Augmenting Animality:
Neuromarketing as a Pedagogy of Communicative Surveillance

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Graduate Department of Social Justice Education
Ontario Institute for Studies in Education of the University of Toronto

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Abstract

This research project considers ethical questions around neuromarketing and its implications for human freedom: How is neuromarketing shaping our subjectivities? How is neuromarketing disrupting our processes of meaning-making? If neuromarketing is scrambling our thinking, can we be free at all? The findings of this inquiry reveal that the practices inherent in the operations of neuromarketing as a form of communicative surveillance instrumentalize the consumer as a means to advertising ends. Neuromarketing discourse constructs and interprets consumers as brain images and particular brain types, reduced further to kinds of instinctive/affective reflex triggers to external advertising stimuli. The key difference between traditional forms of marketing and neuromarketing lies in what the technological apparatus can do to manipulate the consumer brain, that is, bypass the consumer’s capacity for critical reflection, reducing the consumer to the metaphor of mind as animality via the animalization of thinking, as this dissertation argues.

My research seeks to advance understandings of the relations between neuromarketing and constructions of consumer subjectivities. I present a critical hermeneutics of neuromarketing discourse through an examination of narrative devices embedded in multimodal textual artifacts, looking to reveal recurrent themes, metaphors, explicit and implicit assumptions, beliefs, and values. I draw on a hybrid analytic that merges thematic
textual analysis and philosophy, using Heidegger’s tripartite thesis that the stone is worldless, animal is poor in world (*animality*), and man [*sic*] is world-forming, as a conceptual frame for showing how the discursive structures of neuromarketing work to animalize consumer thinking as a brain to study, disinhibit, and manipulate for instrumental ends. The tripartite division is useful heuristically as a method for revealing the crudeness of certain dimensions of the neuromarketing program inasmuch as they assume the consumer is situated in an understandable world, without explicating the process of understanding and/or the concept of *world* when meaning-making. I contend that neuromarketing aims to disrupt and override the thinking processes of consumers. By disrupting thinking, neuromarketing works in opposition to freedom of intelligence as foundational to a democratic way of life. Neuromarketing technique violates our freedom to choose.
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For Kaya
The Lizard

He too has eaten well—
I can see that by the distended pulsating middle;
And his world and mine are the same,
The Mediterranean sun shining on us, equally,
His head, stiff as a scarab, turned to one side,
His right eye staring at me

...

To whom does this terrace belong?—
With its limestone crumbling into fine grayish dust,
Its bevy of bees, and its wind-beaten rickety sun-chairs,
Not to me, but this lizard,
Older than I, or the cockroach.

-- Theodore Roethke
INTRODUCTION

One of the great designs of advertising is to create needs; but this is possible only if these needs correspond to an ideal life that man accepts … 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.

-- Jacques Ellul

In *The Minority Report*, a science-fiction movie based on the short story by Philip K. Dick, the year is 2054 and the protagonist, Chief John Anderton, is the leader of the Precrime program. This law enforcement program 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 biometrics, 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 brain signals transmit the name of the victim and perpetrator to a computer. The data is 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 the accuracy of predictive technology arises when Anderton is framed for a murder he will not commit.

The theme of prediction and technology is recurrent in the movie. It also arises in a consumer setting where constant surveillance by optical recognition devices results in a barrage of advertisements personally calibrated to passers-by. These intelligent advertisements shift and change while the consumer moves from one area to another. In one scene, as Anderton walks through a mall, his eyes are scanned biometrically and he is greeted by interactive advertising billboards framing the length of the strip. In this future society,
identification of consumers seems to occur primarily through retinal scans, and billboard advertisements respond to each consumer by name. For instance, a female voice for a Lexus advertisement states: “A road diverges in the desert. Lexus … The road you’re on, John Anderton, is the one less traveled.” This time a male voice for Guinness beer exclaims: “John Anderton! You could use a Guinness right about now.” On another billboard, an American Express advertisement presents an image of a woman against the backdrop of a tropical beach. A female voice: “Get away, John Anderton. Forget your troubles.”

