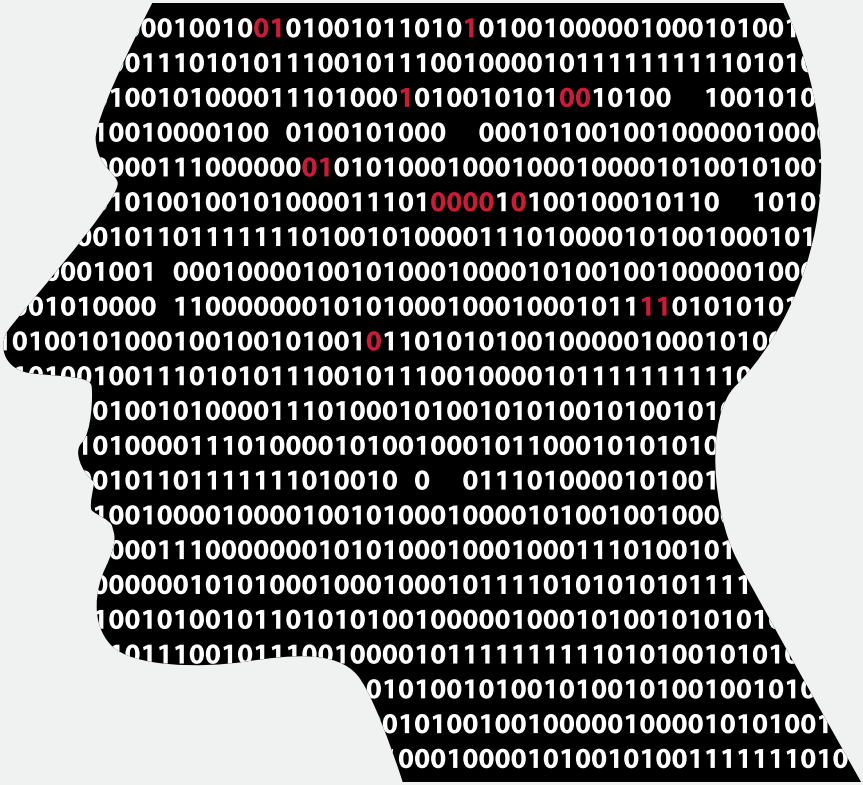
SELENA NEMORIN

BIOSURVEILLANCE IN NEW MEDIA MARKETING

WORLD, DISCOURSE, REPRESENTATION



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Selena Nemorin

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Selena Nemorin
Department of Culture, Communication and Media
University College London
London, UK

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For Venn

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Introduction: Advertising Futures

In *The Minority Report*, a science-fiction movie based on the short story by Philip K. Dick, the year is 2054 and protagonist, Chief John Anderton, is the leader of the Precrime programme. This law enforcement programme relies on brain data transmitted by three precognitive mutants (Precogs) who can predict premeditated murders before they occur. The Precogs, or cyborgs by virtue of their organism/machine connectivity, are kept in a drug-induced dreamlike state in a floatation tank. Their brains are hardwired to a computer network monitoring their neurological activity, and their visions are streamed to a set of screens via the medical imaging process of optical tomography. To justify instrumental treatment of the Precogs, Anderton states: "It's better if you don't think of them as human." The moment the Precogs detect a future crime their brainwaves transmit the name of the victim and perpetrator to a computer. The data are transferred to another machine that etches the information onto wooden balls; the colour of the ball depends on the type of crime to be committed. The Precrime unit is then deployed to apprehend the would-be perpetrators before the crime can occur. The question of accuracy of predictive technology arises when Anderton is framed for a murder he will not commit.

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The theme of predictive technology is recurrent in the movie. It also arises in a scene during which Anderton's eyes are scanned biometrically and he is greeted by personalised advertising billboards as he walks through a mall. Identification of consumers, here, seems to occur primarily through retinal scans. One can assume that extracted consumer data are then matched to names and other identifiers in a global database much like current big data processes of personalisation. These data analytics allow for the identification and categorisation of individuals and groups as automated data profiles which are then matched to relevant products.

When the movie was first released in 2002 observers claimed that such depictions of interactive predictive advertisements were far-fetched. However, it did not take long for rapid advancements in new media marketing to prove them wrong. Inspired by the movie, in 2015 tech start-up Immersive Labs (IMRSV) was one of the first North American companies that actively sought to make targeted billboard advertising as ubiquitous as targeted online advertising.[1] IMRSV aimed to install small cameras into existing billboards and retail signage that would then have the capacity to display advertisements according to consumer type. Acquired by Kairos, a 'human analytics' company, the facial detection platform developed by IMRSV is presented as a "camera enabled software solution that gathers continuous audience analytics, bringing online measurement to offline engagements."[2] The software identifies consumer attributes based on factors such as sex, estimated age, race and attention time, using these data to adapt advertising content to targeted individuals.

Around the same time, responsive billboards emerging in the United States displayed a personalised advertising campaign for the GMC Acadia sports utility vehicle. In collaboration with several companies such as Posterscope USA, EYE Corp Media, Engage M1 and Quividi, the digital billboard combined facial recognition technology and pre-programmed advertising strategies to push tailored responses to consumers.[3] More recently, Estimote, a leading player in sensor development for the Internet of Things (IoT), has been developing proximity technologies (beacons and sensors) referred to as 'nearables.' These devices are placed in strategic areas in stores to detect human presence and behaviours, retrieving content connected to a user's profile or micro-location derived from smart

phone data. The nearables trigger pre-programmed actions that deliver contextual and personalised experiences which are displayed either as a notification or directly in a smart phone application. Video screens within range can also respond with information relevant to the target audience.[4]

Despite these incredible technological advances, the advertising industry continues to search for increasingly precise methods of mining data from consumers. Now their target is what they refer to as 'subconscious' (or unconscious) terrain. With the aid of neuroscience research, brain imaging and other biometric tools, neuromarketers are seeking to "mine the brain so they can blow your mind with products you deeply desire."[5]

The Promise of Concrete Facts

A contemporary form of market research, neuromarketing uses brain- and bio-imaging technologies to track consumers' sensorimotor, cognitive and affective responses to an advertising stimulus. Marketers use these as aids for understanding the nuances within messages that distinguish between those that are more or less effective in mobilising a desired response. Proponents have argued that personalised advertising derived from brain data has the potential to go much further than traditional focus groups and become more efficient and profitable by extracting marketing-relevant information from the consumer's subconscious. The following text bytes by neuromarketing companies are indicative of the popular claims to access the subconscious workings of the consumer:

> Every marketers dream is to speak to this subconscious and make sure it flags their product, in the right light, to the brain's owner on their behalf. If you want your website, product, packaging, advertising and brand experiences to speak directly to the subconscious emotional brain, then you need to measure these experiences directly. (Simple Usability, 2018)

> By going beyond empirical data, studying more than 50,000 brands from around the world and employing recent developments in neuroscience to delve into "the black box" of the mind of the consumer, we discovered a direct link between financial performance and fundamental human values. (Millward Brown, 2017)

> Neuro-Insight analyses ad creative to assess effectiveness, using neuroscience to understand audiences' subconscious responses. (Neuro-Insight, 2016)

One of neuromarketing's early adopters, Clint Kilts, the scientific director of the BrightHouse Institute, claims that traditional focus groups "are plagued by a basic flaw of human psychology: people often do not know their own minds," which is a common assumption in the industry. Brain imaging, on the other hand, "offers the promise of concrete facts – an unbiased glimpse at a consumer's mind in action." This expansion of neuroimaging technologies into diverse commercial settings has heralded what SharpBrains chief executive Alvaro Fernandez refers to as a "pervasive neuro-technology age."[6]

While neuromarketing builds on traditional forms of market research comprising both physiological measurement and communicative interactions, its technological resources have been expanded to incorporate advanced neuroimaging techniques to measure, collect and interpret consumer responses to stimuli that are believed to be more accurate and reliable as predictors of behaviour than self-report.[7] When neurophysiological data are collected, they are analysed using automatic algorithms and interpreted by a market researcher. The reporting phase aims to produce detailed accounts, often including raw data and insights such as metrics, key performance indicators and data visualisations to inform advertising strategies aimed at manipulating consumer behaviour. A range of high-profile brands have turned to these new research techniques, but many of these companies have tended to keep their use of these tools out of the public eye. In fact, as neuromarketing expert Roger Dooley explains: "Many brands use some kind of neurotechnique but very few will talk about it, as it's scary for consumers." Steve Miller, co-founder of Scientific Learning, shares the same sentiment: "With any project you work on, you keep the name out the discussion."[8]

Although the present work focuses on the commercial dimension, it is worth noting that neuromarketing strategies also comprise political-oriented techniques similar to those of Cambridge Analytica, in the way the company used technological platforms to target and influence the US presidential election and UK's Brexit referendum. This technique comprised the use of personalised political advertisements based on psychological profiling

of voters.[9] While the practices of Cambridge Analytica were not only deemed unethical but also illegal, resulting in the business closing its doors recently, many neuromarketing companies have been and are still engaging in psycho-social profiling of audiences and deployment of targeted political marketing tactics into various media. This practice is referred to as 'neuropolitics': furtive behavioural microtargeting for political campaigns.[10] As an online article highlights:

> By reading the responses taken from people linked to fMRI or EEG machines, neuromarketers and their clients aim to optimize stimuli (political messages) and reaction in consumers' brains and drive their (voting) decisions.[11]

Similar behavioural interventions are being made at the governmental level through 'nudge' practices as a corrective to boost economic performance, and, where possible, the improvement of the health, welfare and safety of populations. The use of 'nudge' as a term of art in discussions of public policy development, implementation and assessment owes its position to the widely read book by Richard Thaler and Cass Sunstein[12] *Nudge: Improving Decisions about Health, Wealth, and Happiness* in which the authors argued that it is possible to use actions or stimuli to encourage people to choose one option over others when making a decision. These forms of libertarian paternalism are justified as benevolent actions used to guide people to make correct choices given their nature is to make predictable mistake-based subconscious reliance on heuristics, fallacies and negative social influences.

Several governments have followed the leadership of Thaler in the United Kingdom and Sunstein in the United States to establish specialised administrative units tasked with the responsibility for promoting the use of these techniques, and to experiment with interventions designed to manage a range of behaviours[13] with increasing claims that neuroscience has the potential to provide a framework for understanding how nudges work and how they can be improved.[14] Commentators have argued that behavioural nudges offer a cost-effective policy tool, diverging from traditional policy tools in that they encourage particular behaviours without restricting an individual's choices or imposing financial penalties.[15] Others have claimed that the practice is unethical.[16]

Potential Implications of Neuromarketing

Even those who don't see anything inherently problematic about using diagnostic imaging tools and neurocognitive models to advance commercial interests note that the application of these technologies to probe the human brain, "especially beyond what one might divulge in traditional behavioural testing" raises ethical concerns.[17] Others highlight similar ethical considerations regarding (1) the protection of various parties who may be harmed or exploited through the process of neuromarketing and (2) the protection of consumer autonomy if applications of brain imaging technology are developed to the point where they can enable what is effectively the manipulation of consumers from afar.[18] Scholars also grant that serious ethical issues have the potential to emerge from neuromarketing research practices which are largely proprietary and opaque; however, they maintain that most of the commonly expressed ethical concerns are unrealistic as they are based on the assumption that neuromarketing has technological capacity it cannot possibly acquire in the near future.[19]

Although it has been argued that current technological limitations constrain the capacity for neuromarketing to access the mind at a subconscious level, many of the claims about the benefits of embedding neuroscience into market research raise important questions.[20] These new technologies of biosurveillance have undoubtedly provided advertising with more powerful techniques to manage consumers, leading to a range of social and ethical implications specific to objectification and dehumanisation. The idea of the biometric economy is also relevant here in that new media marketing is exploiting our cognitive life for commercial gain. In this context, neurophysiological data accrue biovalue when the generative and transformative productivity of living beings is instrumentalised and treated as a utility for human projects.[21] As neuromarketing is still a relatively new practice, of course there is an amount of uncertainty in terms of its development. Might the neuromarketing project fail? What if it could succeed? How might our freedoms and democratic rights be damaged by such intimate marketing practices? Even if it does not succeed, what are the harms that might ensue because of its mis/understanding of how human minds work? And what of its apparent disregard of important ethical principles?

This book arises from a political imperative spurred on by a realisation that these techniques are increasingly disrupting the potential of democratic communicative action. In order to foreground how these incursions into the self are taking place, this work is necessarily one of social and cultural theory, drawing on both philosophical and theoretical frames to develop an account of the relationship between neuromarketing, social worlds and the process of meaning-making. The socio-cognitive practices and operational assumptions of neuromarketing as they are rendered in the discourse are the primary focuses for analysis. The central question driving this work is whether or not the discourse of neuromarketing indicates that the practice amounts to a reduction of human beings to a set of reflexive relations to triggers external to their consumer niche (subjective world). My overall aim is to understand who—or what—is made through the relationship of neuroscience, market research and consumer surveillance, thereby questioning how neuromarketing, as a cultural media environment, shapes psycho-social constructions of world and self. A key issue underpinning this work is that of representation: To what extent are consumers systematically portrayed in ways that may enhance or undermine their social authority and agency?

Outline of Chapters

The chapters that follow adhere to the view that marketing is continuously deploying new modes of representation that construct how the world is, new subjects who exist in the world and new goods and services that have the power to trigger market growth through increasingly unreflective consumption. As such, the book is concerned with mapping out ontological structures of the neuromarketing world as a cultural media environment within which realities are shaped and revealed by those in power. At its core, however, it is about the psycho-social experience of modern forms of consumer surveillance using neuromarketing as an example to work through emerging social and ethical implications. In this regard, the work seeks to make a contribution to the conceptual foundations of surveillance studies through an exploration of structures

of meaning-making, and how new media marketing is using diagnostic technologies for surveillance and manipulation of this communicative process. It also seeks to contribute to cultural studies in terms of explicating the impact that pervasive neurophysiological technologies have on consumer representations in cultural media environments. Composed of eight chapters, the book draws centrally from Heidegger's writings on world and structures of understanding as they pertain to *Being and Time*, *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude* and *The Question Concerning Technology*.

Chapter 2 presents the main themes that run through the book, including issues of representation and surveillance. It begins with how marketing has taken up by cultural studies with a particular focus on the rise of behavioural psychology. This is followed by an overview of the relations between marketing and surveillance where I offer an overview of what I call 'consumer biosurveillance': the monitoring and extraction of neurophysiological data used for both behavioural management and value creation. The chapter then presents the method used for undertaking this project: a hybrid approach merging a Heideggerian analytical framework with critical textual analysis, concluding with a summary of potential limitations of this framework.

Chapter 3 is historically informed and outlines in some detail the emergence of the neuromarketing industry. The aim here is not to provide a history of market research and advertising but to explore neuromarketing in practice, including various methods and technological instruments used by the industry. It delineates neuromarketing proponents to include agents who have a stake in the business of 'doing' neuromarketing such as authors, marketing specialists, advertising agencies and regulatory bodies. Some agents with a stake in a neuromarketing company are also attached to universities as academics. These individuals can be considered spokespersons for neuromarketing as they all have interests in the growth of new media marketing. A range of individuals are increasingly turning their attention to the implications of neuromarketing, so this section also addresses critiques of the pro-neuromarketing stance. These individuals range from journalists and scholars to neuroscientists and consumer rights advocates.

Chapter 4 begins by laying out the methodology used in later chapters to analyse consumer representations. The ensuing discussion elaborates on the theoretical and philosophical underpinnings of the book, outlining how Heidegger's concept of *world* can help us understand the communicative relationship between the consumer in her own subjective world and the larger world of neuromarketing as a shaper of social worlds. To grasp structures of thought and the intersubjective socio-cognitive relations that occur between world (as reality/the known) and subject (as knower) it is necessary to be clear on the structures of the world that play a part in the communicative dynamic in which thought occurs.[22] As a heuristic device, the concept of world illustrates the multi-layered dimensions of meaning-making for readers who seek to understand the connection between objectivity (reality) and subjectivity (audience).

The chapter presents an overview of the assumptions of the neuromarketing industry, and how practitioners (from within the community of marketers) are making use of emergent neurophysiological technologies to gain a competitive advantage by attempting to access consumers at a subliminal level in order to shape their behaviour with greater skill, efficiency and effectiveness. This discussion also considers the manner in which the self-promotion of certain neuromarketing groups incorporates constructions of consumers as ignorant, unreflective and malleable targets of strategic communications, despite the fact that the notion of the easily managed passive consumer has been critiqued and debunked in various works.[23]

In order to identify how the discourse of neuromarketing is representing consumers, and whether or not these depictions are accurate, Chap. 5 examines the fundamental structures of how human beings make meaning in and from the world. Our capacity for understanding the world moves from practical understanding to more critical thinking comprising processes such as reflection and interpretation. Existential structures such as practical understanding (e.g. coping and comportment), interpretation and attunement highlight the structures of understanding (i.e. the communicative practice) that neuromarketing seeks to disrupt. A Heideggerian perspective provides the analytic tools to examine the discursive world of neuromarketing as a cultural environment in which

media objects, events, values and assumptions can be used to shape consumer consciousness in a targeted consumer niche. Using structures of understanding as part of a framework for analysis can reveal the ways in which the discourse of neuromarketing frames consumer thinking in—at times—reductive metaphors.

The next three chapters provide textual analyses of how various neuromarketing groups represent the consumer along a continuum that depicts capacity to access and understand the world. More specifically, I use Heidegger's tripartite thesis that *the stone is worldless*, *animal is poor in world*, and *man is world-forming* [*sic*], to analyse in more detail how the consumer is represented in the discourse. This framework illustrates a spectrum of consumer representations, ranging from the consumer as automata, a mechanical object (brain as buy button) driven to action by an external party; an unreflective animal guided by instincts and reflex (reptilian brain or brain as animality); and an agentic and world-forming individual who can engage critically with the world (Dasein).

By comparing these structures, I seek to unearth the social and ethical implications that arise when consumers are represented in a manner that renders them instrumental for advertising projects. Two forms of dehumanisation are proposed: (1) objectification—representing individuals as objects or automata; and (2) animalisation—representing individuals as animal-like. Scholars have argued that technological dehumanisation or reductionism of human beings to machines is a condition of postmodernism.[24] The idea of human animality has been used to signify the way in which biological-determinist ideology has tended to shape human subjectivities in networked societies.[25]

The final chapter rounds off the book by considering the social and ethical questions that emerged in previous chapters. It situates neuromarketing discourse as a form of public knowledge dissemination and creation fundamental to a surveillance society; and considers the implications that these representations may have for various groups. While the kind of knowledge creation neuromarketing represents exists in an informal space for learning, its goals are driven by market discourse, signifying an ensemble of institutional forces with the aim of creating an environment of unreflective consumerism. In this capacity, neuromarketing becomes an educational tool for social conditioning. The chapter seeks to connect

the central aims of the book using a hybrid analytics to map out the discursive structures implicit in neuromarketing as a cultural media environment; to critique how certain vocabularies of neuromarketing discourse are used to frame consumers as manipulatable entities; to highlight the social and ethical implications of such representations of consumers and to identify the discriminatory processes implicit in the material and immaterial practices of neuromarketing. The chapter concludes with thoughts on possible ways forward.

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2

A Theory of Manipulation: Critical Perspectives

What is the nature and form of the neuromarketing techniques being used to attain persuasive advertising force? How are consumer representations constructed through a discursive system mediated by technologies of surveillance? For whom are these technologies working? These questions and more hold significant social and ethical implications given the influential nature of new media marketing. Without a doubt, many of the interactions we have with the social world are shaped by the mass media, which continue to play a central role in the construction and circulation of representations. These representations, in turn, serve to inform social ideas about what it means to *be*. Neuromarketing portrays consumers in a particular way given the algorithmic logics underpinning the processes of data extraction. In this capacity, discourse has the power to shape psycho-social constructions of world and self. The present work aims to make sense of how these practices of consumer surveillance are creating a new epistemic knowledge that ultimately instrumentalises consumers for material gain. As such, this work is interested in exploring the ways in which the discourse of neuromarketing emerges from, and plays a part in, the historical, political and social context.

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If one is to unravel the complex agendas embedded in texts and interpretation, then analyses of texts within the social context must also connect to an interest in how power is manifested through the discursive process, specifically how socio-technical artefacts (such as neuromarketing discourses) construct and categorise individuals and groups as objects for governance. This book, then, also problematises the relationship between discourse and social domination, understanding texts as sites of contestation over meaning, where different groups compete to set forth their knowledges. The circuit of culture is one model from which the significance of neuromarketing in the social construction of meaning can be evaluated. There are three moments in the circuit: representation, production and consumption.[1] Neuromarketing is one particular cultural 'field,'[2] emerging as a storyteller with power to shape ideas and identities. The present work is not concerned with how the subjects implicated in the circuit of culture are enacting their subject-positions; rather it attends to the role that neuromarketing practitioners play in the representation and production of particular kinds of realities. It focuses on neuromarketing as founded on a theory of manipulation.

Situated in both critical cultural studies and surveillance studies, the book seeks to contribute to understandings of the intersection of marketing and an increasingly intrusive form of surveillance focused on the extraction of neurophysiological data. This kind of 'soft' surveillance is implicated in the functioning of the biometric economy in that it is a system put in place by commercial interests to monitor, extract and interpret consumer vitality in order to create value. One might argue that the process is a consequence of the condition of the cultural logic of late capitalism[3] where production, reproduction and consumption have come to provide the footing for establishing and maintaining social relations. This socio-technical development has also led to new ways of perceiving the world, and reductive methods for representing what we would collectively call 'the real,' including the ways in which human beings as consumers are understood. Paying close attention to the narratives surrounding neuromarketing offers a new dimension to the larger discussion about surveillance and consumption.

This chapter begins with how marketing has taken up cultural studies with a particular focus on the rise of behavioural psychology. This is

followed by an overview of the relations between marketing and surveillance. Here, I consider what I call 'consumer biosurveillance,' the monitoring and extraction of neurophysiological data used for both behavioural management and value creation—a form of biopolitics. The chapter then presents the method used for undertaking this project: a hybrid approach merging a Heideggerian analytical framework with critical textual analysis, and it concludes with a summary of the potential limitations of this framework. The use of a hybrid approach is motivated by my wish to answer the question that brought the book into being: Does the discourse of neuromarketing suggest the practice amounts to a reduction of human beings to reflexive relations to triggers external to their consumer niche?

On Managing the Mind: A Cultural Studies Approach

Market research and advertising have been taken to task over the years by various writers along a number of lines, including critiques of ideology, representation, identity, signification and freedom.[4] The two techniques are component parts of the larger project of marketing which also comprises public relations, media monitoring ad planning, brand development, product pricing and distribution, sales strategies and market research. Advertising is an audio-graphic form of marketing communication while market research is the action of gathering and interpreting information about consumer preferences. This work focuses on market research as a tool for developing advertising strategies.

Cultural theorists have examined advertising, in particular, as a symbol for contemporary socio-culture within which it has become ubiquitous and also as an economic and political force.[5] Reflecting on the pervasiveness of advertising and its political effects, Raymond Williams discusses advertising as a "highly organized and professional system of magical inducements and satisfactions, functionally similar to magical systems in simpler societies, but rather strangely coexistent with highly developed scientific technology."[6] Articulating a critique carried forward by writers to the present day, he argues that advertising affects the way consumers respond to certain stimuli and creates a manufactured need that can never be satisfied.

Focused market research into consumer tastes, habits and buying practices took off during the years after the First World War. Market research at this time was grounded on the dominant paradigm of scientific management and aimed to engineer consumer demand. Similar to the 'scientifically' managed work process, information gleaned from market research was used to compartmentalise consumer demand into identifiable segments that could then be targeted by advertising strategies aimed to educate, rationalise and shape social attitudes and behaviour.[7] Manufacturers were starting to realise that mass production and mass distribution were necessary for survival in a competitive environment. Determining how to access new markets and create demand became a priority. Stuart Ewen points out that in the 1920s, consumerism—"the mass participation in the values of the mass-industrial market"—emerged as "an aggressive device of corporate survival."[8] As advertising became more professional, its attempts to shape the lives of consumers became based increasingly on statistics. Also by the 1920s, market research was lauded as a major achievement of advertising agencies, and with the growing prestige of psychology, the focus of advertising executives shifted from the product to the consumer.

Writing about advertising and market research in the post-Cold War era, Vance Packard drew attention to how behavioural psychology and subliminal tactics were being used to manipulate consumer desires for goods and services. He identified eight compelling needs that drive individuals to this desire. These needs include emotional security, reassurance of worth, ego gratification, creative outlets, love objects, sense of power, roots and immortality. Packard was particularly concerned with persuasion and social manipulation. Upon the development of behavioural psychology, he argued, advertising agencies were increasingly hiring behavioural scientists to probe the consumer mind as deeply as they could to uncover facts that could be used to design more effective advertising campaigns. With this new scientific knowledge in hand, market researchers started to question three basic assumptions about consumers:

1. You can't assume that people know what they want;
2. You can't assume people will tell you the truth about their wants and dislikes even if they know them;
3. It is dangerous to assume people can be trusted to behave in a rational way.[9]

Foundational to the advancement of capitalism, market research grounded in behavioural psychology continued to be improved as a tool for businesses to promote their products in an ongoing search for growth and rising profits. In the process, advertising had become a useful instrument for imprinting values onto the mass population, leading to an ethos of conspicuous consumption. In this capacity, advertising moved away from a practice of simply informing consumers about goods and services to deliberately creating desires and demand. To generate demand, advertising strategies had to create needs from thin air, and market research, acting as feedback, was used to increase the efficiency of sales and distribution to gain competitive edge. There is a rich scholarship around the increase in the coercive power of advertising upon the emergence of research in behavioural psychology.[10]

Equipped with applied behavioural psychology to inform market research practices, advertisers aimed to evoke consumer needs by associating these needs with intangible desires, and then connecting them to particular products that would supposedly meet those needs.[11] Here, a central goal of advertising was the creation of a particular way of life by appealing to desires over reason. The aim, many have argued, is to establish certain values as pillars for norms and codes that govern social worlds, values that Wilson Key would claim are imbued into the consumer through advertising stimuli directed at subconscious perception, seeking to "manipulate, manage, or control human behaviour, but of which humans are consciously unaware." A worrisome implication of this form of manipulation is that advertising has the potential to change the value norms of individuals and/or change the "position (anchor point) from which an individual evaluates the world."[12]

Adopting a form of what one might refer to as Girardian thinking, this appeal to desire was fixed on the logic of 'mimetic desire' which was viewed as a central pillar and mover of economic progress.[13] On this view, human beings are said to imitate the desires of other human beings, at a

pre-rational level. When basic needs are satisfied (and, at times, before), individuals and groups become subject to intense desires, although they may not *know* exactly for what. Here, the individual desires to fill a gap, something she lacks which another person possesses. The subject, therefore, looks to the other person to inform her of what she should desire to acquire that form of *being*.[14] In this respect, advertising took on the role of providing models for consumption.

By virtue of the techniques used by advertising, human desire became, by and large, mediated desire where one person influences the desires and preferences of another person. As such, when a person's desire is imitated by someone else, she becomes a 'mediator' or 'model.' Girard points out that this process is clear in publicity and marketing techniques: when a product or service is promoted, a celebrity is used to mediate the consumer's desires. The object, then, is not promoted on the grounds of its inherent qualities, it is promoted on the grounds that a celebrity desires it. Girard maintains that modern technology accelerates mimetic effects, repeating them and extending them to the whole world. Technology also turns mimetic effects into advertising:

> When business tries to increase the sale of a product, it resorts to advertising. In order to inflame our desire, advertisers try to convince us that the beautiful people all over the world are already in love with their products. If the industry needs a patron saint, it should select Pandarus. Shakespeare is a prophet of modern advertising. His Pandarus dangles in front of his prospective customers the prestigious desire that will arouse their own. The most potent drug, the number one *pharmakon*, is this mimetic titillation.[15]

The influence that advertising has on society's mimetic desires is not constrained to material possession; it extends to lifestyles and marriage partners. Advertisements were developed with the specific intention of appealing to thoughts and feelings such as elegance, affection, freedom, patriotism, sexuality, status and youth. In this sense, advertising seeped into what Max Horkheimer and Theodor Adorno referred to as "the 'culture industry', subsidising the 'ideological media' and turning culture into an 'assembly line' whose standardised products it furnishes with arti-

ficial differences." This technical and economic merger of market research, advertising and culture became a *psychotechnique*: a method of manipulating human beings.[16] Jacques Ellul also reminds us that advertising is founded on extensive psychological research in order to manipulate consumptive behaviours:

> Advertising goes about its task of creating a psychological collectivism by mobilizing certain human tendencies in order to introduce the individual into the world of technique. … Advertising must affect all people; or at least an overwhelming majority. Its goal is to persuade the masses to buy. It is therefore necessary to base advertising on general psychological laws, which must then be unilaterally developed by it. The inevitable consequence is the creation of the mass man.[17]

Other Frankfurt School theorists such as Herbert Marcuse, Walter Benjamin, Erich Fromm and Jurgen Habermas offered many critiques of the malaise of western societies. They investigated how powerful cultural structures, especially those associated with media, marketing and consumption, violated human freedom by systematically manipulating the way we feel and behave.[18] Similarly, emphasising that advertising invades everything, Jean Baudrillard claims that advertising is our only architecture now; public and private space disappear, and the space between them also disappears only to be replaced by "great screens on which are reflected atoms, particles, molecules in motion," a world of *hyperrealism*.[19] The notion of hyperreality suggests that the combination of entertainment and information communication technologies (ICT) has started to provide people with experiences that are more intense and engaging than the mundane realities of life, dominating thought and behaviour. Borrowing the Marxian term 'reification,' he claims that commodities, technologies and 'things' have dominated individuals to the point where they have been divested of their human qualities.

More recently, scholars have examined advertising and market research in the context of an increasingly connected digital society, such as the cultural paradoxes in global marketing[20]; dynamics of the production, circulation and modification of meaning in digital interfaces[21]; and the ways in which consumers are being targeted by advertising through the data-capture

industry.[22] Others have shown how the machinery of advertising and media in postmodern society has actively mobilised and shaped human emotions, rendering populations simultaneously emotional and economic agents[23]; how smart phone apps designed to assist consumers in making ethical choices can shape the socio-material realities of everyday consumption[24]; and cause-related marketing (CRM) campaigns that connect consumption in the Global North with international development causes in the Global South.[25] Data mining, surveys, classifying and profiling are some of the most fundamental tools for the market researcher. Through these tools marketing codifies bodies. These tools are also deeply surveillant.

Marketing, Surveillance and the Codification of the Consumer

Over the past two decades or so, the field of surveillance studies has opened up innovative ways of thinking about the relationship between consumers and marketing. Surveillance typically refers to processes and actions that enable public/private entities to manage and control individuals and groups. As Anthony Giddens observes, it is "the collection and organization of information that can be stored by agencies or collectivities and can be used to 'monitor' the activities of an administered population."[26] These practices can occur in a range of environments where state and corporate entities monitor both public and private spaces, such as the workplace, educational institutions and commercial settings. Surveillance systems have become fundamental structures in contemporary connected societies where managing bodies functions through new technologies that allow continuous control and instantaneous communication.[27] This process of monitoring personal data and online activities can also be understood as 'dataveillance,'[28] which provides a common foundation for other forms of digital surveillance, such as consumer surveillance. It has also provided marketing with the technological apparatus to move from simply attempting to persuade consumers to purchase products to making predictions of buying patterns derived from user profiles generated from databases of consumer classifications.[29]

It is reasonable to suggest that the growth of commercial surveillance is connected to the potential for large-scale storage and processing of personal data as a result of information that is at times voluntarily given by the consumer, or as what Gary Marx would refer to as 'soft surveillance,' a process that involves corporations more than governments.[30] An example of this is when people agree to report their consumptive behaviour and attitudes in detail as part of market research. The personal data extracted are evaluated to create a digital profile calibrated to target particular demographics to take consumptive action. This process, however, demands an 'illusion of voluntariness,'[31] hinging on the careful attempts by marketers to hide the imposition of consumer surveillance. Here, individuals deliberately also monitor, quantify and manage their own actions and behaviours. Deborah Lupton, for instance, claims that individuals using wearable monitoring devices such as *FitBits* are viewed by corporations as terrain to be monitored, mined and exploited as bodies of data—a form of surveillance that supports a range of data profiling activities. In this respect, individuals emerge as 'nodes' in the IoT, "valuable data exhausts for repurposing by other actors and agencies."[32]

There are increasing claims that many contemporary marketing processes are surveillant inasmuch as they collect, analyse and apply consumer data to place advertising, define market segments and nudge consumer behaviours. Informed by data-driven predictive analytics, measurement and testing, and strategies of personalisation, the aim, as Wolfie Christl observes, is "to influence behavior at scale." In the background workings, consumers are continuously evaluated, sorted, categorised and ranked according to what works as a good fit for a company's commercial interests. However, as consumers are rendered more transparent, these commercial surveillance processes and practices remain rather opaque.[33] Susanne Lace suggests that in this kind of society, "We are all 'glass consumers': others know so much about us they can almost see through us." She builds on the glass metaphor to argue that the "properties and capacities of glass – fragility, transparency, the ability to distort the gaze of the viewer" reflect our vulnerabilities.[34] However, like glass, the knowledge gleaned from consumer surveillance can also distort ways of knowing in that consumer probing varies from observer to observer, so consumer

data can be approached and understood in various—and perhaps biased—ways depending on who is interpreting the information.

Others have examined specific commercial artefacts such a loyalty cards which are objects for data collection. Through using these cards in mundane, everyday practices like shopping, it is argued that new modes of surveillance become embedded as an integral component of socio-cultural contexts and actions. It is by closely attending to the narrative surrounding these events that one is able to make sense of how surveillance processes influence constructions of subjectivity.[35] Another study uses Foucault's frame of 'governmentality' to study Tesco's loyalty card programme, arguing that Tesco is representative of a significant site in the modern cultural economy. Through the mobilisation of producer and consumer reflexive capacities, these commercial entities seek to frame and extend agency while also seeking to direct that agency to consumptive acts. As Beckett argues, "Consumers are fabricated as they are made visible through surveillance, located within populations and analysed in comparison to that population, rendering them as an ordered object of knowledge."[36] So not only does consumer surveillance play a pivotal role in the construction of consumers and markets, it is also an enactment of corporate power which seeks to align consumer preferences with corporate goals.[37] These practices illustrate the logic of data accumulation embedded in the networked environment, what Shoshana Zuboff refers to as 'surveillance capitalism.'[38]

Foregrounding the issue of race, Oscar Gandy pursues an inquiry into the relations between big data and consumer surveillance, specifically the ethical implications that arise from categorising consumers according to statistical representations. He argues that in these contexts computerised analysis of data is used as intelligence to inform organisational decision-making. The overall effect of this form of consumer surveillance is that it promises rewards and benefits to certain consumers and excludes those who do not conform to codes and expectations. The 'rational discrimination' carried out in corporate environments results in negative outcomes for some individuals and groups.[39] Here, consumers are an epistemological construct, created discursively through new marketing [surveillant] technologies. These socio-technical processes enable companies to create,

circulate and act strategically on the discursive identities generated which form a panoptic view of the subject.[40]

Along similar lines, the 'brandscape' has been investigated as an emerging apparatus and a mode of order in neoliberal capitalism. A result of developments in marketing, urbanism, technology and surveillance, the brandscape is part of the 'affective economy,' has an inherent experiential quality and is dependent on the elicitation of affect. It recodes consumers as spatialised, desiring bodies constructed through networked marketing techniques. These marketing processes are designed to make sense of buying behaviour and seduce target consumers with affective experiences, simultaneously exhilarating and exploiting the targeted individual. This move is fundamental to what Zygmunt Bauman calls the 'consumer society,' where the contemporary world not only needs but also actively engages its population in their capacity as ideal consumers, as 'gatherers of sensations' driven by the desire for immediate satisfaction through the continued accumulation of commodities. Instrumentalisation and commodification of subjects are the norm in these 'liquid' consumer surveillance settings. In this context, consumers in their absorption with their intelligent devices are viewed as 'ready-to-use' tools for advertising ends: organic objects that can be prodded and probed for valuable data.[41]

It is clear that marketing practices have normalised the extraction and classification of consumer data, encoding bodies and behaviours with a view to developing and targeting products to relevant population segments, and increasingly relying on the manipulation of affective intensities. These are well-established observations in surveillance studies. Many questions will inevitably arise, then, from reflection on the possible trajectory of neuromarketing as fundamental to consumer surveillance practices. This book, however, attempts to grapple with only a small piece of that puzzle. It is a reflection on the role that pervasive neurophysiological technologies play when constructing consumer representations in new media marketing. It is also a critique of a method of manipulation mediated by technologies of consumer biosurveillance, functioning in a capacity that holds significant social and ethical concerns for democratic societies.

Consumer Biosurveillance

Emerging from *The United States National Biosurveillance Strategy*, 'biosurveillance' as a term of art has been typically used by medical and scientific professionals, and security analysts, to describe a defence programme which focuses on maintaining situational awareness during catastrophic health events, such as disease activity; threats to human, animal and plant health, as well as chemical, radiological and nuclear threats. The development of Internet-based biosurveillance systems (IBBS) was enabled by the emergence of event-based surveillance more broadly. While the system put in place builds on existing federal, state and local surveillance apparatuses, it also extends its reach to global preparedness. The process of Internet biosurveillance generally includes (1) the collection and storage of data, (2) processing these data to produce information, (3) assembling this information into analyses and (4) dissemination of analyses to end users.[42]

I am, however, using the term 'biosurveillance' to refer to the deployment of diagnostic imaging technologies into commercial settings to mine neurophysiological data for marketing purposes. The information extracted from consumer bodies is then interpreted and used to design strategic advertising interventions to manipulate behaviour, ranging from triggers to enact consumptive actions, to nudges that prompt behaviour change for health promotion. The biological surveillance of consumers is an extension of biopower which depends on the use of data mining to reveal patterns in behaviour to classify and sort—a power which directly aims at extracting the vital characteristics of the body to manage and control it. Biopolitics and biopower work in tandem and can be defined as the governance and regulation of populations, mediated by sociotechnical practices related to the body which, in turn, becomes a political space in its own right. Biopolitics is exercised by various actors, including the state and other private/public institutions.[43]

The kind of instrumentalisation of human beings that emerges from this context is increasingly essential for the functioning of a biometric economy, where biology has become both the driving force behind production and the resource that is mined, refined and distributed for

material gain. Neuromarketing as a form of biosurveillance aims to produce what Catherine Waldby would call 'biovalue,' which is foundational to the logic of a bioeconomy and connected to increasing modes of value generation in late capitalism.[44] The idea of value is important in that neurophysiological data become a utility through which value can either be imagined or extracted.[45] Two structures underpin the pursuit of biovalue: a public incentive where the hope of new biotechnologies can create a *use value*, thus contributing to the production of health and well-being, and the creation of *exchange value* where biological commodities can be bought and sold on the market. Many frames attached to the analysis of biovalue can be applied to the mining and exchange of neurophysiological data for profit in new media marketing.

