goal of considering such neural data as organic tissue, which as such cannot be subject to acts of disposition for consideration, but only donated for altruistic purposes.

65 According to the main studies on the topic, ethical issues related to neuromarketing fall into two major categories: (1) the protection of various parties who may be harmed or exploited by the research, marketing and deployment of neuromarketing; (2) the protection of consumer autonomy. For such a reconstruction, see E.H. Spence, 'Ethics of Neuromarketing: Introduction', in J. Clausen and N. Levy (eds.), *Handbook of Neuroethics* (2015) 203, at 1621, and Y.I. Ulman, T. Cakar & G. Yildiz, 'Ethical Issues in Neuromarketing: "I Consume, Therefore I am!"', 21 *Science and Engineering Ethics* 1271 (2015). The present analysis will not consider the problems arising from the research activity per se, partly because it has been noted that no one would ever challenge the legitimacy of neuromarketing research as long as it is conducted with respect for human rights and with the free and informed consent of the participants. For this consideration, see R. Fiocca, 'Convergenze inaspettate… E se big data e neuromarketing insieme svelassero più di quanto conosciamo dei comportamenti di acquisto e consumo?', 2 *Micro & Macro Marketing* 361, at 375 (2019).

66 E.R. Murphy, J. Illes & P.B. Reiner, 'Neuroethics of Neuromarketing', 7 *Journal of Consumer Behaviour* 293 (2008).

67 A. Krausová, 'Neuromarketing from a Legal Perspective', 1 *The Lawyer Quarterly* 40, at 41 (2017).

68 S.J. Stanton, W. Sinnott-Armstrong & S.A. Huettel, 'Neuromarketing: Ethical Implications of Its Use and Potential Misuse', 144 *Journal of Business Ethics* 799, at 804 (2017).

69 R.M. Wilson, J. Gaines & R.P. Hill, 'Neuromarketing and Consumer Free Will', 42(3) *The Journal of Consumer Affairs* 389, at 394 (2008).

70 Krausová, above n. 67, at 41.

71 G. Zaltman, *How Customers Think: Essential Insights into the Mind of the Market* (2003), at 57.

72 The quotation is taken from the letter sent by the Commercial Alert and signed by academics and leaders of non-profit consumer advocacy groups to the president of Emory University in 2003 and alleging that neuromarketing was a significant risk to consumers and that they should have im-

doi: 10.5553/ELR.000257

It seems pretty clear, though, that neuromarketing in itself focuses on the use of neuroscientific tools in a preliminary research stage which does not appear per se to affect consumers' private autonomy in bargaining. Thus, at the state of the art it seems that the so-called stealth neuromarketing is not yet technically possible.[73] Nevertheless, it cannot be neglected that the knowledge[74] gained by marketing research can directly affect market outcomes: in fact, in 1999 Hanson and Kysar revealed the possibility of market manipulation as the possibility for market outcomes to be influenced by the ability of one actor to control the format of information, the framing and presentation of choices and, more generally, the setting within which market transactions occur.[75] These findings were further supported by research in the context of the digital market, where companies can reach consumers anytime and anywhere.[76] After all, as the findings shown in the previous section have revealed, in the digital marketplace techniques to manipulate consumers by exploiting their emotions in real time already exist. Through the use of emotional AI, companies can target consumer choices even without collecting their biometric data. The risks posed by AI on people's right to self-determination are well known. Automated decision-making systems have brought about a significant advancement in identifying, analysing and even exploiting behavioural patterns in the digital market with an unprecedented level of depth and detail.[77] Similarly, dark patterns are user interface designs which intend to coerce or manipulate users into acting in certain ways, thus threatening online consumers' autonomy as an individual's right to self-governance.[78] AI emotional marketing can exert manipulative capabilities since algorithms employed in the digital market – especially in social networks – allow businesses to quantify, track and manipulate emotions in real time, thus affecting consumer self-determination and autonomy given that the new knowledge on human brain's functioning poses reasonable challenges to the reliance of the rationality paradigm within consumer protection.[79]

In the light of the above considerations, the problem of emotion exploitation poses challenges to consumer's autonomy regardless of the positive or negative effects on consumers' choice, since the legal perspective must consider the right to self-determination itself as the right to exert control over their own decisions, which encompasses the freedom to make mistakes.[80]

4 AI Emotional Marketing in the EU Legislation

From a legal point of view, with the exploitation of emotions a problem arises of protecting consumers' autonomy and self-determination as such, on which much of the EU law is based. In this section, an attempt will be made to analyse whether the existing and upcoming EU law is adequate to protect consumers from manipulation of emotions.

Even though primary EU legislation does not expressly consider it, the autonomy of economic actors constitutes a general principle of EU law, since every liberal legal order has the autonomy of private parties as its basic philosophy.[81] Having a highly competitive social market economy as the basis for the internal market, the protection of the consumer as the weaker bargaining party has always formed an intrinsic part of the entire EU system.[82]

The need for consumer protection in the context of the capitalist economy, especially with regard to advertising, appeared from the 1960s in European legislation, with the aim of protecting consumers' freedom of self-determination. The most important initiatives were Directive 84/450/EEC,[83] which placed a ban on misleading advertising, and Directive 97/55/EC,[84] on the regulation of declaratory advertising. These interventions responded to the two main needs of consumers, those of

mediately stopped all study of neuromarketing. For deeper insights, see Stanton, Sinnott-Armstrong & Huettel, above n. 68, at 799.

73 Stealth neuromarketing refers to the use of neuromarketing tools – such as eye-tracking, facial coding and skin conductance – in real time without people being aware of it and immediately affecting their purchase decisions. See Murphy, Illes & Reiner, above n. 66, at 296.

74 'Knowing what portions of our brains are stimulated may reveal the nature of resulting behaviors' (Wilson, Gaines & Hill, above n. 69, at 399).

75 J.D. Hanson and D.A. Kysar, 'Taking Behavioralism Seriously: The Problem of Market Manipulation', 74(3) *New York University Law Review* 630 (1999).

76 R. Calo, 'Digital Market Manipulation', 82(4) *The George Washington Law Review* 995 (2914).

77 C. Ernst, 'Artificial Intelligence and Autonomy: Self-Determination in the Age of Automated Systems', in T. Wischmeyer and T. Rademacher (eds.), *Regulating Artificial Intelligence* (2020) 75, at 57.

78 For an overview on the relationship between dark patterns and individual autonomy, see S. Ahuja and J. Kumar, 'Conceptualizations of User Autonomy Within the Normative Evaluation of Dark Patterns', 24 *Ethics and Information Technology* 52 (2022).