One can assume that consumer data extracted by retinal scans is then matched to names and other identifiers in a global database much like current bigdata processes of personalization, a phenomenon that can be described as dataveillance. Sociologist Neil Selwyn (2014) offers a helpful definition of dataveillance in terms of how monitoring, mining, and processing data supports a range of data profiling activities. Here, “the data processing arising from dataveillance allows for the identification, classification and representation of social entities (be they people, places or events) in the form of automated data profiles – sometimes described as ‘data doubles’ or ‘data shadows’” (p. 10).iv

The last interactive advertising encounter in the aforementioned scene is with a virtual salesperson in Gap. Anderton’s eyes are once again scanned, but the personal identifiers retrieved by the system are incorrect. What Anderton is greeted with instead is this: “Hello, Mr. Yakamoto, welcome back to the Gap. How did those assorted tank tops work out for you?”
The transparent message of this vignette is threefold: In the future world of the movie, advertising’s access to biometric self is a given; predictive technology is fallible, and the boundaries between self and machine are fractured. As Donna Haraway (1991) would claim, “we are cyborgs” (p. 150).

Prior to making the film, the director, Steven Spielberg (2002), sought to create a realistic future for the setting. In order to do this, he organized a think tank and invited fifteen experts in science and technology and a group more directly involved with the movie to discuss their perspectives on possible future technologies. The experts included representation from the fields of architecture and urban planning, computer science, biomedical research, automotive design, and media communications such as journalism and advertising (Wired Staff, 2012). The modes of advertising in the movie were developed by Jeff Boortz of Concrete Pictures. According to Boortz, the “advertisements would recognize you – not only recognize you, but recognize your state of mind” (Parker, 2002, para. 9).
Since its release in 2002, *The Minority Report* has generated much interest from the advertising industry, specifically with regards to using the film’s advertising techniques as benchmarks for developing “real world” methods. For instance, in a YouTube video, Immersive Labs (IMRSV, 2013) signals the *Minority Report* as an inspiration for its CARA computer vision platform (adaptive face detection). Upon detection of the consumer based on factors such as sex, estimated age, and attention time, the CARA software program collects “analytics data from the real world, deliver[s] targeted content to your audience, analyze[s] the effectiveness of media and create[s] amazing interactive experiences.” The program uses a decision engine that “adapts content, automatically delivering the right message to the right person at the right time.”

When the movie was released, Pamela Parker (2002), writing for *ClickZ*, claimed that the depictions of interactive advertisements were far-fetched. However, over a decade later the technological horizon has evolved by leaps and bounds. For instance, Japanese company NEC is producing billboards that use facial recognition to ascertain consumer information. According to Mark Brown (2010) of *Wired*, these billboards are equipped with a camera that takes a picture of the consumer. The computer then searches through a database of more than 10,000 patterns to determine the sex and approximate age of the subject. The information is used to determine which advertisements can be targeted to the consumer in question. NEC aims to integrate this technology into Tokyo, ultimately replacing advertisements on street corners and railway stations with “digital, face-recognizing signage” (para. 7).

More recently, British retailer *Tesco* is installing facial recognition screens in its 450 gas stations across the United Kingdom. Created by digital media group *Amscreen*, the software that runs on these systems can scan the consumer’s physical features and track shopping habits to present demographically targeted advertisements (Dooley, 2013a; Matlack, 2013). Despite these incredible technological advances, the advertising industry is not stopping at mining data from facial scans—their new target is “subconscious” terrain. With the aid of neuroscience research and brain imaging tools, neuromarketing, a fusion of neuroscience and marketing, aims to “mine the brain so they can blow your mind with products you deeply desire” (Penenberg, 2011, p. 3).

A key difference between traditional forms of marketing and neuromarketing lies in what the technological apparatus can do in terms of manipulating the consumer brain, that is, bypass the consumer’s capacity for critical reflection and reduce the consumer to the metaphor of
mind as animality via the animalization of thinking, as this dissertation seeks to argue. Within a world made for manufactured consumption, neuromarketing aims to provide its private and public sector clients with consumer [trigger] reports informed by clinical data obtained in brain focus group studies. This data is then factored into design and development of advertising campaigns that aim to augment (disinhibit) consumer affect and instincts, attune consumers to a mood of consumption, and motivate purchase decisions at a level beneath the consumer’s capacity for critical/reflective awareness (drawing from Heidegger, I refer to this basic form of “unreflective” coping as the state of animality). Neuromarketing discourse constructs and interprets consumers as brain images and particular brain types, reduced further to kinds of instinctive/affective responses to particular external stimuli (modes of animality). Industry tools include instruments for individual and demographic sorting, classification, manipulation, and normalization (see Bowker & Star, 1999). In light of Ellul’s (1964) quote on the creation of the “mass man,” neuromarketing builds on many of the fundamental principles of advertising and market research developed over the past century.