The production of biovalue is also attached to technical innovation which enables patenting activities of biological matter such as cell lines, genes and transgenic organisms, thereby making claims on life as intellectual property and sources of profit. This kind of exchange of biological material effects "a reorganization of the boundaries and elements of the human body"[46] which in turn creates new subjectivities and social relations.[47] These techniques can be understood as dependant on a coded infrastructure of algorithms used to sort and categorise individuals and groups into particular market segments: an emergent form of consumer surveillance implicated in various relational issues concerning both material and symbolic space. As a result of these technological innovations, corporate entities are now wielding more powerful tools of persuasion to coerce individuals through market forces to change their behaviours and enact new values and social norms. These events have far-reaching social and ethical implications for democratic societies. Zuboff explains this problematic well:

> We've entered virgin territory here. The assault on behavioral data is so sweeping that it can no longer be circumscribed by the concept of privacy and its contests. This is a different kind of challenge now, one that threatens the existential and political canon of the modern liberal order defined by principles of self-determination that have been centuries, even millennia, in the making. I am thinking of matters that include, but are not limited to, the sanctity of the individual and the ideals of social equality;

> the development of identity, autonomy, and moral reasoning; the integrity of contract, the freedom that accrues to the making and fulfilling of promises; norms and rules of collective agreement; the functions of market democracy; the political integrity of societies; and the future of democratic sovereignty.[48]

With these concerns in mind, this book marks an attempt to continue in the critical tradition of Herbert I. Schiller's *The Mind Managers* and Vance Packard's *Hidden Persuaders,* in that it seeks to draw attention to how market research uses neuroscientific methods to tap into 'subconscious' desires to manipulate consumers to take consumptive action. Using a hermeneutic process, it aims to make sense of how neuromarketing discourse as a system of representation has the capacity to produce specific social realities, offering a philosophical framework for analysing the socio-cognitive terrain of consumer biosurveillance. In this respect, the work seeks to make use of analytical tools from diverse critical research traditions to enhance the conceptual foundations of surveillance studies. As such, it is a work of both social and cultural theory.

Critical Hermeneutics and the Issue of Representation

Key to neuromarketing industry practice, neurophysiological data are extracted, organised, analysed and interpreted by market researchers who use these data to represent the consumer: biosurveillance mediated by diagnostic technologies. The production of statistics, graphical outputs and other forms of data visualisations are then used to predict how these data can offer strategic insights into goods and services that might resonate with a consumer at a level beyond conscious awareness, thereby triggering the impulse to buy. Population segments identified through such analyses are often saddled with classificatory markers that then serve to establish and reinforce negative stereotypes about the members of those groups. The generation of categories of healthy or unhealthy behaviours, for example, "tend to correspond intimately with moral concepts of good and bad conduct, as well as virtuous and immoral individuals or

communities."[49] The process of segmentation is expanding beyond the level of predictions about responses to messages,[50] to the development of strategies using prescriptive analytics to determine which behavioural responses serve as the most effective for reaching marketing goals.[51]

A consequence of this tendency to reduce the consumer to neurophysiological data is the process of 'datafication': the rendering of various aspects of life into digital data that can be analysed to understand and predict behaviours, and used to guide social interventions.[52] The use of diagnostic technologies in marketing contexts and data-driven understandings of the consumer lead to social, ethical and economic implications revolving around the collection and application of consumers' personal information about their lives, values, belief systems and bodies. These concerns also extend to how this information is used to support the digital data economy, including issues relating to surveillance, statistical discrimination, privacy and effects on autonomous decision-making. To make sense of this discourse as a system of representation and its implications requires us to contextualise the texts of neuromarketing in terms of structures, forces and dynamics which are rooted in relations of domination.

Analysis of the discursive reproductions of domination has two dimensions: production and consumption (or reception). This book focuses on the dimension of production rather than the act of consumption in an effort to foreground how power is enacted through discourse as a system of representation—to map out the structures of production and domination rather than how these systems are actually lived.[53] Since my focus is on consumer representations, this book aims to characterise how consumers are represented across marketing groups and the kinds of understandings and implications potentially emerging from such representations. The work focuses on the study of media products as textual artefacts which provide historical insights and give an account of actions and/or behaviours that affect the creation of larger social narratives.[54]

Representation recognises the public character of language. Individuals and groups construct meaning using systems of representation, such as concepts and signs. In this sense, representation uses both symbolic and material objects to convey meaning which is relational. This constructionist approach to discursive practices is concerned with the symbolic

dimensions of social life, where things such as words, images, sounds, even data function as signs to produce particular versions of reality. Meaning-making, then, hinges on links made between these different orders of things, the effect of which is the creation of social and cultural codes for understanding.

Producing meaning requires a process of 'encoding' or putting things into the code. On the receiving end, it comprises the audience 'decoding,' or interpreting the code to derive meaning.[55] These things, when represented in the marketing media, carry ideological or cultural meanings. Media are processes in spatio-temporal contexts, operating in what Manuel Castells understood as "a space of flows."[56] These communicative processes play a significant role in social, economic and political processes. They are modes of communication that have the power to influence the ways in which individuals and groups have a sense of living in particular worlds.[57] As such, media has the capacity to transform social imaginaries. While audiences certainly have the agency to draw on their pre-existing mental schemas to interpret representations in diverse manners, meanings are nevertheless produced by various mass media agents as specific messages intended to be deployed to audiences in specific ways. So how might we uncover the impacts that these messages have on social spaces?

The focus of this book is to conduct a critical hermeneutics to reveal the discursive world of neuromarketing as a space of contention for power over consumer representations. Hermeneutics as a critical discourse method is characterised by its consideration of the relationship between language and society to make sense of the connections between discourse, power, dominance and social inequalities.[58] As with critical theory more generally, hermeneutics seeks to uncover the assumptions that underpin language use, thereby highlighting claims to authority. Analysis includes explorations into the occasions when texts are understood as products of and resources for the interpretive process, including analyses of socio-cognitive process, and explanations of the dialectical relations between social events and structures.[59] The dynamic of self and social world is a process of meaning production.

We are always-already immersed in a social world in a network of interactions. In this sense, the socio-cognitive dimensions of the world at large (i.e. the public world or cultural media environment) are permeated by

narratives that shape our individual subjective/phenomenal worlds and influence our understandings of self and others. This approach is in keeping with Heidegger's conception that human beings and world are connected in a dynamic relationship of meaning-making.[60] Discourse structures are the means of symbolic reproductions of dominance. Throughout this book, I use the term 'discourse' to refer to a way of constructing knowledge at a particular historical moment—what Foucault would have called *episteme*. Sense-making and meaningful practice are produced within discourse.[61] Within systems of discourse, there is a dynamic exchange between a subject's lifeworld and a range of systems. There are "channels between lifeworld and systems which in principle flow in either direction – systems can be shaped by lifeworlds, lifeworlds by systems."[62] Thus, understanding and explaining power and dominance in the discourse of neuromarketing involves the reconstruction of the social cognition processes of their production as a method of managing the mind.

This kind of analysis can offer important insights in that it allows us to uncover the foundations upon which major social structures are created, and how concepts, meanings, values, assumptions and beliefs come to be taken up by society at large. Through hermeneutics, a hybrid method combining thematic textual analysis and Heideggerian analytics, this book seeks to reveal the discursive world of neuromarketing as a space of contention for power over consumer representations. It is an attempt to explore how we, as consumers, are shaped and manipulated by advertising tactics more than we realise.

For this undertaking I will use Heidegger's philosophy of inanimate and animate life to analyse how the consumer is represented in the discourse of neuromarketing. Specifically, I will apply the tripartite thesis that *the stone is worldless*, *animal is poor in world* and *man is world-forming* to neuromarketing. Heidegger's thesis was largely influenced by Jacob Johann von Uexküll (1864–1944), a pioneer in the discipline of biosemiotics, and most known for his contributions to the fields of ethology and ecology. Uexküll was interested in articulating the phenomenal worlds or the subjective universes of animals.[63] Rather than understanding animals as physico-chemical machines, Uexküll maintained that animals must be interpreted by their behaviour in the environments they inhabit. Similar to the symbiotic relations that exist between human beings and

their social worlds, Uexküll studied the animal and its environment as a system he called *Umwelt*, which means 'surrounding world' or 'environment,' arguing that the animal and its world are not two distinct beings, but a unitary structure to be understood holistically.[64]

A Heideggerian philosophical framework can serve as a heuristic device for disclosing how neuromarketing as a discursive world represents consumers as instrumental for marketing purposes. This approach also offers an illustration of the objectification and dehumanisation that occurs within these discursive moves, specifically the tendency for the more populist strands of neuromarketing to reduce the consumer to the metaphors of *brain as buy button*, *brain as animality* and associated implications. Bauman has used a Heideggerian frame to understand the instrumentalisation and commodification of subjects that occur in consumer surveillance settings.[65] Agamben has interrogated animality as a concept central to shaping the discursive grammar of scientific, political, economic and everyday life.[66] That neuromarketing objectifies, dehumanises and instrumentalises human thinking can be illustrated through applications of Heidegger's tripartite thesis in much the same way.

Limitations of Study

There are obvious limitations to using Heidegger's analytics, specifically in terms of his ideas on animal life and issues of race and gender. First, his conceptions of the animal, or animality, are incomplete and, at times, inaccurate in light of critiques of his work and given contemporary research in animal studies as well as posthuman studies.[67] One challenge is that, as Derrida pointed out, the term 'animal' spans a range of affects and intelligences, enough to render it possible to question the category itself.[68] Animals also exist in a range of spaces with a range of complex cognitive capacities, which suggests that the relation they have to entities they encounter in their lifeworlds, and their capacities for making meaning in and from the world, may be radically different from ours.[69] Therefore it would be difficult, if not impossible, to accurately capture a fundamental structure to animal *beingness*. Heidegger's structure of *animality* is one that assumes the animal is lacking—animals are viewed as

poor in world, as lacking space and history, the capacity to reflect on the basic nature of things, without dwelling, and without the cognitive ability to use tools as human beings can. This conception is grounded on a privileging of human beings in terms of access to the richness of the world. Heidegger does, however, grant the animal as 'having' (*echon*) some form of access to the world, in terms of language and discourse.

Despite these conceptual limitations, the frame of animality serves as a useful heuristic to illustrate the implications of the boundaries of animality and human *being* in the context of neuromarketing, in terms of how the animalisation of thinking is at play in the discursive world that intersects neuroscience and market research. As I seek to show, through discursively animalising consumer thinking, neuromarketing reduces the consumer to a 'lower thing,' a non-human human for instrumental—political and economic—ends. Returning to the *Minority Report*, the logic behind the reduction to animality is expressed by Anderton when he justifies instrumental treatment of the Precogs: "It's better if you don't think of them as human."

There are also limitations regarding the applicability of Dasein (human existence or *being-there*) as a holistic that can represent the complexities of cross-cultural differences. Dasein does not account for divergent perspectives. To offer one example, Heidegger's fundamental thesis on Dasein is that history is essential to and definitive of being human. As part of his 1934 lectures, he states: "Negroes are men but they have no history."[70] Heidegger makes this assertion in anticipation of objections to the relation between history and Dasein: that there are human beings or groups who have no history (e.g. negroes, an accepted view of the time). Such an assertion poses several challenges: First, that there can even be a homogenous group falling under the title 'negroes,' a group unified viz biological characteristics. Second, that negroes have no historical consciousness, and can therefore be relegated to the realm of nature over culture. Third, Heidegger is making assertions on behalf of a group of people about whom he knows little or nothing.[71]

Other scholars have written on this point, specifically in the language of the coloniality of being. Nelson Maldonado-Torres, for instance, claims that Heidegger "took European Man as his model of Dasein, and thus the colonized appeared as a 'primitive'." Heidegger's concept of *mit-*

sein is not a *being-with* colonised groups nor does it imply a concern for the racialised experiences of non-Caucasian Europeans: "What Heidegger forgot is that in modernity *Being* has a colonial side, and that this has far-reaching consequences … in modernity, what one finds is not a single model of human being, but relations of power that create a world with masters and slaves." In this capacity, Heidegger's ontology can be viewed as supporting a hierarchical knowledge system that maintains colonial social relations.[72]

Furthermore, I was hesitant initially to take up Heidegger's philosophies because I find his political position morally unsettling given his support for the Nationalist Socialist Party. However, I have done my best to separate the man from the philosophy as I believe that elements of his conceptual framework for existence are useful as frames for understanding the discursive world of neuromarketing. As Heidegger had much to say in terms of the tendency of technology to be used to instrumentalise people and nature, given the creep of new surveillance technologies into everyday life his writings are also useful to foreground the social and ethical implications of the use of neurophysiological technologies in market contexts.

The hermeneutic method will hopefully offer readers interested in contemporary surveillance a path to mapping out the relationship between texts and consumer representations in increasingly connected environments. In so far as we understand and interpret the world as a transaction between reader and world as text, thematic textual analysis is a useful tool to examine the world of neuromarketing specific to its discourse structures, especially in light of the premise that technology too can be read as text. That said, I acknowledge my research is limited in a number of ways. What follows is undoubtedly a partial list.

I am focusing on a specific number of multimodal texts as part of a larger discursive world of objects and entities. The first limitation of this study is that it is restricted to a particular iteration of neuromarketing derived from documents that were widely accessible at the time. I used websites to gather certain information, and this information is dynamic and changes frequently. The information collected for this project is accurate as of the time of writing. My study is also constrained to examining a limited number of narrative structures and hermeneutic analysis.

It is unable, therefore, to provide an exhaustive discourse analysis which comprises a large range of discursive devices and content analysis such as quantitative methods. The review of the literature and collection of data draw primarily from European and North American content. I acknowledge there is further literature from other continents that would be valuable to explore.

In addition, my critique examines the expression of thoughts and meanings, rather than instrumental behaviour, as outlined by Fischer in his methodological framework for interpretative analysis.[73] On this view, cognitive perception as a mode of interpretation places value on the researcher's intuition or cognitive capacity as a guide to manipulate, explore and organise data so that meaning creation is not only creative but also analytical. While the research methodology applied in this study is grounded in the relevant literature, it is a hermeneutic activity, an act of interpretation influenced by my own location in the world, including my assumptions, biases, values, beliefs and opinions.

Data and Data Sources

My research into consumer representations in neuromarketing is based on an analysis of scholarly and non-scholarly works available both online and offline over a 20-year timeframe (1998–2018). I chose this start date as it marked the first indications of the intent to deploy diagnostic imaging technologies into market research settings, which came in the form of the filing of a patent (*Neuroimaging as a Marketing Tool* – Grant US6099319A). My data set includes a corpus of multimodal examples of text/talk, primarily from North American and European contexts. Examples of discourse include books, academic journal articles, white papers, popular and substantive news sites, magazines, reports, patents, company websites, conference presentations, social networking platforms, web-based videos and podcasts. These artefacts offer insights into the aims and objectives of neuromarketing and open up opportunities for critical dialogue into the methodology of the field.

Artefact sampling was purposive based on two primary criteria. First, I selected multimodal artefacts that were widely accessible. Second, I chose artefacts that reflected divergent perspectives in their nature and tone.

I have tended to focus on practitioner accounts of neuromarketing used to sell the method to its audiences. The practical examples I use throughout the work were chosen as they reflect the general consensus that neuromarketing is a valuable replacement to traditional market research methods which are no longer sufficiently equipped to uncover consumer preferences. I have viewed neuromarketing proponents as a group of actors who have a stake in the business of 'doing' neuromarketing, such as authors, marketing specialists, advertising agencies and regulatory bodies. Some of these individuals are attached to universities as academics. Features I associate with the dominant pro-neuromarketing narrative include:

- an explicit or implicit pro-neuromarketing stance;
- claims that neuromarketing can tap the sub/unconscious to extract objective information that is useful for designing effective advertising campaigns; and
- claims that neuromarketing tools can be used to predict and manipulate consumer buying behaviours.

While it might be argued my focus can lead to biased results that present the perspective of the most radical proponents of neuromarketing, it is nevertheless important to conduct research that systematically problematises how certain neuromarketing practitioners construct the consumer in an oversimplified manner to be used instrumentally. These narratives are useful for illustrating the ways in which neuroscience is being applied in marketing contexts. Despite this focus, I do not exclude more tempered practitioner accounts of how neuroscience may benefit market research, and the expertise of academics and researchers involved in consumer neuroscience and/or cognitive psychology.

That said, I proceed with the basic assumption that it is objectionable to use medical technologies for marketing purposes. I will argue that by disrupting and overriding our processes of understanding (i.e. our communicative practice) neuromarketing works in opposition to the ideals of a robust democracy, including the basic freedom of communicative action

and experience necessary to produce freedom of intelligence. Here, reflective thought connects to inquiry, educative experience and personal growth, all of which emerge as an ideal aesthetic experience of the world, where thinking involves a metaphysical relationship between individual and world. It is an individual's capacity to learn and the personal growth ensuing that is ultimately the measure of any form of human activity, including democracy as a way of life.[74] If neuromarketing is seeking to manipulate these communicative freedoms, including the capacity to form and enact our own values, how is it engaging in its imaginative work?

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3

The Emergence of Neuromarketing

It was advertising that introduced the concept of efficiency into the field of persuasion. As Ellul pointed out at the time, "the problem was to convince a large number of persons, all typed as 'average', to perform a simple action such as buying a particular product. Out of necessity, advertising had to be convincing with limited arguments and few words."[1] Forms of persuasion in politics and advertising were distinct in the early twentieth century, during which conditions in advertising were more favourable to the partnership of mechanical and psychological means than other realms such as political conditions. Whereas political manoeuvres were targeted at the elite and attempted to elicit an intellectual reaction, advertising was targeted to a wider population with the goal of producing reflex action. The combination of two categories of techniques—mechanical and psychological—armed advertising with its brute force. In contemporary contexts, this separation no longer holds, especially in light of the 2018 Cambridge Analytica revelations, and other deployments of mechanical and psychological tactics to influence both commercial and political action at a level below the threshold of conscious awareness. Now adding to the arsenal of these techniques, innovations in neurophysiological technologies have the power to provide advertising with even more

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precise and efficient tools of persuasion. These developments in contemporary methods of persuasion have serious implications for a democratic way of life grounded on the capacity for self-determination.

This chapter seeks to offer an account of the emergence of neuromarketing. Given that much of marketing history has been recounted comprehensively by others, this section simply attempts to provide a brief overview of significant technological moments that impacted and changed the way the practice has been conducted over the years in order to place neuromarketing on a continuum—as a modality of late capitalism. New technologies drive new practices, and these new practices drive moments of change that make other new technologies possible: a feedback loop of socio-technical events. While the evolution of market research and advertising is in many ways defined by technological change, this effort to chart a map should not be viewed as the advancement of a monolithic causal theory of social change predicated on direct technological determinism. Rather, it remains mindful that interdependence is what characterises technological and social developments.

Technology, Desire and Consumption

Marketing as an informal practice can be dated back to the ninth and tenth centuries B.C., a moment in history during which, as Lawrence Lockley claims, "even the Children of Israel sent out interviewers to sample the market and the produce of Canaan."[2] Evidence of market research as a formal tool of advertising and as an independent field of study, however, did not become endemic until the period between 1910 and 1920. Between 1910 and 1930 major manufacturers established their first market research companies. Over the years, market research and advertising have remained connected intimately as component parts of a larger marketing practice, evolving into an efficient consumer surveillance machine enabled by modern technological developments. What follows are examples of various events that serve to illustrate how technological changes have impacted how market research and advertising are performed.

The Printing Press

Prior to the industrial revolution, goods were produced locally and on a small scale where buyer and seller were in personal contact with each other. Beginning as an oral practice, advertising gradually evolved from simple announcements made by local artisans and shopkeepers to wider distribution of messages with the advent of the Gutenberg printing press in the 1400s. This new technology enabled handbills, posters, flyers and other forms of advertising content to be produced in mass, ushering in the capacity to increase the production of texts while decreasing costs, thereby allowing the dissemination of information to a larger audience.[3] Gutenberg's press gave advertising the opening it needed to flourish by creating an avenue for the first form of mass media publishing: newspapers.

Harold Innis claims that such significant developments in technologies of communication "involved a revolution in the extension of communication facilities,"[4] and became the driving force behind social change. In this sense, technology shaped both individual understanding and social consciousness, a theme that remains consistent throughout the evolution of new technologies and marketing practice. The wide distribution of newspapers became a perfect medium for circulating advertisements. With the arrival of the Industrial Revolution, advances in technology enabled mass production, and the personal links between buyer and seller were replaced with a manufacturer's relationship to consumers often located at larger distances from the factories in which goods were produced.

Telephone

The search for expanded markets to increase profits gave way to more persuasive advertising methods because it became necessary to sell products to customers one would not meet face-to-face during the buyer/seller transaction. With the arrival of the telephone, two or more people, often separated according to geographic location, could be placed in direct and immediate communication. From its early beginnings as a

broadcast system to its eventual use as a medium for market research (e.g. telemarketing) and advertising, the telephone played a crucial role in redefining social and business networks as well as reconstructing ways of understanding the world. While the medium did not replace written communication and face-to-face interactions, it supplemented these actions and altered their nature to varying degrees.[5]

The telephone also impacted market practice in terms of the buying and selling of goods and services. Early directories paved the way for the conduct of commerce by printing information about the business or trade of the subscriber. Not only did this new technology stimulate trade through its capacity to render buying and selling more convenient, it also presented a medium for vast amounts of mouth-to-mouth advertising as an efficient method of stimulating consumer desires. As Sidney Aronson notes: "That telephone communication was a superb medium for advertising was because early users of the telephone tended to act exactly like those who later got their first radio or television receivers, that is they used the electronic wonder incessantly."[6]

During this time, advertising, itself innovating alongside developments in technology, emerged as an authoritative source of information about goods and services. Advertisements for the telephone, particularly those created for the American Telephone and Telegraph Company (AT&T), had the power to do more than sell telephone services to the masses, they deployed new ideas about time and space in the discursive representation of speed as a product of the telephone. This capacity to shape the social imaginary constituted a 'pedagogy of modernity' that was central to shaping the public's conceptions of the world. Telephone advertising depicted new spatio-temporal and social relations hastened by the arrival of electric communication.[7]

Radio

While the growing ubiquity of telephones offered an easy and efficient means of communication and dissemination of information, it was radio that allowed advertising to reach audiences in bulk. Spurred on by a debate that dominated the 1920s around the question of *Who would pay*

for the service? the commercialisation of radio laid the foundations for advertising broadcasting in the United States and Europe. The power of a radio station broadcast that could reach thousands of homes was attractive to manufacturers who wanted to expand their market bases.

The development of the radio and broadcast network saw print advertising move from static visuals to dissemination in aural form, earning advertising greater communicative reach and power in that it was able to appeal to a broad audience through catchy jingles, for example, that had the potential to play in one's head for hours. Of this medium as an advertising technology, McLuhan points out that radio, with its cloak of invisibility, "comes to us ostensibly with person-to-person directness that is private and intimate, while in more urgent fact, it is really a subliminal echo chamber of magical power to touch remote and forgotten chords."[8]

Television

Upon the invention of television advertising gained a sharper edge. The force of television advertising is derived from its presence as both a textual, symbolic system and an economic system. Although they are designed to sell goods and services, television commercials are embedded with symbolic complexity which have both intended and unintended effects that surpass the aim of sales. As Williams observes, the reason modern forms of advertising are effective is not because individuals and groups are hyper-materialistic. If society in general were this way, advertisements would not be necessary. People would simply want to purchase a good or service for the sake of owning that item. The reason advertisements are designed the way they are is because "our society quite evidently is not materialistic enough."[9]

Given that people have needs other than those associated with the material, for them to be persuaded to buy, advertisers must symbolically connect personal, social and cultural values to the product in question. While advertising in previous forms of communicative media had the power to do this, television advertising is particularly suited to this process in that it is able to offer the consumer, through the magic of film, a multi-sensory escape from the finitude of life that mimicked the temporal movements of life itself. On this technique, Ellul observes that:

> The union of two very different categories of technique … yield this new system of human technique. The first is a complex of mechanical techniques (principally radio, press, and motion pictures) which permit direct communication with a very large number of persons collectively, while simultaneously addressing each individual in the group. These techniques possess an extraordinary power of persuasion and a remarkable capacity to bring psychic and intellectual pressure to bear. The second category consists of a complex of psychological (and even psychoanalytical) techniques which give access to exact knowledge of the human psyche. It can thus be motivated with considerable confidence in the results.[10]

Using media creatively, television gained a significant advantage over radio in that it could use visual symbolism to connect goods and services to desirable images and emotions, aiming to evoke in the audience desirable responses.[11] With television, the viewer became both "involved and participant."[12]

Branding and Online Platforms

As the search for expanding markets continued, control through information and communications was challenged with creating new opportunities as existing markets became saturated with mass-produced goods. Given the overflow of the market with a range of newly invented products, advertisers searched to alter the way consumers lived their lives. Advertisements had to inform consumers about the existence of a new invention, then convince these populations that their lives would improve if they used these objects. Branding emerged as a practice attached to market research and advertising, where the brand became "the core meaning of the modern corporation, and the advertisement as one vehicle used to convey that meaning to the world."[13]

Marketing gained an even stronger foothold in society with the genesis of the digital economy. Advertisements could suddenly be disseminated from one location to another at the speed of a mouse click. As the Internet (and ICT, generally) evolved into a more intelligent ecosystem, so too did advertising and market research techniques. Amazon, for example, was arguably the first e-commerce website to introduce personalised adver-

tisements. Involving a process of crunching algorithms to tailor the online store for each customer, a list of recommended items are generated based on data input about the customer's interests.[14]

In addition, the techniques of native advertising provided online companies with a set of tools that had the potential to heighten advertising exposure and further manipulate consumer engagement and behaviour. Broadly defined as "content that bears a similarity to the news, feature articles, product reviews, entertainment, and other material that surrounds it online,"[15] native advertisements are so well assimilated into the design and consistent with the behaviour of the platform, the consumer is often unable to discern advertising content from the media context, which is a central characteristic of native advertising.

The integration of native advertising into other forms of content gives advertisers the opportunity to burrow into the credibility of the publisher's original content, which aids in the attempt to influence consumer behaviour. Because this form of advertising is able to hide its persuasion motive, it is deemed to have the capacity to enhance brand performance.[16] As well as content on a platform, the platform itself and the device that consumers use to access that platform became determinants for the effectiveness of advertising.

With the advent of mobile phones and smart phones, the force of advertising continued to expand across communication technologies. While some have argued that the beginnings of consumer surveillance practices can be traced back to the 1870s upon the appearance of consumer credit bureaus and their capacity to amass vast amounts of personal information,[17] it was the emergence of the digitisation of information and the widespread use of online data mining that spurred on the most significant advances.[18]

Mobile Phones

The adoption of 3G and 4G technologies has outpaced other preceding technologies. Among the technological advancements many consider to be most transformative is the miniaturisation of complex systems or 'miniaturised mobilities': from mobile phones to smart phones. The cost

of these devices has dropped, data have become more affordable and user experience has been enhanced through a variety of smart adaptive interfaces. Mobile Internet is one of the biggest factors facilitating the widespread use of mobile devices, and the social and economic value generated by this use has become a driving force behind the global economy. In short, the rapid growth of mobile phones over the past two decades has made this new technology an effective platform for targeting consumers.[19]

Upon the arrival of Short Message Service (SMS) advertising in 2003, businesses began sending customer loyalty offers and promotions straight to mobile phones. Now context-awareness and location-awareness are rendering the process of sending consumers personalised advertisements more precise, efficient and normalised. These precision technologies have changed the way consumers are targeted by advertising. Smart devices equipped with location determination technologies such as radio-frequency identification (RFID), Bluetooth, Wi-Fi, GPS, geocoding, beacons and near-field communication (NFC) enable proximity notifications, identifying presence to tailor the advertising experience to a particular location—where we are at any given moment in time provides rich information about us, who we are, our habits and so forth. Smart phone usage metrics are used to match first-party data to a verified smart phone ID to enhance consumer profiles, allowing marketers to pinpoint individual consumers they wish to target. Global System for Mobile communication (GSM) operators also sell these data to data brokers and advertisers, thereby creating added value.

Mobile wallet services allow consumers to manage and use coupons, loyalty rewards, boarding passes, gift cards and so forth. Provided it is connected to a network and there is coverage, a smart phone can scan a barcode and immediately access product information. While the user is reviewing this information, another app can search the Internet for the same code, compare prices and present the user with other offers fitted to specific needs; Amazon, for example, has this feature embedded in their mobile app. This functionality is said to 'enhance consumer experiences' in stores. As Google's indexing of the World Wide Web has allowed users to find firms online based on location, personal software processes (PSPs) have the capacity to index the physical world and connect it to the adver-

tising industry. In 2017, for the very first time, more people connected to the Internet with a mobile device instead of a desktop computer.[20] As mobile phone usage expands, they also become the most widely used marketing platform.

The Neurocultural Turn and New Media Marketing

Neurotechnologies

In recent years, neuroscientific understandings of the human brain have become a focus across public and private sectors. The potential for neuroscience to reveal the workings of the brain has burgeoned as an area of interest for diverse audiences in the decades since the emergence of the interdisciplinary approach to the study of the brain and its functions. Of significance has been the development of insights into how the brain both changes and can be shaped as a function of experience.

This 'neuro-cultural turn' has tended to privilege neurobiological explanations over psychological theories of behaviour. Some consider neuroscience to be the application of diagnostic technologies to traditional cognitive psychology models in order to derive biological explanations for behavioural matters. As such, neuroscience has not only become a central means through which the human self and identity are understood,[21] it has also been tasked with solving important social problems.[22] Consequently, there is increasing agreement that neuroscientific discoveries are central to the management of human activities, including psychiatric illnesses, economic behaviours, social experiences, spirituality and ethics. According to a recent commentary in the scientific journal *Nature*:

> We are on a path to a world in which it will be possible to decode people's mental processes and directly manipulate the brain mechanisms underlying their intentions, emotions and decisions; where individuals could communicate with others simply by thinking; and where powerful computational systems linked directly to people's brains aid their interactions with the world such that their mental and physical abilities are greatly enhanced.[23]

Driving this momentum is significant development of brain-imaging technologies, increasingly supported by large research grants and public-private partnerships (P3s). For example, the US-led *BRAIN* (Brain Research through Advancing Innovative Neurotechnologies) *Initiative* and the *European Human Brain Project* (HBP) are seeking to visualise and build computational models of the brain's neural circuits at a granular level of detail.[24] Another US-led initiative, *The Human Connectome Project,* seeks to create a map of macroscopic human brain circuits and their relationship to behaviour. A carefully selected group of 1200 subjects has been assembled to identify relationships between brain circuit phenotype and genotype and to enable detailed comparisons between brain circuits, behaviour and genetics across individual subjects.[25] While there have been concerns expressed about what Raymond Tallis has termed 'neuromania', the view that the complexity of human consciousness can be reduced to neural activity, neuroscience research methods are nevertheless being applied to an array of new fields such as neuroaesthetics, neurotheology, neuroeducation, neurolaw and neuroeconomics.

The efforts being made to understand the nature of decision-making well enough to predict cognitive, affective and behavioural responses seem to lead quite naturally towards efforts to influence those responses.[26] As such, these new knowledges have also made their way into the commercial sector, specifically in the field of neuromarketing where companies are providing consumer behaviour reports derived from data extracted from electroencephalography (EEG), functional MRI (fMRI) and other neurophysiological devices for measurement. The development of advances in neuroscience and increasingly sophisticated diagnostic technologies have presented advertising with even more precise techniques to target consumers at a personalised and behavioural level. Accompanied by introspective questioning to unearth the ways in which individuals structure and respond to reality through metaphor[27] and 'objectively' monitored responses in the consumer brain and body when presented with advertising stimuli, neuromarketers claim to be able to create advertising messages designed to trigger consumers' buying responses. The goal is to probe the subconscious (or non-conscious and unconscious) mind to understand how to better uncover individual needs, and, in the process, manufacture consumption. Neurophysiological

technologies have paved the way for a comprehensive advertising technique that aims to calibrate one's 'brand soma': how one *feels* about a particular commodity in order for that individual to make a purchase and develop lifelong loyalty.[28]

What Is Neuromarketing?

Neuromarketing is a contemporary form of market research that uses brain-imaging technology to track how consumers respond to advertising stimulus.[29] While the first application of neuroimaging into market research was arguably the filing of the *Neuroimaging as a Marketing Tool* patent by Zaltman and Kosslyn in 1998, the earliest reported use of the word 'neuromarketing' was in a June 2002 press release by the BrightHouse Institute, announcing the creation of a business division, BrightHouse Institute for Thought Sciences, which would use fMRI technology for market research purposes. At the time, Commercial Alert, an anti-advertising civic group, criticised the institute for conflicts of interest involving Emory University, as the business division of BrightHouse was established by Emory faculty. The consumer group asked Emory University, the Federal Office for Human Research Protections and the US Senate to investigate the research being conducted by BrightHouse. They claimed that this new market research practice was a threat to society, and also raised important questions about whether or not academics ought to be using university equipment to do research for corporate clients, especially in a clinical environment like Emory University Hospital.[30]

Commercial Alert's efforts did not stop the use of neuroimaging devices in market research contexts. In fact, neuromarketing became a US media phenomenon in 2003 when Read Montague, a neuroscientist at the Baylor College of Medicine in Houston, Texas, reworked the classic Pepsi Challenge using fMRI brain-imaging technology.[31] Montague was motivated to conduct the study because he was interested in the way cultural images affected people's choices. When his 67 participants were given a blind taste test of Coca-Cola and Pepsi, Montague claims that each soft drink lit up the brain's reward system, and that the participants were equally split in terms of their preferred drink.[32] He goes on to say

that the experiment shows consumers who prefer Pepsi during blind tastings have a response in the ventral putamen (an area that affects various kinds of learning and uses dopamine to perform its functions) five times stronger than those who prefer Coca-Cola. When the test was repeated unblind (i.e. participants knew the brand of drink they were tasting), nearly all participants said they preferred Coca-Cola. When the participants tasted Coca-Cola, the ventral putamen and the medial prefrontal cortex (an area identified with one's sense of self) lit up.

Montague suggests his results verified that conscious and subconscious responses are often in conflict when consumers interact with brands, as advertisers have known for years. He also claims that the study indicates some people did not choose a drink based on taste alone; rather, they chose the drink with the added input of what the brand evoked in their medial prefrontal cortex: Coca-Cola's strong brand identity. Writing for *The Globe and Mail* in 2005, Jill Mahoney notes that the results of this test are scientific proof that branding is effective, maintaining that by digging into the deepest recesses of the mind neuromarketing is "a boundary-busting frontier that, at its heart, seeks to find and trigger the brain's fabled 'buy' button."[33] This kind of discourse illustrates how 'lit up' representations of brain activity have had a substantial impact on how we think about brain processes, and how much credibility we assign to subsequent interpretations. As Racine and others observe, brain images, despite being constructed through various technical processes and selectively coloured through software applications, are extremely influential as they often appear "uncritically real, objective or effective in the eyes of the public."[34] A helpful summary of the practical application of neuro-analytical techniques is offered by Schneider and Woolgar:

> Brain imaging is used to assess which areas of the brain are active in relation to specific tasks undertaken by the subject, and what is the extent of this activity. This is done, for example, in relation to the visual perception of the colour or shapes of products, or the effect on the brain of certain smells and odours. In the case of fMRI, the extent of brain activity is inferred from changes in the amount of blood flow in specific areas of the brain. Although the original measurement information is numerical, not visual, the proto-

> col for presenting this information typically represents this information through the use of various colours. It is this which enables the subsequent locution, in a telling use of metaphor that the brain "lights up" in response to certain forms of stimulation.[35]

Evidence of the growing popularity of neuromarketing includes a 2003 *Forbes* magazine cover. In the same year, the *New York Times* featured an article on neuromarketing: "There's a Sucker Born in Every Medial Prefrontal Cortex." In 2005 marketing magazine *Admap* published a selection of articles on the subject matter, and the Market Research Society's conference paid close attention to the use of neuroscience in marketing.[36] Also in 2005, the ESOMAR Congress, a world association of research professionals, featured numerous papers on neuromarketing. The *Journal of Consumer Behaviour* published a special edition on neuromarketing in 2008.

In 2012, the *Covington White Paper* emerged to offer a preliminary overview of significant legal and policy issues neuromarketing raises for the global advertising industry.[37] Around the same time, a press release was circulated widely to announce the formation of The Neuromarketing Science & Business Association, a professional trade association. In April of the same year, the NMSBA published the first edition of the *Neuromarketing Theory & Practice* magazine.[38] The Advertising Research Foundation now regularly publishes material on neuroscience in marketing. And the popularity of the annual *Neuromarketing World Forum*, onto its eighth edition in 2019, illustrates that membership across the globe continues to grow by leaps and bounds.

Although 'consumer neuroscience' and 'neuromarketing' have been used interchangeably in the marketing literature, consumer neuroscience tends to refer to academic research that combines neuroscience, psychology and biology to explain contextually situated human behaviour such as consumption, while neuromarketing tends to be used in the popular discourse when referring to practitioner's interest in neurophysiological tools used for commercial market research.[39] As Andrew Thomas, Associate Professor of Marketing and International Business at the University of Akron, puts it:

> Neuromarketing focuses on which emotions are relevant in human decision-making, and uses this knowledge to make marketing more effective. The knowledge is applied in product design, enhancing promotions and advertising, pricing, store design, and improving the consumer experience in a whole. The field lies at the intersection of economics, neuroscience, consumer behavior, and cognitive psychology.[40]

Whereas neuromarketing is primarily focused on the effort to mobilise consumer demand for the goods and services provided by clients, Martha Farah argues that cognitive neuroscientists in partnership with social marketing researchers often seek to reduce harmful consumption practices such as smoking, while increasing participation in beneficial activities such as exercise. This kind of research seeks to expand understanding of the nature of human beings for the betterment of populations. Many applications include those concerned with public health, or experiments designed to provide information about health-related problems.[41] Social marketing (akin to nudging) is assumed to be justified because drug use, for example, is considered bad for health and a significant cost to society. Yet, since people who engage in these behaviours actually try to 'resist' the messaging, social marketing practitioners tend to argue that this form of marketing is not manipulation.[42]

The present work uses the term 'neuromarketing' to refer to a commercialised market research method for studying brain activity that combines the methodologies of cognitive neuroscience and behavioural psychology to generate greater understanding about how consumers respond to products, brands and advertising stimuli. Consumer neuroscience researchers have further defined neuromarketing as a sub-area of neuroeconomics: "the application of neuroscientific methods to analyze and understand human behaviour in relation to markets and marketing exchanges."[43]

Two primary frameworks for understanding the brain emerge from the discourse of neuromarketing. Some practitioners use dual process models from neuroeconomics to explain their work, some lean more towards discourses around cognitive neuroscience, while others use both. The explicit use of both as complementary theoretical frameworks is particularly evident in the practitioner groups headed or guided by scientific experts in the cognitive neurosciences as a means to make sense of the neurological underpinnings of economic decision-making.

Dual Process Theories

Neuroeconomics seeks to understand economic problems through the analysis of the neural correlates of decision-making,[44] focusing on variables generally studied in behavioural economics such as risk; heuristic choice; self-control and reward magnitude, to name a few. A statement on the promise of this field was provided by Colin Camerer: "The neuroeconomic theory of the individual replaces the (perennially useful) fiction of a utility-maximising individual which has a single goal, with a more detailed account of how components of the individual—brain regions, cognitive control, and neural circuits—interact and communicate to determine individual behavior."[45] The pursuit of this approach has been driven, in part, by the realisation that a very limited number of neoclassical economic theories about consumer preferences and choice are actually supported by empirical evidence. Neuroeconomics and decision neurosciences have provided theoretical insights about human decision-making that account for individual choices and the neural mechanisms underpinning these choices. Its roots can be located in the methodologies of cognitive neuroscience and work conducted by Amos Tversky and Daniel Kahneman on processes of judgement and decision-making.