79 An exhaustive overview of the constitutional challenges of emotional AI with regard to consumers' self-determination and individual autonomy is provided by P. Valcke, D. Clifford & V.K. Dessers, 'Constitutional Challenges in the Emotional AI Era', in H. Micklitz, O. Pollicino, A. Reichman, A. Simoncini, G. Sartor & G. De Gregorio (eds.), *Constitutional Challenges in the Algorithmic Society* (2022) 57. The authors – starting from the Declaration on the manipulative capabilities of algorithmic processes of February 2019 in which the Council of Europe's Committee of Ministers alerted for the growing capacity of contemporary machine learning tools both to predict choices and to influence emotions, thoughts and actions, sometimes subliminally – wonder about the need of new constitutional rights, as suggested by some, in light of growing practices of manipulation by algorithms, in general, and the emergence of emotional AI, in particular.

80 Ernst, above n. 77, at 62.

81 N. Reich, *General Principles of EU Civil Law* (2014), at 18.

82 See, inter alia, J. Basedow, *EU Private Law. Anatomy of a Growing Legal Order* (2021), at 507, who observes that the protection of consumers has become a major topic of legal politics in industrialised nations and also in the EU. Consumer protection is a broad concept: according to Art. 169 TFEU, it serves such diverse objectives as 'the health, safety and economic interests of consumers, as well as the promotion of their right to information, education and to organize themselves in order to safeguard their interests'.

83 Council Directive 84/450/EEC of 10 September 1984 relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning misleading advertising.

84 Directive 97/55/EC of European Parliament and of the Council of 6 October 1997 amending Directive 84/450/EEC concerning misleading advertising so as to include comparative advertising.

being informed and not being misled. Missing, however, was that of not being manipulated, manoeuvred, controlled or conditioned by forms of advertising that, while not possessing a deceptive attitude, are nonetheless capable of altering the consumer's will-formation process or even provoking unconscious reactions.[85] The latter category appeared with Directive 2005/29/EC – also known as Unfair Commercial Practices Directive (UCPD) – which prohibits unfair commercial practices,[86] including both misleading and aggressive practices. While a commercial practice shall be misleading if it contains false information and is therefore untruthful or in any way, including overall presentation, deceives or is likely to deceive the average consumer (Art. 6), it shall be aggressive if, in its factual context, taking account of all its features and circumstances, by harassment, coercion, including the use of physical force, or undue influence, it significantly impairs or is likely to significantly impair the average consumer's freedom of choice or conduct with regard to the product and thereby causes them or is likely to cause them to take a transactional decision that they would not have taken otherwise (Art. 8).

The UCPD can play a central role in consumer protection against AI emotional marketing, given its wide scope of application[87] which includes all the stages of the consumption relationship, including the phase of potential contact between the consumer and the company.[88] Moreover, the UCPD has been recently amended by the so-called Omnibus-Directive (Directive [EU] 2019/2161),[89] and now its Article 2(n) includes the online marketplace in the scope of application of the Directive. It can be assumed that AI emotional marketing techniques could theoretically fall under aggressive business practices. In fact, the subject of the analysis is not businesses' misleading conducts, but those in which consumers' decision-making process is not freely formed due to collecting and exploiting emotional data.[90] The concept of 'undue influence' indeed deals with exploiting a position of power in relation to consumer, which can be related to both economic and intellectual domination of one party on the other.[91] Therefore, according to the above-mentioned form of universal vulnerability, the focus should be on aggressiveness and undue influence in particular.

Nevertheless, some critical concerns can be drawn with regard to the effectiveness of UCPD protection. Most of all, it is not that clear whether algorithmic manipulation could constitute an aggressive commercial practice as it is defined in the UCPD. While the exploitation of emotional weaknesses should be considered undue influence, Article 9(c) UCPD requires the trader to be aware of it. Nevertheless, the exploitation of emotional or cognitive weaknesses may be an unintentional side-effect of contractual optimisation by means of ML.[92] Secondly, the notion of 'material distortion' appears to be a key element in the entire UCPD system, as it requests the aggressive commercial practice to be able to cause the consumer to take a transactional decision that they would not have taken otherwise. This provision has its rationale in preventing consumers from buying unwanted products, accepting terms and conditions that they would not have accepted or turn to products that they would have regarded as inferior substitutes.[93] In this regard, one might object that neuroscience can detect what consumers really want and, thus, they would have taken such decision anyway. Hence, there does not appear to have been efficient coordination between advances in neuroscience and the legislation on unfair commercial practices, where the reference continues to be that of the rational consumer and the definition of aggressiveness does not seem to entail the undue influence exerted on the irrational part of the brain.[94]

85 M. Fusi, 'Pratiche commerciali aggressive e pubblicità manipolatoria', I *Diritto industriale* 5 (2009).

86 According to Art. 5(3) UCPD, a commercial practice shall be unfair if (a) it is contrary to the requirements of professional diligence and (b) it materially distorts or is likely to materially distort the economic behaviour with regard to the product of the average consumer whom it reaches or to whom it is addressed or of the average member of the group when a commercial practice is directed to a particular group of consumers.

87 The Court of Justice of the European Union (ECJ) has confirmed the wide definition of 'commercial practices' on many occasions. For example, in Joined Cases C-261/07 and C-299/07, *VTB-VAB NV* v. *Total Belgium NV and Galatea BVBA* v. *Sanoma Magazines Belgium NV*, [2009] ECR I-02949, the ECJ stated that 'Article 2(d) of the Directive gives a particularly wide definition to the concept of commercial practices: 'any act, omission, course of conduct or representation, commercial communication including advertising and marketing, by a trader, directly connected with the promotion, sale or supply of a product to consumers'. For deeper insights on the ECJ interventions on the interpretation of the UCPD, see J. Stuyck, 'The Court of Justice and The Unfair Commercial Practices Directive', 52 *Common Market Law Review* 721 (2015).

88 In this regard see, inter alia, G.B Abbamonte, 'The Unfair Commercial Practices Directive and Its General Prohibition', in S. Weatherill and U. Bernitz (eds.), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29* (2007) 11, at 15, who observes that the UCPD applies to commercial practices both before and after any purchase by a consumer.

89 Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules.

90 See L. Tafaro, 'Some Reflections on Neuroscience and Civil Law', in A. D'Aloia and M.C. Errigo (eds.), *Neuroscience and Law: Complicated Crossings and New Perspectives* (2020) 113, at 121, who states that the use of neuromarketing techniques constitutes an aggressive unfair commercial practice since they exert an undue influence on consumers' decisions, affecting their capacity of self-determination.

91 In those terms, G. Howells, H.W. Micklitz & T. Wilhelmsson, 'Towards a Better Understanding of Unfair Commercial Practices', 51(2) *International Journal of Law and Management* 69, at 77 (2009).