Situated in philosophy of technology, the overall aim of my research project is to inquire into the construction and function of the consumer in neuromarketing. The question that drives my thesis is whether and how neuromarketing effectively reduces human beings’ agentic world-forming potential to a reflexive animal relation to external triggers, conditioned by advertising messages to make “desired” consumer responses (eMailWire, 2009). I will seek to show how neuromarketing disrupts and overrides meaning-making (as ontological structures of understanding).

Defining neuromarketing
Consumer behaviour research has been informed traditionally by cognitive psychology, but as behavioural economists point out, it has now incorporated the diagnostic techniques of neuroscience to give rise to neuromarketing as a sub-area of neuroeconomics (Kenning & Plassmann, 2009; Hubert & Kenning, 2008; Camerer et al., 2005). Neuromarketing is a contemporary form of market research that uses brain-imaging technology to track how consumers respond to advertising stimulus. In his essay Brain Whisperers: Cutting through the Clutter with Neuromarketing, media and surveillance scholar Mark Andrejevic (2012) provides a substantial critique of neuromarketing as advertising persuasion. He writes: “neuromarketing is merely the latest attempt by marketers to take advantage of the promise of new media
technologies for the purposes of persuasion — it is the marketing industry’s embrace of the ‘neurocultural’ turn” (p. 199). In this context, neuroscience research methods are applied to an array of new fields (see Vidal & Ortega, 2011) such as neuroaesthetics, neurotheology, and neuroeducation, attaching the prefix neuro- to their inquiries as progress in the brain sciences “increasingly informs our daily lives, social practices, and intellectual discourses” (Fisher et al., 2010, p. 230).

Writing for *Time Inc./Business 2.0*, Thomas Mucha (2005) describes neuromarketing as a tool for studying brain activity that combines the “techniques of neuroscience and clinical psychology to develop insights into how we respond to products, brands, and advertisements” (p. 2). Marketers use these data to understand the nuances that apparently distinguish between ineffective and successful advertising campaigns. Consumer neuroscience researchers Lee et al. (2007) define neuromarketing as “the application of neuroscientific methods to analyze and understand human behaviour in relation to markets and marketing exchanges” (p. 200). Proponent of neuromarketing, Professor Ale Smidts of the Erasmus University of Rotterdam explains that neuromarketing aims to understand “the customer and his reaction to marketing stimuli by measuring the processes in the brain (neuroimaging and biometrics) and including them in the development of both theory and stimuli” (Bercea, 2012, para. 30).

Neuromarketing methods have expanded over the years to include a wide biometric taxonomy to measure the self, such as tracking heart rate, galvanic skin responses, and pupil dilation. A general claim made by the industry is that measurement of brain activity offers the most accurate and objective data. Nielsen Research (2014), for example, uses brain-imaging to measure real-time brain activity. The company claims that its methods are “capturing purchase considerations at the moment they are formed in the brain” (para. 2). Other companies such as Procter & Gamble, Unilever, and Kimberly-Clark use eye-tracking technology with three-dimensional simulations of product design and store layout which allegedly help them “roll out new products faster and come up with designs and shelf layouts that boost sales” (Glazer, 2012, para. 3).

For neuromarketing proponents, personalized advertising has the potential to go much further than traditional focus groups and become more profitable by extracting marketing data from the consumer’s subconscious. In a *New York Times* interview with Clint Kilts the scientific director of the BrightHouse Institute, Clive Thompson (2003) writes that traditional focus groups “are plagued by a basic flaw of human psychology: people often do not know
their own minds” (p. 3), a common assumption in the industry. Brain imaging, however, “offers the promise of concrete facts – an unbiased glimpse at a consumer’s mind in action.” Professor Steven Quartz, a 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” (in Singer, 2004).

Similarly, the author of *Buyology*, Martin Lindstrom (2010), 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” (p. 18). The advertising industry stands to make significant gains from neuromarketing as a tool to enhance techniques of consumer persuasion.

**Differences between traditional marketing and neuromarketing**

Traditional marketing methods have relied on behavioural psychology as pathways to unravelling the secrets of the consumer’s buying brain, appealing to the psyche and affective pull (e.g., Sinha & Foscht, 2007; Beckwith, 2000; Cialdini; 1984). These traditional methods include qualitative focus groups, such as interviews and surveys (face-to-face and phone); ethnographies where consumers are observed in specific environments; accompanied shopping; and intercepts where consumers are stopped in the street and surveyed. Chief executive officer of communications company, *G2 Joshua*, Tim Hipperson (2012) points out that in a way considered “inconceivable” in the past, neuromarketing allows market researchers to understand how the human brain responds to a creative stimulus and particular emotions the stimulus triggers. He writes: “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” (para. 2).