Early studies in neuroeconomics were fixed on understanding the nature of evaluative processes, and their influence on the extent to which preferences based on associated values could be seen as transitive. Insights into the nature of choosing have proven more challenging, as the number of biomechanical systems affecting a choice, such as selecting Coca-Cola over Pepsi, are much greater than those involved in producing or recalling an evaluative assessment of each. For example, Tversky and Kahneman challenged the dominant assumption that individual rationality underpins economics. They argued, instead, that economic rationality is systematically violated, and that errors in decision-making are widespread and predictable. While their original work on heuristics demonstrated how probabilistic inferences are made, their research on prospect theory investigated how consumer choices are shaped by these probabilities and associated outcomes. Their work presented a theory of information processing to account for how individuals come to make decisions and esti-

mates and continues to inform the research and methods of both behavioural psychology and behavioural economics.[46]

Distinct alternatives to theories of a unitary brain making decisions in stages continue to be explored. Now popular with behavioural psychology and behavioural economics is the dual process model of two seemingly independent decision-making systems. Models describing individual decision-making in terms of measurable neural activities have been developed: acts involved in gathering information about the environment, those involved in assigning values to potential actions and those related to making a selection.

The two-system model is explained in the work of Kahneman who, in *Thinking Fast and Slow*, claims there is a division between two primary modes of human thinking. Although Kahneman did not invent the System 1/2 model, he certainly popularised the terminology as an overarching framework for making sense of brain processes and how decision-making is influenced by reason, emotion and instincts. For Kahneman, economists erroneously modelled human beings as rational and selfish, with tastes that do not change. However, human beings are neither fully rational nor are they completely selfish. Furthermore, their tastes are far from stable. System 1 and System 2 describe two distinctive cognitive decision-making systems. System 1 is considered rapid, automatic, reactive, emotional or limbic, and beyond our control. This system tends to make intuitive judgements grounded on basic associations with biases towards action and belief. System 2 is slower, more reflective, analytic, cautious and seemingly under our control, tending to make judgements based on evidence and reason.[47]

Neuromarketing practitioners who subscribe to this model would argue that it illustrates why traditional approaches to market research are no longer useful. Prior to the emergence of neuromarketing, market research was based on a System 2 understanding of the brain. However, the brain sciences have provided abundant empirical evidence to show that this System 2 assumption is incorrect: consumers often use System 1 processes which bias decision-making and do not correspond to rational thinking. It is argued that neurotechnologies provide market research with efficient and effective methods that can objectively measure System 1 functionality; thereby they are better able to predict advertising success.

The Tripartite Brain and Somatic Markers

The second primary model for how neuromarketing understands the brain derives from the work of neuroscientist Antonio Damasio who, in *Descartes' Error*, argued that emotions are intimately connected to reason and play a larger role in decision-making than was granted in the past.[48] At the core of his research is the insight that decision-makers encode the implications of alternative choices affectively. Prior to this groundbreaking work, scientists assumed that economic decisions and the perception of economic benefits were processed in the frontal cortex where rational thought occurs. They gradually came to realise that assessments of long-term economic rewards are processed by the 'rational brain,' but perceptions of short-term rewards (impulse buying) are governed by the limbic system, the 'reptilian' sections of the lower brain where emotions are processed. Of particular relevance is the somatic marker hypothesis which holds that emotions are intimately connected to reason. Damasio's main argument is that reason, emotions and feelings are intertwined.

Although emotions are not intentional or cognitive, they are also not separate from cognitive processes; rather, they comprise "a kind of cradle which structures explicit deliberation and one's practical comportment toward specific intentional objects" they are always-already present yet tacit, and they underpin our frame of mind when we encounter the world.[49] The somatic marker hypothesis presents neurobiological evidence that supports the claims that individuals often make judgements based on hunches and subjective evaluation of the consequences. For instance, while Tversky and Kahneman's observations captured dimensions of human economic choice that challenged the dominant view, their theory did not explain why humans choose things the way they do. In this capacity, the somatic marker framework provides a "neurobiological explanation for why information conveying sure outcomes trigger stronger somatic responses than information conveying less probable outcomes."[50] That said, some have critiqued the concept of somatic markers and questioned its utility as an explanatory framework for decision-making.[51]

For neuromarketing practitioners, Damasio represents two significant developments in market research: (1) a reorganisation of the relations

between emotion and rationality in the consumer decision-making process (especially in light of his somatic marker hypothesis) and (2) the claim that aspects of this decision-making process can be measured scientifically and objectively given recent technological advances.[52] These notions of self in terms of a tripartite model have been used to ground much neuromarketing research as evidenced in the work of individuals and companies such as Roger Dooley, Nielsen, Innerscope and Neurohm, amongst others to varying degrees of understanding.

Pervasive Neurophysiological Technologies

The two most common brain-imaging techniques used by neuromarketing are functional magnetic resonance imaging (fMRI) and electroencephalograph (EEG). fMRI determines neurological activity based on changes in blood flow to certain areas of the brain, or the blood oxygenation level-dependent signal (BOLD). Changes in oxygen are generally correlated with underlying synaptic function. fMRI has a significant advantage in revealing small structures that lie deep in the brain. However, some brain regions (specifically the orbitofrontal cortex) can be affected by signal artefacts, potentially compromising the information obtained. EEG uses electrodes applied to the scalp, measuring changes in the electrical field in the brain. EEG has a high temporal resolution (milliseconds), with the capacity to detect brief neuronal events. Because the skull disperses the electrical field, EEG has low spatial resolution which is dependent on the number of electrodes used. The greater the number of electrodes the better the spatial resolution. EEG has poor sensitivity for 'deep brain' structures.

These persuasive neurotechnologies are used to generate visualisations about consumer brain activity in settings referred to as 'neural focus groups' or 'brain focus groups.' These data are then used to calibrate advertising stimuli according to bio- and neurological responses. Information is also generalised for a range of data profiling activities, such as identification, classification and representation of consumers as automated data profiles.[53]

What began as exclusively brain imaging has expanded over the years to include a wider biometric taxonomy used in traditional consumer psychology, such as tracking heart rate, galvanic skin responses and pupil dilation.[54] Biometrics are said to have become popular resources for marketers because they are believed to provide insight into subconscious mental processes.[55] Nielsen Research, for example, presents itself as having been involved in consumer neuroscience for nearly ten years. Using a range of biosurveillance technologies, such as brain imaging to measure real-time brain activity; skin conductance and heart rate to capture emotions; facial coding; and eye tracking, the company claims that it can do more than predict behaviour, it can "capture non-conscious aspects of consumer decision-making with the most complete set of neuroscience tools at a global scale."[56] The increasing popularity of neuromarketing is often attributed to claims that such measurements are scientific and objective which offer better predictive potential than more subjective market research techniques such as surveys and focus groups which rely on self-report. Another primary claim is that the use of brain-imaging methods offers more cost-effective methods of developing products that consumers *will* want or *really* want at a subconscious level.[57]

Highlighting the rhetoric surrounding neuromarketing during its emergent stages, an early adopter, Professor Steven Quartz, neuroscientist at the California Institute of Technology in Pasadena, argues that neuromarketing can uncover preferences of which we are unaware in that it "may hit on subconscious biases that traditional methods, such as focus groups, fail to uncover." Similarly, a populariser of the field, author of *Buyology* Martin Lindstrom claims that traditional market research focus groups are not equipped to detect what consumers really think: "That's because our irrational minds, flooded with cultural biases rooted in our tradition, upbringing, and a whole lot of other subconscious factors, assert powerful but hidden influence over the choices we make … we may think we know why we do the things we do—but a much closer look into the brain tells us otherwise."[58]

Enthusiasm for the promise that neuroscience holds for market research has resulted in a burgeoning research output from both academic and practitioner communities. Proponents claim that neuroscience can provide opportunities for market research practices as well as

guidelines for developing theoretical constructs, designing empirical tests and frameworks for interpreting consumer group responses.[59] In this capacity, neuroscience offers market research a range of tools for the methodological investigations of research problems. Others point out that neuroscience is especially useful for providing new insights into aspects of branding such as brand evaluation, brand relationships; brand preferences, pricing, product packaging, green consumption, new product development and store illumination. Through the use of fMRI and EEG technologies, neuromarketing claims to offer a means of understanding how the human brain responds to a creative stimulus and the particular emotions the stimulus triggers. As one commentator observes: "Consumers naturally connect to the brands and experiences that make them 'feel' something. By putting neuromarketing science into practice, marketers now have the opportunity to create an emotional affinity with brands and forge effective long-term bonds with consumers."[60]

Criticisms

While the potential of applying neuroscience to market research has been met with increasing recognition among industry players, including the Advertising Research Foundation and the NeuroStandards Project, Gallup & Robinson, Viacom and Nielsen, many other individuals and groups have questioned the legitimacy of certain claims being made by neuromarketing practitioners. Some have gone as far as claiming that neuromarketing is worrisome because it engages with the "distortion and potentially inappropriate commercialisation of science."[61] Demonstrating its views on the dangers of deploying neuroscience into the commercial sphere, in 2011 the French Parliament passed a revision of its 2004 law on bioethics which effectively bans the commercial application of neuroimaging in France, only allowing these methods to be used for medical or scientific research purposes, or for court expertise.[62]

Perhaps the most significant ethical issue that arises is related to privacy which commentators view as being violated on various fronts. A common argument is that the aim to target and influence consumers at the point of sale with advertising messages set to operate at a level below

conscious awareness is morally suspect. Using neuroimaging for market research can potentially infringe on bioethical principles such as confidentiality and privacy.[63] Jack Gallant, a neuroscientist at the University of California, Berkeley, expresses serious concerns about the implications the commercial use of these technologies holds for mental privacy. "I tend to be a pretty paranoid person," he explains. "As a scientist, I'm not sure what to do other than to tell people we need to start thinking about this because somewhere down the road we're going to be able to do it really well."[64] The methods and findings of neuroscience applied to market research, according to Wilson et al., hold the potential for marketing practices to "threaten consumers' abilities to follow preferences and dictates according to free will." Furthermore, "This context suggests that external constraints on decision-making imposed by applications of neural manipulation are possible violations. Transgressions are particularly troublesome when manipulation occurs without explicit awareness, consent, and understanding."[65]

Brain scans conducted during neuromarketing assessments may also reveal incidental clinical findings, such as brain tumours, or information concerning personality traits, emotions, memories and sexual preferences that individuals may want to keep confidential.[66] Some argue that these worries about brain privacy are largely blown out of proportion and can be downplayed by "analysing away" the grounds of the fears by (1) discussing what is really at stake in questions of privacy, (2) reflecting on what 'mind' refers to in 'mindreading' and (3) taking into account the limitations of brain imaging for the alleged neuromarketing purposes.[67] Despite repeated claims around technological limitations, experts in neuroscience are being hired by companies seeking to deploy diagnostic technologies into market research. These experts are also attached to universities and other corporations investing large amounts of money into research and development.

This is where the truly worrisome aspect of neuromarketing lies—in the acquisition of academic knowledge, and the application of such knowledges by experts in situations that seek to strategically manipulate consumers to take consumptive (or political) action. To offer one example, Neurons Inc. is affiliated with a range of academic institutions worldwide, including Cambridge University, Harvard Medical School,

Stanford, MIT, Imperial College London and University of Copenhagen. It also collaborates with NASA's Ames Research Centre. Clients include Facebook, Ikea, Google, Coca-Cola, McDonald's and Samsung to name a few. In light of this growing popularity and access to research and development resources, it is reasonable to say that the use of psychophysiological techniques for advertising purposes will continue to become more efficient and precise.

Some critics have noted that there is a "paucity of peer-reviewed reports in the field" as indicators that "companies may be making premature claims about the power of neuroscience to predict consumer behaviour."[68] There have been accusations that consumer neuroscience has failed to deliver on the promises that sparked initial popularity, such as having the ability to identify a consumer 'buy button' in the brain.[69] Commentators have also taken on an explicitly technical approach, claiming there is an emphasis that conclusions drawn from the correlations between brain functions and blood flow, for example, should be approached with caution. These interpretations require drawing connections between cognitive or affective responses to neural activity and then characterising the meaning of the neural activity occurring in specific regions in the brain. Although neuroscience has made advancements in connecting neural activity to blood response, Wilson and others point out that there is a lot to be learned about "the relationship between a task-related thought or emotion and neuronal activity."[70] The nature of this endeavour is so great that critical scholars have compared understanding the complex dynamics of neural systems in the brain to understanding the operation of a microprocessor, claiming that neuroscience methods as they currently exist would not be up to the task.[71]

Assessments of accuracy, reliability and predictive capacity of popular neuromarketing research have been a challenge to produce. To a certain degree, this is because of transparency, where many neuromarketing companies have been unwilling to open up their methods to the public. In an early evaluation of some studies, the authors claimed "that at least some aspects of advertisement perception, brand memory and economically relevant choice behaviour are amenable to neuroscientific investigation." However, "the current research is a patchwork of largely unrelated studies addressing a wide range of potentially relevant issues. It appears

that, to date, no direct 'recipes' can be derived from this new research."[72] The Advertising Research Foundation also conducted a series of studies, referred to as Neuro 1 and Neuro 2, to offer support to commercial buyers of neuromarketing services for assessing and comparing the quality of these services. The studies showed considerable disagreements among vendors about what their methods predicted about how advertisements performed. In addition, they tended to use different terms to identify what was being measured. This led the evaluators to suggest that the measures did not represent a "common truth," thereby rendering it difficult for those searching for neuromarketing services to properly understand what they were buying.[73] Conscious of this lack of transparency, practitioners emphasise the necessity to better communicate with both private and public groups about the possibilities and limits of neuromarketing methodologies.[74]

Also emerging over the years are ethical concerns about the practice of neuromarketing with a focus on issues of autonomy and self-determination. For example, a Covington White Paper on legal and policy issues claims that, "[a]t its core, neuromarketing involves an effort to influence consumer decision-making at an unconscious level."[75] Others suggest that the mere possibility of this kind of consumer influence merits immediate discussion around how society might manage such information. Here, the most disturbing challenge raised by neuromarketing is the issue of self-determination as it constitutes a 'soft' attack on individual autonomy.[76] Andrejevic makes a similar point, claiming that "neuromarketers are interested in more direct forms of influence – in particular those that bypass conscious reflection on the part of consumers. The promise of direct access (if not transparency) runs two ways: if MRI scans provide 'direct' access to consumers' brains, they can also provide insight regarding how best to directly influence these brains, and thus their owners."[77] On this view, neuromarketing seeks to isolate the moment of decision and acts on the process of decision-making at a level beyond the consumer's conscious awareness; it aims at eliminating identity as a factor in choice so that consumer response to an advertising stimulus becomes a reflexive response to external action.

Despite these critiques, neuromarketing practitioners continue to construct representations of consumers derived from their interpretations of

experimental data. These data inform the creation of consumer profiles used to categorise individuals and groups as particular 'brain types,' sometimes referred to as 'brainotyping.' This information is then used to segment consumers into groups in terms of their expected responses to particular commercial messages. Schneider and Woolgar claim that this kind of application of brain imaging and other forms of biometric measures reveal and enact a certain version of the consumer that is contingent on the contrast between what appears to be the case (e.g. a consumer's account of product preferences) and "what can be shown to be the case as a result of the application of the technology—the hidden or concealed truth."[78] These interpretations of consumer 'brainworlds'[79] are revealed to neuromarketers' clients as objective and predictive knowledge into theoretically constructed and empirically validated models of their targets. These consumer representations are grounded on the assumption that consumers are (a) entities who do not know themselves very well and (b) objects that can be triggered into buying responses through exposure to advertising stimuli calibrated to activate targeted internal drives.

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4

The Discursive *World* of Neuromarketing: For Whom Are These Technologies Working?

The previous chapter placed the emergence of neuromarketing in a larger evolutionary trajectory of technological moments that made significant impacts on market research and advertising. Through increasingly sophisticated technological tools, and the manufacture and deployment of behaviourally targeted advertising strategies, marketing now has the capacity to manage consumer decision-making processes. As consumer rights monitors Grey et al. cautioned upon the advent of neuromarketing: "The whole point of neuromarketing is to bypass thought, not encourage it."[1] This is achieved by mobilising internal drives through the use of neurophysiological technologies as a form of biosurveillance, often creating the consumer as being needful prior to creating the product. Similar to the aims of behavioural advertising strategies developed in the 1920s and onwards, desires are imbued into the consumer through specifically tailored advertising stimuli directed at subconscious perception, seeking to manipulate human behaviour in a manner that sits beneath the threshold of conscious awareness. A critical and disturbing implication of this manipulation is that neuromarketing strategy has the power to change the value norms of individuals and/or change the position from which individuals make sense of the world. These techniques

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include instruments for individual and demographic sorting, classification, manipulation and normalisation which will be considered in the following chapters.

Using a hybrid analytic, this work seeks to illustrate how neuromarketing aims to influence consumer thinking and behaviour. To do this, it is necessary to first situate the world of neuromarketing as an interconnected system of ideas, values, practices and materialities. Therefore, this chapter will begin laying the conceptual foundations for a hermeneutic inquiry with a preliminary sketch of neuromarketing as a discursive 'world,' including identification of the aims and assumptions of the industry. Introducing Heidegger's phenomenological construction of world to analyse subject and object relations (consumer and reality) is useful for the following reasons: (1) 'world' is a synthetic concept that explains how the horizon of experience is unified in a way that goes deeper than the subject/object divide. It is meant to articulate the manner in which Dasein (Dasein refers to human being, or literally as *being-there*) is given over to the thresholds of meaning and existential significance in a way that is more or less all encompassing and (2) by understanding this dynamic as a totalising relation we start to examine the notion of experience (or phenomenology: the logos of phenomena) in a way that cuts across the subject/object divide. The operative difference here is between the world as a Euclidean container filled with objectively present things and a dynamic and socio-culturally encoded space of possibility in which meaning projecting human beings exist in relationship to other entities. On this view, world is the space where we understand ourselves and other entities.

World: A Cultural Media Environment

Deploying the comparative media theory of McLuhan, Angus observes that the content of one communication medium is a previous communication medium. For instance, "the content of television is the play, the public announcement. … The content of film is the novel; the content of speech is thought." He asks, "What then is the content of thought? One must say the content of thought is, simply, the world." As such, every

experience is an experience of *the world*.[2] The issue here is how we conceive of 'world.' Pierre Legendre observes that the world is not given to human beings. We can only access the world through the mediation of language, and, therefore, representation[3] on the basis of what is disclosed to our senses. In light of the view that representation uses symbolic as well as material objects to convey meaning which is relational, the concept of world can help us understand the communicative relationship between the consumer in her own subjective world (i.e. socio-cognitive terrain) and the larger world of neuromarketing as a shaper of consumer worlds. Given that the content of thought is simply the world, to grasp structures of thought and the intersubjective socio-cognitive relations that occur between world (as reality/the known) and subject (as knower), it is necessary to be clear on the structures of the world that play a part in the communicative dynamic in which thought occurs. Only then might we obtain a holistic view of the dynamic between individual meaning-making and the social world in which entities exist. As a conceptual device, world illustrates the multilayered dimensions of meaning-making for those who seek to understand the connection between objectivity (reality) and subjectivity (audience).

I use the term world in two senses. First as a larger socio-cultural environment mediated by a continuous interplay between a variety of media. McLuhan's views about the components of meaning-making in the context of comparative media theory are useful here: world can be understood as a cultural environment within which media objects, events, values and assumptions have the power to shape audience consciousness to varying degrees.[4] Here, the relationship between consumer consciousness and world is one of intentionality, of directedness. Socio-cognitive dimensions of the world at large are permeated by discursive processes that shape individual subjective worlds and influence understandings of self and other entities. This kind of discursive network interconnects media companies, corporations and organisations, governments, audiences and advertisers, and turns on the production of audiences and the selling of their own consciousness to advertisers or to political candidates and political causes.

World is a shared phenomenon in that the social world always presupposes the individual's (*I*) world, yet they are always in dynamic. In short,

our internal world is conditioned first by the social milieu in which we exist. According to Heidegger, the structures of discourse create "a public space, or a common vantage point from which we survey the world together."[5] In this sense, the formation of the self exists in relationship with the various social worlds we inhabit and the various entities we encounter in the world. Human beings can never escape the influence of the social world and can never understand themselves in absolutely autonomous terms, untouched by the normative authorities that give shape to the social world. As Thomas Sheehan reasons, things don't come with already built-in meanings, rather, they become constituted as meaningful: "Discursive meaning occurs only in a synthesis, and synthesis presumes a prior distinction between the elements that will get synthesised into a meaningful whole."[6] The relation between human beings and world, then, is a relation of meaning-making.

The second sense of world can be understood as a targeted consumer niche. The niche, or the consumer's subjective world, can be likened to the idea of the online 'filter bubble,' a lens that Eli Pariser would say "invisibly transforms the world we experience by controlling what we see and don't see … [interfering] with the interplay between our mental processes and our external environment."[7] The idea of a filter bubble can be extended to online as well as offline neuromarketing practice as a technique of creating and revealing behaviourally targeted consumer environments, calculated according to brain-imaging and biometric response data. This process of data extraction and curation produces a distorted version of what we would collectively call 'the real.' To reiterate, world can be viewed as the larger cultural environment in which neuromarketing and advertising have the power to shape the social imaginary, and as a personal or subjective world: the internal space where an individual is able to formulate her thoughts. As mentioned previously, within systems of discourse there is an ongoing exchange between a subject's lifeworld and the social world. Given that meaning-making occurs as part of this exchange, questions of representation emerge when thinking about how discourses construct certain knowledges that are then taken up and become meaningful in various worlds.

We can also understand world as a field or horizon within which entities appear. The horizon of world sets the conditions for intra-worldly

relations. This larger social world is a space where meaning is not only constructed and revealed but also contested. When critiquing the role that neuromarketing plays in shaping the world as a cultural media environment and, in turn, consumer consciousness, it is useful to visualise the world as possessing what Andrew Feenberg calls a 'hermeneutic horizon.' The concept of horizon "refers to culturally general assumptions that form the unquestioned background to every aspect of life."[8] Some of these assumptions can support hegemonic practices, a form of domination so deeply embedded in social life that it can often evade attention. Cultural horizon is the second hermeneutic dimension of technology; the first being social meaning which, as Pinch and Bijker claim, emerges from "the socio-cultural and political situation of a social group" that "shapes its norms and values, which in turn influence the meaning given to an artefact."[9] In other words, technological artefacts accrue meaning through a social process, similar to the bias Neil Postman and Langdon Winner discuss in their work on how technological artefacts can come to be embedded with certain ideologies.[10] A critical reading of neuromarketing discourse as a socio-technical artefact holds the potential to reveal how human ends are constructed and transformed as they are adapted to technical means, and to identify the hierarchical power structures that exist within its discursive cultural horizon or its discursive social world.

The Social World of Neuromarketing as a Disciplinary Matrix

The discursive world of neuromarketing comprises a process that both represents the world and signifies the world, constituting and creating the world in meaning. This idea of world can be illustrated with terminology such as *the world of neuromarketing* or *the business world*, to use two examples. Heidegger understands such a world as "concrete particulars, though of a distinctively human sort," for example, "the 'public' we-world or one's 'own' most familiar (domestic) environment."[11] To elaborate, the *physical world* (as a set of objects), for instance, is different to *the world of physics* which encompasses a space of equipment, practices, assumptions

and values which physicists inhabit.[12] If we were to speak of the world of the teacher in this sense, we would not be referring to a domain of possible abstract entities like pedagogical theories or mathematical equations but to things such as classrooms, desks, students, colleagues and so on. Thomas Kuhn conceived of the social world as a disciplinary matrix of symbolic generalisations which includes the beliefs, values, techniques and so forth that are shared by members of a given community,[13] similarly, the notion of neuromarketing as a world designates it as a space comprised of shared materialities and vocabularies.

'Publicness' is a necessary dimension of any shared human world. As Heidegger observes, "the world is always already given primarily as the common world. … This is how philosophers imagine things when they ask about the constitution of the intersubjective world. We say: what is first, what is given, is the common world – the 'one'."[14] Furthermore, the meaning of a word or thing is contingent on the larger context within which it is encountered. For instance, a computer desk is part of a larger context that contains other things which give the desk its purpose: these other things might include a computer, books, pens, printer and so on. We first obtain a practical understanding of things through our everyday experience of them. The meaningfulness of the thing is derived because of its connection to events (e.g. typing, email, work) and qualities (e.g. productivity) that give it value in its relational capacity. As the world is shared, so *the* world is always prior to *my* world—*the* world is a public or social world in which meaning-making is a transactional and negotiated experience. Taylor Carman writes:

> What concerns us here ... is his idea that frameworks or norms of understanding are not just integral to the practice of science, but "are constitutive of nature as well." There is a sense, that is, in which fundamental changes in the normative standards of scientific practice do not just effect transformations in science itself, but can also be said to "transform the world."[15]

Heidegger's well-known example of this process is the hammer. Of course, the hammer is a useful tool, but in order to be useful the utility of the hammer must be hidden from the person hammering as she hammers (practical, unthematised understanding). Her focus is on the task to be

completed, the fastening of the nail into the wall, not on the fact that the hammer is useful for securing nails into walls. A certain type of withdrawal or concealment of meaning determines the hammer's mode of presence. Revealing the world, then, refers to a process that occurs on two levels. First, it refers to the revealing of an already interpreted, symbolically structured (socio-cognitive) world; the world in which we always-already find ourselves. Second, it refers equally to the revealing of new cultural horizons or horizons of meaning and of previously hidden aspects of meaning. While neuromarketing can be considered a world, it also has the discursive capacity to construct and reveal particular representations of the world (i.e. the representation of consumers as particular kinds of subjects or objects). Using this frame, the world of neuromarketing can be said to comprise various dimensions of social space filled with online and offline codes, assumptions, norms and values comprising intersectional communities. This sense of world can also be analysed in terms of individual subjective worlds of various entities (or niches). World, then, becomes a place of intersubjectivity and social construction where meaning is encoded and decoded and shared in a network of information, what Castells would call a "type of space that allows distant synchronous, real-time interaction."[16]

The psycho-social and material arrangements of worlds also seep in and out of each other. Research in critical discourse analysis posits that a significant tool for gaining legitimacy is the reliance on already established ideologies, where beliefs and representations held in common by community members provide meaning for everyday practice.[17] In this capacity, the world of neuromarketing is influenced by, and gains legitimacy from, the discourse of the larger world of neuroscience, for example. As neuromarketing cuts across and influences lifeworlds in a feedback loop of informational meaning-making, the larger world of neuroscience trickles into neuromarketing and then flows into individual subjective worlds as various forms of knowledge.

This dynamic is revealed in the way neuromarketing practitioners seek legitimacy for the technique as a science by referring to studies in neuroscience as grounding for focus group methods, an attempt that can be understood as a means of client confidence building. For instance, during the earlier stages of neuromarketing, a prolific writer of academic articles,

Douglas Fugate, relied on neuroscience to give weight to the possibility of manipulating trust by activating certain reactions in consumer brains: "Neuroscience holds open the possibility of empirically testing this and other inferential models that were developed using traditional research methods."[18] Practitioners are making similar moves. Claiming to be the world's first neuromarketing company, SalesBrain writes on its website:

> Neuromarketing is an effective new discipline to improve sales and marketing results by applying discoveries from neuroscience. With the SalesBrain's NeuroMap™ model, you can scientifically CAPTURE, scientifically CONVINCE and scientifically CLOSE more customers.[19]

Australian company the Retail Doctor Group (Builders of Business Fitness) claims:

> … we combine quantitative research methodologies into your customer database or general consumer market via online panel studies with consumer neuroscience methodologies to unveil who your core target markets really are. … Neuro-psychological consumer personality profiling is our most popular product.[20]

Founded in Germany, and now with offices in the United States and Iran, Neuromarketing Labs promises:

> We provide you with objective results through sound neuroscientific research. The development of customized solutions is our strength. Our analyses are based on proprietary algorithms which enable predictions of population with high accuracy.[21]

To obtain a holistic view of neuromarketing as a world where meaning is made and shared one might ask questions such as: What equipment (hardware and software) do neuromarketers use? What beliefs do people in the world of neuromarketing exhibit? What are its codes of ethics? How are the tools of neuromarketing being used as new technologies? How are they mediating activity? Although neuromarketers rely on all kinds of assumptions, posits and claims to truth, have they *really* examined

what any of these essential features *are* or *mean*? Or are they forgetting something, relying on concepts handed down from the cognitive sciences and neuroscience that might distort the phenomenon in some crucial way?

Objective Subjectivity

As highlighted in Chap. 2, Packard discussed how during the post-Cold War period behavioural psychology was used to manipulate consumer desires for goods and services. Marketers started to question three basic assumptions they had been making about consumers. To reiterate:

1. You can't assume that people know what they want;
2. You can't assume people will tell you the truth about their wants and dislikes if they know them;
3. It is dangerous to assume that people can be trusted to behave in a rational way.

Forward to the early 2000s, neuromarketing begins to emerge as an evolution of traditional market research, combining neuroscience, behavioural psychology and cutting-edge technological equipment to function like a "lie detector."[22] The message deployed to potential clients is that consumer preferences can be captured at both explicit and implicit levels: neuromarketing aims to bypass the capacity for critical reflection to extract neurophysiological data which then inform design and development of strategic advertising materials. By using neuromarketing, companies are promised to gain a competitive edge in that the intelligence derived from predictive techniques has the capacity to better identify new segments of consumer demographics for direct and selective targeting.[23] As some online commentators claim, by using neuromarketing:

> Marketers can be able to identify and e*asily trigger mechanisms that induce consumer purchasing*, thereby automatically enhancing the competitiveness of their businesses or companies.[24] (emphasis mine)

Although the technique builds on traditional approaches to market research, the key difference between traditional market research and neuromarketing lies in the power of sophisticated technological equipment. The central traditional assumptions, however, remain intact with two added assumptions emerging as a result of techno-scientific progress:

- Algorithms know consumers better than they know themselves.
- Psycho-physiological techniques can predict which products will be successful.

One of the more common narratives found in the discourse in terms of the relation between neuromarketing and the consumer revolves around ideas of *truth*. On Key's view of the media communications industry, truth has become a product of human perception which is relevant in the context of neuromarketing where "truth becomes credibility and is validated in the eyes of the beholder instead of within a rigorous structure of confirmable facts."[25] As others have also observed, there is an increasing reliance on brain images to render messages more reasonable and persuasive.[26]

The way neurotechnologies are used in the subjectification of research participants, and the way these representations are rendered intelligible to a range of actors who seek to manage behaviours in one way or another, is described by William Uttal. Also observable in neuromarketing, truth claims promised by brain visualisations, findings and applications of neuroscientific research have been misrepresented by various entities ranging from the science itself to marketing proponents and the mass media. This is relegating brain-imaging of mental states to what Uttal calls the new phrenology:

> Despite their apparent realism, claims to account for the phenomenology of mental states in terms of these simulated functions localized in the living brain require an act of faith in all those elements on which the image is premised. The visual imaginary that is the result is, in this sense, no different from that of the phrenologists of the nineteenth century.[27]

Subjective worlds are manipulated to appear as objective. And these manufactured truths depend on the faith of the audience. A reading of the

discourse of neuromarketing highlights the following general assertions to truth:

- Neuromarketing technique draws from scientific truth
- Neuromarketing technique offers objective scientific truth

The history of advertising and market research suggests that the elevation of commodities and values of mass production to the realm of truth was a main task for individuals who aimed to indoctrinate the mass population into a logic of consumerism. This elevation of commodities and particular values resonates with contemporary marketing practices. So how might neuromarketing truth be produced and circulated?

Presupposition is one strategy individuals use to insinuate their representations of the world into the consciousness of their audiences. The capacity to determine presuppositions also confers a certain amount of power to shape reality. In the popular discourse of neuromarketing, these presuppositions are presented as axiomatic, objective truth and include the following examples: consumers are irrational and do not know themselves; consumers do not tell the truth or they actively lie; neuromarketing techniques offer objective or 'non-subjective' truth; neuromarketing can predict with high accuracy which products will be successful, thereby avoiding the common pitfalls of traditional market research methods. The remainder of this chapter identifies the core assumptions of the social world of neuromarketing and its claims to truth, both of which play a role in shaping how consumers are represented.

Assumption 1: Customers Do Not 'Know' or Do Not Have Access to Truth

A key assumption and strategy for selling neuromarketing is that consumers do not know themselves, therefore they cannot tell the truth. Human brain activity can provide marketers with information not obtainable via conventional or traditional marketing research methods such as self-report and interviews, largely because people do not know (or do not want to) explain their preferences when asked, given that certain

modes of understanding are executed at a level below conscious awareness. This assumption builds on the first traditional market research assumption highlighted by Packard: You can't assume that people know what they want. Take, for example, Lindstrom's assertion that traditional focus groups have failed. Their techniques are unable to unearth what consumers *really* think. Lindstrom argues that neurotechnologies can give advertising strategies a neurological boost:

> … the true reactions and emotions we as consumers experience are more likely to be found in the brain, in the nanosecond lapse before thinking is translated into words. So, if marketers want the naked truth—the truth, unplugged and uncensored, about what causes us to buy—they have to interview our brains.[28]

The nanosecond lapse is a recurring theme in the discourse of neuromarketing, and it is presented as a space to be accessed for an advertising message to engage the consumer at a level that lies beneath the human capacity for critical/reflective thinking. The lapse has been addressed extensively by Brian Massumi in *Parables for the Virtual: Movement, Affect, Sensation*. Massumi uses two brain experiments to highlight what potentially occurs during this lapse. In one experiment, brain activity of research subjects was monitored on an EEG machine. Participants were asked to flex a finger at a moment they would choose. They then had to recall the time they made their decision by taking notice of the spatial clock position of a revolving dot. However, the EEG machine recorded significant brain activity 0.3 seconds before the subjects' recollection of when their decision was made. For Massumi, the experiment suggested there was "a half-second lapse between the beginning of a bodily event and its completion in an outwardly directed, active expression."[29] These kinds of responses assume there is a momentary lapse between a 'true' thought and/or emotion and socially mediated discourse.

Neuromarketing goes even further to privilege objective data (i.e. to prefer it as a basis for designing messages) over the consumer's own self-knowledge. Neuromarketers assume that people's bodies are more truthful than the words they speak.[30] On this view, neuromarketing seeks to bypass the unpredictability of focus groups by seeking access to con-

sumers' brains and affective intensities. These claims are part of a strategy market researchers use to sell their product (the results of research, actionable intelligence, strategies etc.). Promising access to the hidden causes of buying behaviour, neuromarketers seem to want to be viewed as the only community of experts who have the knowledge and tools to reveal hidden information through brain-imaging and other biometric technologies of measurement. As Schneider and Woolgar observe: "The important corollary is that the technology and its expert operators thereby become accountable for revealing the causes of purchasing decisions and that the human subject is secondarised as an object of research."[31]

Assumption 2: Customers Might Know the Truth but They Lie About It

Another persistent assumption is that consumers do not tell the truth even when they do know what they want, illustrated by the comments of an anonymous industry executive who sees neuromarketing as a solution to untrustworthy consumers: "We can say goodbye to those endless expensive bloody research groups where consumers either lie their heads off or tell us what they think we want to hear."[32] This assumption is connected to the second traditional market research assumption: You can't assume people will tell you the truth about their wants and dislikes if they know them (because they don't trust you; they don't see you as their agents). Diana Lucaci, the CEO and founder of True Impact Marketing, explains that traditional market research has relied on focus group studies and surveys to identify and understand how consumers think and feel about products (or brands). The challenge, however, is that consumers sometimes do not tell marketers the truth. What often occurs in traditional focus groups is that people provide answers they think marketers want or give answers that will make them appear "better" to the other participants. The technological apparatuses of neuromarketing can overcome this challenge, providing "invaluable information for marketers because it takes a lot of guesswork out."[33]

Relatedly, Steven Quartz, a neuroscientist, argued that neuromarketing can uncover preferences of which consumers are unaware; preferences rooted in identity and self-image. Dissatisfied with traditional market research methods, Quartz and his project manager, Anette Asp, set up *CoolScan*, a neuromarketing study. The aim of the project was to access the 'unconscious' to unearth the radical differences in how consumer brains reacted to the notion of 'cool.' Asp explains:

> The questions a marketer asks his subjects, they consciously have to reflect on. … I sometimes think they force an answer just because they feel they're expected to say something. So they form an opinion as they answer the question, while *we're more or less reading their minds*. With the brain scans we're able to pierce inside their conscious mind to their unconscious motives and reactions to things that marketers might not be able to reach.[34] (emphasis mine)

When Asp volunteered to have her brain examined she was surprised to discover she was uncool. She then pointed out that the experiment measured unconscious brain activity and not the "coolness factor" of the research participants, claiming: "The study is really getting to something deeper than superficial things … all the hidden motives to our behaviour that kind of shape who we are. … That's who I am, right?"[35] Asp's trust in neuromarketing methods and objective data that can be pulled from subjective experiences evokes Ellul's observations on advertising, in that it is not as important to persuade the individual through rational means; rather, the aim is to implant in the individual a certain way of thinking about life. This form of persuasion is achieved through appeals to affect which have the capacity to mobilise specific human habits with the end goal of persuading individuals and groups to take consumptive action. A necessary tactic, then, is to base advertising on psychological laws. As Marcuse might argue, this technique is attached to a world within which:

> one-dimensional thought is systematically promoted by the makers of politics and their purveyors of mass information. Their universe of discourse is populated by self-validating hypotheses which, incessantly and monopolistically repeated, become hypnotic definitions of dictations.[36]

Assumption 3: It Is Dangerous to Assume That People Can Be Trusted to Behave in a Rational Way

A departure from classical economic theory stating that people generally make rational decisions to maximise their own benefit, more recent studies suggest that 95% of our decisions are made at a subconscious level. These processes occur with minimal to no awareness or volitional control, not only preventing individuals from engaging with critical awareness of these events but also affecting an individual's decision-making process without their conscious awareness. Bias and heuristics are often embedded in thinking, therefore traditional marketing research is rife with bias.[37] Furthermore, neuroscientific findings show that affective responses precede and influence rational thought, echoing the Heideggerian claim that affect presupposes analytical understanding. What writers refer to as the limbic brain drives people to engage in particular behaviours that at times contradict rational comprehension of an event. The discourse of neuromarketing illustrates clearly the focus on the limbic system (temporal and frontal lobe) given the role it plays in the regulation of expressivity of emotion, emotional memory and biochemical triggers.[38] As such, the general consensus in the neuromarketing practitioner community is that asking consumers to rationalise their full range of responses to various stimulus is not a reliable source of data.