92 In this respect, see P. Hacker, 'Manipulation by Algorithms. Exploring the Triangle of Unfair Commercial Practice, Data Protection, and Privacy Law', 2021 *European Law Journal* 1, at 10 (2021). Starting from the Case C-628/17, *Prezes Urzędu Ochrony Konkurencji I Konsumentów* v. *Orange Polska S.A*, ECLI: EU:C:2019:480 – where the ECJ ruled that a practice may be aggressive if it 'is liable to make that consumer feel uncomfortable and thus to confuse his thinking in relation to the transactional decision to be taken' – the author argues that, while in this case the trader was clearly aware of the consumer's impairment, it cannot be generalised to every scenario since the exploitation of emotional or cognitive weaknesses may be an unintentional side-effect of contractual optimisation by means of machine learning.

93 Abbamonte, above n. 88, at 23.

94 Referring to consumer protection law in general, Valcke, Clifford & Dessers, above n. 79, at 63, consider the need for reviewing the traditional separation between emotion and rationality in the light of taking interdisciplinary insights into account.

doi: 10.5553/ELR.000257

The upcoming EU legislation on AI directly considers AI systems which materially distort a person's behaviour, as well as emotion recognition systems. Article 5 of the so-called AI Act,[95] as amended by the European Parliament on 14 June 2023, prohibits, among others, the placing on the market, putting into service or use of: (a) an AI system that deploys subliminal techniques beyond a person's consciousness or purposefully manipulative or deceptive techniques, with the objective to, or to the effect of, materially distorting a person's or a group of persons' behaviour by appreciably impairing the person's ability to make an informed decision, thereby causing the person to take a decision that that person would not have otherwise taken in a manner that causes or is likely to cause that person, another person or group of persons significant harm; (b) an AI system that exploits any of the vulnerabilities of a person or a specific group of persons, including characteristics of such person's or a such group's known or predicted personality traits or social or economic situation or age or physical and mental ability, with the objective to, or to the effect of, materially distorting the behaviour of that person or a person pertaining to that group in a manner that causes or is likely to cause that person or another person significant harm; and (c) use of AI systems to infer emotions of a natural person in the areas of law enforcement, border management, at the workplace and in education institutions. Under Article 3(34), 'emotion recognition system' means an AI system for the purpose of identifying or inferring emotions, thoughts, states of mind or intentions of individuals or groups on the basis of their biometric and biometric-based data.

Although these provisions increase consumer protection in the digital age, some critical points should be highlighted. Firstly, the exploitation of vulnerabilities is seen from the perspective of group vulnerability, whereas the exploitation of emotional data is a universal vulnerability which hardly falls under the manipulative techniques described by Article 5(a) and (b). This view does not consider any of the recent elaborations in the critical literature on a more flexible notion of vulnerability to which any consumer will eventually be exposed.[96] Furthermore, the prohibited emotion recognition systems are only those used in certain areas, which do not include consumer market or bargaining. Nevertheless, the inclusion in Annex III of 'AI systems intended to be used to make inferences about personal characteristics of natural persons on the basis of biometric or biometrics-based data, including emotion recognition systems, with the exception of those mentioned in Article 5' means that several online marketing techniques that deploy consumers' emotions could be considered high-risk AI systems. Accordingly, the safety requirements set for such AI systems would be mandatory, for instance, also for online sentiment analysis, given that 'biometric-based data' means data resulting from specific technical processing relating to behavioural signals as well (Art. 3 n. 33[a]).[97] At the same time, Recital 26c of the AI Act proposal names facial expressions, movements, pulse frequency and voice as examples of biometric-based data, leaving uncertainty whether this definition includes, for instance, online text analysis. However, these requirements – such as transparency, human oversight, accuracy, robustness and cybersecurity – would only apply to providers since users of AI systems have some specific obligations. Among the latter, nevertheless, Article 52 sets some transparency obligations for both providers and users of AI systems intended to interact with natural persons, irrespective of whether such systems are high risk or not. According to paragraph 2, users of emotions recognition systems which are not prohibited under Article 5 shall inform in a timely, clear and intelligible manner of the operation of the system the natural persons exposed thereto and obtain their consent prior to the processing of their biometric and other personal data in accordance with Regulation (EU) 2016/679, Regulation (EU) 2016/1725 and Directive (EU) 2016/280, as applicable. However, it has been noted that the effectiveness of this transparency obligation for the protection of individuals is questionable since the content of this obligation seems to concern only the operation of these systems and not their purposes.[98]

Similar considerations can be made about the Digital Services Act (DSA). In the DSA, consumers' manipulation as considered in Article 25 sets that

> providers of online platforms shall not design, organize, or operate their online interfaces in a way that deceives or manipulates the recipients of their service or in a way that otherwise materially distorts or impairs the ability of the recipients of their service to make free and informed decisions.

The effectiveness of this provision is strongly threatened by the second paragraph, according to which the prohibition in paragraph 1 shall not apply to practices covered by Directive 2005/29/EC. Thus, as long as it is not clear whether exploiting emotions through AI emotional marketing techniques is to be considered an unfair commercial practice, it is not accordingly clear if Article 25 DSA is applicable to it. Furthermore, any of the subsequent exceptions (para. 3) to the exception

95 Proposal for a Regulation of the European Parliament and the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts of 21 April 2021.

96 Galli (2022), above n. 11, at 266. See also Hacker, above n. 92, at 27: 'while the mentioning of vulnerabilities due to age, physical or mental disability does point to specific reductions of rational decision-making capacity, the strict enumeration of the protected groups again leaves the question of bounded rationality, or vulnerabilities stemming from yet other trait combinations, unresolved.'

97 The previous version of the AI Act defined 'emotion recognitions systems' as only those based on the use of biometric data, without considering those systems that do not use such data to detect emotion, such as online sentiment analysis. See J. Czarnocki, 'Will New Definitions of Emotion Recognition and Biometric Data Hamper the Objectives of the Proposed AI Act?', 2021 *International Conference of the Biometrics Special Interest Group*, https://ieeexplore.ieee.org/document/9548285.