An example that can serve to highlight the technological difference between neuromarketing and more traditional forms of marketing is the practice of brain hacking, a military research attempt to decode and manipulate the subject. Pioneered by Stanford researchers, brain hacking as a technique gives three-dimensional visualization that
encompasses the whole brain, allowing researchers to 1) see in greater detail how parts of the brain interact on a cellular level, and 2) obtain a more comprehensive understanding of those interactions across the entire brain. According to Justin Sanchez, program manager for Neuro Function, Activity, Structure, and Technology, the group that funded the research: “What we’re saying here today is that we can develop new technology that changes how we observe and interact with the circuits of the brain” (Tucker, 2014, para. 4). A question that arises in light of brain hacking technology is this: If neuromarketing possessed the tools to decode, hack into, and manipulate the consumer brain/mind, would it?

It could be argued that a form of brain hacking already occurs in neuromarketing as currently practiced, inasmuch as the technique attempts to probe the consumer subconscious to extract useful data, then decode and manipulate the consumer with advertising campaigns that are tweaked according to the consumer’s biometric/instinctive responses to specific advertising stimuli, as we shall see in the following chapters. Neuromarketing utilizes the consumer as instrumental for profit-making in a digital economy founded on capitalism. In order for this instrumental relationship to be developed, the neuromarketer uses sophisticated strategies of persuasion aimed at bypassing the consumer’s capacity for critical reflection and manipulating the consumer’s affective and instinctive states to influence choice.

The authors of a Covington White Paper on the growing legal and policy issues around neuromarketing practice, Voorhees et al. (2012) argue, “[a]t its core, neuromarketing involves an effort to influence consumer decision-making at an unconscious level” (p. 8). Andrejevic (2012) is also clear on this point: “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.” (p. 201; emphasis added).

Neuromarketing seeks to isolate the moment of decision and acts on the process of decision-making at a level that is 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. As consumer rights monitors Grey et al. (2003) write: “[T]he whole point of neuromarketing is to bypass thought, not encourage it” (para. 9). Although the technique ultimately depends on the consumer having the freedom to
choose amongst commodities, the tendency of the field according to its discourse structures is toward the total reification of the consumer.

It is precisely the potential for neuro-technologies and other technologies of augmentation (e.g., wearable technology, Google Glass, Oculus Rift) to manipulate and control consumers through intimate brain-machine interfaces that makes neuromarketing, as a technique of advertising, an industry to monitor closely in terms of consumer rights. As World Business Academy executives Brutoco and Austin (2010) 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” (para. 8). In this sense, neuromarketing erodes our core democratic values of freedom and self-determination. It is a question of rights, then, specifically the right to freedom of intelligence that provokes my investigation and my choice to draw on thinkers such as Heidegger to understand how certain modalities of late capitalism may threaten consumer rights to freedom.

Violating freedoms: Neuromarketing as communicative surveillance

My précis so far evidences how it can be argued that neuromarketing aims to disrupt and override consumer thinking processes (i.e. structure of understanding the world, sense-making). To offer a complementary illustration, neuromarketing as communicative consumer surveillance that violates consumer rights to freedom can be viewed in light of the work of numerous philosophies regarding freedom and democracy, including those of Jurgen Habermas and John Dewey. For instance, surveillance scholar David Lyon (1994) uses the Habermasian theory of “communicative action” to illustrate the communicative dimensions of surveillance. Habermas (1984) proposes that communicative action is the distinguishing characteristic of human beings. In an “ideal speech” situation individuals attain freedom through “undistorted communication.” Individuals pursue their goals on the condition they can “harmonize their plans of action on the basis of common situation definitions” (p. 286). This, on Lyon’s (1994) interpretation, means communication without compulsion. When applied to neuromarketing, however, it can be argued that neuromarketing techniques shatter the possibility for undistorted communication.