A recurring assumption for why advertising should use and would benefit from neurophysiological imaging equipment is that consumers are irrational and unable to access their 'true' subconscious emotions and feelings. This is because a large part of the process of understanding occurs beneath conscious knowing which aligns with the traditional market research assumption noted by Packard: It is dangerous to assume that people can be trusted to behave in a rational way. By accessing the subconscious, neuromarketing proponents claim that it is possible to identify an individual's direct responses through the advertising stimulus they are exposed to, such as products, packaging, logos and various sensory dimensions associated with commodities to be developed. Bypassing consumer responses offers neuromarketing a way to obtain evidence that

a consumer would be unable to rationally articulate, thus offering superior insights into consumer behaviour which can render marketing campaigns more efficient and effective on a global scale.[39] Neurological studies have proven that certain emotive responses can be a catalyst for desirable actions for marketers.[40]

To many neuromarketers, neurophysiological technologies have the potential to access these emotions in an objective manner.[41] For instance, the executive vice president at Deutsch Inc, LA, Douglas Van Praet notes:

> For too long marketers have been asking the wrong question. If consumers are making their decisions unconsciously, why do we persist in asking them directly through market research why they do what they do? It's like asking the political affiliation of a tuna fish sandwich. It's not that consumers are intentionally trying to deceive or are even reluctant to share their opinions. They simply can't tell us because they don't really know.[42]

The power that neuromarketing has to help us understand our own 'irrational behaviour' is also presented as a benefit to society. For instance, Lindstrom argues that neuromarketing can provide us with data that will show us how our true selves react to the world. As a result, we gain "more control, not less." His logic unfolds to claim that the more we know about why we "fall prey to tricks and tactics of advertisers," the better we become at defending ourselves against their strategies; and the more data that "companies know about our subconscious needs and desires, the more useful, meaningful products they will bring to the market."[43] In this capacity, the benefit of neuromarketing resonates with the idea that psycho-physiological techniques can help consumers obtain greater self-knowledge.

Assumption 4: Algorithms Know Consumers Better than They Know Themselves

The ancient Greek aphorism 'know thyself' was later expanded by Socrates who famously claimed that "the unexamined life is not worth living." As with many philosophers who followed, Socrates upheld self-

knowledge as a virtue so valuable that other worldly and spiritual pursuits were trivial unless one possessed this kind of wisdom. To know oneself, however, would demand also knowing things such as deepest thoughts, desires, values and beliefs. These are examples of substantial self-knowledge. While many people have sought such knowledge, it is commonly agreed that this form of reflection is difficult to attain. The theme of substantial self-knowledge also emerges in neuromarketing.

The discourse of neuromarketing suggests that neuroscience deployed into market research settings allows consumers to learn about and develop a better understanding of their internal lives. Echoing a sentiment shared in the data sciences more broadly, neuromarketers claim that their diagnostic technologies are allowing them to extract complex amounts of data and have given them the computational tools for analysing these data which can then be brought to bear on advertising decisions. In other sectors, algorithms are being used to help determine who is approved for a loan, who is hired for a job and who makes parole. Although accurate personality judgements emerge from social-cognitive skills, developments in machine learning suggest that computer models are also able to make valid judgements.[44] This world view privileges machinic thinking over human thinking. Here, computers generate algorithms that are claimed to be able to make predictions in a rational, unbiased and consistent way, whereas human beings cannot. This so-called objective mechanism allows neuromarketing to bypass conscious human participation in market research. By accessing neurophysiological measurements targeted at the subconscious, neuromarketing can then use various forms of analytics to find patterns in data and develop consumer profiles. Whether or not these representations are accurate is another matter.

In February 2008, Nielsen took its first steps to acquiring the Berkeley-based company NeuroFocus, one of the most prominent players in the neuromarketing environment at the time. The CEO of NeuroFocus, Dr. A. K. Pradeep, claimed to have developed a tool that could access the subconscious. *Mynd*, a portable, wireless (EEG) scanner was promised to provide an "accurate read of the subconscious mind."[45] The skullcap-size brain scanner was fitted with dozens of sensors covering the area of the brain. With modern technologies integrated into the brain scanner, *Mynd* was intended to deliver the consumer's neurological data to advertising

clients in the blink of an eye, capturing, amplifying and delivering a subject's brain waves in real time via Bluetooth to remote devices such as laptops, iPhones and iPads. Pradeep is also the author of *The Buying Brain*, a book that purports to teach advertisers how to access consumers at a deep subconscious level. In it, Pradeep presents his clients a map for understanding the consumer subconscious and for identifying how consumers respond to product concepts and packaging. The book claims to teach the reader how to engage the aspects of male and female consumer minds at the "preconscious, precognitive" level, where responses are "unbiased and unfiltered." While criticism from within the neuromarketing community itself suggests that Nielsen invested in a company that possessed more style than substance,[46] Pradeep's promise of accessing subconscious data through EEG, thereby allowing neuromarketers to know consumers better than consumers can know themselves, was clearly effective for attracting investment by a large and well-respected company such as Nielsen.

Many perceived advantages of the social benefits of data processing point to an assumption that "digital data render social processes and social relations more knowable and, it follows, more controllable," as Neil Selwyn argues.[47] This is a perception certainly reflected in the discourse of neuromarketing, which is especially pertinent in the narrative of neuromarketing as a benefit to society because of its accuracy and predictive capacities. For example, futurist Dick Pelletier who, in his *Positive Futurist* blog, connects finding the buy button to a social, economic and environmental benefit:

> Understanding customer 'buy buttons' will make businesses more profitable as they begin to limit inventories to products that customers actually want. ... Neuromarketing can benefit us in many ways ... limiting production of goods to more of what consumers actually buy will lower waste throughout the world providing a healthier environment. This is all part of our magical future.[48]

This kind of benefit to the natural environment, however, comes at a cost to the consumer in that the consumer is reduced to an instrumental object, a machine that can be turned on and off by external triggers in an

effort to make businesses more profitable. Pelletier foregrounds the promise of the buy button, the neuromarketer's Holy Grail which, when activated, would likely result in consumptive action. While several individuals and companies explicitly talk about the capacity to find the buy button, other neuromarketing proponents take on a more measured approach, arguing that the buy button is non-existent. Nevertheless, discourse around the buy button evokes what Marcuse would argue is implicated in the politics of corporate capitalism, creating a second nature in the human being that connects her 'libidinally' and 'aggressively' to the form of the commodity.

An evolution of traditional market research, this assumption of the all-knowing machine rests on the idea that neurophysiological technologies have access to information hidden from the consumer's capacity to know. The representation of the consumer here is as a non-knowledgeable or ignorant subject, and the neuromarketer with the aid of intelligent computational tools is capable of unravelling the black box mystery of subconscious decision-making processes. The discourse situates neuromarketers as experts who have the knowledge and resources to reveal hidden information. In other words, neuromarketers are the finders and keepers of truth. However, the discourse gives primacy to the machinic over the trust individuals might place in personal knowledge. In this obsession with mining truth from information embedded in neurophysiological measurements, there is a risk of reducing the complex of meaning and truth to data.

Assumption 5: Psycho-Physiological Techniques Can Predict Which Products Will Be Successful

Building on the idea that neuromarketing has the tools to delve into the inner recesses of the consumer's psycho-physiological self, is the assumption that information extracted also allows neuromarketing to predict buying behaviour. As such, one of the most significant recurring themes is that of prediction, a digital iteration of traditional market research

methods. For example, member of ST&T Neuromarketing Research, a neuromarketing company based in the Netherlands, Tom van Bommel claims that EEG better predicts advertising success because people should not be trusted to correctly represent their responses to advertising stimuli. Referring to recent experiments conducted on aural and visual stimuli while consumers were connected to EEG, he concludes that the accuracy and predictive capacity of neuromarketing technologies disrupt the underpinnings of classic, explicit market research, painting a sober picture of the future of surveys, interviews and focus groups:

> The problem isn't only that people often don't know what they like as an individual – because even if they do, the data only weakly predicts global marketplace success. The studies stress the superior predictive power of implicit research such as neuroimaging, biometrics and implicit association methods.[49]

This view is also expressed by Tim McPartlin, Senior Vice President at Lieberman Research Worldwide, who claims that neuromarketing methods offer a better measurement than classic market research approaches: "I can ask you directly 'how much do you like this?' And you say 'I don't particularly like it.' But if I can see your brain activity and parts of the brain that suggest you really, really like it, then I've got some more information." McPartlin sees neuromarketing as a way of getting past the illusion of how individuals might be presenting outwardly in the form of socially acceptable responses contrary to the subject's true opinion. Here, better measurement allows predictive capacities: "The hypothesis is that if I can get a truer and more accurate reading of my customers' opinions, I'll know better whether they will buy it."[50] As an article in *The Telegraph* (U.K.) suggests, where traditional advertising simply peers neuromarketing delves:

> ***Neuromarketing: Can science predict what we'll buy?***
>
> Advertisers have long used science to peer into consumers' brains; today 'neuromarketing' has given them the power to delve into our subconscious.[51]

Whether or not the practice can do what it claims to do, to survive in a competitive atmosphere its proponents *must* claim they can predict with objectivity how advertising stimuli will affect consumers. Schneider and Woolgar observe that, "The hope of revealing hidden information is central to the case for generating and sustaining research in the field."[52] For Andrejevic, "A gesture towards interior truths may be retained, but is simultaneously displaced by the goal of prediction."[53] Put simply, truth is as good as its latest successful prediction.

Another example of neuromarketing and its reliance on prediction, or predicting behaviour, is illustrated by the language of Zaltman and Kosslyn's Google patent for *Neuroimaging as a Marketing Tool*. While the patent was originally assigned in 1998 to Zaltman and Kosslyn, Nielsen is now the current assignee, indicating the broader acceptance of neuromarketing as a tool for advertising. The patent illustrates that neuromarketing aims to predict consumer behaviours through specific brain focus group methods. First, note how the subject is reduced to responses in the brain: "the greatest measures of activation in the set of brain regions of interest." This reduction of consumers to a set of reflexive triggers equates with the animal-machine metaphor that dominated the cognitive sciences in the past, foregrounding the connection between neuromarketing and already established ideologies: Animals are reflex machines. Humans are animals. Then humans are also reflex machines.[54]

The mind as animal-machine metaphor has the following implications: mental processes are tacit physical behaviours; mental processes are controlled by the environment; learning is a process of differential reinforcement; and thoughts are tacit conditioned verbal responses. It is also in keeping with the idea of the 'cerebral subject'—an anthropological figure according to which the brain is the location of the modern self.[55] The implications of this connection will be further explored in Chap. 6. The patent includes the following claims, quoted here at length:

17. A method of predicting behavior comprising:
    - selecting a first set of subjects;
    - exposing the first set of subjects to stimulus materials;

- monitoring the first set of subjects in a neuroimaging device while exposing the first set of subjects to stimulus materials;
- collecting data from the neuroimaging device;
- determining the measures of activation in a set of brain regions of interest from the collected data;
- obtaining a behavioral measurement from the first set of subjects; and
- correlating the behavioral measurement with the measures of activation in the set of brain regions of interest.

18. The method of predicting behavior of claim 17 further comprising:

- providing the first set of subjects with a questionnaire which is completed by the first set of subjects to yield questionnaire results; and
- correlating the questionnaire results with the behavioral measurement and the measures of activation in the set of brain regions of interest.

19. The method of predicting behavior of claim 18 further comprising:

- selecting a second set of subjects;
- monitoring the second set of subjects in a neuroimaging device while exposing the second set of subjects to a second type of stimulus materials;
- collecting data from the neuroimaging device;
- determining the measures of activation in a set of brain regions of interest from the collected data; and
- determining whether the stimulus materials or the second type of stimulus materials produces the greatest measures of activation in the set of brain regions of interest.

20. The method of predicting behavior of claim 19 further comprising:

- analyzing characteristics of the stimulus materials and the second type of stimulus materials;
- correlating the characteristics with the collected data.

21. The method of predicting behavior of claim 20 further comprising:

- determining which of the characteristics produces the greatest measures of activation in the set of brain regions of interest.[56]

Behavioural measurements are correlated with measures of activation in the set of brain regions of interest. Subjects are exposed to various stimuli and their responses are recorded in real-time by neurological and biometric measurement apparatuses. The focus on behavioural prediction is captured in explicit language. The purpose of this technique is most clear in the final step of *Claim 19*: "determining whether the stimulus materials or the second type of stimulus materials produces the greatest measures of activation in the set of brain regions of interest." Also highlighted in *Claim 18:* "correlating the questionnaire results with the behavioral measurement and the measures of activation in the set of brain regions of interest"; and *Claim 21*: "determining which of the characteristics produces the greatest measures of activation in the set of brain regions of interest."

There is a focus in the patent on correlation which reflects the more general tendency for neuromarketing to rely on correlation amidst the vast amounts and complexities of the data. Correlation, as Andrejevic argues, "promises to resolve the paradox of attempts to bypass representation with more representations."[57] Further, "Deeper truths may be positioned within the subconscious or preconscious subject, but in practice they are tracked according to recorded behaviour. In the end, what matters to marketers is … the reliance on correlation." When examined through this lens, psycho-physiological techniques align neuromarketing with emerging practices of social control in a dynamic background, where, as Patricia Clough writes: "the probabilistic measuring of sociological methodology shifts from merely representing population, even making populations, to modulating or manipulating the population's affective capacities, whether it means to or not."[58]

This chapter has begun to lay the groundwork for further analysis by explicating how the concept of world can be used to make sense of the social imaginary of neuromarketing. In doing so, it has attempted to highlight the five primary assumptions that underpin the contemporary market research practice. Using textual examples, the chapter has sought to foreground how neuromarketing practitioners, from within the community of marketers, are making use of emergent neurophysiological technologies for competitive advantage by gaining privileged access to

the internal machinations of consumers in order to shape their behaviour with greater precision, efficiency and effectiveness. This chapter has also introduced a secondary theme of this work: the manner in which self-promotion incorporates slightly altered representations of consumers as ignorant, malleable targets of strategic communications. The following chapter will continue to develop a framework for analysing consumer representations in neuromarketing, focusing on how human beings make sense of the world through particular structures of understanding. Exploring these structures will offer insights into the relationship between the world of neuromarketing discourse and the socio-cognitive dimensions of meaning-making.

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5

Structures of Understanding

Heidegger's phenomenological inquiries into understanding have informed the discipline of artificial intelligence (AI) with regard to breaking down human information processing (i.e. structures of understanding) into components that can be used to guide the development of computer intelligence.[1] Applying a Heideggerian frame to explore human understanding in the context of neuromarketing is a reasonable extension in that it can illustrate the structural aspects of the consumer's communicative process that neuromarketing seeks to disrupt. Building on the conceptualisation of world in the previous chapter, this section attends to the process of understanding and its dynamic relation to the two senses of world used in this work: a social world and an individual's personal or subjective world. Despite its limitations, outlined in Chap. 2, Heidegger's schema in *The Fundamental Concepts of Metaphysics*, the tripartite division of worldless (inanimate/mechanical realm), poor in world (animal realm) and world-forming (human realm) is useful heuristically to show how consumer thinking is represented in neuromarketing discourses.

This chapter draws from Heidegger's work to develop an inquiry that seeks to reveal how neuromarketing discourse represents consumers along a continuum ranging from non-thinking objects and animals to

S. Nemorin, *Biosurveillance in New Media Marketing*,
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world-forming entities who can be nudged to take consumptive action. The purpose of the chapter is to illustrate how human beings [as Dasein] make meaning in and from the world, and to foreground the complexity of the process of understanding not necessarily captured by certain neuromarketing practitioners. Our capacity for meaning-making moves from practical understanding such as unreflective coping with the world to thematising, for example, which is a hermeneutic process requiring critical thinking skills such as reflection, synthesis and interpretation. Basic existential structures such as *practical understanding* (as mindless coping), *interpretation* and *attunement* can illustrate how consumers make sense of the world which serves as a launching pad for analysis of how neuromarketing represents consumer thinking.

Discourse: Social Dimensions of Communication

Dasein is commonly translated as *being-there* or as *human existence*. Heidegger uses Dasein to signify the ontological structures that define what it means to exist in the world as a human being. Despite serious shortcomings pertaining to race, gender and anthropocentrism,[2] there are certain structures in Heidegger's attempt at a fundamental ontology that prove useful when mapping out a narrative that illustrates consumer representations. Heidegger's analytic of Dasein provides a starting point for an inquiry into the mode of being of the individual who asks herself: What does it mean to *be*? For Heidegger, Dasein is a human being whose basic state of existence is *being-in-the-world* (*In-der-Welt-sein*). Being-in-the-world can also be referred to as a mode of existence.[3] Dasein's way of being-in should not be understood as spatial inclusion (being *in*) but rather as inhabitation or dwelling.[4] This basic state of everydayness gives rise to basic familiarity with other entities, particularly in relation to the handiness of equipment or how we use tools/things.

Dasein is also always *being-with* others (*Mitsein*) and *being-amidst* non-human intraworldly entities. *Being-with* is a structural moment of being itself more basic than—and prior to—relating to particular others.[5] Discourse (*Rede*) is an essential condition of interpretation in the analytic

of Dasein and forms part of the existential structures of Dasein's understanding of the world where beings are rendered intelligible. The other two fundamental structures are understanding and attunement. Given the scope of this work, I cannot do justice to the complexities of discourse; however, it is useful to include a brief commentary to offer context for how meaning (including signs and significations) hangs together in the world of Dasein. Furthermore, discourse points to the social dimensions of Dasein's communication practices which can serve to highlight the fact that consumers in their targeted niches exist in a dynamic interrelationship with the larger discursive world of neuromarketing as a cultural media environment.

There are two strands that run through Heidegger's conception of discourse in *Being and Time*. The first connects discourse to language and linguistic practice; the second is the conceptual connection between discourse and interpretation. Carman writes:

> In a word, discourse is the expressive communicative dimension of practice, broadly conceived, language being just one of its concrete manifestations. More particularly, discourse constitutes a kind of public space of expressive possibilities, a domain of expressive comportments that it makes sense to engage in, in some local world. For just as our pragmatic ends are sketched out in advance in the projection of our understanding, so too our expressive possibilities are articulated in advance by the discursive intelligibility of the social world in which we live.[6]

It is neither reason nor action that Heidegger considers distinguishing features of human understanding over animal experience and behaviour, it is discourse. Although animals might resemble human beings to a certain degree in terms of having some kind of "primitive intentional relations to things," within their own discursive world systems he sees them as lacking "the understanding of being that allows us to make sense of entities *as* entities and of our attitudes *as* intentional."[7]

Discourse holds a place of privilege in the conditions pertaining to the explicitness of understanding. It underpins interpretation and assertion, yet it also presupposes interpretation; it is a hermeneutic condition of interpretation: "What can be articulated in interpretation, thus even more primordially in discourse, we have called meaning (*Sinn*)."[8] For

Heidegger, we "begin by understanding even ourselves as embodying the anonymous normative authority of our received practices." Discourse creates what one might consider a public space from and through which we examine the world together. This point relates to the idea of neuromarketing as having the capacity to construct particular representations of consumers that are then taken up by the social world. Through discourse it creates social meaning and reveals particular kinds of worlds.

The idea of discourse also illustrates the discursive system of neuromarketing as an assemblage comprised of many parts that can produce consumer worlds derived from brain imaging data. In order to understand the relationship between discourse and world from the framework of Heidegger's tripartite thesis, it is necessary to grasp first what it means for Dasein to *be* in the world, specifically how do human beings make meaning in and from the world?

As Angus notes, one might understand the history of *being* as a history of media connections (i.e. the relation between media of communication to human perception of being):

> … that open the possibility of, and assign a characteristic form to, the web of meaning that characterizes the world … which includes the constitution of the relation between knower and known. … Thought is understood less as an 'internal' activity than as a multiplicity of connections spread out throughout the material forms of social communication.[9]

It is this relation between knower (subject) and known (world) in the environment of neuromarketing that the present work seeks to reveal, beginning with the subject/object schema.

Making Meaning in and from the Discursive World

Heidegger maintains that the philosophical tradition has misunderstood human existence by superimposing a subject/object schema on it where human beings are conceived as rational animals, as animals with cognitive capacities able to represent the world around them. He rejects the subjectivism of Descartes and the internalism of Husserl, as well as scien-

tific naturalism and reductionism. Heidegger's interpretation of human existence is an attempt to conceive of mundane intentional phenomena in neither exclusively subjective nor exclusively objective terms. He claims that although minds and objects play a role in our understanding of self and the world**,** we can only begin to understand them with reference to the context in which they show up for us. This point is relevant to the way neuromarketing reveals consumer worlds and directs consumer attention to a particular stimulus calibrated to consumer behaviours and affective/instinctive responses (I explore this point further in the following chapters).

On Heidegger's view**,** Husserl neglected, in his work on intentionality, the mode of being of the entity who has a world. Simply, 'intentionality' refers to a "relationship of direct attention" and not to "deliberate attention" as common usage of the term might suggest.[10] Examining the conditions of the intelligibility (how things make sense) of intentionality in subjective/objective capacities is to ask what intentionality *is*: How are we to understand the *being* of entities capable of intentional attitudes and behaviours? How are we interpretable to ourselves as subjects of experience, as having a world?[11] In the context of neuromarketing, how are we capable of interpreting ourselves as consumer subjects in the intersection of neuroscience and marketing? A phenomenological approach to consciousness (e.g. structures of understanding and an elaboration on intentionality towards the world as a wider cultural environment) can benefit cultural studies in that it can shine a light on the relations between the knower and the known.

Aspects of understanding illustrate how consumers construct meaning in their encounters with the world. Understanding (*Verstehen,* sometimes *Verständnis*) is one of the most original and all-encompassing ways in which human beings exist in the world; it is a fundamental mode of Dasein's existence. The underlying structure of understanding is simpler than it might appear. There are two basic ways in which things are 'given' to us in relation to our modes of understanding: either as ready-to-hand (*Zuhanden*) or as present-at-hand (*Vorhanden*); that is, either in the mode of *Zuhandenheit* or in the mode of *Vorhandenheit*. A tool, such as a hammer, for example, can be approached in two ontologically distinct ways. We can take it and use it or we can reflect on it from a distance. When we

use the hammer it becomes ready-to-hand inasmuch as it is a tool ready to be put to work and we are not explicitly thinking about the nature of the hammer as we use it, we are simply using it to perform a task. The second sense is present-at-hand to indicate what the hammer has become in relation to us as we try to understand the hammer through intellectual philosophical/scientific inquiry.

Developing the idea of understanding as a cognitive capacity, Heidegger claims that Dasein's understanding of the world has the existential structure of projecting (*Entwurf*) onto various possibilities. A projective existential understanding of the world frames our cognitive grasp of things and explicit experiences.[12] The first form of understanding (practical understanding) comprises knowing *how* not knowing *that.* Understanding means *knowing how* which precedes and gives possibility to *knowing that*. This structure of understanding comprises the use of available things in practical settings. Understanding is always—in part—thematic. Carman writes:

> Understanding … includes, but is by no means restricted to, cognitive and intellectual capacities, since those capacities are essentially grounded in the competent performance of practical tasks. … We ought not to conceive of understanding as a physical or psychological event that occurs in the brain or mind, then, any more than we ought to conceive of talking as something that happens in the tongue or walking in the feet. Understanding is instead the way we make sense of entities by dealing with things available for use in everyday practical activity.[13]

Understanding can be divided into three sub-categories: coping, interpretation and assertion. While Heidegger does not make this phenomenological move himself**,** Dreyfus suggests further distinctions between the ways Dasein copes in the world. Skilful coping, for example, differs from mindless, mechanical coping in at least three ways: (1) skilful coping is a mode of awareness, not an inner private event that is separate from things in the world; (2) comportment is an ongoing coping that is "adaptable and copes with the situation in a variety of ways," where the individual responds to the world on the basis of a reservoir of past experiences; (3) when things become difficult the individual switches to "deliberate

subject/object intentionality."[14] While Dreyfus's conception of coping has been critiqued,[15] the distinctions he presents for this basic form of understanding are, nevertheless, useful to highlight the complexity of thinking that Dasein exhibits when making meaning in and from the world.

Our practical 'dealing' (*Umgang*) with things in a meaningful world is connected to intentionality. Heidegger refers to this intentional directedness as 'comportment' (*Verhaltung*). Comportment has the structure of directing oneself towards, or of being directed towards something, a "more fundamental involvement of people with things than the traditional relation between self-referential mental content and objects outside the mind." As Dreyfus explains, comportment includes things like "producing something, taking care of and tending to something, making use of something, giving something up and letting it go, undertaking, accomplishing, evincing, asking, considering, discussing, determining."[16] A distinction between Dasein and the animal is that Dasein comports itself towards the world where the animal unreflectively behaves.

Although Heidegger's conception here relates to how human beings exist in the world generally, these structures can be applied to the context of neuromarketing to illustrate *being-with-others* as a relationship between consumers and media as a cultural environment capable of shaping minds, values and beliefs. It is important to note that this mode of shaping consumer consciousness is different to traditional forms of marketing in that it is a digital evolution of market research using technologies that are increasingly precise. Neuromarketing merges modern approaches to behavioural psychology and cognitive neuroscience with a persuasive technological apparatus. Through application of this technique of biosurveillance, neuromarketing seeks to bypass the capacity for critical reflection to extract neurophysiological data. These data are then used to design advertising messages for nudging consumers at an instinctive level.

To offer a practical example of how *being-with* others can affect an individual's capacity for meaning-making at various levels, Alice Sylvester, task force co-chair and account planning director at Foote, *Cone & Belding* in Chicago, argues that developing advertisements based on the traditional AIDA model of building *Awareness, Interest, Desire and Action* is no longer relevant to contemporary market research and advertising

settings. She is emphatic that traditional copy-testing methods will not "unlock the buying secrets buried in the unconscious mind."[17] PHD Media in partnership with Neurosense studied how different forms of media impact the brain and which forms of media are more effective for delivering certain messages. Brain activity was scanned while subjects were exposed to multimodal advertisements. PHD concluded that audio-visual advertisements were most effective at "*disrupting existing perceptions*" (emphasis added).[18] The aim in both of these examples is to bypass critical and reflective processes of understanding and appeal to affect and instincts as driving forces for action through the application of new technologies.

Another example illustrates how neuromarketing discourse constructs consumers as lacking self-awareness. I return to the *CoolScan* project discussed in the previous chapter. Asp, the project manager of the neuromarketing study, writes: "the questions a marketer asks his subjects, they consciously have to reflect on. … With the brain scans we're able to pierce inside their conscious mind to their unconscious motives and reactions to things that marketers might not be able to reach."[19] Upon closer examination, such reductions can be understood in light of what Heidegger would call the poor in world animal, which lacks the capacity to access the world in the way Dasein has access (more on this later).

The following statement from Lindstrom expresses a similar sentiment, highlighting how neuromarketing conceives of the consumer. Lindstrom implies that a consumer's true self is an internal set of trigger relations that exists beneath conscious awareness and ultimately controls how consumers behave in the world. He writes, "Our truest selves react to stimuli at a level far deeper than conscious thought, and how our unconscious minds control our behaviour (usually opposite to how we think we behave)."[20]

This reductive process highlights how some neuromarketing practitioners tend to reduce the consumer to reflexive reactions, bypassing the complexities in thinking demonstrated by Dasein as an agentic entity with the possibility of accessing the world in a reflective and critical manner. This reduction points to misappropriation, and also a certain level of misunderstanding how the human brain functions, how human beings make meaning from the world. While these misunderstandings are prob-

lematic when examined in relation to the claims of what neuromarketing can do, other sorts of harm may result from using inappropriate theoretical frameworks—unanticipated consequences, such as reproduction/reinforcement of stereotypes which will be considered in the final chapters.

Neuromarketing as a Technique of Revealing the World

The question concerning technology, to Heidegger's mind, is the "question concerning the constellation in which revealing and concealing, in which the coming to presence of the truth, comes to pass."[21] For Heidegger, the revealing of a world and the 'happening' of truth are the same. The idea of truth here is articulated in *Being and Time* as 'unconcealment' (*Unverborgenheit*), an event related to how the world can be revealed to the human being in order for that being to come to understand the self and other entities it encounters. In post-industrial societies, however, new technologies constrain our experiences of things as they are. In this context, things in the world are revealed through both a technological frame and as exploitable for technological use. Similarly, technology mediates the way neuromarketing reveals the social world and the subjective worlds of consumers. This revealing is enacted in two ways, both of which are underpinned by the logics of technological processes.

First, neuromarketing practitioners position themselves as the experts of revealing brainworlds to the consumer in the form of interpretations of neurophysiological data which are seen and represented as objective truths. This process of data mining and profiling is derived from unstructured digital data, which, as Antoinette Rouvroy observes, is a form of 'data behaviourism,' rehabilitating "a new 'truth regime' … creating the widest possible zone of indistinction between reality and the world."[22] An example of how the world is revealed to consumers is found in the discourse of the company *Neuromarketing Labs*. Their website states: "Explicit questionnaires are largely biased, since people … do not do, what they say … do not say, what they know and … do not know, what they think and feel." As with many other proponents of neuromarketing, *Neuromarketing*

Labs positions itself as using scientific methods to "avoid these biases and … capture unconscious processes during decision making thus providing us with invaluable insights for your marketing efforts." They maintain that brain scans offer them objective measures and "reveal unconscious processes leading to buying-decisions that are impossible for consumers to put into words (or verbalize)." This claim rests on the assumption that if consumers cannot put what they are experiencing into words, they have only an immature, or incomplete understanding of things.[23]

Consumer information gleaned from this neuromarketing process is then included in a report given to corporate clients, creating consumer worlds and consumer identities grounded on data interpreted by the neuromarketing practitioner. Reliance on algorithms to generate consumer profiles relieves the practitioner from the full weight of tasks related to interviewing, transcribing, interpreting and analysing the consumer in her lifeworld. Retreating from much of the labour of meaning-making and handing over this intellectual work to machines generates a particular kind of world construction framed largely by the logic of machines. These worlds are then *given* to the consumer as a revealing of her 'true self' derived from interpretations of her brainworld and through research on similar kinds of individuals and groups. As such, these data reveal a world constituted by consumer profiles created according to a technological process that Alain Supiot would view as the:

> … metamorphosis of all singular quality into measurable quantity whereby we are bound in to a speculative loop in which the belief in these numerical images replaces the contact with the reality that these images are meant to represent.[24]

Second, another layer of world is revealed when consumer data are built into advertising messages that are deployed at that specific category of consumer. The type of knowledge created through this process is far from objective in terms of the objectivity of scientific knowledge. In other words, the techniques involved in the practice of neuromarketing are not used to simply observe the complexity of individuals but to sort, classify, and segment individuals into various categories for the purposes of predicting their dispositions towards specific goods and services. Ian

Hacking has written about the problematic of classifying individuals which is relevant to the assessment of neuromarketing: when people are taken as objects of scientific or bureaucratic inquiry, or in this case for commercial inquiry, the classifications used affect those being classified and the effects on these people also change these classifications:

> We think of these kinds of people as definite classes defined by definite properties. As we get to know more about these properties, we will be able to control, help, change, or emulate them better. But it's not quite like that. They are moving targets because our investigations interact with them, and change them. And since they are changed, they are not quite the same kind of people as before. The target has moved. I call this the 'looping effect.' Sometimes, our sciences create kinds of people that in a certain sense did not exist before. I call this 'making up people.'[25]

This mode of revealing is a misreading of the consumer on the part of the neuromarketer, a prediction that has the potential to cause unintended harms because of misapprehension of Dasein by neuromarketers. The paradox of neuromarketing, then, exists where the aim of the technique is to bypass mediation with more mediation, as Andrejevic observes. Despite the promises of neuromarketing proponents, brain scans fail to offer direct insights into the subject's true self. Instead, the scans offer "highly mediated images subject to the very vagaries and interpretive impasses they purportedly avoid."[26] Schneider and Woolgar see this revealing as ironic given justifications for applications of these technologies are contingent on an incompatibility between expectation and reality. They explain that such uses of brain imaging and measuring devices "reveal and enact a particular version of the consumer that depends on an achieved contrast between what appears to be the case – consumers' accounts of why they prefer certain products over others – and what can be shown to be the case as a result of the application of the technology – the hidden or concealed truth."[27] Furthermore, these ironic technologies do not act in isolation. They form an interdisciplinary matrix of neuromarketing as a social world that comprises equipment, texts, advertising and marketing portfolios, agencies, popular media reports and so forth.

The creation of worlds also relates to the development and implementation of advertising strategies using multimedia apparatuses that increas-

ingly augment reality in a way that forces or invites consumers to immerse themselves in the multisensory potentials of digital worlds. What we're presented with in this cycle is neuromarketing as a market research tool informing advertising messages tweaked behaviourally to disrupt the communicative process and trigger consumer instinctive drives, a capacity that, drawing from Heidegger, is illustrative of animal performance. In order to make sense of how neuromarketing seeks to disrupt the consumer's communicative processes it is helpful to elaborate a little more on the process of how the world is revealed, as meaning-making is linked to how the consumer understands the world, and, in turn, how the world is given to the consumer through discourse.

Revealing the World Through Signs and Disturbances

The goal of neuromarketing focuses on drawing the consumer's selective attention to particular signs in advertising messages that are calibrated behaviourally. In revealing consumer worlds, neuromarketing techniques arrange signs and symbols in advertising messages in a way that connects with the consumer at a level of awareness that lies beneath critical and reflective thinking to the level of mindless everyday coping, which is the most basic form of understanding. An example of how neuromarketing may work to manipulate consumer attention towards certain brands, for example, through targeting the consumer's subconscious, branding strategist and neuromarketing proponent Tjaco Walvis begins by asking whether or not neuroscience can help identify regularities in the way branding can influence the outcome of memory-based choice situations.

The relevancy of brands to the consumer, according to Walvis, is connected to the degree they create biological or psychological reward signals in the consumer brain which then activate the dopamine system (associated with creating feelings of pleasure and motivation). Whether a brand is evoked at the "buying moment" is a primary determinant of the consumer's ultimate choice. Evocation, he argues, occurs at a level beneath

conscious awareness which is where branding must focus to gain competitive advantage. Although Walvis offers an argument for how branding using neuroscience might work towards capturing the consumer at a level driven by feelings and emotions, he does not explicate how the world might be revealed to the consumer in order for the consumer to engage with the branding experience in the first instance. I turn to Heidegger's explanation of how the world is revealed to Dasein through signs and disturbances to illustrate the relations between the consumer and the branding process.

There are two ways in which the phenomenon of world is revealed to us: *disturbance* and *signs*. In disturbance, the world (intertwined practices, equipment, skills for using the equipment) which provides the basis for using certain equipment is hidden. It is not disguised, rather it is undiscovered. The world must be revealed by a certain technique. As we dwell in the world, we are able to get at the world by shifting our attention to particular things and entities while simultaneously remaining involved in it. When we discover equipment is missing or broken, for instance, the disturbance allows us to become aware of the function of the equipment and the way the thing fits into a practical context. For instance, if we are unable to do our work because of a missing piece of equipment, we become helpless, and when we ask if we can abandon our task the point of the activity becomes apparent.

The second way the world can be revealed to us is through signs and is most directly relevant to how neuromarketing as a technique presents the world to consumers. Heidegger claims that a sign is an entity, a kind of equipment, with the function of revealing its way of being as well as its practical context. Signs direct our attention to the practical background they presuppose. He uses the example of an automobile's turning signal to illustrate what he means by a sign:

> Motor cars are equipped with an adjustable red arrow whose position indicates which direction the car will take, for example, at an intersection. The position of the arrow is regulated by the driver of the car. This sign is a useful thing which is at hand not only for the heedfulness (steering) of the driver. Those who are not in the car—and they especially—make use of this useful thing in that they yield accordingly or remain standing. This

> sign is handy within the world in the totality of the context of useful things belonging to vehicles and traffic regulations. As a useful thing, this pointer is constituted by reference.[28]

Using Heidegger's example of the car and its turning signal to illustrate the notion of the world being revealed as a system of signs, Dreyfus explains that we often react appropriately to a car's turning signal without being any more thematically aware of it than we are of the doorknob when we use it to enter a room. On this view, coping with signs is to "cope not just with *them,* but with the whole interconnected pattern of activity into which they are integrated"[29] into a dynamic context. Signs point out the context of shared practical activity. Human beings can cope with signs without being aware of them.

Returning to the context of neuromarketing, the notion of a consumer's attention being directed towards certain things as a referential whole is highlighted by Walvis who claims that in order for a consumer to choose a brand, it must first be recalled from the consumer's memory and then be evaluated positively (of course, she may also choose to avoid a brand!). He justifies the infiltration of the consumer's thinking with the following: "Unconscious thought can even lead to better, more satisfying decisions, especially in the case of more complex product choices such as deciding between houses or cars." Important for the neuromarketer, then, is to understand how brands are connected to consumers in a subconscious capacity and to direct attention accordingly. Walvis writes:

> Branding seeks to increase the likelihood that the neuron-assembly or association network that represents the brand is activated and the brand name enters our awareness during the choice process. Thus, we are interested in the neurological rules that determine what we will call a brand's cortical representation probability. Once established, such rules would give rise to branding laws that point towards actions we can take to increase the brand's cortical representation probability and hence the chance it is chosen.[30]

In this capacity, branding aims at influencing consumer decision-making by increasing the probability that the brand wins the competition for positive awareness by drawing the consumer's attention to particular

signs. Emotions are key motivators in the act of brand choice. The importance of affect on consumer buying responses is a focus of neuromarketing, demonstrated by the SalesBrain website which states that a path to connecting advertising stimuli to the subconscious (and unreflective) terrain of the consumer is through emotions: "The 'Reptilian Brain' is strongly triggered by emotions."[31]

Attunement: Triggering Affect

Discovering the world also implies that Dasein is always situated in the world in a particular manner. Dreyfus and Wrathall suggest, "we have a 'there' … a meaningfully structured situation in which to act and exist – and we are always disposed to things in a particular way, they always matter to us somehow or other."[32] The way we are disposed to things is shaped by our moods (i.e. *ontic* manifestations). Disposedness to things can also be referred to as an 'attunement,' a way of being tuned-in to things in the world, and this attunement goes necessarily with Dasein's understanding of what things are. Disposedness is an existential feature of Dasein in that Dasein is always-already attuned in the world. In other words, we are always experiencing the world while we are in a particular mood. We have a disposedness towards things in the world, or a moment of felt experience which varies in temporality depending on type of affect (e.g. boredom, anxiety, fear etc.).

On Heidegger's view, our mood directs our experience of the world. Here, various kinds of understandings of the world are grounded in an already existing affective stance towards the world in general. In the context of neuromarketing, the consumer is targeted and triggered by an advertising stimulus that attunes them according to affect (moods, emotions, feelings) and instincts, attempting to prime them before deploying advertising messages at them. As Byron Reeves, a communications professor with Stanford University, explains, "If you get the emotional impact of the message right, everything else will follow."[33] The question that arises in this context is whether or not neuromarketing actively seeks to attune the consumer to be more open to advertising messages. If this is

indeed the case, how is this process being performed? In order to answer this question, we must first grasp what attunement means.

Attunement (*Befindlichkeit*) is one of three interrelated structures of human existence and maps directly onto how neuromarketing aims to nudge the consumer into desirable buying responses by first manipulating affect, including moods, emotions and feelings. The other two fundamental structures, as I mentioned previously, are *discourse* and *understanding*. Heidegger makes two divisions here with his terminology. First, attunement refers to ontological structures of being as in metaphysical and/or phenomenal structures. Affectedness and its moods refer to the ontical aspects of attunement—worldly facts that relate to entities. Heidegger uses the term *Befindlichkeit* to refer to what is commonly called 'being in a mood' and also what is called 'feeling' and 'affect.' Dreyfus translates *Befindlichkeit* as 'affectedness.'[34] Mood is one of the ways through which Dasein can show its affectedness.

Affectedness gives sense to the world of Dasein and to the way in which Dasein relates to the world. Dasein always belongs to a world, which is first disclosed by background moods, for example. At the bottom of the way we experience existence is the fact that things matter to us. As Matthew Ratcliffe notes, mood is primordial:

> It is a condition of sense for any encounter with beings, whether theoretical or practical. It is thus prior to the intelligibility of all such beings and not reducible to them. Hence moods are not subjective or psychic phenomena but are instead prior to the sense of a theoretical subject-object distinction.[35]

Moods are constitutive of our understanding of being whereby beings are rendered intelligible. Moods also help us make sense of our world and ourselves.