98 E.M. Incutti, 'Sistemi di riconoscimento delle emozioni e ruolo dell'autonomia privata: linee evolutive di un umanesimo digitale', 2 *Giustizia civile* 515, at 530 (2022).

doi: 10.5553/ELR.000257

posed by paragraph 2 refers to emotion recognition systems. In any case, it was pointed out that DSA's scope of application is limited to (very large) online platforms, while other online or offline commercial players are not affected by it unless they commit to voluntary codes of conduct on online advertising, and this limited scope generates a considerable gap.[99]

Lastly, given that AI strongly relies on data, the EU General Data Protection Regulation (GDPR) can play a significant role in individuals' protection against unlawful data processing, ensuring that people exert control over the circulation of their own personal data. However, it must be borne in mind that GDPR does not directly address the protection of individuals' autonomy as conceived in European consumer law,[100] as it regulates the specific right to data protection and circulation. At the same time, though, GDPR should be seen as complementary to consumer protection law, in order to move away from the hitherto dominant 'silo' viewpoint and conceive these regulations as aimed at the most comprehensive protection of the citizen-consumer.[101] Nevertheless, the subtle nature of the manipulative techniques considered hereto poses relevant challenges to the effectiveness of GDPR. Emotion detection and deployment in the digital market can be addressed by GDPR from two main perspectives: (a) emotional data may be considered personal data; thus, its processing may fall within the scope of application of the general principles set by GDPR; (b) the use of AI for emotional marketing purposes may fall under Article 22 GDPR as it performs an automated processing. Under (a), the main problem is the blurred notion of 'emotional data' since no explicit reference to emotions is made by GDPR.[102] Accordingly, it is not clear whether emotions can be considered personal data, as well as sensitive data, thus making it uncertain whether any legal basis for its lawful processing is required. On the one hand, data related to human brain and mind should always be personal data if they allow to single out the data subject at stake.[103] On the other hand, sometimes emotions are defined as information *inferred* from data rather than personal data per se.[104] This means that personal data must be processed in compliance with GDPR, but this does not necessarily imply that emotions inferred from such data should be processed in the same way, especially when they are not per se capable of singling out that specific data subject.[105] Likewise, if collected and processed personal data are sensitive – such as biometric data – they are subject to the stronger legal bases listed in Article 9 GDPR, but emotions are not necessarily sensitive data according to this provision. In any case, these obstacles can easily be circumvented by collecting consent, which data subjects often give without really having read the terms of the processing. Moreover, GDPR explicitly states in Recital 47 that the 'processing of personal data for direct marketing purposes may be considered as done for a legitimate interest', raising the question of whether online behavioural marketing could always find a legal basis in the legitimate interest of the data controller, thus bypassing data subject's consent.[106] Under (b), Article 22 GDPR establishes the data subject's right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning them or similarly significantly affects them. While the GDPR is intended to be technologically neutral, the use of AI in data processing is undisputedly subsumed under this provision.[107] Nevertheless, its effectiveness is still open to debate. Firstly, it is still controversial whether Article 22 sets out a prohibition or a right,[108] with the effect that in the latter case the data subject would only have a weak right to object to automated processing. Secondly, while it is unquestionable that online profiling for marketing purposes is automated processing, it is not certain whether it fulfils

99 Galli (2022), above n. 11, at 267.

100 The separation between the consent to data processing and the conclusion of the contract for which such data are processed is generally highlighted: in fact, the act of entering into a contract is not necessarily the same as giving consent under Art. 6(1)(a) GDPR. See W. Kotschy, 'Article 6. Lawfulness of Processing', in C. Kuner, L.A. Bygrave & C. Docksey (eds.), *The EU General Data Protection Regulation (GDPR): A Commentary* (2020) 321, at 330.

101 See C. Koolen, 'Consumer Protection in the Age of Artificial Intelligence: Breaking Down the Silo Mentality between Consumer, Competition, and Data', 2&3 *European Review of Private Law* 427 (2023), where the author observes that when a data subject is also a consumer, there is a role to be played by both consumer law and data protection law, since this interaction between is necessary to counterbalance, on the one hand, a reduction of the level of data protection enjoyed by individuals and, on the other hand, a shift in terms of informational power from data subjects to data controllers. In this view, the 'silo approach' in consumer protection, where a clear demarcation remains between the different branches of law due to the diverging objectives of each branch, should be overcome in favour of strengthening the positioning of consumers on the market and turn them into consumer-citizens by virtue of safeguarding their right to self-determination. On the interaction between consumer and data protection law, see also M. Rhoen, 'Beyond Consent: Improving Data Protection through Consumer Protection Law', 5 *Internet Policy Review* 1 (2016).

102 A. McStay, 'Emotional AI, Soft Biometrics and the Surveillance of Emotional Life: An Unusual Consensus on Privacy', 7 *Big Data & Society* 1, at 3 (2020).

103 M. Ienca and G. Malgieri, 'Mental Data Protection and the GDPR', 9(1) *Journal of Law and the Biosciences* 1, at 8 (2020): according to the definition of Art. 4(1) GDPR, the related WP29 Guidelines 44, and the CJEU Cases, data related to human brain and mind are always personal data if they allow for singling out the data subject at stake. See also F.J. Zuiderveen Borgesius, 'Singling Out People without Knowing Their Names – Behavioural Targeting, Pseudonymous Data, and the New Data Protection Regulation', 32 *Computer Law & Security Review* 256 (2016).

104 Ienca and Malgieri, above n. 103, at 9. In the age of Big Data and advanced analytics, this kind of information can be also inferred rather than observed by data analytics based on retrospective data mining, pattern recognition and aggregation of multiple data sources or predictive analytics.

105 Häuselmann et al., above n. 54, observe that processing emotion data does not fall under the material scope of the GDPR in case the individual concerned is neither identified nor identifiable. Likewise, Ienca and Malgieri, above n. 103, at 8, observe that it is questionable whether mental data alone are sufficient to be considered personal data, even without any additional identifiers to the concerned data subject.

106 F. Galli, 'Online Behavioural Advertising and Unfair Manipulation Between the GDPR and the UCPD', in M. Ebers and M. Cantero Gamito (eds.), *Algorithmic Governance and Governance of Algorithms* (2021) 109, at 114.

107 S. Wrigley, 'BOTS, Artificial Intelligence and the General Data Protection Regulation: Asking the Right Questions', 22 *Trinity College Law Review* 199, at 203 (2019).