Neuromarketing works in opposition to the ideals of a robust democracy as defined by philosophers such as John Dewey (1916), to use another example, who understands democracy as a social act, as “primarily a mode of associated living, of conjoint communicative
experiences” (p. 87), and a freedom of intelligence: “the basic freedom of mind and of whatever degree of freedom of action and experiences is necessary to produce freedom of intelligence”\(^\text{xi}\) (p. 17). Dewey does not use the term “intelligence” to indicate I.Q. or cleverness; rather, he uses the term to signify reflective thought. On this view, “[p]eople are free, in one of the meanings of the word, if they are able to create, or at least to choose, their own values” (Dewiel, 2000, p. 3). These tensions lead directly to key questions underlying my project: How is neuromarketing shaping our subjectivities? How is neuromarketing disrupting our processes of meaning-making? If neuromarketing is scrambling our thinking, can we be free at all?

Of course, advertising and marketing have been taken to task by numerous scholars regarding how and if they violate consumer agency and democratic structures. Media studies, mass communication studies, and cultural studies have long explored questions regarding hegemony, representation, identity, ideology, signification, freedom, consciousness, and sense-making in light of the mass media as a manipulator of ideas (e.g., McChesney, 2013; Boler, 2008; Dean, 2005; Chomsky, 1989; Hall, 1973; Barthes, 1972; Marcuse, 1964; Innis, 1950). Advertising has been analyzed by cultural theorists as a symbol for contemporary socio-culture within which it has become ubiquitous, and also as an economic and political force. Writing on the pervasiveness of advertising and its political effects, Raymond Williams (1980) discusses advertising as a “highly organised 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” (p. 731). Articulating a critique carried forward by scholars to the present day, Williams argues that advertising affects the way consumers respond to certain stimuli and creates a manufactured need that can never be satisfied. Similarly, science and technology scholar Paul Edwards (2003) claims that advertising, as a way of generating demand, often creates “needs” from thin air, and market research, acting as feedback, is used to increase the efficiency of sales and distribution.\(^\text{xii}\)

Advertising has long been considered a manipulator of minds and increased significantly in coercive power upon the emergence of research in behavioural psychology (see Bourdieu, 1998; Smith, 1994; Key, 1989; Ewen, 1976; Packard, 1957; Bernays, 1947). Jacques Ellul (1964), for instance, points out that advertising is founded on extensive psychological research\(^\text{xiii}\) and well before “propaganda proper,” it was advertising that “introduced the conception of efficiency into the field of persuasion … in advertising the end was to produce
reflex action” (p. 365). Jean Baudrillard (1988b) argues that advertising invades everything. In his view, 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 (pp. 129-130).

Exemplifying one approach within the political economy of communication, Dallas Smythe (1981) conceives of the relation between advertising and labour as “mind slavery.” The “commodity form of mass-produced advertiser supported communications” is the audience, specifically audience labour-power (pp. 2-3). Such a process interconnects media companies, audiences, and advertisers. Smythe calls this assemblage the consciousness industry, which turns on the production of audiences and the selling of their own (audience) “consciousness” to advertisers or to political candidates and political causes.

The field of surveillance studies has also opened up new ways of thinking about the relationship between subjectivity and mass media. Susanne Lace (2005), for example, suggests that in a consumer surveillance society, “We are all ‘glass consumers’: others know so much about us they can almost see through us” (p. 1). 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 – mirror” our own vulnerabilities (p. 7). However, like glass the knowledge gleaned from consumer surveillance can be distorted in that consumer probing varies from observer to observer, so consumer data can be approached and understood in varied ways depending on who is interpreting the information. Foucault’s conceptualization of the panopticon (1977) is often used in the context of surveillance, the panopticon representing a surveillance apparatus as a mirror of modernity. Gandy (2006) and Andrejevic (2012), for example, explore the panopticon in a consumer context—what Bauman and Lyon (2013) call “the soft end of the surveillance continuum” (p. 54).

Stuart Hall’s (1973) encoding/decoding model of communication (using four stages: production, circulation, use – distribution or consumption – and reproduction) offers a theoretical framework for explaining how media messages are produced, disseminated, and interpreted in the world. Hall claims that messages have a “complex structure of dominance” because they are “imprinted” by institutional power. He advances the notion that readers (audience) play an active role when decoding messages as they rely on their personal socio-cultural contexts and are able to disrupt/alter messages themselves via collective action. Put
simply, advertisements have nuanced layers of meaning; they can be decoded in diverse ways and might mean different things to different people.