Heidegger asserts that "mood is not a property of the theoretically characterised 'subject,' but a more primordial ground whereby things can show up for us as 'this' or 'that,' an all-enveloping cradle which discloses or gives meaning to all our conceptions of theoretical beings and all our engagements with practical beings."[36] Similarly, Eugene Gendlin explains that mood has always-already disclosed one's being-in-the-world as a whole

and always-already has its own understanding (understanding as an existential structure of human existence). On this view, we may not know what our mood is or what it is about, or we might not be conscious of our mood, but there is a certain level of understanding of living in *that* mood. This understanding of mood is an implicit understanding and not a cognitive understanding. Understanding through mood is different from cognition in the following ways: "It is sensed or felt, rather than thought—and it may not even be sensed or felt directly with attention. It is not made of separable cognitive units or any definable units. … Certainly one can reflect and interpret, but that will be another, further step."[37]

The concept of mood can be tied to Damasio's work on emotions. According to Damasio, although emotions are not intentional or cognitive, they are also not separate from cognitive processes. Rather, they comprise "a kind of cradle which structures explicit deliberation and one's practical comportment toward specific intentional objects."[38] They are always-already present yet tacit, and they underpin the frame of mind in our approach to the world. When juxtaposed with Damasio's research on neurological patients, mood is not simply something that determines the way the world is opened up for explicit deliberation."[39] Moods, then, serve as a background for existence comprising our sense of self, world and our place in the world; they attune our interactions with the world, and underpin cognitive deliberation.

The attempt to manipulate the process of attunement is found in the following example: Chairman of Millward Brown and author of *The Branded Mind*, Erik du Plessis, claims that feelings, emotions and moods are primary factors in modifying consumer perceptions, directing attention and giving preferential access to memories as well as biasing thinking. On his view, a primary task for the [neuro]marketer, then, is to engage people's attention, and 'touchpoint' advertising is a fundamental component of this task. *Touchpoint* is an advertising term that designates the ways in which "brands 'touch' the consumer and point to where the consumer comes into contact with the brand."[40] The foundation of touchpoint advertising is that it is designed to attract the consumer's attention through manipulating perceptions and affect. Another troubling example can be found in the work of neuromarketing proponent Christine Comaford who claims:

> Our brains use habit, experience and emotional cues (all largely unconscious) to make decisions about both the quality of our interactions and buying decisions related to a brand. So we need to intentionally affect the brand experience and perceptions of that experience. And if we're able to provide new brand information for the brain to process we can even change a consumer's experience and buying behavior.[41]

It is clear that affectedness and its moods are key neuromarketing targets. They open the door for consumers to be manipulated, that is, to be predisposed to an advertising message through a process of attunement.

This chapter has sought to build on an analytic framework for understanding the social imaginary of neuromarketing discourse. It considered the fundamental structures of how human beings make meaning in and from the world. The chapter has foregrounded the potential danger of neuromarketing as a tool for consumer biosurveillance in that it uses psycho-physiological techniques to disrupt decision-making. Neuromarketing seeks to do this by deploying advertising messages designed to trigger instinctive responses and bypass the human capacity for critical awareness. The following chapters will consider more specifically the ways in which the discourse of neuromarketing represents consumers as potentially reductive metaphors which have repercussions for issues of representation, and the social guidance those representations reinforce.

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6

Worldlessness: The Brain as 'Buy Button'

Often referred to as the father of modern philosophy, René Descartes (1596–1650) broke from the traditional Scholastic-Aristotelian philosophy prevalent during his lifetime to develop a new form of mechanistic science. A substance dualist, Descartes argued that the body is comprised of material properties and works like a machine. Although he understood the body as a machine, he maintained that human beings are more than just bodies because no simple machine will ever be able to do what we can do. First, human beings have the capacity to speak intelligently on a wide range of topics. Second, we have the capacity to act intelligently in a variety of situations. While machines might have the ability to speak or act intelligently in specific limited contexts, what they can do will never equal the depth and breadth of human intellectual capacities. On this view, machines can only act intelligently when they are faced with situations they have been pre-programmed to understand. Therefore, human beings must be more than mere machines.[1]

Descartes went on to relegate non-human animals to a category closer to that of machine than human. He argued that although animals were complex beings they were subordinate to humans. Whereas human beings possess an immortal and rational soul (the mind and the soul are

S. Nemorin, *Biosurveillance in New Media Marketing*,
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one and the same) machines do not, nor do animals. Furthermore, the mind is incorporeal and does not follow the laws of nature; it does not require the body to exist or to continue to think, yet it has the capacity to interact with the body. Thinking is not a physical process; rather, it is a non-physical one. Descartes' divisibility argument is this:

1. If minds are identical to bodies, then whatever is true of minds is true of bodies, and vice versa.
2. But minds are indivisible and bodies are divisible.
3. Therefore, minds are not identical to bodies.

Here, although the mind and body interact causally through the pineal gland in the brain, the relationship between mind and brain/body is contingent rather than necessary; the brain is part of the body and not the seat of the soul, and the body and brain are reducible to the workings of a machine. Cartesian minds, however, do not possess physical attributes nor do they have a location in space. Descartes further posited that in order to think or feel an entity must be conscious. In order to be conscious an entity must possess a mind. Since machines do not possess minds they can neither think nor feel.[2]

This kind of mechanisation is found most noticeably in cognitive science, an overarching scientific research programme that emerged in the 1950s, now integrating disciplines such as psychology, neuroscience, linguistics, computer science, artificial intelligence (AI), anthropology and philosophy. A primary aim of the programme is to make explicit the principles and mechanisms of cognition, setting it apart from earlier approaches in psychology and philosophy. Given neuromarketing techniques are guided by research and development in certain strands of cognitive science, specifically behavioural psychology and cognitive neuroscience, the purpose of this chapter is to present metaphors and conceptions of the brain from cognitive science to serve as background for how neuromarketing fits into a larger techno-scientific paradigm ruled by guiding metaphors for understanding how the human brain works.

The guiding metaphors most directly influencing popular neuromarketing emerge from behavioural psychology: mind as animal-machine

and mind as reflex-machine with some connections to mind as computer. As such, this work will focus primarily on these reductionist models. Neuromarketing has further reduced consumer subjects to brain processes that fall under the metaphors of brain as buy button and brain as animality.

Although the popular discourse of neuromarketing seems to conflate the terms 'brain' and 'mind,' throughout this chapter I will use the term 'brain' when discussing metaphorical representations emerging from neuromarketing specifically. I do this because of the tendency for neuromarketing to invoke the brain metonymically to represent consumers of all kinds,[3] and to reduce consumer behaviours to cerebral activity derived from neuroimaging techniques, as what Ortega and Vidal would call a 'cerebral subject'—an anthropological figure according to which the brain is the location of the modern self.[4] This chapter serves as an entry point into the tripartite framework used to analyse consumer representation. Each of the following three chapters will be guided by a theoretical metaphor as a framework for studying and understanding the consumer as represented in the discourse of neuromarketing.

Metaphorical Constructs

Philosophical inquiries into metaphor have informed critical theory in its explorations of the role of metaphor as a transformational and transactional symbolic construct key to the process of meaning-making (or understanding the world). The first systematic account of metaphors can be attributed to Aristotle[5] who offers clues into what Ricoeur calls the "semantic role of imagination (and by implication, feeling) in the establishment of metaphorical sense." Aristotle claims that of the lexis in general (diction, elocution and style), metaphor is one of the tools that disclose discourse (logos). The vividness of good metaphors comprises their ability to "set before the eyes" the sense they illustrate—a visual dimension that can be referred to as "the picturing function of metaphorical meaning."[6]

In their seminal work, *Metaphors We Live By*, Lakoff and Johnson claim that conceptual metaphors are fundamental mechanisms of the mind

that structure our basic understandings of the world. Metaphors enable us to use our existing knowledge of social and physical experiences to grasp other subjects, and they have the capacity to shape our perceptions and actions, at times without us even noticing them. Furthermore, metaphors play a pivotal role in the construction of socio-political realities:

> In all aspects of life, not just in politics or in love, we define our reality in terms of metaphors and then proceed to act on the basis of the metaphors. We draw inferences, set goals, make commitments and execute plans, all on the basis of how we in part structure our experience, consciously and unconsciously, by means of metaphor.[7]

On this view, metaphors are helpful when used to understand theories and models; they are structures of thought and not simply language.

The importance of metaphors as aids for persuasion is well established in the marketing literature. Writing about how to improve market research methods by incorporating insights into the cognitive structures consumers use to understand the world, Zaltman explores how metaphors, emotional cues and visual imagery impact the way consumers make meaning. He defines metaphors as basic orienting structures of human thinking processes that influence how individuals process and respond to stimuli. Metaphors "not only help us make sense of what we perceive, but also direct our attentional and perceptual processes."[8] Metaphors are central to imaginative activity and can also reveal an individual's hidden knowledge, including thoughts and feelings. In *Marketing Metaphoria: What Deep Metaphors Reveal About the Mind of the Consumer*, Zaltman and Zaltman acknowledge the general understanding of a metaphor as the representation of one thing as something else: "shorthand for many forms of idiomatic, nonliteral expressions of representations."[9] In addition to deep metaphors which, they argue, are subconscious thinking structures that capture human universals (i.e. patterns, traits and institutions common to human cultures across the world), the authors claim there are two other relevant levels of metaphors at play in human thinking processes: (1) surface metaphors: the general metaphors people use in

everyday language, for example, "This problem is just the tip of the iceberg"; and (2) metaphor themes which "ride below the surface metaphors, but are not completely buried in our subconscious." These kinds of metaphors illustrate a more basic lens for deep metaphors. The examples they use to illustrate metaphor themes include "I am drowning in debt" and "Don't pour your money down the drain," which associate money with liquid, in turn reflecting the deep metaphor of *resource*.[10]

Metaphor is also one the four rhetorical instruments or four master tropes individuals might use when constructing persuasive texts, the others being metonymy, synecdoche and irony. When people are at odds with each other they use rhetorical devices to persuade audiences to take one course of action or another. Metaphor can be understood as perspective in that it is not only a figurative tool, but also used as a pathway to the discovery and description of 'truth.'[11] As some commentators note, entities who control and change guiding metaphors ultimately have the power to control and change action.[12]

For this work, I am interested in metaphor as a rhetorical device that shapes meaning-making through narrative structures and as a political object that directs attention to certain aspects of an event over others.[13] As Paul Edwards notes, these guiding metaphors are cases of contested storytelling—they are "necessarily, and simultaneously, representations or constructions of possible subject positions. … They are also about modalities of intersubjective relations: language, communication, and emotion."[14] With these things in mind, this chapter begins an inquiry into the metaphorical representations of consumers that emerge in the discourse of neuromarketing, and how such constructs influence particular ways of thinking about consumers, thereby shaping social imaginaries. The metaphor I will focus on here is that of *brain as buy button*. First, however, I will offer a necessarily brief sketch of the guiding metaphors that neuromarketing inherited from behavioural psychology and the cognitive sciences more broadly in order to situate the thinking of neuromarketing in the context of a larger scientific paradigm.

Behaviourism

Mind as Animal-Machine

Combining elements of philosophy and psychological theory, behaviourism emerged in the late nineteenth century as a reaction to traditional forms of psychology which were unable to make predictions that could be tested empirically. The earliest iteration of behaviourism can be traced back to Edward Thorndike who developed the law of effect: the strengthening of behaviour through reinforcement. It was not until John Watson began publishing widely on the matter that behaviourism became more entrenched in the scientific community; it was also embraced by the advertising world. Although various individuals, such as Pavlov, Tolman and Skinner have contributed to the development of behaviourist ideas, it is Watson who is primarily credited for behaviourism's application to psychology (behavioural psychology). In 1913 he published his theory of behaviourism as a science that analysed human behaviour through observable activity and could use that information to predict and control responses.[15]

As Watson's contributions to behavioural theory became more prolific, he was hired by Stanley Resor, the president of J. Walter Thompson Agency, to find a bridge between advertising and science. Their partnership sought to identify laws of human behaviour in the context of market research and apply the information obtained through empirical studies to develop messages that would elicit desired responses from mass audiences.[16] This partnership would eventually radically change the landscape of marketing, bringing about the increasing use of behavioural psychology as a tool for persuading the masses to take consumptive action.

Watson's exploration of studying behaviour in laboratory settings began during his postgraduate studies at Chicago University where he researched the behaviours exhibited by rats as they learned to exit mazes. In order to determine whether or not these rats used faculties apart from their senses, Watson not only blinded and deafened the creatures he also anesthetised their skin. Despite this cruel treatment, the rats exited the maze as quickly as the control groups. Watson concluded that the

muscular-nervous system possessed some form of memory. The essence of Watson's theoretical aims emulated the study of evolution in which biologists experimented on a variety of animal species. The data obtained from these empirical investigations could then be extrapolated to explain human behaviour.

These experiments marked Watson's first moves towards establishing behaviourism, grounded on the premise that prediction and control comprise the essence of any kind of science. By studying and measuring, it was possible to not only predict but also control what human beings would do. In this capacity, human beings were simply organic machines.[17]

It is here that we find the metaphors most relevant and recurrent in the discourse of neuromarketing, namely the *mind as animal-machine* and the *mind as reflex-machine*. First, the classical animal-machine metaphor: Animals are reflex-machines. If humans are also animals (both literal and metaphorical connotations), then humans are reflex-machines. This metaphor has the following implications: mental processes are tacit physical behaviours; mental processes are controlled by the environment; learning is a process of differential reinforcement; and thoughts are tacit conditioned verbal responses. This metaphor will be explored further in the next chapter.

Mind as Reflex-Machine

Another metaphor situated in the behavioural sciences is the mind as reflex-machine, which has similarities to the computer metaphor. Symbolic activity (language, problem-solving and perception), physical behaviour and emotional responses are all of equal standing under the reflex-machine metaphor that directs attention to external variables controlling a response rather than to internal transformations. The metaphor of reflex-machine focuses attention on how behaviour is learned and developed from simple components instead of towards the structure of more complex behavioural patterns:

> If THE MIND IS A COMPUTER, it may be reprogrammed, while if it is a REFLEX MACHINE, its responses may be modified through new

> conditioning. While reprogramming and behaviour modification are different processes, they have in common the precept of a flexibility of the mental apparatus and the possibility of change and learning.[18] (emphasis author's)

The reflex theory of the brain produced both opportunities and challenges for behavioural psychology in that, through physiology, it attempted to connect the brain (connected stimuli and responses) to the mind (connected ideas).[19]

Cognitivism

Mind as Computer

The 'Cognitive Revolution' in 1952 against behaviourist psychology brought with it a new way of understanding the brain and mind. The model of *mind as computer* was central to cognitivism. This view is now known as the classical conception of cognitive processes or as computationalism. Whereas behaviourism discounted references to internal states of the organism—explanations of behaviour were conceived as sensory stimuli and behavioural conditioning (input side) and overt behavioural response (output side)—cognitivism made referring to internal states legitimate and demonstrated that these internal states were necessary dimensions to providing behavioural accounts of complex information processing systems.

More importantly, the computer model of the mind was understood as showing how content or meaning could be attributed to internal states. For instance, a computer is generally considered a symbol-manipulating machine and a symbol is a thing that possesses a physical form that represents something. According to the mind as computer metaphor, the brain is a computer, a 'physical symbol system,' and mental processes are enacted by the manipulation of symbolic representations situated in one's brain. Although cognitivism made meaning (representational semantics) acceptable scientifically, it dismissed consciousness from the science of the mind.

Prior to cognitivism Sigmund Freud's work had undermined simplistic identifications of mind and consciousness. In Freud's early model, the psyche comprised three systems: the conscious, the preconscious and the unconscious. The conscious is in accord with the field of awareness. The preconscious refers to what we are able to recall but are not aware of at present. The unconscious is part of our phylogenetic heritage; it is somatic and affective, its contents have been separated from the conscious by repression, and it cannot enter the conscious/preconscious systems without distortion. Computation did not reflect the cognitive properties of the individual but those of the socio-cultural environment within which the individual was immersed.[20] The difficulty with this idea is that real human computation (original source domain for conceptualising computation in the abstract) is both an internal psychological process as well as a socio-cultural activity. Thompson writes:

> Cognitivism, instead of realizing that its computer programs reproduced (or extended) the abstract properties of the sociocultural system, projected the physical-symbol-system model onto the brain. Because cognitivism from its inception abstracted away from culture, society, and embodiment, it remained resistant to this kind of critical analysis and was wedded to a reified metaphor of the mind as a computer in the head.[21]

Cognitivism's radical separation of cognitive processes from consciousness created an explanatory gap in theorising the mind. Where Cartesian dualism created an explanatory gap between mind and matter, consciousness and nature, cognitivism created a new gap in materialist form between sub-personal, computational cognition, and subjective mental phenomena. Cognitivism supports a mechanistic frame: the brain rules in all things human: human information processing can be reduced to functions in the brain and explained by the information processing capacity of digital computers. Here, since the brain is an object of scientific study it works by cause and effect and is subject to the sort of external technical controls that are effective in relation to the environment. Such a stance assumes that simple cause and effect relations can explain everything one would need to know about human mental processes or modes of thinking. This mechanistic approach emerges in neuromarketing

in terms of its connectivity to the guiding metaphor of mind as reflex-machine which holds implications for how the consumer is constructed as a buy button that can be manipulated by external inputs. In order to make sense of this form of metaphorical reductionism, it is necessary to revisit the concept of world, specifically in terms of what it means to *have* a world given the notion of having or not having a world is central to how having a world is also associated with human agency.

Mechanical/Inanimate: Worldlessness

In Part Two of his 1929–30 lecture courses, *The Fundamental Concepts of Metaphysics*, Heidegger asks the question: What is *world*? He undertakes an examination of the concept of *world* and what it means for human beings to *have* a world. By the end of the lectures he concludes that the human being has a world much richer and deeper and more expansive than the world of the animal. The poor in world animal is Heidegger's point of departure for his analysis of what it means for human beings to relate to and have a world.

To explore what it means to have a world, Heidegger asks about other kinds of entities that inhabit the world, such as animals, plants and inanimate objects like the stone: "Are they merely parts of the world, as distinct from man who in addition *has* world? Or does the animal too have a world, and if so, in what way? In the same way as man, or in some other way? And how would we grasp this otherness?"[22] Heidegger presents his distinctions with a tripartite thesis that the stone is worldless, animal is poor in world, and man is world-forming:

1. The stone (a metonymy for the material, mineral world) is worldless; that is, *without* world the stone is straightforwardly *weltlos*;
2. The animal (ostensibly, no metonymy here, inasmuch as "the animal" *means* animality *as such*) is poor in world; that is, animal life is characterised by a certain world poverty, *Weltarmut*;
3. Human beings (again, putatively no metonymy) shape, inform or constitute their world: *Der Mensch ist weltbuildend.*[23]

Seeking to disclose the essence of wordlessness, poverty in world and world formation, Heidegger investigates the way these kinds of beings relate to the world to bring out the character of their subjective worlds, or what it means to exist in particular kinds of worlds. His project includes identifying what constitutes the essence of the *animality* of the animal, and the essence of the *humanity* of human beings. He maintains it is easy to claim that the difference between the two is reason in that human beings are rational, reasoning entities while animals are not; however, this is not sufficient as it first requires answering what reason or lack of reason mean in this capacity. Even if the question is clarified we cannot know whether or not such a distinction represents what is most essential and metaphysically important.

Central to the difference between animal and human being is that Dasein has the possibility of apprehending the world *as such* whereas the animal cannot ever apprehend the world *as such*. The animal can only *behave* in its existence in the world. Although animals might recognise things or anticipate other things causally related to them, they do not use things as tools or signs as humans do. While Heidegger insists his philosophising does not aim to create a hierarchical division between human and animal, a range of scholars have argued otherwise (e.g. Derrida 2008; Buchanan 2008; Calarco 2008; Agamben 2004; Krell 1992).[24] Further, his view of animals as entities that cannot use tools or equipment like human beings has been challenged by research in ethology (e.g. Roach 2007; Krützen et al. 2005; Pierce 1986).[25]

We must also consider the *Cambridge Declaration of Consciousness* that asserts non-human animals share complex cognitive abilities with human beings, supporting claims that Heidegger's thesis is not only simplistic but hierarchical, in that it fundamentally privileges human beings over non-human animals, in terms of modes of being-in-the-world and, by extension, membership in the moral community.[26] Nevertheless, as I mentioned previously, Heidegger's fundamental structures are useful heuristically for revealing the crudeness of certain aspects of the popular neuromarketing programme in that it assumes the consumer is situated in an understandable world without elaborating on the process of *understanding* or the concept of *world* in the context of meaning-making and subject/object relations. In addition, the heuristic also has the potential

to foreground the dangers associated with designing technologies based on a limited understanding of human cognition.

In *§47* Heidegger begins his first thesis: the stone is worldless, meaning that inanimate objects have no access whatsoever to entities and beings. While neither the stone nor the animal have a world, this 'not-having' of world cannot be understood in the same sense. The expressions of worldlessness and poverty in world indicate there is a distinction to be made. Where poverty in world suggests a deprivation of world, worldlessness implies that the stone, or the mechanical object, cannot even be deprived of anything resembling a sentient understanding of world. The deprivation of world with regard to the animal requires further conditions which Heidegger goes on to clarify by investigating what it means to say that the stone cannot even be deprived of world. The stone as an inanimate object, like Descartes' machine, has no capacity for the thinking processes that reveal the world. Making a provisional characterisation of world as the accessibility of beings, Heidegger inquires into the differences between machine, equipment and instrument in an attempt to work toward an understanding of organisms and, ultimately, a conceptualisation of the world of the poor in world animal versus the world-forming capacity of the human being.

For Heidegger, a machine falls under the category of equipment, and equipment (or tools) are objects used *in-order-to* do something; the essence of equipment is to serve a purpose. The *in-order-to* of equipment does not involve drive. Things are *capable* as far as they are instinctually driven (*triebhaft*). Capacity, then, can only be located where there is drive (*Trieb*). Equipment and tools do not have internal drive. That said, it is important to acknowledge that this reflection is no longer necessarily the case given the extent to which machines are now being imbued with some degree of 'intelligence,' and are expected to expand much further with a dramatic infusion of government support for research and development in AI. Nevertheless, Heidegger's thesis is relevant in terms of differentiating between the possibilities of self-determined purposes across entities.

For Heidegger, ready-made equipment is subject to implicit or explicit *prescriptions* with regard to possible uses. Such a prescription is not given by the readiness of the equipment; rather it is inferred from the plan that has already determined the production of the equipment in question and its particular equipmental character. For example, the purpose of the spoon is

determined by the artisan who crafts the spoon, or the person who uses the spoon to eat. The spoon does not imbue itself with purpose derived from organic internal capacities. Something capable, such as an animal, is not subject to this prescription but is "*intrinsically regulative* and *regulates itself*."[27]

The conception of the worldless inanimate object can be superimposed onto the act of reducing the consumer to a *reflex-machine* in that the scientific reduction renders consumers as instrumental objects, ready-to-use tools *in-order-to* serve advertising ends. Symbolic activity (language, problem-solving and perception), physical behaviour and emotional responses are all of equal standing under the reflex-machine metaphor which directs attention to external variables controlling a response rather than to internal transformations. The metaphor guides the researcher's focus to how behaviour is learned and built up from simple components, rather than directing attention to the structure of complex behavioural patterns. The reduction of the consumer to this kind of metaphor also suggests that consumer responses can be modified.

Since reflexes can be subject to deliberate restructuring, the reflex-machine metaphor leads one to understand behaviour as infinitely flexible. This kind of metaphor suggests the possibility of reprogramming the brain by creating new patterns of thinking or restructuring its 'hardware' with drugs, surgery and even implanted microchips.[28] The consumer, here, like Heidegger's conception of ready-to-hand equipment (i.e. equipment being used prior to thematising which would render it present-at-hand), serves some already prescribed purpose. In other words, market research, through the creation of strategically designed advertising messages, imbues into consumers the purpose of taking consumptive action by nudging them.[29] This leads us to the metaphor of the *brain as buy button* (or reflex-machine) that emerges from the discourse of neuromarketing.

Brain as Buy Button

The first reduction of the consumer to a particular kind of brain is the metaphor of the brain as buy button, which also connects to the metaphor of mind as reflex-machine. Although the existence of a buy button in the brain has been largely discredited in both neuromarketing and

consumer neuroscience, it nevertheless persists in certain elements of popular neuromarketing discourse. Situated at the inanimate/mechanical level of Heidegger's tripartite thesis, the brain as buy button implies that the consumer is worldless. She holds no possibility at all to have a world, not like the poor in world animal and not like Dasein's world-forming potential. Worldlessness refers to not having access to beings; a characterisation of having a world is the accessibility of beings.

Examples of the brain as buy button metaphor are found most explicitly in the text/talk of the SalesBrain team: Dr. Christophe Morin, self-identified *Chief Pain Officer*, and Patrick Renvoisé, *Chief Neuromarketing Officer*. Counter views also come from active proponents within the neuromarketing community itself. For instance, Lindstrom claims that neuromarketing may never be able to identify exactly where the buy button is located, but it certainly has predictive power to determine advertising success.[30] The managing director of Decode Marketing, Phil Barden, is emphatic that there is neither a "shopping module" in the brain, nor is there a "buy button."[31] And while neuromarketing pioneer Steve Genco believes that the technique has the potential to "influence consumers' decisions and actions more effectively," he maintains that there is no buy button in the brain as brains are complex systems that make purchase decisions over time.[32] While I will address various practitioner examples of neuromarketing over the following chapters, I will return to SalesBrain for two reasons. First, the company presents itself, alongside Brighthouse Institute, as one of the first North American companies to offer neuromarketing research and consulting services. Second, SalesBrain has a large presence in the popular discourse when searching for neuromarketing online.

"Would you like to know how to persuade anybody to do anything?" is how Morin introduces his presentation at the Risdall Marketing SalesBrain seminar: *Is there a buy button in the brain*?[33] Despite his tendency to instrumentalise the consumer for advertising purposes, Morin is active in debates around neuromarketing ethics, including protection of subjects, protection of insights and protection of youth. He claims that ethics (ETHICS) comprises explaining protocols (E), treating with respect (T), honouring privacy (H), instilling trust (I), condemning stealth ads (C) and safeguarding youth (S). Morin is also a board member

of the Neuromarketing Science and Business Association (NMSBA) and involved in the development of a code of ethics to guide the self-regulated industry.

Morin's reduction of the consumer brain to a buy button is best illustrated in his essay, "Neuro-marketing: The new science of consumer behaviour."[34] Although he does move to discussing the reptilian brain (mind as animal-machine) later in the text, on the first page of his essay is an image of a human brain topped with a green button that says 'buy.' This illustration serves as an excellent example of a graphical reduction of the consumer brain to a reflex-machine (or buy button), a mechanical representation of the consumer brain as a system, responsive to external triggers or inputs that can switch on the consumer's buy mode.

Another graphical representation can be found in Morin and Renvoisé's cover art for their book: *Neuromarketing: Understanding the "Buy Buttons" in Your Customers' Brain*. Here, the brain is situated on a red bull's eye, suggesting the brain is a target for attack. In this instance, however, the brain does not have a buy button visible on its exterior; rather, the buy button is deliberately hidden from view, implying that SalesBrain has the knowledge to teach those who read the book how to find this button. The book claims that it will allow readers to understand how the buy button works and how to trigger it to elicit desired buying responses.[35]

The buy button theme continues on the SalesBrain website where Morin and Renvoisé graphically depict the consumer brain as an object that can be captured (a fly fishing hook about to land a brain), convinced through some kind of chemical process (a funnel pouring a chemical solution into the centre of the brain) and then triggered into action by pressing the buy button (a brain with a buy button on top).[36]

According to his biography on the website, "pushed by a strong desire to seek the truth about Sales & Marketing, Patrick discovered the buy button inside the brain." To access the buy button, Renvoisé claims he spent two years researching and developing a scientifically grounded brain map. While this representation once again shows a buy button on the brain, the "scientifically convince" piece largely relates to the attack on an individual's dopamine levels. For neuromarketing practitioners, dopamine is associated with both the reward system and the tendency to become addicted to things. The relevancy of brands or goods and services

to the consumer is attached to the degree they create biological or psychological reward signals in the brain that activate the dopamine system (associated with creating feelings of pleasure and motivation). The aim is to influence consumer actions by increasing the probability that the object wins the competition for selective attention. With the aid of neurotechnologies of measurement, neuromarketers claim that it is possible to capture what connects with the consumer at a subconscious level and use this information to design advertising stimulus that directs and captures the consumer's attention accordingly.

Although proponent Roger Dooley admits that dopamine-driven marketing "sounds scary," dopamine is nevertheless a key element in the brain's reward system and targeted for marketing purposes. By focusing on manipulating levels of dopamine, or on the "dopamine kicker" neuromarketers aim to "reinforce behavior and create positive associations" with whatever they are trying to sell.[37] This is perhaps one of the clearest examples of how neuromarketing seeks to bypass individual volition by using psycho-physiological tactics to modify human behaviour for commercial purposes.

In another blog, Dooley uses an arrow to point out the location of the buy button on a brain-imaging visualisation. For Dooley, there is "almost" a buy button. Referring to a Temple University research study, he argues that fMRI has the best ability to predict the effectiveness of advertisements. The study in question found that there is one section of the brain vitally important to advertising success: the ventral striatum which is a strong predictor of real-world, market-level responses to advertising messages. The ventral striatum plays a fundamental role in the brain's reward system, and is associated with human behaviours, emotions and triggers, including desire and craving.[38] The conclusion of the study was that neuromarketing is getting closer to the buy button. Although the graphic does not explicitly present the brain *as* a buy button, the dialogue around inputs, outputs and triggers certainly suggests an alignment with a mechanistic and instrumental view of the human brain as a system that can be triggered to perform in a particular way.

The brain as buy button also found its way into popular magazines. In 2003, neuromarketing made the cover of *Forbes* magazine. The image depicts a woman's face with an illuminated Coca-Cola can (over Pepsi posi-

tioned behind) hovering at eye level and shooting a beam of light to what is implied as the buy button in the brain. The image is a nod to the Pepsi Challenge, one of neuromarketing's first endeavours trying to 'predict' consumer behaviour. The article offers an account of neuromarketing and its increasing popularity amongst powerful industry and academic players. The title of the article, *Pushing your buy button,* clearly represents the reduction of consumer to a set of relational triggers: a brain as buy button.[39]

The consumer brains depicted in the graphical representations above resonate with British cybernetician Gray Walter's explanation of the black box as a metaphor that emerged from engineering. The engineer is given a sealed box that has terminals for input, to which he may bring any voltage, shocks or other disturbances he pleases, and terminals for output from which he may observe what he can.[40] The most common implications of the brain as buy button metaphor can be understood in light of certain entailments of the mind as a machine (or computer) metaphor. On this view the brain is hardware; the brain is a rapid, complex calculating machine; the brain is made up of digital switches; thinking is computation; and the function of the brain is information processing.

Yet another flawed model, with consequences for marketing and for society, the machine metaphor privileges one mode of human thinking at the expense of other, paralogical (thinking that does not conform to the rules of logic) or tropological (figurative speech) modalities, and the intuitive. As Edwards argues, "it returns to the Cartesian metaphor of the mind as a mathematical engine, but with a massively elaborated concrete structure that vastly changes the Cartesian concept."[41] Similar to human behaviour, most computer programs are not built in or hardwired. This implies that behaviour and thought patterns can be changed, erased or replaced. These examples highlight how the discourse of neuromarketing represents the consumer as a tool that can be activated by a buy button for advertising purposes. Despite the noise about how neuromarketing can be used to help consumers learn about themselves or help consumers make healthier life choices, these depictions of the consumer as a buy button or as controllable through a buy button in the brain clearly illustrate the ultimate goal of neuromarketing, that, as Renvoisé points out in a TED talk, is "really about finding that buy button" so that he can "sell you something that maybe you don't even need."[42]

As I mentioned previously, in his analysis of the difference between a tool as equipment and the capacity of an organism, Heidegger claims that a tool is "subject to some implicit or explicit *prescription* with respect to its possible uses … always derived from the plan which has already determined the production of the equipment and its specific equipmental character. Something which is *capable* on the other hand is not subject to such a prescription but is *intrinsically regulative* and *regulates itself*."[43] In other words, a tool has a purpose already inscribed into it by an external party, whereas an organism has some kind of agency in terms of self-regulation varying from an animal acting on instinctive drive and Dasein acting according to world-forming possibilities. Furthermore, a tool can be approached in two ontologically distinct ways: we can take it and use it or we can reflect on it from a distance. When we use a hammer, for instance, it becomes ready-to-hand in that it is a tool ready to be put to work. The second sense is present-at-hand to indicate what the hammer has become in relation to us as we try to make sense of the hammer through intellectual inquiry. In the case of the brain as buy button metaphor, the consumer subject is perceived in both of these capacities. We can once again look to Morin to explore the purpose of the consumer in terms of utility for neuromarketing. This time, we turn our attention to the written word. Morin writes:

> Neuromarketing offers cutting edge methods for directly probing minds without requiring demanding cognitive or conscious participation … Such techniques finally allow marketers to probe the consumers' brains in order to gain valuable insights on the subconscious processes explaining why a message eventually succeeds or fails. They do so by removing the biggest issue facing conventional advertising research, which is to trust that people have both the will and the capacity to report how they are affected by a specific piece of advertising.[44]

To obtain a clearer picture of what the excerpt above suggests, it is helpful to consider purpose in terms of the role of the neuromarketer and how the consumer is to be put to use as a tool.

First, the purpose of the *neuromarketer* is to break down methodological barriers that exist inasmuch as untrustworthy consumers cannot or

will not accurately report their responses to an advertising stimulus. The investments of which Morin speaks refer to over 400 billion dollars invested in advertising campaigns, so the investments are advertising strategies that aim to trigger positive purchase decisions in consumers which, in turn, result in material gain. The purpose of the neuromarketer, then, is to ensure that these investments are productive investments so that the companies selling products can make a profit.

Second, the purpose of the *technique* of neuromarketing (neuroimaging hardware and non-hardware such as questionnaires, surveys, interviews etc.) is to "probe the consumers' brains," a method positioned as able to extract objective (or non-subjective) data from the consumer's subconscious, turning investments into moneymaking commodities (actionable intelligence/strategy). This relies on the production of audiences and the selling of audience attention to advertisers or to political candidates and political causes. The use of neuroscience by marketers leads to the deployment of strategies for producing influence through advertisements, delivered to audiences whose attention has been produced/captured by other non-advertising content.

Third, the purpose of the *consumer* can be likened to that of an object, a ready-to-hand or ready-to-use tool that can be prodded and probed for information. Martha Nussbaum identifies seven basic features of treating things as objects that are of relevance here. Nussbaum argues that what is at issue in objectification is the question of treating one thing as another, and one aspect of this is "treating *as an object* what is really not an object, what is, in fact, a human being."[45] This aspect is important when taking into account that the buy button is a reduction of a human being to a worldless stone, an inanimate or a mechanical object with no capacity for accessing the manifestness of world, the entities within and even itself.

Nussbaum maintains that we do not treat all things in all of these ways, and treating things as objects is not objectification, as objectification requires making a thing, or treating as a thing, something that is not a thing. To treat a human being as a thing equates to treating that individual as a tool, by treating the individual primarily or simply as an instrument. These features are useful for understanding what is involved in the notion of treating *as an object* and especially useful for illuminating how an entailment of the brain as buy button metaphor results in the

consumer becoming constructed as an object, as a ready-to-use tool for market research purposes. The reduction of the consumer to brain as buy button fits with Nussbaum's identification of features attached to objectification:

1. *Instrumentality*: The objectifier (neuromarketer) treats the object (consumer) as a tool for his or her own purposes: the consumer is instrumental to the needs of marketing—*in-order-to* achieve material gain.
2. *Denial of autonomy*: The objectifier treats the object as lacking in autonomy and self-determination: the consumer is not trusted to accurately report—and know—her own affective and instinctive responses to external stimuli.
3. *Inertness*: The objectifier treats the object as lacking in agency, and perhaps also in activity: the consumer is reduced to a machine-like thing, a computer, that does not even respond with conscious awareness to the world and the entities within because it is wordless. The consumer is constructed as a reflex-machine to be manipulated by external controls.
4. *Fungibility*: The objectifier treats the object as interchangeable: (a) with objects of the same type and/or (b) with objects of other types. All consumers are understood as reducible to brains or neurophysiological responses to an advertising stimulus.
5. *Violability*: The objectifier treats the object as lacking in boundary-integrity, as something that it is permissible to break up, smash, break into: neuromarketers use new technologies to probe the consumer's brain and break into the subconscious. In this capacity, the neuromarketer engages in the consumer surveillance activity of "decomposing, slicing, pulverizing [consumer] totalities into an aggregate of traits that can then be recomposed back (but also, in principle, rearranged and composed into a different 'totality')."[46]

The brain as buy button metaphor supports a mechanistic frame as espoused by cognitivism. Here, since the brain is an object of scientific study, it works by cause and effect and is subject to the kinds of external technical controls that are effective in relation to the environment. Such a stance assumes that simple cause and effect relations can explain everything one would need to know about human modes of thinking or meaning-

making. In light of the discursive moves used to understand the human brain as reducible to the processes of a machine (to a digital computer), one must ask the following questions that Dreyfus highlights as central to the two subfields of AI (i.e. cognitive simulation and AI): (1) Does a human being in processing information actually follow normal rules like a digital computer? (2) Can human behaviour, no matter how generated, be described in a formalism which can be manipulated by a digital machine?[47]

While the buy button metaphor is an exaggeration, in the context of neuromarketing it also seems to be a research programme. In other words, neuromarketers seek to realise the metaphor in reality through their technological innovations. Tendentially, they aim at a loss of volitional capacity on the part of the consumer to gain a level of control over the consumer. In this respect, the neuromarketing assemblage incorporates the consumer as a part rather than as an agent, rendering the individual worldless, a mere mechanical *thing*.

Whereas the conception of the consumer brain as buy button is crude and strictly mechanical (i.e. inanimate and worldless), the discourse of popular neuromarketing also reveals a reduction of the consumer to what I call the metaphor of *brain as animality*, a more sophisticated yet fundamentally instrumental model of the consumer in that it recognises the symbolic processes involved in human communication, at least to the extent of acknowledging the capacity of the consumer to focus on the perceptual dimensions (e.g. image, sound, smell) of the commodity being sold.

This chapter focused on representations of the consumer brain as buy button that fit with Heidegger's frame of the worldless inanimate object or machine, before considering Morin's excerpt that also highlights the consumer as a tool with pre-inscribed purposes (it is inanimate/mechanical with no possibility for access to the world). The next chapter moves to a conception of the consumer brain as an object that has some access to the world, including existing entities, and to notions of truth. This takes us from Heidegger's first thesis of the purely mechanical realm (the stone is worldless) to his second thesis on the animality of the animal (the animal is poor in world), leading to the question of whether or not neuromarketing techniques can captivate consumers like Heidegger's unreflective poor in world animals. In this capacity, we see the theme of the emergent animal appear in the discourse of neuromarketing.