108 L.A. Bygrave, 'Article 22. Automated Individual Decision-making, Including Profiling', in C. Kuner, L.A. Bygrave & C. Docksey (eds.), *The EU General Data Protection Regulation (GDPR): A Commentary* (2020) 321, at 530.

doi: 10.5553/ELR.000257

the condition of producing legal effects or significantly affecting the data subject. In fact, the expression 'legal effects' is capable of limiting the scope of decisions covered by this provision to some specific cases, such as government-made tax decisions or the automatic acceptance of contract offers.[109] Likewise, 'significantly affects' raises doubts that targeted online marketing ordinarily meets the significant effects threshold, which are listed by the WP29 as including the intrusiveness of the profiling process involved, the expectations and desires of the data subject, the pitch of the advertisement and the exploitation of data subject vulnerabilities.[110] Accordingly, it has been observed that there are two types of online behavioural marketing can be 'soft' or 'strong': the former is exempt from Article 22 GDPR, while the latter may be considered automated decision-making, depending on certain factors.[111] In any case, it appears relatively easy for processors to use one of the exceptions contained in subsection (2) bearing in mind that data subjects often consent to processing without reading the privacy notice properly (if they read them at all),[112] especially when the automated decision is in the data subject's interest.[113]

5 Behavioural Law and Economics, Consumer Contracts, and Emotions

The previous section has shown the public nature of the EU legislation considered therein, since neither the UCPD nor the latest interventions directly affect contracts concluded under national law. Consumer protection though is pursued in the EU also by the so-called EU contract law, which entails two different dimensions. On the one hand, it deals with the contract law contained in primary and secondary EU law; on the other hand, it can be understood as all the contract law rules applicable in the EU, comprising the one emanating from the Member States.[114] Besides, strictly speaking, there is no such thing as a 'European law of contract': the EU has adopted a number of directives over time and now some issues of contract law – particularly in the area of consumer protection – are treated uniformly across the Member States.[115] In this section, we will analyse the problem of exploiting consumers' emotions through AI from a contract law perspective, both considering the EU policy on consumer transactions and the main national law provisions on contract law.

Given the centrality of behavioural economics studies in understanding and exploiting consumer behaviour, useful hints for understanding the EU policy on consumer contracts law can be drawn from the economic theories of contract mainly conducted by the US legal doctrine. While classical contract theories, influenced by the 'rational-choice theory',[116] assumed contracts were made by rational, informed parties, modern theory and cognitive psychology challenged this view,[117] showing that people often make irrational decisions influenced by heuristics, biases and emotions. Furthermore, the findings of behavioural economics marked a turning point, leading to the emergence of 'behavioral contract theory'[118] as a branch that considers the impact of human biases on contracts. Such approach goes back to the above-mentioned Herbert Simon's concept of 'bounded rationality' and has been further developed by the literature on consumer transactions, showing that consumer decisions are influenced by systematic misperceptions and that the information asymmetry between complex contracts and limited consumer abilities creates challenges.[119] Therefore, a central aspect of consumers' imperfect rationality appears to be the misperception leading to systematic mistakes in assessing the costs and benefits of products. Moreover, the behavioural ap-

109 Wrigley, above n. 107, at 207.
110 Bygrave, above n. 108, at 534-5.
111 Galli (2021), above n. 106, at 119-20.
112 Wrigley, above n. 107, at 207.
113 I. Mendoza and L.A. Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling', in T.E. Synodinou, P. Jougleux, C. Markou & T. Prastitou (eds.), *EU Internet Law: Regulation and Enforcement* (2017) 77, at 95.
114 See, inter alia, M.W. Hesselink, 'Contract Theory and EU Contract Law', in C. Twigg-Flesner (ed.), *Research Handbook on EU Consumer and Contract Law* (2016) 508, at 518, who pinpoints two different ways in which EU contract law can be understood: the contract law *of* the EU, that is, the contract law contained in (written and unwritten) primary and secondary EU law; and all the contract law rules, of whatever origin, comprising the contract law emanating from the Member States.
115 H. Kötz, *European Contract Law* (2017), at 1.
116 The 'rational-choice theory' was first developed by the law and economics division of the University of Chicago Law School and, in particular, by Richard A. Posner, according to which people know what they want and their preferences are generally predetermined and independent of the context in which decisions are made; that they do not make mistakes unless they are the victims of fraud; and that they breach only where breach is more efficient than performance and perform only where performance is more efficient than breach (T.S. Ulen, 'Behavioral Contract Law', 17(2) *Review of Law & Economics* 281, at 285 (2021).
117 From the mid-19th century until the early 20th century, contract theory was dominated by classical and neoclassical economic theory, whose basic assumption was that contracts are made by rational informed parties. Beginning in the late 1920s and early 1930s, classical contract theory began to undergo some changes. The classical theory was replaced, though not entirely, by modern theory under the influence of scholars such as Arthur Corbin and Karl Llewellyn: where classical theory was formalist and based on axiomatic assumptions, modern theory was substantive and based on social propositions, logical deduction and autonomous reasoning. For further insights see, inter alia, M.A. Eisenberg, 'Behavioral Economics and Contract Law', in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (2014) 438, at 441-2.
118 For an overview on behavioural contract theory, see B. Kőszegi, 'Behavioral Contract Theory', 52(4) *Journal of Economic Literature* 1075 (2014).
119 Oren Bar-Gill describes consumer transactions as the product of an interaction between consumer psychology and market forces where, on the demand side, there is an imperfectly rational consumer who takes purchasing decisions affected by systematic misperceptions and, on the supply side, there is a sophisticated seller who designs its products, contracts and prices in response to such misperceptions. In fact, the defining feature of consumer transactions is the imbalance between sellers and buyers with respect to both information and sophistication. In this respect, see O. Bar-Gill, 'Consumer Transactions', in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (2014) 438, at 465-6; O. Bar-Gill, 'The Behavioral Economics of Consumer Contracts', 92(3) *Minnesota Law Review* 749 (2008).

proach acknowledges that consumer misunderstanding of contractual information has an innate character and is not only a function of poor disclosure and literacy.[120] We can assume that the concept of bounded rationality reflects the shift from the neoclassical contract theory to an era of 'incomplete contract', where the limits of cognition are inherent to bargaining.[121]

It is relevant, though, to highlight a broader reconstruction provided by Eisenberg with regard to the 'waves' of modern Behavioural Law and Economics (BL&E).[122] The first wave shows that actors often make decisions without having full information; the second wave shows that in certain areas actors systematically make decisions that are not rational even within the bounds of the information they have acquired; the third wave bears principally on how contracting actors behave, for example, how contracting actors think about sanctions for breach and are incentivised or disincentivised by given types of contractual provisions. And so, scholars' elaborations on BL&E and consumer transactions seem to focus almost exclusively on the first wave, neglecting the more relevant scientific and psychological findings on the functioning of human decision-making that show the relevance of the second wave and, in particular, of the emotional and unconscious part of the human brain in decision-making.[123]

5.1 EU Consumer Contract Law

The focus on the first wave of BL&E shines through the disclosure paradigm as the prevalent legal tool in much of US and EU consumer law to counteract biases.[124] Nevertheless, EU consumer law has peculiar characteristics that can be summarised in its being instrumental to the objective of improving the functioning of the internal market.[125] On the one hand, EU law of contracts is characterised by some prescriptive contents, such as consumer's right to withdrawal,[126] the invalidity of unfair terms[127] and the right to replacement or repair.[128] On the other hand, information duties or mandated disclosures are among the most frequently used regulatory tools in EU consumer legislation, since they are conceived as being the least intrusive consumer protection instruments for solving the problems caused by imperfect distribution of information among market players and achieve consumers' self-determination and maximise their choice.[129]