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7

Poor in World: Augmenting Animality

The previous chapter presented an overview of Heidegger's first thesis that the stone is worldless, and how the heuristic applies to the way neuromarketing discourse reduces consumers to the metaphor of *brain as buy button*. This representation has social and ethical implications in terms of the objectification and instrumentalisation of individuals as tools to be used for advertising ends, to be explored further in the chapters that follow. Heidegger's second thesis is about the *animality* of the animal which, while not completely lacking access to the world like the stone, is, nevertheless, lacking in its manner of understanding the world compared to the richer form of access that Dasein's world-forming potential allows. Access to the world in the context of animality is restricted to a limited mode of revealing.

Unlike inanimate objects (metonymy: stones), animals are not altogether *worldless* nor are they wholly *world-forming* (*Weltbildend*)—they are something in between. The animal is poor in world because it never reaches the level of understanding that Dasein can reach; it is unable to reveal the undisconcealed *as* undisconcealed, thus remaining in a mood of poverty where entities can never be made manifest to it through critical understanding. This chapter continues my inquiry into the

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representation of the consumer with a focus on the metaphor of brain as animality. The relationship between world and animality illuminates how certain guiding metaphors play out in the discourse of neuromarketing as dehumanising mechanisms. The comparison of different modes of being-in-the-world will illustrate animalisation of thinking in terms of disruptions to the consumer's structures of understanding.

Animalising the Consumer Brain

Heidegger uses the language of *poverty* and *deprivation* to explain having or not having a world. In *§ 46* of *The Fundamental Concepts of Metaphysics,* he claims that poverty in world refers to a deprivation of the richness of the world. The thesis that animal is poor in world is placed between the stone as worldless and man is world-forming to show that the animal in its poverty somehow possesses less as opposed to more:

> Poor in world implies poverty as opposed to richness; poverty implies less as opposed to more. The animal is poor in world, it somehow possesses less. But less of what? Less in respect of what is accessible to it, of whatever as an animal it can deal with, of whatever it can be affected by as an animal, of whatever it can relate to as a living being. Less as against more, namely the richness of all those relationships that human Dasein has at its disposal.[1]

To be poor in world means to be deprived of access to how entities manifest *as* entities in the world. Animals cannot penetrate to the deepest levels of meaning as a human being can, as Dasein can. However, while animals do not have access to entities as entities, they do not lack access to things in the world altogether. Carman notes: Heidegger seems to grant animals "something like intentionality in the primitive sense of a certain form of 'directedness' toward objects."[2]

To illustrate animal understanding Heidegger uses the example of a bee, a creature that has a world but one always-already contained to a particular domain which is strictly circumscribed according to its nature. This bounded world (or niche) is limited in the degree and manner to which the animal is able to penetrate whatever is accessible to it. The bee

is familiar with the blossoms it visits as well as their colours and smells, yet it does not know the blossoms *as* blossoms. In other words, the bee would not know about the number of leaves on the plant, or the purpose of the stamens and roots, for instance. In opposition to the world of the bee (the animal), the world of the human being (Dasein) is much richer:

> … far more extensive in its penetrability, constantly extendable not only in its range (we can always bring more and more beings into consideration) but also in respect to the manner in which we can penetrate more deeply in this penetrability.[3]

If we examine the difference between poverty in world and world formation from this perspective, the distinction between the two kinds of worlds is one of degree in terms of the level of completeness of understanding related to the accessibility of entities. For Heidegger, the world-forming potential of human beings has greater value than the poor in world capacity of the animal. On this view, it is possible to characterise the relation human beings possess with the world as the extendibility of what the individual relates to, or the depth of critical awareness and depth of understanding. This is why he frames human beings as world-forming. The animal, however, is viewed as lesser in terms of its capacity to derive meaning in and from the world.

The frame of animality serves as a useful structural illustration for how the animalisation of thinking is at play in neuromarketing discourse. These discursive moves construct the consumer as a 'lower thing,' to a non-human human for instrumental ends. The metaphor of brain as animality is recurrent in the discourse of neuromarketing; it is a digital iteration of the classical mind as animal-machine metaphor that guides the larger scientific paradigm of cognitive science. As mentioned previously, the mind as animal-machine metaphor follows the logic that animals are reflex-machines—if humans are animals, then humans are also reflex-machines. This metaphor has the following implications: mental processes are tacit physical behaviours; mental processes are controlled by the environment; learning is a process of differential reinforcement; and thoughts are tacit conditioned verbal responses.

Synonymous with the idea of animality, the terms 'reptile' or 'lizard'[4] and derivations such as 'chameleon'[5] and 'critter'[6] are recurrent in neuromarketing discourse. Take, for example, Comaford's identification of three parts of the human brain. She claims that the human brain can be reduced to two states: the critter state and the smart state. The smart state is associated with the neocortex and is where human beings have quick access to a range of resources and can respond from rational choice. This part of the brain, she argues, allows human beings to exhibit a number of advanced behaviours, such as social behaviour, tool making, language use and critical consciousness. She merges the limbic system with the survival mechanism in the reptilian brain to create what she calls a "powerful combo pack": the critter brain. The critter brain acts from instinct and is "primarily a stimulus-response machine with survival as its focus." While Comaford argues that innovation and growth require that the smart state drives management decisions, in another work she suggests it is the critter state that must be targeted for marketers to positively reinforce brands and attitudes.[7] Her text/talk, as with neuromarketing discourse more generally, demonstrates a tendency for transforming already existing metaphors into adaptations for digital consumerist life. These new metaphors are deployed throughout the neuromarketing world to shape perceptions of the consumer as a brain to be manipulated strategically.

Neuromarketing practitioners also tend to agree that advertising messages ought to be pitched at a level of understanding that exists beneath the consumer's critical awareness in order to trigger desired behavioural responses. While many proponents such as author and practitioner Roger Dooley; Carla Nagel, the executive director of NMSBA; Nielsen's Carl Marci; Innerscope's Thomas Ramsøy; and Neurohm's Rafal Ohm demonstrate an expert understanding of the way the human brain functions, others such as SalesBrain's Patrick Renvoisé, whom we met in the last chapter, do not. In a TED talk on the buy button in the consumer brain, Renvoisé exclaims: "What I'm here to tell you is that we are reptiles!" He defines neuromarketing as follows: "In neuromarketing you have 'neuro' which means the brain, and marketing as in 'I'm going to try to sell you something that maybe you don't even need'."[8] Elsewhere, Renvoisé promotes the capacity for marketing to engage in a form of mind control by targeting the reptilian brain.[9] This sentiment about the reptilian brain is

shared across the field, with the consensus that the reptilian brain is the true decision-maker, and if advertising messages are able to connect to this primitive brain, consumers will be more susceptible to purchasing the products on offer. The trademarked NeuroMAP™ formulated by SalesBrain has allegedly helped more than 6000 companies at a global level "get their message truly understood by the brain of their customers."[10] The question that arises when reading this is: What does *truly understood* actually mean?

When examined closely, the text/talk of Renvoisé is an exemplar of the reduction of consumers to the metaphor of *brain as animality* in that it constructs consumer thinking in line with the poor in world status of Heidegger's animal (e.g. a reptile) as a pathway to advertising coercion. Selectively drawing on the work of Damasio, Renvoisé asserts that we don't have a single self, we have three selves. The primary motivator of our behaviour is the reptilian brain (our instinctual self) which is triggered by affect and has a greater impact on our decision-making processes than either of our other two brains, namely, the rational self (or new brain) and the emotional self (the middle brain).

Appealing to the scientific realm to legitimise his work, Renvoisé explains that neuroscience research suggests "emotional cocktails" create chemical reactions that directly impact the manner in which information is taken in and processed by the reptilian brain. These cocktails can trigger the response to buy. So the best way forward would be by engaging the reptilian brain, which is "unconscious [and] … completely uncontrollable."[11] On characteristics of the reptile as the true decision-maker, the SalesBrain website presents the reptilian brain as the part of the consumer that "forgets most everything in the middle," with a short attention span that holds "huge implications on how to construct and deliver powerful messages."

The core of what Renvoisé claims is simple. In order to sell more and develop consumer loyalty it is necessary to use tactics of manipulation that bypass consumers' capacity for conscious reflection, without allowing them the opportunity to recognise that their targeted niches (i.e. their subjective worlds) were being hacked into with neurophysiologically calibrated stimuli in the first instance. Articulating a common assumption in the industry that the consumer does not know herself, Renvoisé positions

neuromarketing as a lie detector, penetrating the consumer subconscious to extract objective truth in the form of biodata.

The overall aim of neuromarketing is demonstrated with Renvoisé's comments on his expertise as an applied neuromarketer. He explains: "So what do we do in applied neuromarketing? We look at how neuroscientists tell us about how [a] certain stimulus provide[s] a certain response [*sic*], and can you guess what response we're trying to get from consumers? YES! We want them to say *yes* or *buy*." By claiming that it is possible to create an emotional cocktail to trigger the reptilian brain, Renvoisé's commentary illustrates the reduction of the consumer to the brain as animality metaphor, an animal-machine where mental processes can be controlled by external stimuli and desired behaviours prompted through differential reinforcement. The brain as animality metaphor compares humans to willing subjects in behaviourist experiments such as the conditioning experiments on Pavlov's dogs. In these experiments, animals learn to associate an unconditioned stimulus that triggers a particular reflex response with a new (conditioned) stimulus in order for the new stimulus to trigger the same reflex response. In this sense, the consumer becomes a ready-to-use object that can be conditioned and manipulated by an external stimulus to effect desirable buying behaviours.

Encirclement: Consumer Captivation Within a Target Niche

At this point we begin to see the theme of *encirclement* (or an encircling ring) emerge from the discourse of neuromarketing. The animal's encircling ring (*Umring*) can also be understood as a targeted perceptual space that constrains consumer behaviour depending on consumer responses and likes. Heidegger's notion of encircling ring (sometimes called disinhibiting ring) is informed by Uexküll's concept of *Umwelt*. The first principle of Umwelt theory is this: "all animals, from the simplest to the most complex, are fitted into their unique worlds with equal completeness. A simple world corresponds to a simple animal, a well-articulated world to a complex one."[12] This self-world is a subjective space shaped and

constrained or expanded according to each animal's modes of sense perception. Environmental triggers are capable of affecting the behaviour of organisms within their 'phenomenal world' or 'self-world.' The possibility of disinhibition by an external entity is essential to animality. That the animal will never become aware of what is disinhibiting it as such is also fundamental to animality.

The encircling ring is comparable to Pariser's explication of the online filter bubble where the processes of personalisation "serve up a kind of invisible autopropaganda, indoctrinating us with our own ideas, amplifying our desire for things that are familiar and leaving us oblivious to the dangers lurking in the dark territory of the unknown."[13] When considered against the backdrop of neuromarketing, the concept of a filter bubble can be extended to both the online and offline worlds of neuromarketing as a disciplinary matrix that constructs behaviourally targeted consumer environments calculated according to neurophysiological data.

Encirclement or to encircle [*umringen*] is a central concept for my inquiry into animality and how neuromarketing acts on external triggers to stimulate consumer buying responses. It is this encirclement that opens up the possibility for behaviour where the animal is related to other things, despite the fact that these things will never manifest themselves *as* entities or *as* beings to the animal. Encirclement leads to captivation (*Benommenheit*) which Heidegger considers to be the essence of animality. On his view, the animal is denied the possibility of Dasein's world-forming capacity as a necessary result of its captivation within its own subjective world. In the animal's captivation, the possibility of understanding beings as being, or things as things, is withheld. The animal interacts with its world on instinct and without critical and reflective consciousness. The kind of environment that confines or encircles the animal is capable of affecting behaviour and the subjective world or self-world of the animal.

When applied to the context of neuromarketing, the encircling ring or niche, explains the relationship between our self-worlds as consumers and the public world of neuromarketing. Niche can be viewed as a consumer's behaviourally targeted subjective environment existing in and influenced by the larger world of neuromarketing. Feenberg claims that the idea of niche can be used to illustrate relationships like those between a part of a

machine to the whole machine: "The apparent origin of complex wholes lies in their parts but, paradoxical though it seems, in reality the parts find their origin in the whole to which they belong."[14] This is a useful frame for analysing consumer inter-subjectivities within the larger social world of neuromarketing. Here, the larger social world becomes a cultural environment within which media objects, events, values and assumptions can shape consumer consciousness—a consumer's targeted niche. As Angus notes, "the specific prevailing configuration of this cultural environment is defined by a continuous translation between a plurality of media."[15]

By presenting the relations between a consumer and the world of neuromarketing as a dynamic of targeted consumer niche and social world, the way in which neuromarketing contains and shapes consumer consciousness can be identified. When niche is conceptualised as an offline/online extension of the notion of a filter bubble, it becomes evident how consumers are constrained within a particular way of being-in-the-world that is instrumental to advertising ends and detrimental to the consumer's self-determination, or the potential to create and recreate the self. This manipulated absorption results in the binding of the consumer to a prescribed identity similar to the process of the fixed identity construction process of the filter bubble. In the words of Pariser, "When you enter a filter bubble, you're letting the companies that construct it choose which options you're aware of. … You can get stuck in a static, even narrowing version of yourself—an endless you-loop."[16] This individual subjective world is open for external disruptions of the consumer's capacity to create the self and develop a system of values not set by those who would benefit most from an unreflective and uncritical consumerist way of life.

On Heidegger's view, the encirclement of the animal makes it intrinsically open for the things that can disinhibit or trigger it. This intrinsic self-encirclement (*Sich-Eindringen*) is a bounded environment drawn around the animal in a way that opens up a [metaphorical] sphere (*Umkreis*) in which the things that disinhibit its behaviour can do so in various ways. The ring is a subjective space shaped by each animal's mode of sensory perception and influenced by external triggers. To illustrate, Heidegger speaks of the tick which lives in an intimate relation with another animal—a small life cycle marked by intensities of affective experiences; for instance, the heat of a mammal's body, the textures of its fur, the smell

of its sweat. The tick is only ever open to these experiences and captivated by events that trigger (or disinhibit) behaviours that are specific to it. The tick has a particular mode of captivation towards the elements in its natural environment yet it is not conscious of its captivation. Like other animals, it is caught in a dynamic of being openly drawn to elements in its world while at the same time never able to be exposed to the openness of being itself, or world formation as Dasein is. The tick behaves in the world according to its instinctive drives, a nature which is not fixed in the animal itself but in the relation between the animal and its lifeworld. Heidegger claims that human beings also share this form of captivation towards elements in the world; however, the difference is that human beings are able to recognise their own captivation and interrupt their relationship with it. As Agamben reasons, "the world has become open for man only through the interruption and nihilation of the living being's relationship with its disinhibitor."[17] So unlike the critical and reflective Dasein, holding the potential to escape its bonds, the animal always remains captivated within its own phenomenal world. This chapter is concerned with the claims (or ability) of neuromarketers to bypass the critical and reflective capacity of Dasein in order to captivate and manipulate the unknowing animal in us.

Captivation as the Essence of Animality

Unlike the human being's comportment in the world, animal behaviour is underpinned by instinctive imperatives. Comportment does not simply refer to acts of consciousness but to the everydayness of human activity in general. Animals can only behave whereas humans exist in the world. So how does the animal relate to its environment as behaviour distinguished from human comportment? Heidegger again uses the example of a bee to illustrate how it is instinctive drive that directs the bee's behaviour as a mode of animality:

> In all its instinctual activity the bee is related to its feeding place, to the sun, to the hive, and so forth. Yet this being related to … is *not an apprehending* of these things *as* feeding place, *as* sun or whatever, but rather, one is

> tempted to say, as something else. No, it is *not* an apprehending of something *as something*, as something present at hand. There is no apprehending (*vernehmen*), but only a *behaving* (*benehmen*) here, a driven activity which we must grasp in this way because the possibility of apprehending something as something is *withheld* (*genommen*) from the animal. And it is withheld not merely here and now, but withheld in the sense that such a possibility is 'not given at all.' This possibility is taken away (*benommen*) from the animal, and that is why the animal is not simply unrelated to anything else but rather is taken (*hingenommen*), taken and captivated (*benommen*) by things.[18]

In other words, the bee is unable to reflect on and understand the *as* structure of its environment. For Heidegger, the bee can only be given over to things in this manner because it is fundamentally directed by the essential drive of foraging. It is not because the bee has critical reflection that it can be captivated by what the sun evokes in its behaviour, it is because of instinctive drive. In having the *as* structure withheld from it, the animal is *taken* or *captivated* by things.

Captivation is the essence of the animal as an organism. The captivated animal in its instinct-driven behaviour does not and cannot relate itself to itself (e.g. by knowing itself). Animals also do not react to entities and objects in their presence as neither ready-to-hand nor present-at-hand. To use another of Heidegger's famous examples, although the lizard suns itself on a rock, it cannot understand the rock as a rock. The lizard evidences a way of being-in-the-world similar to the human in that it knows to seek out a place to warm itself when it needs heat; however, it is unable to grasp the properties of its environment and the entities within. As Heidegger would ask: Does the lizard experience the ledge as a ledge? Does the lizard have access to understanding the sun as a sun? On this view, animals are deficient in experiencing the world from a critical perspective—animals are not afforded the expansive access to the world that Dasein possesses. Animals are not Dasein as they always remain captivated within themselves.

Captivation can be situated on a continuum illustrating the cognitive capacities of human beings compared to the animal. The process of captivation can be applied to consumers to highlight how neuromarketing

aims to constrain individuals within targeted market niches, bypassing their capacity for critical reflection and triggering them into desired responses via manipulating instinctive drives and affect. In this respect, captivation can be mapped onto how consumers, as Bauman might put it, are kept "turned in on themselves as pleasure-seeking individuals."[19] Here, the consumer is denied the use of her cognitive capacity by a bypass strategy, informed by enhanced knowledge of brain function to grasp the *as* structure of things. The tactic deliberately aims at nudging the consumer at a level beneath critical awareness, to the point that she cannot identify or understand she is being disinhibited from an external source. In addition, because advertising strategies are conducted at subliminal levels, the consumer remains incapable of knowing that she is being manipulated and coerced, at least until some other distraction demands the investment of her attention. When superimposed onto the context of neuromarketing, the process of captivation is illustrated by the *Zaltman Metaphor Elicitation Technique* (*ZMET*). The goal here is to find a way to limit the consumer's use of the full range of her cognitive capabilities.

Evoking Instincts and Affect

ZMET is a method of questioning aimed at evoking conscious and unconscious thoughts in the consumer through a set of introspective questions. Ideally, *ZMET* is intended to be accompanied by neuroimaging tools; hence the patent *Neuroimaging as a Marketing Tool* which we first encountered in Chap. 4.[20] Two classifications of the patent offer insights into the aims of neuromarketing, specifically in terms of the technique as a surveillance system designed to deliver consumers to advertisers:

- A61B5/16 Devices for psychotechnics; Testing reaction times; Devices for evaluating the psychological state
- G06Q30/02 Marketing, e.g. market research and analysis, surveying, promotions, advertising, buyer profiling, customer management or rewards; Price estimation or determination

One of Nielsen's many patents that seek to analyse brain data in response to stimuli such as identifying emotional responses to sensory inputs, this patent discusses the use of neuroimaging to augment the *Metaphor Elicitation Technique*, where multisensory materials such as images, sounds, tastes and smells are used to inform market research recommendations for advertising campaigns. A central assumption of this patent is that through diagnostic technologies the neuromarketer can come to know the consumer better than the consumer could ever know herself—a recurring assumption in the discourse of neuromarketing. Of course, *knowledge of* is not necessarily the same as the *ability to* influence; however, the aim is also that of influencing. Zaltman and Zaltman claim that while advertisers could gain access to our subconscious and persuade us through the senses (via advertising stimuli), other research methods simply accessed the conscious mind and left unexamined the deep structures that underpin how we understand concepts (e.g. metaphors and symbols).[21] The solution? Patent US 6315569 B1: *Metaphor Elicitation Technique With Physiological Function Monitoring*, originally published in July 1993, as Zaltman's *Metaphor Elicitation Method and Apparatus* (US5436830A) eventually evolving into a *Technique.* The original abstract states:

> A method and apparatus for eliciting customer input to construct advertising/marketing campaigns. The metaphor elicitation technique method and apparatus provides a series of steps on an apparatus for eliciting from a customer the important aspects associated with a particular topic about which a marketing program is to be devised. The customers interact with a file of images which are designed to pictorially represent important sensory aspects of a topic being studied. The images and subsequent graphical maps and related constructs are then used to create an appropriate marketing/advertising campaign for the product or subject matter being studied.[22]

The abstract for the most recent patent offers some insight into the motives (desires/hopes, but not necessarily capability to achieve those ends) of neuromarketing as a technique:

> A process and apparatus for using a metaphor elicitation technique in conjunction with physiological function monitoring to *elicit, organize and analyze data* pertaining to a research topic. The metaphor elicitation technique process and apparatus is improved with the acquisition of data related to a user's physiological functioning. This data provides further insight and understanding which can be used in creating an appropriate marketing campaign for a product … determining the presence of pre-existing biases or beliefs.[23]

There are certain aspects of this technique, such as introspective questions, that require some form of conscious awareness on the part of the consumer in terms of reflecting on and answering questions, and responding to an advertising stimulus with assertions that convey likes, dislikes, preferences and so forth. The end aim of this technique, however, is to readjust consumer attitudes towards *x* by "bringing to a level of conscious awareness those thoughts and feelings that are ordinarily not evident or are not evident in a clear or precise way."[24] One might argue that this process does not seek to simply bypass critical thought; rather, it can be construed as a direct assault on the reflective side of Dasein's capabilities. The technique seeks to evoke and track subconscious structures of understanding the world such as metaphorical associations, memories, affect and instinctive reactions, information that would then be used to design and develop an advertising stimulus to trigger the consumer into a buying response. This stimulus is calibrated to the consumer's neurophysiological attributes as captured by a range of imaging technologies. The combination of *ZMET* and *Neuroimaging as a Marketing Tool* offers an excellent example of how Ellul conceptualises the psycho-social machinery of advertising as a technique designed to manipulate individuals and populations:

> These techniques possess an extraordinary power of persuasion and a remarkable capacity to bring psychic and intellectual pressure to bear. The second category consists of a complex of psychological (and even psychoanalytical) techniques which give access to exact knowledge of the human psyche. It can thus be motivated with considerable confidence in the results.[25]

The implicit goal of the elicitation technique is to captivate consumers with a behaviourally targeted or subliminal advertising stimulus intended to keep us absorbed within ourselves, in our targeted consumer niches, while we simultaneously grasp at an external illusion of a reward system designed as an advertisement that is meaningful enough to trigger a buying response. This form of self-capture resonates with Heidegger's understanding of animal behaviour where behaviour is an intrinsic retention or absorption, where there is no reflection involved. Because of the animal's absorption in itself, it becomes poor in world, captivated within its own distinct perceptual universe and lacking the ability to interpret and articulate the implicit meanings of the entities and environments it encounters.

When applied to neuromarketing, captivation is the result of a subliminal attack on the consumer, aimed at increasing profits for companies. In order to remain competitive advertising must continue to expand alongside capitalism, machinery that history suggests was founded on and perpetuates master/slave relations. These relations as relevant to neuromarketing can be understood in light of Dallas Smythe's conception of the relation between advertising and labour as mind slavery.[26] As capital produces workers, mass media businesses produce audiences and deliver them to advertisers. This process of socio-political, cultural and economic interconnectivity comprises media companies, advertising agencies, businesses, audiences, government and so forth—an assemblage with neuromarketing as the agent of predictive intelligence offering scientifically grounded strategies to maximise advertising effectiveness.

The advertising message informed by the data extracted in the neuromarketing process involves the deployment of predictive and increasingly multisensory advertising messages into the structures of consumer consciousness. This tactic is aimed at sneaking through the "nanosecond lapse before thinking is translated into words,"[27] before the consumer can register she is being targeted subliminally in accordance with her neurophysiological measurements and symbolic associations for meaning-making. In this sense not only is the consumer captivated within herself or turned in on herself, she must also be triggered to enact a desirable buying response—conditioned like one of Pavlov's dogs.

This triggering process (disinhibition) is expressed by authors of the *Neuromarketing for Dummies* online cheat sheet. On their view, while

traditional advertising effectiveness assumed a direct and conscious path from consumers viewing an advertisement to then making a purchase, advances in brain science have mapped out an indirect route that accounts for "nonconscious" processes. As they explain, the sciences of the brain illustrate the various ways we can be influenced subtly in our day-to-day lives: "First, influence brand equity by changing brand attitudes, memory, and intentions toward the brand. Then, allow brand attitudes and associations to impact sales at the point of purchase."[28]

While this might sound easy enough, the reality is that the nudging process requires rather sophisticated technologies that go well beyond what neuromarketers are able to bring to bear in learning about how we process information. It requires a massive stream of expensive research in order to determine which representations and relationships in a 10-20-30-second audio-visual message produces the desired responses within that time period, and at the right time, in order to generate the desired responses in the right segment of the audience population. That said, market research companies are certainly investing in the research and development of more efficient technologies to do just that. Whether or not these techniques work, or can work in the near future, has been taken up by various commentators, some of whom argue that the technologies used do not have the capacity to coerce consumers, or invade the consumer brain. Matt Wall from the Centre for Imaging Science, Hammersmith Hospital, for example, observes of neuromarketing's claims to be able to predict engagement and success that "Any EEG researcher knows this is absolute rubbish, but they do succeed in producing fancy sciencey-looking graphs and results that appear convincing enough for the marketing people they're selling it to."[29] However, given the surge of pervasive neurotechnology patents for brain reading in these past years, and the amount of money being invested into imaging technologies for non-medical purposes, there is cause for alarm. For instance, a report by SharpBrains suggests that Nielsen is the United States' leading patent holder for neurotechnologies with Microsoft, IBM, NASA, the US Army, Lockheed Martin, General Electric and AT&T also in the top 100.[30]

Stealth and Disinhibition

Neuromarketing practitioner Phil Barden claims that the role of marketers is to "influence consumer behaviour, both short- and long-term, in favour of the brands they manage … increase purchase frequency, and turn non-users into users." To capitalise on a subconscious process of consumer decision-making requires that consumers are triggered into desirable buying responses which, according to Barden, means that [neuro]marketers must "increase reward and at the same time decrease pain."[31] These attempts at triggering consumers serve as examples of how Heidegger's animal, captivated within its target niche, could be disinhibited by an external stimulus. This form of captivation is determined by the possible kinds of disinhibiting triggers within the animal's encirclement. Yet, as an animal, it can never identify and understand the nature of what is disinhibiting it *as such*, or that it is being disinhibited at all. The animal's instinctive activity can only be affected by things that bring its instincts into play or by things that have the power to disinhibit its behaviour. The thing that disinhibits the animal allows it to respond to the disinhibition and act within a particular range of instinctive drives "must always in accordance with its essence withdraw itself."[32] For Heidegger, it is because the animal's specific way of being is simply behaviour, and because the thing that disinhibits corresponds to this specific behaviour, the animal is able to be triggered by an external stimulus.

Former chief scientist at Xerox PARC, the late Mark Weiser once said that "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it."[33] When applied to neuromarketing, this invisibility or withdrawal from detection can be likened to the techniques used to trigger the 'animal brain' within us. Weiser goes on to observe that this kind of disappearance is a fundamental consequence of human psychology, not technology: whenever human beings become familiar with something, they cease to be aware of it as an object or even that it stands out in what Heidegger would call a 'horizon'—the background that determines how an object might present itself as ready-to-hand, in the way that it demands our attention (or horizonal awareness). The self-withdrawal of

the thing that disinhibits Heidegger's animal can be translated as the explicit tactics of neuromarketing to target the reptilian brain before the consumer moves from instinctive thought to reflective attentiveness to the world. As Penenberg observes of this process:

> … at the very creation of an unconscious idea, in the wisp of time between the instant your brain receives a stimulus and subconsciously reacts. There, data are unfiltered, uncorrupted by your conscious mind, which hasn't yet had the chance to formulate and deliver a response in words or gestures. During this vital half second, your subconscious mind is free from cultural bias, differences in language and education, and memories.[34]

Disinhibition is a recurrent theme in the discourse of neuromarketing, specifically with regard to general claims that consumers can be triggered with personalised stimulus placed strategically in advertising messages. These advertisements are positioned in a way that tries to evade our horizonal awareness. An example of this is native advertising, where behaviourally targeted messages are so cleanly assimilated into the design and consistent with the behaviour of the platform, that the consumer is often unable to discern advertising content from the media context in which it is placed. In this respect, the advertisement tries to withdraw itself into the source material or the original media, while also trying to connect to consumers at a level beneath conscious awareness. These embedded triggers do not only seek to target the consumer at the level of the reptilian brain, they are designed to harness affective structures, such as moods and emotions, in order to persuade consumers to buy. Mood setting is a primary aim for neuromarketing. As marketing scholar Meryl Gardner claims, "[mood] states are very important to advertisers, because feelings are intrinsically tied to the effectiveness of advertising … the creation of a particular mood may be the goal of advertising."[35]

To target instincts and mood (which as we saw in Chap. 5 are preconscious structures of understanding), content and/or advertisement messages informed by neuromarketing are deployed through various media, such as television, radio, movies, web sites, streaming media, call hold music, smart phone apps, ringtones and so on. A practical example of consumer disinhibition is found in the text/talk of Roger Dooley who

writes about audio branding and neuromarketing. On his blog, he asks: "How can marketers go beyond using audio to communicate benefits (or, even worse, speed read through the legalese of a disclaimer) and incorporate a powerful branding or other marketing message?" Dooley notes that marketers recognise the power that mood setting music has on subliminally influencing consumer buying responses. It is possible, he wonders, to go beyond the obvious? He identifies a neuromarketing study to illustrate the effects of multisensory mood setting:

> In 1998, Adrian North, David Hargreaves, and Jennifer McKendrick ran a test in a British wine shop to determine the role of background music in purchase decisions. For a number of days they piped in French and German music, alternating between the two. The results: on French-music days, the French wine outsold the German wine by a ratio of four to one. On German-music days, German wine outsold the French by a ratio of three to one.[36]

Dooley concludes that "seemingly insignificant factors – even those of which the customer isn't consciously aware – can have a profound impact on customer behaviour." This form of multisensory consumer disinhibition becomes all the more powerful when thinking about how neuromarketing holds the potential to trigger consumers both physiologically and psychologically through emerging technologies of augmented reality. These technologies include bio-sensing wearable technology that allows readers to *feel* books, smart phone apps that can sense and change moods, IoT-VIA systems that can play music to manipulate dispositions or digital scent technology where scents can be emitted remotely through the Internet which could be used for "augmented satiety."[37]

In another example, Neuroco, a market research company in England, conducts neuromarketing experiments for large global corporations including Bridgestone, HewlettPackard (HP) and various others in the food, beverage and cosmetics industries. For one of its campaigns, HP hired Neuroco to assess which images would give a newly developed digital photography advertising campaign the biggest "neurological boost." The firm engages in an array of activities targeting the disinhibition of moods and emotions, including evaluation of the subliminal power of

colours, logos or product features; the mental effects of music or jingles; the power of celebrity endorsers and the most "brain-wave-soothing" designs for store layouts. The company also tests neurological responses to smell and touch.[38]

Also consider a recent patent assigned by Nielsen: *Methods and Apparatus to Identify a Mood of Media* (US20180049688A1/2018).[39] The aim of this patent is to identify emotions and moods evoked by various media, and then to use these various media and personalised advertising stimulus to artificially trigger these emotions and moods. The patent is filed under the following classifications which offer an idea of the purpose of the patent, and the aims of neuromarketing more broadly:

- A61B5/165 Evaluating the state of mind, e.g. depression, anxiety
- G06Q30/0269 Targeted advertisement based on user profile or attribute

Patents using bio- and neuroimaging techniques for market research have moved from simply identifying emotional responses or general sentiment to states of mind or moods such as depression and anxiety. What follows are excerpts from the patent description that illustrate method. The first excerpt states that mood models will be used to recommend goods and/or services such as personalised music:

> [0157] Once the mood model is validated, the example recommendation engine utilizes the mood model for mood identification and/or media recommendation. As disclosed herein, the mood model may be utilized for any number of different purposes. For example, the example mood model may be used to provide consumer music experiences, suggestions of media in association with a brand, provide feedback to musician and/or composers about emotions evoked by media they have created, etc. In some examples, a mood-based music search engine may be provided to enable recommendation of music based on a mood, enable identification of a mood of a user based on the music to which they are listening or have listened to, etc. In some examples, music may be streamed based on the desired mood and/or other user characteristics. In some examples, a mood of a user is identified and media associated with the mood of the user is presented.

The next excerpt states that these mood models will be used to personalise media associated with literature:

> [0158] In some examples, the example recommendation engine recommends media in association with printed literature and/or an electronic book. For example, e-book segments can be identified and emotion-appropriate music can be played to enhance emotion evoking segments of particular pieces of the literature. For example, the text of the e-book may be analyzed to identify a mood evoked by the passage. In some examples, metadata associated with the text is analyzed to identify the mood. In response to such identification, media may be selected to match the identified mood. In some examples, musical features are synchronised to various e-book passages based on emotions evoked by such passages.

The following excerpt states that mood models will be used to provide therapeutic support, which is worrisome in that these market research techniques are being used for health-related purposes, so far without regulation:

> [0159] In some examples, emotion enhancing musical features can be used to provide physiologically and/or neurologically-based therapeutic support. For example, subjects exhibiting hypertension may be presented with media evoking a calm emotion. The calming emotion of the media, in some examples, may calm and/or relax the subject, thereby relieving the symptoms of the hypertension.

It is in this fourth excerpt where the fundamental purpose of the patent emerges: brand enhancement (charitable cause or not):

> [0160] In some examples, the example recommendation engine is used to enhance a brand. The human brain is typically emotionally engaged in charitable acts that correspond to dopamine-serotonin levels. In some examples, a brand may donate to a cause based on a number of listeners to media associated with such cause within a given time period. Listeners may select their favorite cause and listen to media associated with such cause. At particular times, the cause, the brand, and/or a level of donation to the cause may be announced to the user. Users may look forward to particular announcements, thereby causing a corresponding change in the dopamine-serotonin levels of the user.

In this patent, it is clear that Nielsen NeuroFocus understands that the way we are disposed to things in the world is shaped by our moods. Kisiel's translation of *Befindlichkeit* (attunement), *disposedness* to things can also be referred to as a way of being tuned-in to things in the world, and this attunement goes necessarily with Dasein's understanding of what things are.[40] Disposedness is an existential feature of Dasein in that human beings are always-already attuned in the world. In other words, we are always experiencing the world while we are in a particular mood. We have a disposedness towards things in the world, or a moment of felt experience which varies in temporality depending on type of affect (e.g. boredom, anxiety, fear etc.). On Heidegger's view, our mood directs our experience of the world. Various kinds of understanding of the world are grounded in an already existing affective stance towards the world in general.

Moods help us make sense of our world, of ourselves; they inform our understanding of the world. The force of affect exacts a strong pull over the way the brain processes the information that follows. While scientists concur that assessments of long-term economic rewards are processed by the rational brain, perceptions of short-term rewards (impulse buying) are governed by the limbic system, it is the 'reptilian' part of the lower brain where our emotions are processed. Although we experience the world first through affect, these affective states also begin generally as pre-conscious activity, and it is this temporal activity that neuromarketers are trying to exploit. As marketers agree, when it comes to the sales pitch, moods and emotions happen first. In the context of neuromarketing, the consumer is targeted and triggered by an advertising stimulus that attunes them according to affect, or as the above patent suggest, according to mood states.

The patent also seems to understand that emotional contagion can be used across a variety of media. For instance, a Facebook study, *Experimental evidence of massive-scale emotional contagion through social networks*, found that "people transfer positive and negative moods and emotions to others." Similarly, longer-lasting moods (e.g. depression, happiness) can also be transferred through networks.[41] Such interactions between the consumer in her targeted niche and the public 'we-world' of neuromarketing presented as a website or an IoT ecosystem (i.e. the cultural environment

within which media objects, events, values and assumptions can shape audience consciousness) is limited theoretically to that of instinctive reflexivity. Being triggered into mood states that respond to multisensory cues deployed by an "external recommendation engine" can be related to the animal's captivation. Like the animal, the consumer is turned into herself by being nudged into happiness, pleasure, fear or other mood states. Furthermore, the possibility of grasping the marketing trigger as a brand enhancement technique is withheld from the consumer, like a magician through misdirection. Because of this inability to understand, interpret and grasp the *as* structure, the consumer, like Heidegger's animal, is unable to disclose the undisconcealed as undisconcealed, thus becoming poor in world if we grant that neuromarketers actually have the ability to design communications that activate the animal (reptilian) brain in us.

Advances in media technologies that can be incorporated into an evolved form of subliminal advertising give new meaning to Agamben's observations on captivation as "a sort of fundamental *Stimmung* in which the animal does not open itself, as does Dasein, in a world, yet is nevertheless ecstatically drawn outside of itself in an exposure which disrupts it in its every fiber."[42] In the case of neuromarketing, consumers are drawn further into themselves, into their targeted consumer niches or their filter bubbles, and simultaneously drawn outside themselves by the multisensory advertising spectacle of a digital network. This process is an example of consumer dataveillance strategies, in that the human being is constructed as what Murakami and Ball would call a "desirous networked body, whose desires and connections are constantly monitored and encoded … becoming exploited as well as exhilarated." These moves extend the reach of marketing from the biopolitics of simply managing bodies to include the neuropolitics of also managing brains.[43]

Here we see that the aim of neuromarketing is to capture and captivate a consumer through exploitation of their moods: instrumental treatment of human beings for the sake of advertising profit. Without consideration for the well-being of the consumer, neuromarketing seeks to decode consumer reflexive responses or mood states through interpretation of experimental data; design and develop advertising stimuli according to behaviourally and biometrically calibrated strategies; aug-

ment moods (e.g. anxiety, fear, pleasure); and trigger the targeted consumer to behave in desirable ways. With the advent of sophisticated neurophysiological technologies as well as multisensory technologies of augmented reality (all of which can enhance the immersive real-world/computer experience had by the consumer), neuromarketing presents a potential threat to manipulating consumer consciousness. In this capacity, the consumer becomes an organic trigger responsive relation to external forces reduced to the metaphor of brain as animality.

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8

World-Forming: The Agentic Consumer

We now move from Heidegger's second thesis of the *animality* of the animal (the animal is poor in world) to the idea of the human being as world-forming. On this conception, the consumer can be understood in line with Heidegger's vision of Dasein as an entity with the capacity for critical resistance to external manipulations. A similar conception of the consumer is found widely in predominantly academic settings, including studies of consumer neuroscience and neuroeconomics. It is the capacity for critical reflection, synthesis and interpretation that neuromarketing seeks to bypass in its quest to trigger consumer buying responses at a level beneath conscious awareness. In keeping with human beings as world-forming, the science underpinning the construction of consumers in these settings rests on two preliminary formulations of the consumer, one emerging from cognitive neurosciences influenced primarily by Antonio Damasio, the second emerging from behavioural economics, primarily influenced by the work of Daniel Kahneman and Amos Tverksy. This chapter considers these two theoretical frameworks in order to make sense of how certain neuromarketing practitioners understand consumers as world-forming.

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While Kahneman's System 1 and System 2 formulation of the brain certainly has had an impact on the way neuromarketing approaches human thinking and decision-making processes, it is generally agreed that Damasio's work on somatic markers has been most influential when it comes to the way in which neuromarketing conceives of human beings on the occasions they are conceiving of human beings as 'embodied' minds. As such, this chapter begins with an explication of Damasio's conception of the tripartite brain before moving to the System 1 and System 2 model of decision-making. This is followed by an explication of Dasein as world-forming and a discussion about how while certain elements of neuromarketing see the consumer as an agentic individual, the discourse nevertheless seems to return to some form or another of instrumentalism when practitioners begin to speak about how to 'treat' consumers. In other words, while neuromarketing practitioners might understand consumers as agentic, the discourse comprises representations that depict consumers as energy resources to be exploited for material gain.

World Formation

To continue with his philosophical inquiry into what the world is, and how one might speak of what it means to be in the world in general, Heidegger moves to his final thesis of man as world-forming to illustrate what is meant by *world formation*. What he arrives at is that a significant difference between human beings and animals emerges from how beings are manifested as such, of beings as beings, or something as something, which is a possibility that is fundamentally closed to the animal. The essence of animality is captivation, and a fundamental moment of captivation is the inability of the animal to grasp the *as* structure of other entities it encounters in the world. The inability to grasp the *as* structure of things is key for highlighting the ontological difference between the consumer as world-forming Dasein and the consumer as a poor in world animal—both are in the same person, but limited activation of particular cognitive/affective networks means they respond primarily as animal.

The *as* of interpretation comprises the structure of the explicitness of something understood; it constitutes interpretation. For example, it is only

because I understand my dog as part of the subspecies *Canis lupus familiaris* that I am able to draw broad theoretical distinctions between how I am viewing it and the dog itself. Interpretation is a fundamental structure of Dasein's being-in-the-world in that it does not exist only in our thoughts or experiences, it also plays out in our daily practices. The *as* structure of interpretation is at the ground of the intelligibility of entities as entities, although the understanding is not always explicit. There is also a social dimension to this mode of interpretation. Simply, Dasein can never escape the influence of the social world and can never understand itself independently from the norms that give shape to the everyday world.

Only when things as things are made manifest to us do we enter into a relation with things in the world as one that comprises the character of *attending to*, of either *letting it be* or *not letting it be*. The relation to an entity governed by this letting be or not letting be is the stance of comportment [*Verhalten*]: our practical 'dealing' [*Umgang*] with things based on an intentional directedness. As Dreyfus observes, comportment has us directed-towards an object or entity, a "more fundamental involvement of people with things than the traditional relation between self-referential mental content and objects outside the mind."[1] Comportment is adaptable and copes with situations in various ways where the individual responds to the world on the basis of a reservoir of past experiences. Considered in Chap. 5, this kind of stance in the world includes behaviours like "producing something, taking care of and tending to something, making use of something, giving something up and letting it go, undertaking, accomplishing, evincing, asking, considering, discussing, determining." When things become difficult the individual switches to purposeful subject/object intentionality.[2]

Applying this framework to neuromarketing, it is only because the consumer understands an advertising stimulus as a persuasive advertising strategy that she is able to see the text for what it is, and able to interpret it critically, reflectively and modify or even negate its influence. The significant characteristics of the phenomenon of world and, as a result, world formation is threefold: (1) beings made manifest; (2) the *as* structure; (3) the relation to beings as letting be and not letting be, or a comportment towards (selfhood). For Heidegger none of these ways of being can be ascribed to animality or life in general. Animal behaviour

is underpinned by instinctive drives in opposition to human comportment as action. Comportment does not simply refer to acts of consciousness but to the everydayness of human activity. Humans exist in the world reflectively whereas animals only behave instinctively in their captivation:

> The specific manner in which man *is* we shall call *comportment* and the specific manner in which animal *is* we shall call *behaviour*. … The behaviour of the animal is not a *doing and acting,* as in human comportment, but a *driven performing* [*Treiben*]. In saying this we mean to suggest that an instinctual driveness, as it were, characterizes all such animal performance.[3]

We have seen in previous chapters that some neuromarketing practitioners actively reduce consumers to automata or to animals; others do not view consumers as such; rather they view consumers as agentic but seek to manipulate 'below the radar.' As the authors of *Neuromarketing in Action: How to Talk and Sell to the Brain* recommend, targeting consumers at a subliminal level may "trigger a better imitation reflex" in order for that individual to buy a product. Although these practitioners might refer to focusing attention on the reptilian brain, they also grant that consumers are not just animals. As such, an advertising strategy must be beyond rebuke and not only design advertising materials that target consumers as unthinking beings:

> The customer's subconscious is giving you the all-clear. Its decision is positive: it buys. However, customers are not just animals. They are very intelligent, and sometimes rational. They have signed up and chosen your offer, but they can return it. They may not purchase again from your stores. They leave your store and come to their senses. Your ultimate weapon for total satisfaction is to be irreproachable.[4]

While this more layered understanding is specifically evidenced in academic applications, it also emerges in a range of practitioner settings that use neurophysiological technologies to make sense of human decision-making processes, or cognitive and emotional responses to advertising stimuli. As more and more companies bring on board neuroscience experts, the representation of consumers becomes more

sophisticated. Recruitment of academics not only provides deeper understandings of human decision-making processes, it also brings expertise in the development and use of scalable physiological and brainwave measurement technology. For example, EmSense, one of the early participants in the neuromarketing space, appointed to its science advisory board notable academics such as Michael Gazzaniga, Read Montague, John Polich and Thomas Ramsøy. Gazzaniga in particular published the *Handbook of Cognitive Neuroscience*. He has also authored countless other works about neuroscience and psychology. Montague is a leading expert on neuroeconomics and neuroimaging. John Polich is an expert in brainwave activity, and Ramsøy a neurobiologist.[5]

Although EmSense shut its doors some years ago, academics have continued to contribute their expertise to market research endeavours. For instance, its science advisory board member, Thomas Ramsøy, has since moved on to become the founder and CEO of Neurons Inc., a self-identified 'applied neuroscience' company. Upon review of his scholarly research outputs, it is clear that he understands human beings as complex organisms, and human cognitive and emotional behaviours as framed by social contexts[6] which is informed by the work of Damasio. However, he is also explicit about his aims to reveal the underlying mechanisms that drive these cognitive and emotional processes. Using neurophysiological and psychological approaches, Ramsøy is fixed on explicating the neurobiological underpinnings of behavioural economic practices. Elsewhere, he explores neuroscience as a path to understanding the complex underlying processes implicated in making brand decisions, with his research often informed by prior work in behavioural and consumer psychology.[7]

Somatic Markers: A Neural Theory of Economic Decision-Making

Damasio's somatic marker hypothesis is a neural theory which holds that emotions are intimately connected to reason; it offers a systems-level neuroanatomical and cognitive framework for decision-making and how it is influenced by affective states. Damasio's main argument is that reason,

emotions and feelings are intertwined. Although emotions are not intentional or cognitive, they are also not separate from cognitive processes. Central to the theory is that decision-making is influenced by emotion-related signals (somatic markers) that emerge in bioregulatory processes, including those markers that express themselves in emotions and feelings. This influence can occur at various levels of operation either consciously or non-consciously, and they can bias behaviour when a person is not aware of them.[8] Reason, then, is dependent on several brain systems working together across a range of levels of neuronal organisation and not on a single brain centre. Both 'high-level' and 'low-level' brain regions (from the pre-frontal cortices to the hypothalamus and brain stem) communicate with one another in the act of reason:

> The lower levels in the neural edifice of reason are the same ones that regulate the processing of emotions and feelings, along with the body functions necessary for an organism's survival. In turn, these lower levels maintain direct and mutual relationships with virtually every bodily organ, thus placing the body directly within the chain of operations that generate the highest reaches of reasoning, decision making, and, by extension, social behavior and creativity. Emotion, feeling, and biological regulation all play a role in human reason.[9]

The lowly orders of our organism are in the loop of high reason. On this view, the body as represented in the brain may comprise an important frame of reference for the neurological processes we experience as the mind which exists in and for an integrated organism.[10] This would not be the case if not for the interplay of body and brain during evolution, during individual development and the present moment. Here, the mind had to be first about the body or it could not have been at all. On the basis of the body as a ground of reference, the mind can then be about a variety of other things that are real and imaginary:

1. The human brain and the rest of the body constitute an indissociable organism, integrated by means of mutually interactive biochemical and neural regulatory circuits (including endocrine, immune and automatic neural components);

2. The organism interacts with the environment as an ensemble; the interaction is neither of the body alone or of the brain alone;
3. The physiological operations that we call mind are derived from the structural and functional ensemble rather than from the brain alone: mental phenomena can be fully understood only in the context of an organism's interacting in an environment. That the environment is, in part, a product of the organism's activity itself, merely underscores the complexity of the interaction we must take into account.[11]

In another work, Damasio presents three levels of 'self' that build upon each preceding level to form a holistic sense of organism as self. This theorising is central to the research conducted and presented by neuromarketing practitioners. First there is the proto-self: the most basic level is an organism's sense of physicality derived from non-conscious neural patterns that map the organism's physical structures. Core self: affective state (at a fundamental physiological level) of which the organism may be conscious. This level of self arises from interactions between proto-self and objects in the environment. This is the "background feeling" of life itself—a sense of being something, an awareness of being alive. There is also extended (or autobiographical) self: conscious understanding of self, contingent on substantive memory capacity and reasoning ability.[12]

Innerscope is an example of a neuromarketing company headed by scientists with great expertise and tempered perspectives on the benefits and limitations of using neuroscience for advertising purposes.[13] Founded in 2006 by Carl Marci, a neuroscientist and physician, and Brian Levine who had worked at the MIT Media Lab, the company uses neurophysiological technologies to explore the subconscious and biological connections between consumers and media content. Innerscope is well known for its work on detecting consumer responses to Super Bowl advertisements. The company also worked with Campbell Soup to redesign displays and packaging that aimed to better connect with customers' affective states. Evidencing the view that consumer decision-making is complex, Marci explains that "We are wired to connect, but that connection system is not very discriminating. So while we connect with each other in powerful ways, we also connect with characters on screens and in books, and, we found, we also connect with brands, products, and services." Further,

making an observation on the result of a study conducted with Temple University, Marci notes that "what was really interesting was the high levels of activity in the area known as the precuneus—involved in feelings of self-consciousness—where it is believed that we keep our identity. The really powerful ads generated a heightened sense of personal identification,"[14] thereby representing consumers as having an autobiographical self: the conscious understanding of self that is attached to memory capacity and the ability to reason.[15] A discursive example of the overall goal of neuromarketing which is the manipulation of consumer decision-making, Marci states: "The Holy Grail would be, which measures have value and in what combination."[16] Innerscope was eventually acquired by Nielsen in 2015, and is now Nielsen Consumer Neuroscience with Marci, also a part-time Assistant Professor of Psychiatry at Harvard Medical School, as Chief Neuroscientist.

In other instances, the two-system model emerges in the discourse. Some companies tend to focus on one or the other. However, as companies move away from being comprised of marketing specialists who are limited in their capacity to interpret scientific material to experts in cognitive neuroscience and neurobiology, for example, we begin to see a nuanced exploration that uses both models to make sense of the embodied individual.

Fast and Slow Systems of Thinking

Human beings engage with their environments through an integration of implicit and explicit knowledges to be used for decision-making. Researchers in psychology and neuroscience have in the past proposed models for decision-making, targeting both functional-level processes of decision-making and their underlying mechanisms. In his influential work, *Thinking Fast and Slow*, Kahneman claims there is a division between two primary modes of human thinking. Although he did not invent the System 1/ 2 model, he certainly popularised the terminology as an overarching framework for making sense of brain processes and how decision-making is influenced by reason, emotion and instincts.

System 1 is a fast system, responsible for intuitive decisions derived from affective states, images and associative memory. System 2 is a slow and more rational system, observing the output of System 1 and at times intervening. Human beings have had to adapt to both fast-paced and slow-paced environments. As an evolutionary device, we required rapid, heuristic decision-making capacities when there was no time to deliberate, such as in the case of immediate threats. We also, however, required a slower system for long-term planning which was suited to less chaotic situations, such as organising a party. The two thinking processes work in tandem to address conflicting demands, a collaborative endeavour that occurs through cultural enforcements or as a result of our fundamental evolutionary structure.

Attention and effort are fundamental to these processes. Effort refers to what an individual is doing, rather than what is happening to her. Attention is comprised of a range of factors such as selective and focal attention. Selective attention refers to the purposeful direction of effort to a specific mental task. Focal attention to an object increases the sensitivity attached to matters related to that particular object.[17] Attention and effort are key components of the dual process model: System 1 continuously monitors what is occurring both inside and outside the brain. It then generates evaluations of different dimensions of the situation with minimal or no effort. System 2 either receives questions from System 1 or generates them, then directs attention and searches one's associative memory to locate pertinent answers. The pupils of the eyes are sensitive indicators and useful measures of mental effort[18] which explains the use of eye tracking in both psychology and neuromarketing practices.

Priming is the psychological mechanism through which System 1 informs the way we think and our subsequent actions. Priming can be viewed as System 1's alternative to persuasive messaging. Where persuasion demands that individuals give their attention and effort to a message, evaluate the message as truthful and reasonable, and retain it, priming does not require any of these actions. Rather, it is based on the cognitive process of associative activation: the brain's capacity to automatically and quickly trigger associated ideas, concepts and values when an idea emerges in the mind. For example, when the idea of 'home' is evoked, the brain immediately activates a range of things we associate with our homes. Priming does

not follow the rules of logic that govern System 2 processes. Instead, it makes certain thoughts or ideas more accessible to downstream mental processes over other thoughts and ideas.

Priming is central to advertising campaigns, evident in the symbolic evocation through use of deep metaphors which are emotional and subconscious drivers of behaviour, they are the way we structure and make sense of the world at a subconscious level.[19] For example, when the metaphor of 'connection' is evoked, a range of associations related to feelings of belonging or exclusion come into mind.

The dual process model has often been used to justify why traditional approaches to market research are no longer useful and why neuromarketing ought to be used as a replacement. Prior to the development of these hypotheses, market research was informed by a System 2 view of the brain. The assumption was that consumers were able to access their mental states and be able to explain what they liked and why they chose particular things over others. However, behavioural psychology has generated a vast scholarship that counters this assumption, arguing that consumers regularly rely on System 1 processes of which they are not conscious. These subconscious thinking processes bias consumer behaviours in ways that do not align with rules of logic.

In short, consumers are complex creatures whose behaviours and fundamental structures of understanding are shaped by both evolutionary and socio-cultural factors. In this capacity, human beings are seen as embodied cognitive organisms. Despite these sophisticated understandings of consumers as agentic and embodied beings, companies such as Neurons Inc. remain focused on targeting the consumer at a level of understanding where she is not reflectively engaged with the world around her, where she is not comported towards things in a way that allows her to understand them *as* things. Ramsøy, for example, is quite explicit in deploying neuroscience into the commercial sector for competitive advantage in that it "allows you to peek into other people's heads. To measure things they are not able to verbalise very well," and to "use the latest tools and insights from neuroscience *to measure, understand and affect human decision making*"[20] (emphasis added).

Affecting human decision-making can be seen as comparable to subliminal advertising strategies. Neuromarketing builds on these strategies

by incorporating new theoretical frameworks and innovative technologies that have the capacity to monitor consumer responses to advertising stimulus at a level of intrusion that was not possible in the past. As neuromarketing proponent and researcher from the IE Business School Roberto Álvarez explains, neuromarketing seeks to establish "a link between the emotional reactions in the brain to stimuli or tasks."[21] Using neurophysiological technologies, the five senses are targeted, and smell, colours, sounds, textures and temperatures of advertising stimuli are calibrated until neuromarketers find the "*perfect brain reaction and response* to both the adequate and the ideal" (emphasis added).

Autopilot Coping Versus Interpretive Understanding

Although Heidegger bases much of his explications of understanding the world on the act of using tools and equipment such as hammers (his most well-known example), it is reasonable to extend the concept of mindless coping as a way of approaching an advertising stimulus as a tool of persuasion. An example taken from the discourse of neuromarketing to illustrate the process of Dasein coping with the world begins with the claim made by Zaltman and Zaltman that 95% of the time our minds are working on 'autopilot.' Here, most of our everyday decisions are arrived at with limited conscious effort and involvement.[22]

When applied to neuromarketing, autopilot can be used as vernacular for when consumers are not explicitly aware of the entities they encounter in the world; instead, they are engaged with the world on a level where they are acting from habit and instinct without displaying the capacity to critically interpret, reflect on and thematise the entities they encounter. For instance, it can be argued that when a consumer is in a state of mindless coping and watching advertising stimuli presented by a brain focus group, the consumer might respond to an image of food by salivating, maybe the stomach rumbles, or the eyes linger on an image of piping hot stew, yet the consumer is reacting to an external stimulus according to subconscious responses rather than with the critical capacity to analyse

how the message's individual parts have been especially calibrated to engage a particular demographic or a particular behavioural category.

Critical reflection becomes necessary in situations where our ordinary way of coping with the world is not sufficient, or when something ceases to run smoothly. When things are not working smoothly, we must pay explicit attention to them. The world Dasein has already understood now comes to be interpreted, the available comes explicitly into our attention and we then seek to understand in a new way, as a form of interpretation (*Auslegung*). Unlike everyday coping, interpretation includes explicit cognitive processes such as reflection and synthesis. It is this critical capacity that neuromarketing aims to bypass in order to trigger consumptive action at a level beneath conscious awareness.

In *Being and Time*, Heidegger describes interpretation as "the working out (*Ausarbeiten*) and appropriation (*Zueignen*) of an understanding." Because Dasein's understanding can project itself onto other entities, or Dasein itself, there are various kinds of interpretation resulting, including interpretations of the world and interpretations of the self.[23] Interpretation, on this view, refers to understanding made explicit. If understanding is *knowing how,* interpretation is a form of *showing how.* Understanding precedes and conditions interpretation. As Carman observes: "Interpretation is no mere contingent or inessential modification of understanding; it is rather the explicit realisation or manifestation of the content and substance of understanding itself."[24] The projective nature of understanding allows us to make distinctions between meaningful elements in the context of significance.

The distinction between understanding and interpretation is the difference between *what* we understand and *how* we understand it with the aid of theory or faith. The *as* structure is fundamental to the nature of interpretation and presupposes the fore-structure of understanding, which consists of three hermeneutic conditions: 'fore-having' (*Vorhabe*), 'foresight' (*Vorsicht*) and 'fore-conception' (*Vorgriff*). These three elements can be illustrated on a continuum showing Dasein's gradual transition from tacit understanding to explicit interpretation. Interpretation involves practical norms at two distinct levels: First, in practical intelligibility (the *how* being made explicit itself), and second in the comportment towards something that results in making its nature explicit. As we have seen with examples that aim to sneak through the nanosecond lapse, the language of neuromarketing fixes the consumer in the groove of fore-having as the

ideal way of *being-toward* an advertising stimulus, and not moving out of this space until the advertising message has had enough time to trigger consumer instincts. Fore-having refers to the background understanding we have prior to explicitation (interpreting something as something).

Understanding, according to Dreyfus, "consists in *using as* or *treating as,* which is normative and aspectual but typically tacit and unthematic (*available*). Interpretation, by contrast, consists in *taking as* or *seeing as* (in a broad, nonliteral sense of 'seeing')."[25] In *Being and Time*, Heidegger addresses two different ways of being: availability [*Zuhandenheit*] and occurrentness [*Vorhandenheit*]. The process of understanding things moves from seeing things/entities as being *available* to *unavailable* to seeing them as *occurrent*. Occurrence is categorised as three moments: Holding the binding character of things towards oneself, completion, and unveiling the *being* of beings. This fundamental occurrence belongs essentially to world formation. To explain: practical understanding (unreflective, everyday, projective activity) becomes explicit in the practical deliberation that occurs in breakdown or disturbance. What becomes thematic can be articulated in statements such as, 'this saucepan is made of cast iron.' What is laid out as *unavailable* (in interpretation) can be selectively thematised as *occurrent* by means of assertions attaching predicates to subjects such as 'this saucepan was made in France.' Interpretation gives richness to the way we understand things by working out the possibilities projected in understanding.

Regardless of whether neuromarketing presents consumers as brains as animality or world-forming individuals, it nevertheless seeks to bypass our ability to identify and understand other entities as occurrent. To explain, first we—as Dasein—normally deal with equipment that obtains intelligibility from its relation to things such as other equipment, individual and group roles, and social goals and norms (contextual). Heidegger describes this equipmental way of being-in-the-world as *availability*. Second, when equipment breaks down, for example, we experience entities as independent from our coping practices. Heidegger refers to this mode of being-in-the-world as *occurrentness*. Dreyfus writes:

> Occurrent beings are revealed when Dasein takes a detached attitude towards things and decontextualizes them - in Heidegger's terms, deworlds them. Then things show up as independent of human purposes and even of human

> existence … deworlding takes place in two stages. First we use skills and instruments to decontextualize things and their properties, which then appear as meaningless objects, colors, shapes, sounds, etc. … We then invent theories in which the occurrent data are taken as evidence for quasars and quarks and other entities we cannot directly experience.[26]

Occurrent beings are revealed in both breakdown and when we take a detached stance towards things to decontextualise them. In this detached stance, we encounter occurrent entities as substances that have particular properties. For instance, if a consumer were to take a detached stance to an advertising stimulus, the consumer would have the capacity to comprehend its properties, such as how the advertisement is constructed, what it is aiming to do, whether or not it is targeting the consumer at a level that appeals to the emotions and so on. The ability to deworld (or decontextualise and theorise) comes into play when we consider a fundamental difference between how Dasein can access a world and how the animal is poor in world in terms of lacking access to the nature of the entities encountered in the world. Dasein's ability to deworld is one facet of thinking that neuromarketing seeks to negate in its efforts to influence consumers through more instinct-driven levels of action. The intention and act of bypassing can be seen as a statement about the possibility of success, an expanded ability, enabled by the insights derived from brain scans, that can allow neuromarketers to circumvent the distracting reflective assessments that are common to a detached stance.

Kenning and Linzmajer support the use of consumer neuroscience in market research, noting it is a "win–win situation" for consumers and companies. On their view, neuromarketing can "lead to 'objective' results, so that researchers can hope to gain specific new insights into unconscious and automatic processes that influence human behaviour."[27] This scientific reduction constructs the consumer as fundamentally driven by responses that lie beneath their conscious awareness. The discourse suggests that neuromarketing practitioners seek to engage consumers at a level where they cannot understand entities (i.e. advertising stimuli) as occurrent. This is particularly evident in the following example, a patent that comprises the priming of consumers.

Developing Neurophysiologically Effective Advertising

As we saw previously, priming is an implicit memory effect where exposure to a particular stimulus influences response to a subsequent stimulus: subtle cues to the subconscious mind can change the behaviour of a subject. An example of this (and the intent of neuromarketing) is illustrated by a patent originally filed by NeuroFocus, now assigned to Nielsen: *Personalized content delivery using neuro-response priming data* (US20090083129A1).[28] The patent is for a system that can evaluate source materials, including videos, imagery, web pages, text and so forth in order to identify the priming characteristics attached to the source materials. The system is also able to collect user preferences, including interests, purchase history and location data. The priming factors and user characteristics are compiled to obtain blended attributes. A product attribute is a characteristic of a product thought to appeal to customers. For example, feature attributes for a pair of sunglasses might be *status* and *cool* for an individual who desires to be seen by peers and colleagues as fashion forward. Priming effects on product evaluations are more likely to emerge when featured product attributes are psychological rather than functional.[29]

Customer attributes such as user preferences and interests are similar to classifications in that attribute labels apply to behavioural data. These attributes are correlated with stimulus material attributes to intelligently select stimulus material (e.g. marketing, entertainment, informational materials) to be introduced into the source material. The stimulus material includes commercials, brand images, magazine advertisements, movies, and can even involve particular tastes, smells, textures and/or sounds. The stimulus material may be embedded in either real-time or near real-time into the source material for delivery to a consumer through devices such as televisions, cable consoles, computers and monitors, projection systems, display devices, speakers, smart phones and tactile surfaces.

Priming an attribute relevant to the consumer increases the likelihood that this attribute will be considered when the consumer is interpreting advertising stimulus, thereby determining the effectiveness of the advertising

strategy. The attributes placed in advertising messages increase the effectiveness of the context to influence the way consumers process information. As Dooley states, "this is what most advertising and sales techniques attempt to do, i.e., enhance the beliefs or mood of the target so that the ultimate sales pitch is most effective." The priming system patent is filed under the following classifications which offer insights into the intent of the technique, specifically the identification and overall manipulation of psychological states:

- G06Q30/0201 Market data gathering, market analysis or market modelling
- G06Q30/02 Marketing, e.g. market research and analysis, surveying, promotions, advertising, buyer profiling, customer management or rewards; Price estimation or determination
- A61B5/16 Devices for psychotechnics; Testing reaction times; Devices for evaluating the psychological state

The justification for the patent is that conventional systems for delivering personalised content are limited, and are subject to semantic, syntactic, metaphorical, cultural and interpretive errors. As such, techniques using neuro-response priming data and user preferences have the capacity to more precisely personalise content delivery. Data collection devices include neurophysiological measurement technologies such as EEG (electroencephalography) to record electrical activity of the brain, EKG (electrocardiogram) to measure electrical activity and collect data on the health of the heart; EOG (electrooculography) to record eye movements; facial emotion encoding devices; galvanic skin response and reaction time devices. Neuro-response data comprise information acquired from the central nervous system, autonomic nervous system and effector data. Data are broken down according to particular demographics:

> [0060] In particular embodiments, a subject attribute data model includes a subject name and/or identifier, contact information, and demographic attributes that may be useful for review of neurological and neuro-physiological data. Some examples of pertinent demographic attributes include marriage status, employment status, occupation, household income, household size and composition, ethnicity, geographic location, sex, race.

It is clear that these data will be used for classification and segmentation given the nature of identifiers: name, contact information and demographic attributes are viewed as potentially useful for review of neurophysiological data. Examples of "pertinent" demographic attributes include marital status, employment status, occupation, household income, household size and composition, ethnicity, geographic location, sex and race. Other fields such as shopping, entertainment and financial preferences may also be included.

As commentators have observed, firms are no longer creating a product for a segment but creating segments for a product. In this capacity, advertising and segmentation have become intimately connected, and ethical concerns raised about advertising practices are also attached to the process of segmentation. Segments emerging from collected data are thought to "have an objective reality."[30] Population segments identified through brain images and associated biometric analytics are often grafted to classificatory markers that then serve to establish and perpetuate negative stereotypes about those groups.

A potential outcome of this process is statistical discrimination, where computerised analysis of data is used as intelligence to inform judgements about selection of advertising strategies. In the case of this patent, the consumer's biometric and neurological activity is mined for behavioural data that can then be used to develop and implement the right advertising message for that consumer type. The overall effect of this process is that it potentially promises rewards and benefits to certain individuals and excludes those who do not conform to codes and expectation. In this mode of consumer surveillance, already marginalised groups may be further differentially impacted by the discriminatory practices embedded in the system's logics. This is a well-established point in surveillance studies.[31] As Gandy observes: "Statistical discrimination enabled by sophisticated analytics contributes to the cumulative disadvantage that weighs down, isolates, excludes, and ultimately widens the gaps between those at the top, and nearly everyone else."[32]

Discriminatory actions against certain groups on the basis of predictions about the kinds of behavioural responses to opportunities and challenges are treated as rational because of the trust placed on normalised inferential statistics. Also occurring is the expansion of segmentation

beyond the level of predictions about responses to stimuli used to develop prescriptive advertising strategies more likely to reach neuromarketing aims. Critics have highlighted the challenges associated with depending on statistical models developed and assessed through analysis of big data in ways that turn this information into something that looks like knowledge when in fact it is not.[33]

Furthermore, insights derived from these research studies do not necessarily generalise across population segments given research studies are being conducted on relatively small convenience samples. The assumptions made about the representativeness of these samples have been based traditionally on the randomness with which they have been drawn from target demographics. However, various factors affect the accuracy of the representativeness of these samples, such as those that systematically exclude some members of a population from being included in the sample and failures to recruit and retain minority research subjects.[34] Using demographic markers and cognitive and emotional responses to various stimulus materials, "neurologically effective advertising" is selected for presentation to the targeted segments, and mined information is used to develop stimulus content "suited for particular levels of priming and resonance." This patented system works on two levels: cognitive and affective priming.

Affective priming is where individuals and groups subconsciously generate emotional responses to context or source material (e.g. smart phone app) where the advertising message appears. These context-generated responses can influence judgements. Affective priming is manipulated by varying the affective tone of the source material so that it might elicit positive or negative emotions. Studies in psychology have shown that affective reactions can be automatically triggered by particular stimulus material, and these triggered affective intensities influence consumer attitudes and subsequent judgements about the advertised product. These stimuli aim to trigger consumers at a level beneath conscious awareness, where instincts and emotions prevail. Studies have also shown that advertisements using emotion-based messages are better able to influence segment-based membership or create segments altogether for product purchase, attesting to the power that neuromarketing has when it focuses on affective (or pre-cognitive) priming. Furthermore, if priming is largely occurring at an affective level over a cognitive level it becomes a challenge

to see how cognition might perhaps prevent the advertising strategy from working. Here, 'working' does not simply refer to persuasion to purchase but also to the construction of social value groups and the reformulation of personality traits.[35]

Cognitive priming works at a level where the consumer is drawing from a reservoir of memory, values, beliefs and involves more explicit interpretive processes. While the consumer's affective reactions are targeted, this mode of priming also relies on the consumer's ability to retrieve narrative experiences. This aspect, however, makes the advertising experience more difficult to predict in that an advertisement might contain product information that can be interpreted in different ways, exemplifying Hall's encoding/decoding model of communication. Here, audiences are presented with messages that are interpreted in various ways depending on cultural and economic backgrounds. The ideas represented in the message are reconstructed through a process of assigning meanings to symbols, and by interpreting the advertising message as a whole.

The capacity to decode messages relies on an individual's personal experiences and social context. Successful communication occurs when the advertising message is received and understood in the way it was intended.[36] The impact of the advertising context on brand evaluation would depend on the attribute primed or triggered by the context—interpretation of information often depends on the particular knowledge structures that are currently active and meaningful to the audience. Active concepts and knowledges direct selective attention (or attunement) to particular aspects of a stimulus and are likely to be used in subsequent interpretations. Highly accessible attributes are more likely to be used in interpreting information about a product. Given that the accessibility of attributes shapes interpretations of product information, it becomes important to identify the determinants of attribute accessibility. When the advertising context is embedded with a particular attribute (e.g. when a smart phone app has an image or a sound associated with the attribute), the attribute is likely to become accessible. As a result, that attribute is also likely to be used in decision-making processes related to the advertised product.

Priming attempts to target System 1 where judgements are formed quickly without critical deliberation. However, the language of this patent

also implicitly represents consumers as world-forming and not simply unreflective beings in that priming works on other levels: that of unreflective coping as well as a level that comprises the autobiographical self where understanding emerges more explicitly as human beings interact with the world. This self is heavily dependent on memories and projections it can make for the future.

Part of this extended self is the capacity for projection [*Entwurf*], a fundamental structure of occurrence, or the capacity to understand things by working out the possibilities projected in understanding. Crucially, understanding as projection does not comprise, in any fundamental way, conscious or deliberate forward-planning. Rather, realisation of understanding can be manifested as interpretation, when human beings explicitly see something as something, such as in the case of disturbance. Dasein, then, becomes a "thrown projection" (*Geworfen entwurf*), projecting onto the possibilities that both lie before it or are hidden. This mode of being comprises understanding and interpreting the world in terms of possibilities. Thrownness (*Geworfenheit*) refers to an awareness that we are delivered over to a world we share with others, always caught up in everyday life, and in the 'throw' of a range of moods, such as fear, excitement, anxiety or boredom. However, Dasein as world-forming is not simply thrown into the world. Given world-forming individuals are capable of understanding, we are also able to displace our thrown condition. In this sense, human beings are characterised by a potentiality to be otherwise.

This capacity of projection is the experience of what Heidegger views as freedom: the experience of human beings enacting their potential in the world. As we have seen thus far, it is clear that neuromarketing practitioners do not all explicitly see and treat consumers as objects or animals per se. Some perceive consumers as agentic, inasmuch as they are aware of our world-forming potentialities, of our power to deconstruct their advertising illusion and to dispel the magic they have cast over us. Their onslaught, then, must bypass consumer capacity for choice and critical/reflective thinking through decoding, captivating, disinhibiting and attuning consumers into desirable buying responses via behaviourally and neurophysiologically calibrated advertising stimuli. This process, however, is contingent on a particular way of revealing the world to consumers, which results in a very specific way of representing the consumer as a calculable utility.

Enframing and Quantification

In *A Question Concerning Technology*, Heidegger identifies the essence of technology as a revealing in that it points to something essential about the constitution of our way of being-in-the-world. Heidegger's essay calls our attention to the social crises brought on by modern technology's new and distorting methods of ordering the world, resulting in the reconstruction of our cognitive perceptions of reality or world. This brief account does not seek to engage with the full complexity of Heidegger's thoughts but to offer sufficient background to make sense of his central arguments about how technology reveals the world to human beings.

For Heidegger, the revealing of the world through modern technologies is different to what occurred with pre-industrialisation technologies. Under the conditions of modern technology, "the earth reveals itself as [only] a coal mining district, [its] soil as a mineral deposit … what is unlocked is transformed, what is transformed is stored up, what is stored up, in turn, distributed, and what is distributed is switched about ever anew. Unlocking, transforming, storing, distributing, and switching about are ways of revealing."[37] In other words, technological enframing [*Gestell*] in modern technological contexts reveals the world/nature as an energy resource, a thing to be used. Through the mechanisation and industrialisation of everyday life, worlds become technologically *enframed*. There are strong reasons for claiming that neuromarketing is dominated by a propensity for enframing. Much of the discourse can be situated in an assemblage of 'objective' techniques that impose order in a way that instrumentalises human beings and attempts to achieve its goals with more efficiency through practices of measurement, or datafication. In accordance with neurophysiological data, the way the world (i.e. reality) is revealed to consumers in a neuromarketing setting is twofold, as we saw in Chap. 5.

First, brain focus group researchers position themselves as the experts on revealing the consumer's subjective world in the form of 'objective' or 'non-subjective' interpretations of data. The neuromarketer as privileged knower of objective truth illustrates what Ellul describes as the tendency for human beings in a technological society to interpret and understand

things in the world in absolute terms, placing the knowledge of the objective specialist over all else for the sake of efficiency. This idea also resonates with the technical phenomenon. According to Ellul, "it is really a question of finding the best means in the absolute sense, on the basis of numerical calculation. It is, then, a specialist who chooses this means; he is able to carry out the calculations that demonstrate the superiority of the means chosen over all others."[38] In this system, the individuals and groups who rise to the top are the ones who are skilled at enacting the calculative thought required for enframing to work.

The danger of technology, according to Heidegger, is the way *being* is concealed in the act of enframing. However, it is not technology per se that engages in these actions, as technologies are used by human beings to achieve particular aims. Heidegger points out two ways in which this danger attests itself. First, enframing commands more and more of our existence in that our lives are increasingly structured by the patterns of production and consumption fundamental to modern industrial societies. Enframing manipulates needs and instrumentalises populations. The loss of being that occurs as a consequence of the logic of enframing is the reduction of nature, including human beings, to commodities.

In neuromarketing, reality is constructed and revealed by a third-party interpretation of the consumer according to a set of quantifiable neurophysiological data, which reduces human beings to potential for biovalue. Heidegger uses the term 'standing-reserve' to indicate the instrumentality that results from enframing human beings as objects to be measured and calculated. Neuromarketing reveals a world that positions consumers as energy resources, as exploitable subconscious terrain narrowly defined in terms of potential utility. The techniques used play a significant role in the objectification of consumers as capital, where they are rendered as neurophysiological classifications or segments that can be deployed in personalised settings to engage in consumptive actions.

At its core, how the neuromarketing programme understands the consumer as standing-reserve is expressed best by Dooley on the inside flap of his book *Brainfluence: 100 Ways to Persuade and Convince Consumers with Neuromarketing*: "Your customer's subconscious mind is a vast potential resource—this book explains how to tap it."[39] Clearly, the consumer is

seen as a commodity who is then subject to a personalised advertising technique that Neuromarketing Labs claims "elicits the best desired response, e.g., the highest desire to buy."[40] As techniques like these shape our lives, we are vulnerable to becoming reduced to component parts of the standing-reserve. An example of the representation of the consumer as standing-reserve is found in a neuromarketing blog entitled *TV commercials zapping: Consumer's new hybrid tank engine*.

> In the ever evolving emotional and engagement paradigm, we can now see in detail what the audience's emotional responses are via recent artificial intelligence technology, make precise changes and optimize critical factors to increase conversion.[41]

This understanding of the consumer is similar to Lewis Mumford's ideas of the 'megamachine' where human skill and energy are mobilised as a component part of a machine based on a complex of power that comprises political power, control of energy, measurement and machinic productivity, and material gain. While key to the development of a megamachine was traditionally a dictator able to run the system in a way that would amplify the domination of an oligarchy, the modern machine no longer relies on this kind of authority:

> … there is no visible presence who issues commands … under the pretext of saving labour, the ultimate end of this technics is to displace life, or rather, to transfer the attributes of life to the machine and the mechanical collective, allowing only so much of the organism to remain as may be controlled and manipulated.[42]

The quantification of consumers is also in line with the work of consumer surveillance strategies such as dataveillance. Here, the emerging narrative is one that places the consumer brain as a biological commodity that can be understood through algorithmic processes and categorised according to statistical determinations. This kind of discourse reveals consumers as calculable energy resources (i.e. exploitable terrain), both present-at-hand entities to study and ready-to-hand tools to use from nature. The idea of consumers as exploitable ready-to-hand tools is similar to

Bauman's discussion about the behavioural advertising process used by Amazon as targeting "ready-to-use niches of the market,"[43] where surveillance technologies consistently work to keep consumers constrained in market niches, and always open to consuming the targeted products presented to them. Individuals and groups are manipulated to consume through 'categorical seduction': the activation of desires in a targeted and behaviourally specific manner, transforming consumers into instruments for material gain.

Similarly, as part of an ensemble of modern surveillance technologies, neuromarketing enframes the consumer through her neurophysiological activity as nature in order to capture her: nature revealed solely as a valuable material resource. This representation is illustrated again and again with the consumer brain positioned as a resource to be 'tapped,' 'mined' and 'exploited,' where human beings become bodies of data that can be used for a range of data profiling activities. Data processing enables identification, segmentation, classification and representation of various demographics as automated data profiles, with varying consequences that may affect the life chances of the individuals and groups in question.

Despite Dasein's world-forming potential, technological enframing reveals the consumer as a thing to be used, as a body of data to be optimised for profit. Data visualisations of neuro-affective responses hold the potential to create value which is then sold in the market to advertising clients. By virtue of the human-machine interface in this practice the consumer becomes enframed as an object of technology. In this capacity, neuromarketing engages in instrumentalisation of the consumer. And human agency is breached for the sake of scientism.

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9

Self-Determination and Implications of Mining the Brain

In a connected world where the distinction between online and offline is blurring, human beings are put under continuous surveillance. As a result, the way the world is being revealed is experiencing radical change.[1] Much of this change is related to the technological ability to capture dimensions of life in increasingly granular detail. Mediated by neurophysiological technologies, activity in the brain is monitored in real time and readily available for predictive purposes. Derived from brain images, 'brain types' can be named and categorised, becoming constitutive[2] despite the fact that these characterisations may be grounded on reductive assumptions and contain inherent biases, inaccuracies and distortions that may affect the life chances of not only historically marginalised groups but human beings overall. Brain type data are used to create strategic advertisements which arguably have the capacity to manipulate consumer decision-making based on 'lookalike' audiences. This manipulation is achieved by mobilising affect and instincts as drivers for consumptive action, a process that often creates the consumer prior to creating the product.[3] In this capacity, neuromarketing as an epistemological practice has the potential to impact the social imaginary in far-reaching ways.