We argue that neither the mentioned contractual remedies nor the disclosure policy are suitable to cope with manipulation by AI emotional marketing. As mentioned above, private autonomy is to be protected per se against illegitimate interference in the decision process. Such conducts do not necessarily result in objective deficiency of the material agreement. Therefore, the contractual remedies discussed above help the consumer react to the imbalance and/or abuse of power by the business,

120 A.M. White, 'Behavior and Contract', 27(1) *Law and Inequality: Journal of Theory and Practice* 135, at 160 (2009).

121 G. Bellantuono, *I contratti incompleti nel diritto e nell'economia* (2000), at 4.

122 Eisenberg, above n. 117, at 442-62.

123 The role of emotions in guiding our judgments throughout our daily lives as an original, primordial faculty of differentiation is also described by the philosophical doctrine of 'intentional emotions' developed by Max Scheler and traceable in the works of Franz Brentano, Christine Tappolet and Robert C. Solomon, according to which emotions do not represent an inflexible state of mind but are related to situations and experiences and carry an active, targeted potential. For further insights, see J. Haenni, 'Emotion and Law: How Pre-Rational Cognition Influences Judgment', 13(3) *German Law Journal* 369, at 370 (2021).

124 In this respect, P. Hacker, 'Personalized Law and the Behavioral Sciences', in C. Busch and A. De Franceschi (eds.), *Algorithmic Regulation and Personalized Law* (2021) 241, at 244, observes that a number of legal interventions in the US and in the EU take behavioural insights into account to both actively harness biases in order to facilitate the attainment of certain regulatory goals (public nudging) and to counteract biases in order to stimulate more adequate decision-making. The Author identifies three main groups of these legal applications: the revision of i) disclosures, ii) default rules and iii) mandatory rules.

125 Hesselink, above n. 114, at 520.

126 For an exhaustive overview on the EU withdrawal rights, see J. Watson, 'Withdrawal Rights', in C. Twigg-Flesner (ed.), *Research Handbook on EU Consumer and Contract Law* (2016) 508, at 242-4. In a nutshell, the EU legislation sets withdrawal rights in a variety of contractual situations where the consumer is considered to require additional protection, for example, the 1985 Doorstep Selling Directive (Directive 85/577/EEC), Directive 94/47/EC concerning timeshare, Directive 97/7/EC on distance selling, Directive 90/619/EEC on life assurance, Directive 2002/65/EC on distance marketing of financial service, and Directive 2008/44/EC on consumer credit. The author divides the underlying rationale of withdrawal rights into two categories: (a) to counter psychological and/or informational disadvantages the consumer may experience during the conclusion of the contract due to the pressure exerted by the business, thus protecting them from aggressive marketing strategies (in this regard, the reference goes to E. Terryn, 'The Right of Withdrawal, the Acquis Principles, the Draft Common Frame of Reference and Proposal for a Consumer Rights Directive', in R. Schulze (ed.), *Common Frame of Reference and Existing EC Contract Law* (2009) 147, and to M. Loos, 'The Case for a Uniform and Efficient Right of Withdrawal from Consumer Contracts in European Contract Law', 5 *Zeitschrift fur Europaisches Privatrecht* 9 (2007); (b) to protect the consumer from informational disadvantage that prevents the consumer from assessing beforehand the quality and nature of the goods or services, thus ensuring that a fair and balanced contract is concluded.

127 According to Art. 3 of Directive 93/13/EEC, 'a contractual term which has not been individually negotiated shall be regarded as unfair if, contrary to the requirement of good faith, it causes a significant imbalance in the parties' rights and obligations arising under the contract, to the detriment of the consumer'. The ECJ referred in the case *Océano Grupo* (Joined Cases C-240/98 to C-244/98 *Océano Grupo Editorial SA* v. *Murciano Quintero* [2000] ECR I-4942) to the 'idea that the consumer is in a weak position vis-à-vis the seller or supplier, as regards both his bargaining power and his level of knowledge'. Likewise, in *Elisa Maria Mostaza Claro* v. *Centro Mòvil Milenium* (C-168/05 *Elisa María Mostaza Claro* v. *Centro Móvil Milenium SL* [2006] ECR I-10421), the Court stated that the Directive aims at replacing the formal balance which the contract establishes between the rights and obligations of the parties with an effective balance which re-establishes equality between them. In other words, the Directive aims to combat abuse of power by traders in their dealings with consumers. Also, transparency plays a central role in unfair terms law, since Art. 5 implies that contract terms shall be invalid if they are not drafted in plain, intelligible language. In this respect, see H.W. Micklitz, 'Unfair Terms in Consumer Contracts', in N. Reich, H.W. Micklitz, P. Rott & K. Tonner, *European Consumer Law* (2014) 125, and P. Rott, 'Unfair Contract terms', in C. Twigg-Flesner (ed.), *Research Handbook on EU Consumer and Contract Law* (2016)508, at 287, 301.

128 Directive (EU) 2019/771 of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC, establishes the right to replacement or repair, and in the alternative the termination of the contract, when the professional has delivered goods that do not correspond to the contract of sale they have concluded with the consumer.

129 C. Busch, 'The Future of Pre-contractual Information Duties: From Behavioural Insights to Big Data', in C. Twigg-Flesner (ed.), *Research Handbook on EU Consumer and Contract Law* (2016) 508, at 222-3.

doi: 10.5553/ELR.000257

yet only when this imbalance/abuse results in objective contractual terms and/or in the quality of the goods and services offered. This clearly does not cover limitation of consumer autonomy by exploiting emotions through algorithms, since such conduct is capable per se of affecting self-determination even when not resulting in objective contractual imbalances.

Likewise, the idea that disclosure is the most effective tool to ensure consumer self-determination still rests on a conception of the consumer as a rational agent, meaning that information is the best way to allow the consumer to make a rational decision by rebalancing the information asymmetry. Not only has this assumption been challenged by the latest findings in behavioural psychology,[130] the limits of disclosure policies, too, have been pointed out by the literature for some time now. In fact, on the one hand, there is a limit to the amount of information that companies can reasonably be expected to disclose about their market strategies;[131] on the other hand, cognitive psychology and neuroscience have questioned the enduring validity of the economic premise of the information paradigm.[132]

5.2 National Contract Law

Some final remarks must be drawn about the national level, where the issue of limitation of personal autonomy is generally considered by Member States' discipline on contract validity. As the subject is generally left to Member States' competence, contract validity can suffer from a moderate degree of fragmentation and issues of emotion manipulation might occur in different ways.

Nevertheless, some central aspects of contract validity can be considered common to most of the civil law systems. Taking Italian law as an example, the Civil Code appears, on the one hand, to acknowledge the bounded rationality theory by protecting the limited capacity of bargaining parties, which are not intended as maximising their economic benefit; on the other hand, the very notion of contract is founded on the assumption of rationality immanent in the economic conduct of people.[133] So, at the foundation of contract's validity is the free consent of the bargaining parties and a contract where such consent is missing is to be considered void under Articles 1325 and 1418 of the Civil Code. Likewise, a contract is invalid, and a party can avoid it if such consent was vitiated by either mistake (Art. 1427), duress (Art. 1434) or fraud/deceit (Art. 1439). The question arises as to what extent national contract law protects the autonomy of will of a potential buyer of products advertised with the help of knowledge gained from AI emotional marketing research, which appeals to basic human instincts and emotions as opposed to human intellect.[134]

In this regard, the nullity of a contract concluded as a result of emotion exploitation could only fall under the absence of consent as an essential part for the validity of the agreement. Nonetheless, this would be difficult to ascertain, since the absence of consent in Italian contract law is attributable only to physical duress or psychic annihilation, to a contract signed by a person other than the real contracting party, to a contract signed as a joke or for teaching purposes.[135] In relation to the second form of invalidity, the deformation of will appears to be strictly linked to misrepresentation, misperception or psychological violence. In fact, a contract may be avoided if a party's will is affected by a mistake that bears on the essential qualities of what was promised in the contract or on the person of the other contracting party. The effect of fraud/deceit is almost the same, but the mistake is consciously caused by the other party and trickery of some sort is required. Duress occurs with psychological violence and is cause for invalidity of the contract if it causes the other party to fear that they or someone close to them were threatened with an imminent and serious danger to life and health, honour or property.[136] None of these provisions seems to include subtler forms of manipulation,[137] that is, the intrusion into the irrational part of human decision-making process, since it affects consumers' self-determination irre-

130 As pointed out, inter alia, by Norbert Reich, the usefulness and effectiveness of these information requirements have been subject to a controversial debate which ranges from criticism of the merely symbolic character of these regulations that are based on a model of the 'rational informed consumer' contradicted by behavioural studies: 'are information rules efficient in achieving their objective of strengthening party autonomy and consumer choice?' (Reich, above n. 81, at 50).

131 In this respect, see Kötz, above n. 115, at 177, who observes that, while it is true that in a competitive economy the law should encourage people to inform themselves about the qualities, usability and saleability of goods and services, at the same time this incentive would be weakened if a party who has acquired such information through training, experience or research were obliged to provide it to the other party, thus sacrificing any informational advantage. See also A.T. Kronman, 'Mistake, Disclosure, Information, and the Law of Contract', 7(1) *Journal of Legal Studies* 1 (1978).

132 In this regard, Busch, above n. 129, at 226. The effectiveness of disclosure policy in the face of behavioural psychology is questioned by many scholars. For instance, O. Bar-Gill and O. Ben-Shahar, 'Regulatory Techniques in Consumer Protection: A Critique of European Consumer Contract Law', 50 *Common Market Law Review* 109, at 110 (2013), observe that EU disclosure mandates are likely futile, since 'the conventional European disclosure paradigm reproduces archaic templates that have consistently and irreparably failed'. G. Loewenstein, C.R. Sunstein & R. Golman, 'Disclosure: Psychology Changes Everything', 6 *Annual Review of Economics* 391 (2014), show that 'psychological factors severely complicate the standard arguments for the efficacy of disclosure requirements'.

133 E. Battelli, 'Diritto dei contratti e questioni di razionalità economica', 1 *Contratto e impresa* 106, at 111 (2019).

134 Krausová, above n. 67, at 42.

135 A contract is void under Art. 1418 of the Italian Civil Code if the contract in its entirety or its essential elements are contrary to mandatory rules, if any of the essential elements lacks – that is, consent ('accordo'), cause ('causa'), object ('oggetto'), form ('forma') – and in any other case expressly prescribed by the law. The lack of consent concerns cases where a contractual manifestation of will appears to exist but exists only in appearance or only in appearance can be referred to its author. For further insights, see V. Roppo, *Il contratto* (2011), at 697-9.

136 Such a form of deformation of contract is present in most of the EU Member States legislations. See, for further insights, Kötz, above n. 115, at 110.

137 E. Mik, 'The Erosion of Autonomy in Online Consumer Transactions', 8 *Law, Innovation and Technology* 1, at 27 ff. (2016) observes that the traditional rules on deformation of will do not effectively regulate subtle forms of manipulation by companies in the digital marketplace. See also M. Ebers, 'Regulating AI and Robotics: Ethical and Legal Challenges', in M. Ebers and S. Navas (eds.), *Algorithms and Law* (2020) 37, at 76, who refers to the challenges posed by the so-called microtargeting, that it is difficult to subsume under any of the traditional protective doctrines – such as duress, mistake, undue influence, misrepresentation, or *culpa in contrahendo*.

doi: 10.5553/ELR.000257

spective of any possible mistake resulting in their will, as well as no form of threat can reasonably be expected in such scenarios.

The relationship between emotion manipulation and domestic contract law is narrowly addressed by the literature. Nevertheless, some non-Italian scholars have found that, even if triggering an affective rather than cognitive response circumvents conscious mind and prevents a person to form their will with utilising their intellectual capacity, deformation of will wouldn't be applicable since 'Civil Code protects one's own will especially with regard to their intellect'.[138] Moreover, law traditionally does not cope with emotions, other than those able to deform the rational choice, such as fear. In this regard, it may be useful to also consider the exploitation of positive emotions as potential triggers of deformation of one's will.