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It is clear that the aim of neuromarketing is to establish certain habits and values as pillars for norms that govern individual and social worlds. These norms are imbued into the consumer through advertising messages targeted at subconscious perception. With these developments in new media marketing shifts in the nature of capital also emerge. Neuromarketing technologically reformulates information about consumer brains that has biovalue. This process is one where the generative productivity of living beings is instrumentalised in a way that marks them as utilities for human projects, in this case for the purposes of the advertising industry. The practice of neuromarketing and its capacity to turn consumers into biological resources for exchange value is brought to life with Haraway's notion of 'writing technology' where "organisms have ceased to exist as objects of knowledge, giving way to biotic components, i.e., special kinds of information-processing devices. … Immunobiology and associated medical practices are rich exemplars of the privilege of coding and recognition systems as objects of knowledge, as constructions of bodily reality for us."[4] As I highlighted in Chap. 4, a disturbing implication of this kind of consumer targeting and instrumentalisation is that the machinery of new media marketing has the capacity to nudge the position from which human beings make sense of the world. As Wilson and others reason, the fundamental distinction between traditional marketing practices and neuromarketing techniques is that "the former attempts to change beliefs, attitudes, and behaviors through well-recognized means, while the latter are expert attempts to trigger buying emotions in consumers."[5] Another key difference lies in what neuromarketing technologies can do at a practical level in terms of manipulating the consumer brain. The capacity to mine neurophysiological data at ever increasing detail affords advertising messages the precision to target consumers in a way that was not possible in the past.

This final chapter seeks to round off the book by exploring more closely the social and ethical questions that emerged in previous chapters. It situates neuromarketing discourse as a form of public knowledge dissemination and creation fundamental to a surveillance society. Discourse has power. As such marketing practices and social imaginaries are influenced by these discursive constructions. While the kind of knowledge creation neuromarketing represents exists in an informal

space for learning (i.e. in a cultural media environment), its goals are driven by market discourses, signifying an assemblage of institutional forces with the aim of creating an environment of unreflective consumerism. In this sense, neuromarketing becomes a tool for social conditioning. With these things in mind, this chapter centres on the implications of neuromarketing in the context of its role as an epistemological practice in the biometric economy.

The chapter begins with an account of how neuromarketing seeks to produce biovalue from consumer data, all of which is predicated on the act of instrumentalisation comprising implicit practices of dehumanisation. These acts, which are underpinned by algorithmic processes, have consequences for consumers in general but with especially problematic effects on vulnerable populations. I argue that above and beyond the possibility of dehumanisation, neuromarketing also deprives individuals of their fundamental humanist freedoms, specifically the right to self-determination. The chapter concludes with a consideration of possible ways forward with regard to how the deployment of pervasive neurotechnologies into market research settings ought to be managed.

The Commodification of Life Itself

Research into recombinant DNA and monoclonal antibodies marked the beginnings of the biotechnological knowledge industry in the 1970s. Sustained efforts have been made to promote policy initiatives to capitalise on these new knowledges as biotechnology has come to be viewed as an industry with transformative socio-economic potential. For example, the Organisation for Economic Cooperation and Development (OECD) continues to push a policy agenda that focuses on the 'bioeconomy.' Some commentators argue that the notion of a bioeconomy is not only a way to conceive of socio-economic developments, framing these developments in such a manner also allows them to be embedded discursively into wider institutional frameworks.

In the past two decades, scholars have attempted to theorise the connections between capitalism and biotechnology, including political-economic relations such as biovalue, bioeconomics, biocapital, biowealth

and organic capitalism. There are two main streams of theoretical ideas: a Marxist-feminist perspective focusing on production and reproduction, and a Weberian-Marxist perspective examining the way relations of production are explored alongside ethical subjectivity. The latter is deeply influenced by a Foucauldian framing of biopolitics (i.e. the analysis and governing of individuals on the level of populations), examining the socio-cultural settings in which neuroscientific findings are constructed. Of relevance to the present work, in that it seeks to make sense of the exploitation and capitalisation of neurological life, is the notion of 'biovalue' as fundamental to the process of a biometric economy.

For Nikolas Rose, the "re-shaping of human beings is thus occurring within a new political economy of life in which, in part at least, biopolitics has become bioeconomics,"[6] and 'biocapital' a new iteration of capital.[7] Identifying speculative value as fundamental to biocapital, Kaushik Sunder Rajan considers the market potential of these bioproducts, arguing that contemporary biotechnologies can only be understood in relation to economic markets. Here, productive, reproductive and speculative capital are implicated in this new evolution of capitalism in that biotechnology has become embedded as a form of enterprise that cannot be separated from contemporary capitalism.[8] The consequence of this relation is what Rose would see as the commodification of 'life itself.'

As noted in Chap. 2, concepts associated with the analysis of biovalue can also be applied to the mining and exchange of neurophysiological data for profit in new media marketing. To use one example, biovalue in neuromarketing contexts depends on speculation. As Julie Cohen observes, the processing of personal data is a form of 'bioprospecting' with various groups competing with each other to extract market value from the resources mined. The data here comprise personal information that has *potential* value.[9] Part of the success of neuromarketing relies on the belief that technological developments and methods will yield advertising benefits from these resources. The discourse of neuromarketing suggests that neurophysiological responses are more truthful than the words human beings articulate, which is why there are efforts to bypass the unpredictability of focus groups by seeking direct access to consumers' brains. These claims form part of a strategy used to sell neuromarketing to clients. Promising access to the secrets of buying behaviour, neuromarketers

want to be seen as experts who have the knowledge and tools to reveal hidden information through brain-imaging and other biometric technologies of measurement. The brain's *potential* is presented as an untapped frontier that can be exploited for material gain provided one has the proper technological tools of extraction and scientific method. In the popular discourse of neuromarketing, brain data are positioned as a valuable bioresource that can be used to predict the success of advertising campaigns.

An emphasis on such value also leads to biolabour: the embodied work that consumers perform in their role as brain focus group participants. This form of labour can be seen as the process where consumers give market researchers access to their *in vivo* biology: the productivity of their biometric and neurological capacities. Research subjects provide access to their bodies to market research and that may pose risks. For example, if done correctly the use of fMRI is relatively safe; however, if tests are conducted by individuals who are not properly trained, the research participant might be harmed. Given that diagnostic imaging use in market research settings is not regulated according to codes that oversee applications in medical environments, improper use of fMRI is a possibility.

Research participants also give their consent to the neuromarketing company to access and retain their physiological information, alongside whatever incidental information is derived from it. Neurological data, for example, are then packaged and sold to advertising companies for material gain. In this way, the neurological life of the consumer becomes sealed in a productive relationship with not only the neuromarketer, but also the larger world of advertising and, potentially, a contingency of data brokers. Research participants and their collective history of neurological responses produce a resource that can be mined, in the same way marketing in general engages in data mining the click history of online consumption patterns, such as Amazon purchases for information that can be acquired by data brokers who then sell this information to other companies for material gain. However, the creation of biovalue does not only constitute economic acts, it also comprises numerous symbolic actions that revolve around the instrumentalisation of consumers. These actions range from the objectification that occurs when representing consumers as buy buttons, to the animalisation of thinking, both of which configure

the consumer in a manner that points to processes of objectification and dehumanisation. In other words, human beings are enframed and reduced to energy resources: commodified parts of the standing-reserve. These developments are all generative of a particular kind of brainworld which requires closer attention.

Biosurveillance: Sorting, Classification, Discrimination

In a biometric economy, biology is both the driving force behind production and the resource that is mined, refined and distributed. The transformation of biological matter into capital is a worldwide phenomenon, ranging from stem cell manipulation and tissue harvesting to organ transplants. It was inevitable that these processes would filter into the neurocultural turn to characterise the human brain as a resource to exploit as the "newest business frontier."[10] For many, the human brain is the ultimate biological resource. Carrying over a cognitive sciences view, the brain is still perceived as a computer able to learn and undergo continuous reorganisation. And with a lineage from behaviourism, the brain is also understood as a reflex-machine or an animal-machine that can be triggered to perform desirable actions. According to neuromarketing practitioners, the brain can be given a neurological boost to behave in a way that is of utility to advertising goals.[11]

Increased reliance on the quantification of life to generate value also brings challenges regarding the algorithmic processes that underpin these undertakings. Neuromarketing is an example of 'adiaphorization' which, in one of its senses, refers to the way that data from the body (e.g. via biometrics and neuroimaging) or triggered by the body (e.g. using sensor-based triggers) are, as Lyon would say, "sucked into databases to be processed, analysed, concatenated with other data, then spat out again as a data double."[12] A form of biosurveillance, these techniques sort individuals into groups according to behavioural and physiological responses. Information gleaned from neuromining can be used to exploit neurological traits identified in certain demographics, thereby engaging in a process of social sorting: the "collection of personal and group data in order

to classify people and populations according to varying criteria, to determine who should be targeted for special treatment, suspicion, eligibility, inclusion, and access."[13] Algorithms play a key role in neuromarketing, designed to detect brain patterns and connect them to affective states. Data mined are used to provide 'data-driven' advertising solutions, with a logic of accumulation underpinning the entire process: more data are better for improving predictive capacity. Biosurveillance within the neuromarketing setting is comprised of an algorithmically driven network approach fixed on shaping and directing consumer consciousness. Control functions take the form of neurological data mined from a process of bio- and neuroimaging, observation and behavioural questioning.

Classification, or the naming of people as categories and then treating them or relating to them differently from others, is a central concern for the analytics and prediction involved in the neuromarketing process. Classifications have the power to shape the quality of our lives. However, as Bowker and Star point out, through reliance on classifications to order the world, or entities in the world, "we are taking a series of increasingly irreversible steps toward a given set of highly limited and problematic descriptions of what the world is and how we are in the world."[14] Population segments identified through brain images, for example, are usually attached to classificatory markers that then construct and sustain negative stereotypes about those groups. This technique creates borders around individuals and groups, binding them in a system of assessment that uses the grammar of quantification to extract and assign needs, attributes and behaviours, thus creating artificially generated communities. An outcome of this process is statistical discrimination, where computerised analysis of data is used as intelligence to inform decision-making.

Discriminatory actions against certain groups on the basis of predictions about the kinds of behavioural responses to opportunities and challenges are treated as rational because of the trust placed on normalised inferential statistics. Insights derived from these research studies do not necessarily generalise across population segments, and many of these data systems "involve layers of inference, where 'data' are not the original observations but are the products of an inferential process of some kind."[15] Some of the challenges that emerge in the technological process

of creating value are straightforward and must be actively addressed, such as concerns that the algorithms used to develop categorisations may mirror human biases in decision-making. Inferential systems can contain biases in several ways: like segmentation, they reinforce difference; they cannot be structured to ensure any bias to the outcome can be eliminated at the source, social injustice is often coded into the training data; and they create difficulties for establishing transparency.

Algorithms introduced into various fields have already rendered problematic decisions reflecting biases inherent in the data used to train them. Some errors are intentional due to deliberate bias, some are simply neglected due to ignorance,[16] but the cause of the bias is not necessarily the factor that matters to the victim—it is the action of categorisation and prediction as well as the consequential decisions following that matter most. For example, software applications developed to help judges in sentencing by predicting risk of future criminal behaviour have demonstrated a tendency for racial discrimination.[17] It is conceivable that similar biases could be built into the neuromarketing algorithms that develop intelligence about consumer brain patterns broken down by gender, race and ethnicity. Indeed, as evidenced in the previous chapter, precision consumer priming is conducted according to these kinds of demographic identifiers. An algorithm designed to make predictions from mined neurological data will be biased if there have been few (or no) market research studies in certain populations. Subtle discrimination inherent in brain-imaging interpretations may be more difficult to anticipate. As a consequence, it may be more challenging to prevent an algorithm from learning and incorporating such biases into its system.

Bauman and Lyon's comments on the status of the consumer highlight the role of the consumer in this quantified context: "The crucial purpose, perhaps the decisive purpose in the society of consumers … is not the satisfaction of needs, desires, and wants, but the commodification or recommoditization of the consumer: raising the status of consumers to that of sellable commodities."[18] As Bauman observes, "when another human is treated along the lines of a commodity good selected according to colour, size, and number of addups, adiaphorization is in full swing and at its most devastating."[19] Through advances in neurophysiological technologies, the consumer in this context becomes reified as an instru-

mental thing to be stirred up into desired responses *in order to* drive consumption. The discursive world of neuromarketing reveals a range of data images of the consumer, including a reduction to a brain as buy button, a mindless automata; or a brain as animality, a thing that is always-already open to being triggered by an external stimulus.

As we have seen, Heidegger's tripartite thesis shines a light on how consumers are represented through discourse as instrumentalised. Two forms of dehumanisation were proposed: objectification, representing individuals as objects or automata; and animalisation, representing individuals as animal-like. Computational and/or mechanical systems are a common theme in work on dehumanisation. Scholars have argued that technological dehumanisation or reductionism of human beings to machines is a condition of contemporary society. The idea of human animality has also been used to signify the ways in which biological-determinist ideology has shaped human subjectivities in networked societies. Although the buy button is certainly a mode of representation, it is not as prevalent as the metaphor of brain as animality. While I will consider the brain as a buy button, it is on animality that I will focus primarily in the following sections.

Dehumanisation

A significant implication of reducing the consumer to the metaphors of brain as buy button and brain as animality is dehumanisation. This process is often examined in connection with genocidal conflicts, for example, the ways in which Jews were represented and treated during the Holocaust, or the Tutsis in Rwanda. These populations were dehumanised during the violence enacted by its perpetrators and prior through the psycho-social processes that represented victims as vermin or animals. Similar metaphors have been used to depict immigrants who are seen as a polluting factor to social norms. Dehumanisation is also explored in feminist literature, particularly on the representation of women in pornographic material. While dehumanisation can lead to mental representations of particular groups as automata, the most common form is the representation of populations as animals or with animal-like qualities.

A powerful way of degrading human beings is to deprive them of the qualities societies and cultures believe separate humans from 'lower' animals. When individuals or entire groups are identified with non-human animal kinds (i.e. when they are dehumanised), they are placed beyond the boundary of the moral community which leaves them open to targeted discrimination and instrumental treatment.[20] Herein lies the link between classification within the market and that which necessarily occurs in the social realm—the dehumanisation of racialised groups, for example, enables others to treat them as animals. Such treatment is particularly evident in the use of neurodata in political contexts, where policy discourse sells an ideology of disregard, punishment or exclusion and varieties of behavioural modification such as nudging.[21]

One form of dehumanisation comprises the denial of qualities especially valued as human; at other times it involves the active making of an object something that is not actually an object. The second form of dehumanisation is transmogrification or transformation which refers to a change in the human being resulting in a grotesque or fantastic form. As Mel Chen observes, "the figurative substitution of a human with an animal figure often accomplishes both of these things and constitutes a displacement to lower levels of the animacy hierarchy."[22] Approaching the objectification and animalisation of consumers through Heidegger's tripartite thesis reveals neuromarketing discourse as grounded on a sociopolitical grammar that creates hierarchical distinctions amongst consumers who can then be justified as instrumental biological resources for advertising ends.

Objectification

The brain as buy button is a new metaphor that emerges from the data and is connected to the mind as reflex-machine metaphor. The mind as reflex-machine metaphor has similarities to the computer metaphor. As mentioned previously, symbolic activity (language, problem-solving and perception), physical behaviour and emotional responses are of equal standing under the reflex-machine, and direct attention to external variables controlling a response, rather than to internal transformations. The metaphor of the

reflex-machine places the neuromarketer's focus on how consumer behaviour is learned and built up from simple components instead of built up from a complex of nuanced behavioural patterns. Situated at the inanimate or mechanical level of Heidegger's tripartite thesis, the brain as buy button implies that the consumer is worldless, holding no possibility at all to have a world unlike the poor in world animal and unlike Dasein's world-forming potential. By representing the consumer brain as a buy button, neuromarketing enacts objectification of the consumer.

Treating things as objects is not objectification. To objectify requires that a living entity is made into a thing or treated as a thing. To treat a human being as a thing equates to treating that individual as a resource to be exploited, as an object to be used, which is clear when consumer brains are represented as buy buttons that can be triggered into desirable responses by an external third party. In this way the human being has been objectified, symbolically made into an inanimate or a mechanical object with no capacity for agentic behaviour.

The reduction of the consumer to brain as buy button fits with Nussbaum's identification of features attached to treating as an object what is really not an object. First the consumer is treated instrumentally, with neurophysiological data mined for biovalue. The consumer is also denied autonomy in that the consumer is metaphorically reduced to a buy button, an object lacking autonomy and self-determination. Relatedly, there is also the dimension of inertness, where the consumer is viewed as an object lacking agency: reduced to a machine-like thing, a mechanical object that does not even respond with conscious awareness to the world because it is worldless. The consumer is constructed as a reflex-machine to be manipulated by external controls, such as triggered by personalised advertising stimulus aimed at targeting the consumer at a level beneath conscious awareness. The next dimension of objectification is fungibility, where the consumer is treated as interchangeable with objects of the same type and/or objects of other types: consumers are understood as reducible to neurological and biometric responses to an advertising stimulus. The final criterion is that of violability, where the consumer is treated as an object that lacks boundary-integrity, as a thing that is permissible to break into: neuromarketers use new technologies to break into the consumer's brain and trigger consumers to take consumptive action. In this capacity,

the agentic potential of the consumer as Dasein is reduced to the reflexive triggers of a machine that can be manipulated to act.

The brain as buy button metaphor supports a mechanistic frame as evident in cognitivism. This view sees the human brain as an object of scientific study which works by cause and effect and is subject to the kinds of external technical controls that are effective in relation to the environment. This perspective assumes that simple cause and effect relations can explain human modes of thinking or meaning-making. Whereas the conception of the consumer brain as buy button is crude and strictly mechanical, the discourse of popular neuromarketing also reveals a reduction of the consumer to brain as animality, a more sophisticated yet fundamentally instrumental model of the consumer in that it recognises the symbolic processes involved in human communication, at least to the extent of acknowledging the capacity of the consumer to focus on the perceptual dimensions (e.g. image, sound and smell) of the commodity being sold.

Animalisation

Notwithstanding the challenges that emerge from Agamben's reading of technology and biology,[23] his work is useful for illustrating the symbolic effects of the reductionist tendencies prevalent in the discourse of neuromarketing. Agamben refers to animality in the context of an 'anthropological machine,' a socio-political grammar that creates the category of the non-human human to serve political and economic ends. Science, for instance, breaks down the distinction between human beings and animals in dangerous ways with the reduction of humanity to pure biology. By making this conceptual move certain groups seek to maintain positions of privilege in the hierarchy of bare life (*zoē*).[24] Through such acts, human beings are reduced to animals with an existence determined by the encircling ring (or niche) in which they are surrounded. On this view, human agency becomes "simply one effect of physical causes among others revealed by biological and medical science to be predetermined after all."[25]

The animalisation of consumer thinking in neuromarketing is in line with the socio-political grammar of Agamben's anthropological machine which radicalises Foucault's notion of biopolitics. This machine is

founded on a socio-political discourse and has existed in ancient and modern (post-Darwinian) forms. The pre-modern machine functioned by humanising animals so that certain kinds of human beings were viewed as animals in human form. Examples are the man-ape and the slave. The modern anthropological machine flips the relationship between animal and human and animalises the human rather than humanising the animal. Examples of the modern machine are the ape-man (*Homo alalus*) and the Jew (the non-man produced within the man): the animal that is separated from what is considered human is a 'lower thing.' As Adrian Mackenzie points out: "This framing provides ways of situating animalization in relation to thinking (as well as in relation to responsibility, ethics, politics, and futurity)."[26]

For Agamben, the separation of bare life from political existence has framed the historical development of Western politics since ancient Greece. In *Homo Sacer*, he claims that the animalisation of the human is conducted by a sovereign power.[27] In *The Open: Man and Animal*, he extends the concept of anthropological machine from the realm of political discourse to other domains, including science, economics, religion and metaphysics. Using the figures of the werewolf, the slave and the woman, Agamben explains that stories about the wolf-man, for example, were not only present in folk mythologies, but also emerged in the writings of reputable eighteenth-century scientists such as Carl Linnaeus, the founder of modern taxonomy, who is widely considered the father of modern ecology. In his taxonomy of *Homo sapiens*, Linnaeus includes *Homo ferus* (manlike animal) which he connects to *enfants sauvages* (wolf children). Agamben claims that this example illustrates how the boundaries between human and non-human animal shift depending on the criteria used when categorising various groups. The prescient issue is not a case of developing more accurate classification systems; rather, it is an issue of acknowledging that the blurred line separating human and non-human animal is a thing that is articulated and divided time and again.[28] Such a line is evidenced in the reduction of the consumer to the metaphor of brain as animality in the discursive world of neuromarketing.

Others have also explored the idea of animality as a socio-political event. Chen, for example, does so through the 'grammar of animacy.' What linguists call the animacy hierarchy, the "conceptual organisation

of worldly and abstract things with grammatical consequences," arranges forms of animate and inanimate entities in order of value and priority. In a similar vein to the claims of Agamben, Chen maintains that "animacy is political, shaped by what or who counts as human, and what or who does not." Further to this: "language users use animacy hierarchies to manipulate, affirm, and shift the ontologies that matter in the world."[29] Animalisation of human beings is used to justify the objectification, dehumanisation and instrumentalisation of the human being. This justification in itself is a part of the power process. In her words: "when humans are blended with objects along this cline, they are effectively 'dehumanised', and simultaneously de-subjectified and objectified."

Because the anthropological machine is always re-inscribing the animal-human difference in the human, the figure of the human being is unable to stabilise. In both older and newer versions, the machine generates a 'zone of indetermination,' or a state of exception within which human beings and animals become indistinguishable: "The zone takes different forms, but it always posits the existence of something not yet human that is already human."[30] In the context of neuromarketing, the state of exception is one that can be understood as what I view as *augmented animality*, a zone where the consumer exists as a not-yet-human human, whose animality is amplified by sophisticated technologies of augmentation (e.g. neurophysiological technologies, augmented reality technologies, various multimedia applications etc.). In keeping with the mind as animal-machine and mind as reflex-machine metaphors and entailments vis-à-vis our connectivity to the materialities of neuromarketing, the consumer becomes a hybrid of machine and organism.[31] The intimate connections between human and machine renders neuromarketing techniques especially potent as a method of augmenting affect and instincts.

While it is important to reiterate that neuromarketers do not actively *see* the consumer as an animal, on closer examination of the industry it is evident that a conceptual reduction of the consumer to brain as animality is re-inscribed through the discourse, assumptions and operative practices and goals. Neuromarketing does not simply represent consumers metaphorically as instrumental objects, the practice engages in focused action against consumers designed to manipulate behaviours.

The theme of animality represents the consumer in terms of the mind as animal-machine metaphor along with associated entailments, including the idea that mental processes are tacit physical behaviours, that mental processes are controlled by the environment, that learning is a process of differential reinforcement and that thoughts are tacit conditioned verbal responses. This metaphor is also attached to the following logic: Animals are reflex-machines. Humans are animals. Humans are also reflex-machines. The mind as reflex-machine is relevant here in terms of the overall mechanisation of the mind hypothesis that seeps into the world of neuromarketing from the larger narrative of cognitivism.

Other individuals writing on neuromarketing have claimed that neuromarketing has the potential to train consumers to behave like Pavlov's dogs.[32] The Pavlovian example, as Edwards notes, "draws a parallel between the transference of a natural reflex (salivation at the smell of food) onto an arbitrary stimulus (the sound of a bell) and the mental process of associating words ('Dinnertime!') with their meanings."[33] An iteration of neuromarketing from this perspective might unfold as the transference of a natural reflex (e.g. increase in oxytocin at the sight of a particular image) onto an arbitrary advertising stimulus (e.g. metaphor, symbol, sound and smell) and the mental process of associating words (e.g. uncool connoisseurs) with their meanings.

In their deliberate efforts to trigger and condition consumers into buying responses, neuromarketing practitioners actively seek to manipulate human processes of understanding, which results in the subversion of core democratic values of freedom of intelligence and self-determination. Their goal is to break into and exploit that inner space where we still have the capacity for freedom of intelligence, thereby violating the integrity of our bodies. Following Marcuse, the notion of 'inner freedom' has its own reality in that it designates a private space where human beings may become and remain themselves. In light of the psycho-social technique of neuromarketing this private space is being breached, "whittled down" in a cultural media environment that actively perpetuates one-dimensional consumer existence,[34] where commercial entities are increasingly staking their claim on life itself.

Manipulating the Brain: On Self-Determination

Writers note that implementation of new technologies have both seen and unintended consequences. All possible risk of harms to individuals ought to be taken into consideration before deploying pervasive neurophysiological technologies into market research settings. Such use should be questioned in view of its potential challenges to infringements of bioethical principles and values, such as autonomy, self-determination and privacy as intrinsic human values. The remainder of this chapter addresses the issue of self-determination as this value is central to a democratic way of life. Human beings are not simply targeted consumers with behaviours and preferences to be mined and manipulated using techniques of biosurveillance. The capacity for self-determination must be respected. My intention here is not to rehabilitate the autonomous subject. Rather, it is my aim to explore a pragmatic understanding of the self as a dynamic between individuals, a process of making the self through communicative action.

The concept of 'communicative action' is useful for illustrating the dimensions of biosurveillance which are especially relevant to neuromarketing practices. As we have seen thus far, the process of human understanding and decision-making is a complex system underpinned by nuanced cognitive processes. Communicative action is the distinguishing characteristic of human beings. In an ideal speech situation, individuals acquire freedom through a process of 'undistorted communication.' This means communication without compulsion (without coercion, without using advertising force). When technologies are used to deliberately persuade rather than inform, as is the case with neuromarketing, the Habermasian covenant of trust in the communicative process is compromised. As Brutoco and Austin argue, the use of technology that "gets inside people's heads in an attempt to circumvent their rational thought and animate their preconscious brain is unethical. … Brain scanners go too far." In this capacity, neuromarketing is an incursion into the democratic values of freedom and self-determination.

These values have been explicated by philosophers such as John Dewey who does not use the term intelligence to indicate I.Q. or cleverness;

rather, he uses the term to signify reflective thought. Reflective thought connects to inquiry, educative experience and personal growth that emerge as an ideal aesthetic experience. Furthermore, thinking involves a metaphysical relationship between individual and situation, which Dewey refers to as 'transactional realism.' It is an individual's potential to learn, and the growth ensuing, that is ultimately the measure of any form of human activity, including democratic life: "people are free, in one of the meanings of the word, if they are able to create, or at least to choose, their own values."

Democratic life comprises conjoint communicative experiences. For Dewey "everything which bars freedom and fullness of communication sets up barriers that divide human beings into sets and cliques, into antagonistic sects and factions, and thereby undermines the democratic way of life."[35] Legal guarantees of civil liberties such as free belief, expression and assembly are of little use if in our everyday lives freedom of communication (exchange of ideas, facts, experiences etc.) is disrupted and manipulated. These things destroy the fundamental condition of democratic life (where human beings are educated to engage in reflective thought) more effectively than brute force or explicit coercion.

Applying Heidegger's tripartite thesis to the discourse of neuromarketing illustrates how the field aims to override freedom of intelligence. Using neurophysiological data to inform precision advertisements, neuromarketing seeks to persuade us at a level beyond conscious awareness to undertake consumptive action. One might view this as strategic manipulation. By disrupting communication, by targeting our reptilian brain—the 'true decisionmaker'—and in seeking to bypass critical reflection and awareness, neuromarketing works in opposition to the ideals of a robust democracy, in opposition to "the basic freedom of mind and of whatever degree of freedom of action and experiences is necessary to produce freedom of intelligence." In this sense, the technique constitutes an affront to human agency in that it violates our freedom to choose, our capacity for self-determination. It places us in a state of 'unfreedom' where a group of individuals wielding technological apparatuses have the power to shape our perceptions of the world, ultimately denying us the capacity to choose our own ways of being-in-the-world.

To further illustrate what I mean by the disruption of our freedom to choose, we can also draw on the work of Jean Paul Sartre who, considering the social and political construction of the individual, distinguished between two modes of freedom: practical freedom and ontological freedom. Practical freedom (or freedom from obtaining) is akin to the notion of negative liberty where one is free from external restraints or physical constraints. As Gail Linsenbard explains, this form of freedom is "present in varying degrees and in varying circumstances, depending on the range and quality (both subjective and objective) of the options available to me, and on the degree to which I have the actual ability and available means to carry out my chosen option successfully." For example, I am free to move from house to house depending on the physical limitations I might have, such as physical impediments, financial restrictions, relationship anchors, legal bonds and so on. While I might at some point be constrained with regards to my [practical] freedom to move from one place to another, I would remain consciously free because I can always choose between yes or no in my mind. In this capacity, I am ontologically free. While the specific events I am presented with at any moment may be beyond my control, it is ultimately my decision which of these things I will focus on, which I will reject, which I will accept and so forth. Although we may be deprived of a range of unspecified possibilities, Linsenbard claims that, "we nonetheless remain ontologically free to choose between at least two possibilities: our conscious choice permits us to say 'no' to any imposed situation, whatever the consequences."[36]

When individuals are being oppressed either socially, economically and/or politically, and their freedom is diminished to the point where they can be said to be unfree in a practical capacity, they still remain ontologically free: "It is in this sense that persons may be understood to be ontologically free to make and remake themselves even in the midst of oppressive forces and constraints." Freedom is a primary social value. To be free to choose is an aspect of what makes human beings human. As Linsenbard puts it: "Ontological freedom, or freedom of choice, is foundational in that it is what all persons are as Being—as human reality, and it makes practical freedom possible." So what is neuromarketing doing to our freedom to remake ourselves, our freedom of intelligence, our freedom to choose? This tension has led to important questions underpinning my project: How is neuromarketing shaping or disrupting our processes of meaning-making? If neuromarketing is disrupting our think-

ing processes, can we be free at all? And upon scrutiny, if neuromarketing is indeed deemed to be violating the right to self-determination through tactics of managing consumers at a level beneath their conscious awareness, how should the industry itself be managed?

Moving Forward: Regulatory Possibilities

Many writers critiquing neuromarketing tend to be in agreement that current brain-imaging technologies will not pose a serious threat to privacy until scanning methods can obtain more accurate and useful information about individuals. Nevertheless, they observe that there are social and ethical implications, and enormous practical consequences on the horizon when neuromarketing methods have evolved far enough to overcome their limitations. As this work has evidenced, however, neuromarketing is already having a subconscious impact on individuals in that it can delineate which advertising stimulus can trigger affective responses that lead people to take consumptive action, such as pleasure, trust and excitement. These stimuli are often not related to the characteristics of the product, and the result of these actions is the deliberate attempt to manipulate the consumer's decision-making processes.

Neuromarketing borrows selectively from the cognitive neurosciences. As we have seen, there are significant leaps made in neuroscience, where experimental research is harnessing predictive ability through deployment of new technologies and methods. These developments in neuroscientific knowledge have afforded neuromarketing practitioners the ability to identify, segment, and target more effectively than traditional focus groups could manage in the past. As a result, the potential for neuromarketing to manipulate consumer behaviour is being enhanced.

While advertisers and corporations more generally have turned with faithful enthusiasm to neuromarketing, there has been growing concern expressed by consumer rights advocates and regulatory bodies that the technique leads to consumer deception and the erosion of privacy rights (e.g. intrusions into thought processes and data protection issues), and incursions into human agency. Pervasive neurotechnologies share many of the ethical and social issues associated with the commercial development

of other medical diagnostics and therapeutics. As well as issues of brain privacy and confidentiality, there might also be conflicts of interest—that is, corporations motivated by self-interest, responsible conduct of research, product safety, integrity of published data and fair advertising balance between benefits and risks.[37]

There are ongoing debates about the ethics of neuromarketing, a field which has thus far had licence to self-regulate (or not regulate at all) its market research practices. During the field's nascent stages, Donald Kennedy, editor-in-chief of *Science*, expressed concern that brain-imaging would be used in ways that infringe on personal privacy to a "totally unacceptable degree,"[38] arguing that legislation may be required to regulate the commercial use of such technology as there was no legislation that governed the neuromarketing industry. Some years later in 2010, the Advertising Research Foundation, a global industry collective, announced the launch of the *NeuroStandards Collaboration Project*, an independent review of neuromarketing methodologies with aims to establish industry standards. The project was sponsored by corporations holding interests in the development of neuromarketing methods which would give advertisers the opportunity to discover "new methods that promise a better understanding of unconscious processes and the emotional drivers of responses to their messages."

In 2011, findings from the first phase of the project were published. In the foreword of the White Paper, Robert Barocci, ARF President at the time, stated that advertisers had learned many useful things in terms of how to make more effective advertisements. As Barocci noted: "Our advertiser members were asking about it in increasing numbers – Is it valuable? Who should I hire? What can it add to what I am doing now? Am I losing competitive advantage if I don't use it?" The review made no mention of consumer privacy rights or consent. Instead of focusing on standards of transparency and responsibility relevant to substantive consumer rights, for example, the project focused on how to develop more effective advertising strategies through improvement of methods that could lead to a better understanding of consumer emotions and the 'unconscious.' The initiative, it seems, was not prompted by an interest in discovering whether or not such forms of marketing were unethical, rather the primary motivation was to uncover whether or not (and how) neuromarketing would be

of utility to the advertising industry. But this is not a surprise given the ARF is a trade association invested in the improvement of marketing and advertising.[39] Since then, the ARF has continued to be interested in the benefits that neuroscience can bring to new media marketing.

A major industry attempt at developing a system of ethics to guide research methods, in January 2013 the Neuromarketing Science & Business Association released its *Code of Ethics* to govern the practices of its member organisations. The Code accepted the principles of the ICC/ESOMAR *International Code on Market and Social Research*.[40] Yet in 2018, while the neuromarketing industry has grown and expanded its trade associations tasked with developing a code of ethics, the very individuals who are on the advisory board guiding this process are also the same individuals actively seeking to override our thinking processes to persuade us to take consumptive action. Participation in the association and in ethical oversight remains voluntary.

Other organisations such as ESOMAR, the Advertising Standards Authority (UK), the Ethics Research Institute (UK) and the National Committee for Science and Technology (US), to name a few, have developed codes of ethics; various bodies develop codes of ethics pertaining to science and technology more broadly which invariably relate to advertising and market research. Informed by the work these organisations are undertaking, some neuromarketing companies have created their own code of ethics to address data collection and management, information analysis and interpretation.

There has also been exploratory research on ethics conducted with neuromarketing practitioners from various countries, one of which is motivated by the challenge of "identifying how to satisfy consumers' needs in the best manner possible, whilst ensuring companies' financial profitability." Again, rather than paying critical attention to whether or not the practice of neuromarketing is an incursion into fundamental human rights, the authors claim that their research will lay the foundations for further neuromarketing studies and be positioned to "refute invalid arguments about neuromarketing's manipulative methods and techniques" and "contribute to creating and building a favourable climate needed to attain the objectives pursued by the neuromarketing research."[41] Other studies conducted by neuromarketing proponents share similar sentiments and aims.

As scholars who have studied the industry have noted, it is not likely that neuromarketing companies can be compelled to make their data public or be forced to comply with strict industry standards, unless it is demonstrated that neuromarketing techniques can manipulate consumer behaviour and/or if consumers could not identify that they were being manipulated. With this in mind, the present work has sought to make sense of how neuromarketing discourse represents consumers and the social and ethical implications that emerge as a result. Through a close reading of discursive structures, it has been possible to unearth assumptions and motives. It is clear that neuromarketing instrumentalises consumers. It is also clear that the intent of the practice is that of strategic behavioural manipulation designed to skirt conscious awareness. With increasing collaborations between industry and research institutions, public awareness and participation in the development of legislation that regulates neuromarketing activities is an urgent matter. It is our responsibility, then, to engage with the technique as a dimension of consumer biosurveillance that holds serious implications for a democratic way of life.

Bioethicists have offered foundations for a code of ethics that the neuromarketing industry has since sought to build upon to self-regulate. The overarching aim for such a code is to promote research and development, profitable enterprise and entrepreneurship with beneficial and non-harmful applications of neuroimaging technologies at all stages of their development and deployment. The code includes (1) guidelines that address protection of research subjects; (2) protection of vulnerable niche populations from marketing exploitation; (3) full disclosure of goals, risks and benefits; (4) accurate media and marketing representation; and (5) internal and external validity. However, while neuromarketing practitioners have indeed turned to ethical constructs, the assumption from which they begin is that strategic behavioural manipulation is ethical. Furthermore, their adherence to ethical principles has been used to justify the application of these new technologies into market research[42] rather than to consider seriously the implications that such uses have for self-determination.

The ideal of an agentic individual being-in a democratic social world is freedom from chains, from imprisonment, from enslavement by others, but these chains seem to have evolved from iron to an

algorithmic form that imposes constraints on our freedom to choose. In this sense, neuromarketing as an advertising technique subverts the core democratic value of self-determination, specifically the fundamental right to freedom of intelligence—the freedom to choose our own self, our own values, rather than having values of unreflective consumption imbued in us through subliminal nudges. This breach of self occurs the moment the inward space where we have freedom to choose is wrenched open to disinhibition and external manipulation, rendering our neurophysiological data into biovalue. As such, one of the most significant ethical issues that arises is related to mental privacy which commentators view as being violated on various fronts, particularly the power to use technologies coercively to manipulate the mental states of individuals and groups.[43] A common argument is that the aim to target and influence consumers at the point of sale with advertising messages set to operate at a level below conscious awareness is morally suspect. Using neuroimaging for market research presents a threat to human agency. Violations are especially worrisome when consumer manipulation occurs without consumers' conscious awareness, understanding and consent.

What is now necessary is the facilitation of broader debates and public education about how neuromarketing relates to ethical frameworks that protect consumer rights—this must address the question of mental privacy and self-determination explicitly. If it is found that neuromarketing technologies have (or will soon have) the capacity to bypass conscious reflection to persuade consumers to buy things they don't need, and in doing so instrumentalise human beings for material gain, then it certainly runs counter to the right to self-determination. If this latter point is true, the morally correct option for human beings to enact undistorted communication in a democratic community is an outright ban of neuromarketing. While the French Parliament has taken the lead in drawing a strict boundary around applications of diagnostic imaging, only allowing these methods to be used for medical or scientific research purposes or for court expertise, other countries have not followed.

If not an outright ban, then the neuromarketing industry must be externally regulated to protect against potential harms to human beings by placing the right to self-determination and well-being as guiding

values. If the path to regulatory control is chosen, in order to develop and implement meaningful standards and regulations for market research practices, policy actors must be able to grasp the comprehensive nature and consequences of neuromarketing in light of basic consumer rights. It is reasonable to suggest, then, that independent bodies ought to be actively involved in a critical review of the neuromarketing industry. An interdisciplinary body of academics, government representatives, civil groups, consumers and practitioners must work together to develop appropriate standards, evaluative techniques and sanctions. In particular, strict measures must be taken to protect vulnerable populations, especially children.[44] If strong regulatory controls are not put in place human beings will continue to be treated as instrumental objects to be used for the purposes of new media marketing, an advertising future that evokes John Anderton's justification of the mistreatment of the Precogs in the *Minority Report*: "It's better if you don't think of them as human."

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