Overall, it seems that the conduct of manipulating consumers' emotions could only fall under the UCPD within the category of 'undue influence', which, however, still remains vague and, moreover, does not find a counterpart in the types of conduct that render the contract invalid according to national law. As mentioned, the UCPD is eminently public policy in nature, providing only rules of conduct on businesses, putting contract law on one side.[139] This separation led to the Italian doctrine of 'non-interference' between rules of conduct and rules of validity in contract law. According to this theory, the mere upstream violation of conduct rules (such as those set by the UCPD) never leads to the invalidity of the contract concluded downstream, unless this effect is established by the law, or the violation results in a structural defect of the contract.[140] Accordingly, the only remedy available to the consumer would be compensation for damages which would not be easy to prove. Nevertheless, some Italian scholars show openness to the possible permeability of validity rules versus conduct rules and admit the invalidity of contracts entered into as a result of such practices.[141]

6 Conclusion

The creation and exploitation of new forms of knowledge by companies through the combination of new technologies and scientific findings – such as AI, neuroscience and neuromarketing – are capable of generating a renewed form of universal vulnerability linked to the collection and exploitation of emotional data from digital consumers. The analysis revealed the possibility for companies to escape EU and national legislation on consumer protection and contract law through the use of algorithmic manipulation of emotions. Therefore, the problem arises of how to fill this protection gap, promoting a greater coordination between regulation and the latest findings in neuroscience, while bearing in mind the need not to stifle innovation through overly hard legislation. On the one hand, public EU legislation on consumer protection should challenge its own 'instrumental' premise based on the functioning of the internal market. In the light of the neuroscientific results, it appears necessary to take into proper account the second 'wave' of the BL&E insights, in order to protect their self-determination as such regardless of situations resulting in misperceptions and/or mistake.[142] On the other hand, national courts and/or legislators should break down the wall between the EU legislation on unfair commercial practices and contractual law existing at domestic level,[143] in order to leave part of the protection to private enforcement. This approach results also in the new Article 11a of the UCPD, added by the Omnibus-Directive, according to which

> consumers harmed by unfair commercial practices, shall have access to proportionate and effective remedies, including compensation for damage suffered by the consumer and, where relevant, a price reduction or the termination of the contract.

Although the EU legislator takes such a clear position on the link between UCPD and private remedies, the wording of the provision does not give private enforcement the force it could have in consumer protection law in terms of deterrence. In fact, the redress procedure is still left to Member States and to national court without providing for stringent forms of protection for consumers,

138 Krausová, above n. 67, at 42.

139 S. Whittaker, 'The Relationship of the Unfair Commercial Practices Directive to European and National Contract Laws', in S. Weatherill and U. Bernitz (eds.), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29* (2007) 11, at 144.

140 For an overview of the Italian doctrine applied to consumer contracts, see E. Scoditti, 'Regole di validità e principio di correttezza nei contratti del consumatore', 1 *Rivista di diritto civile* 128 (2006).

141 M. Maugeri, 'Pratiche commerciali scorrette e annullabilità: la posizione dell'Arbitro per le controversie finanziarie', 11 *La nuova giurisprudenza civile commentata* 1516, at 1519 (2017), traces the debate among Italian scholars on the ammissibility of contractual invalidity to contracts stipulated through unfair commercial practices. See also C. Camardi, 'Pratiche commerciali scorrette e invalidità', 6 *Obbligazioni e contratti* 408 (2010) and, with specific regard to neuromarketing, Tafaro, above n. 90, at 124, who observes that 'the regulation of consumer contracts seems to move in favor of overcoming the dichotomy between the rules of validity and the rules of behavior, with the possible accumulation of remedies (invalidity and compensation)'.

142 We believe that the perspective of those who advocate a paradigm shift in the primary purpose of consumer protection in the EU is to be welcomed. A.M. White argues that traditional law and economics approach to consumer contract law is based on the following syllogism: (1) markets are efficient, (2) regulation of contracts interferes with markets, (3) regulation is inefficient and (4) regulation is bad. While much modern scholars explicitly challenge the premises and the conclusion, the unstated (0) premise of this syllogism still appears to be that 'efficiency is the goal'. Well, 'now that the syllogism has broken down, it is time to examine not only premise 1 and the conclusions, but also the zero premise.... Equally important is the need to make equity and prevention of exploitation an explicit norm in consumer contract law' (White, above n. 120, at 138, 178).

143 Such hope is expressed, inter alia, by H.W. Micklitz, 'Unfair Commercial Practices and European Private Law', in C. Twigg-Flesner (ed.), *European Union Private Law* (2010) 229, who outlines the actual similarities between the UCPD and contract law rules, hoping that courts should 'break down the walls between the two legal systems'.

doi: 10.5553/ELR.000257

for example, in terms of reversal of burden of proof and effects of the termination.[144] In any case, such (national) remedies do not refer to cases of manipulation previous to the conclusion of the contract which do not result in a breach of the contract itself.[145] Nevertheless, the massive scale of certain practices may surpass the enforcement of individual rights[146] and require for stronger regulation.

In conclusion, the latest technological advancements suggest that the objectives mentioned above might require for a renewed concept of private autonomy, in order to extend consumer protection beyond the borders traced so far by the EU and national contract law and, thus, protect private autonomy per se as one of the main expressions of the fundamental right to self-determination. While at the supranational level there is an emerging, albeit not fully satisfactory, intention to protect private autonomy in the light of the latest challenges posed by technology, this seems not to be happening to the same extent at the national level. The notion of private and contractual autonomy is linked to longstanding legal and constitutional traditions of Member States which find in the need of ensuring legal certainty the ground for connecting national contract law to the rationality of bargaining parties. Preserving this value is crucial, yet, simultaneously, it is essential that scholars and courts recognise and enhance the importance of the inner aspects of individual will without necessarily relying on legislative reform that might face considerable opposition. The goal must be to provide for a broader interpretation of private autonomy aimed at achieving consistency between legal systems that prioritise private autonomy and the technological advancements that offer a much deeper understanding of the real functioning of human decision-making.

144 In this respect, C. Pavillon, 'Private Enforcement as a Deterrence Tool: A Blind Spot in the Omnibus-Directive', 6 *European Review of Private Law* 1297, at 1313 (2019), observes that 'this raises the question why the possible deterrent effect of damages or termination has been ignored. There is no question about the fact that compensation and the restitution effect of termination can have a deterrent effect (para. 2). In view of the proposed collective redress procedure, private sanctions deserve more attention. The choice whether the termination is *ex tunc* or *ex nunc* and what the effects of the termination are for the consumer, in terms of a repayment obligation or a usage fee is left to the Member States and assumingly to national courts. The same is true for the distribution of the burden of proof: a reversal of this burden in the sense that the consumer has to prove that the contract was concluded under the influence of a UCP can have a deterrent effect'.

145 The provision appears to reiterate in clear terms the consistency between the UCPD and private remedies existing at the national level. The expression 'where relevant', for instance, in the Italian implementation act of the Omnibus-Directive has been translated as 'were applicable' ('*ove applicabile*'), which implies the possibility of enforcing such remedies only when existing national law allows it, that is, in case of serious breach of contract (Art. 1453 Civil Code) or nonconformity in product sales (Art. 130 Consumer Code) or all the other conditions set for the invalidity of the contract.

146 Valcke, Clifford & Dessers, above n. 79, at 62.