There is a large body of research on behavioural advertising and its connections to surveillance and privacy (Staksrud & Livingstone, 2012; Goldfarb & Tucker, 2011; Manzerolle & Smeltzer, 2011; Stanland et al., 2011; Lawford, 2008; Gates & Magnet, 2007; Nairn & Monkgol, 2007; Dinev & Hart, 2003), and an equally broad base of literature on neuroscience as a method that can inform marketing and advertising techniques (du Plessis, 2011; Lindstrom, 2010; Zurawicki, 2010; Fugate, 2008, 2007; Broderick & Chamberlain, 2007; Lee & Broderick, 2007; Plassmann et al., 2007). The connection between neuromarketing and privacy in terms of intrusion of the mind has also become a hot topic over the past decade (Ratzek, 2011; The Economist, 2004; Singer, 2004; Lovel, 2003; Thompson, 2003). There have been critiques of neuromarketing as an attempt to manipulate the brain/mind through modern neurotechnologies (Andrejevic, 2012; Schneider & Woolgar, 2012) and efforts to connect the technique to a system of ethics that can guide industry practice (Murphy et al., 2012; Wilson et al., 2008). However, there is a gap in the literature on philosophical approaches to neuromarketing as an instrument of communicative surveillance that works to construct the consumer as a thing (animality) to study and manipulate for instrumental ends.

While theoretical frameworks used in surveillance studies have been dominated by the metaphor of the “panopticon” (Foucault, 1977; 1970), there has been a growing consensus amongst surveillance scholars to move away from a Foucauldian perspective to explore other models for analysis, such as Deleuze’s social ontology of “assemblages” (Deleuze, 1999, 1995; Deleuze & Guattari, 1988) and Actor-Network theory (Latour 2005; Law & Bijker, 1994). While these perspectives draw attention to crucial aspects of consumer surveillance, they do not elaborate on the communicative structures that underpin the manufacture of consumer consciousness. A critical (Heideggerian) hermeneutics of neuromarketing as a discursive process contributes to surveillance studies a new philosophical framework to analyze the socio-cognitive terrain of contemporary consumer surveillance practices.

A critical hermeneutics of neuromarketing discourse

For my textual analysis, I will use Heidegger’s (1995) tripartite thesis that the stone is worldless, animal is poor in world, and man [sic] is world-forming, to analyze how the consumer is constructed through the discourse structures of neuromarketing. I will focus on the
concept of animality. In line with fundamental structures of animality, I will argue that neuromarketing aims to captivate consumers within themselves – what philosopher Zygmunt Bauman would call a turning in (Bauman & Lyon, 2013) – and encircle them in their target niche of personalized consumption. Captivation is the essence of animality, that un/reflective void separating human from animal, according to Heidegger. Neuromarketers seek to manipulate the consumer at a level comparable to what Heidegger (2010) would call everyday/mindless coping (a most basic form of “practical understanding” where we are so absorbed in the world that we are not even aware of awareness itself) and make attunements (e.g., mood setting) before the consumer shifts into the capacity for more reflective and critical thinking (i.e. interpretation and thematizing).

Approaching “technology as text” (Grint & Woolgar, 1997) using a Heideggerian reading allows us to inquire into neuromarketing technologies (i.e. hardware/non-hardware) as open texts that are “written” or configured in various ways by the social groups involved in each stage of development, production, and marketing. The metaphor of technology as text can lead to a revealing of often hidden work by the various individuals involved in crafting the “materiality and interpretations of devices” (Selwyn, 2012, p. 86). As Haraway (1991) writes: “Social reality is lived social relations, our most important political construction, a world changing fiction” (p. 149). It is exactly this “world changing fiction” that my project seeks to explore. The practice of neuromarketing (and augmenting consumer animality) is brought to life with Haraway’s notion of “writing technology” where:

In a sense, 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. Biology here is a kind of cryptography. Research is necessarily a kind of intelligence activity. (p. 164)

The Heideggerian framework is useful here in that its concepts for analysis can reveal patterns (themes) and disclose how textual artifacts of neuromarketing construct the consumer as instrumental to the needs of the advertising industry and profit-driven corporations. Bauman has used a Heideggerian frame to understand the instrumentalization and commodification of subjects that occur in [liquid] consumer surveillance (Bauman & Lyon, 2013). Agamben (2004) has interrogated animality (the anthropological machine) as a concept central to shaping the discursive grammar of scientific, political, economic, and everyday life. That
neuromarketing animalizes thinking can be illustrated through Heidegger’s conceptions of animality in a similar capacity, as I will show in this dissertation.

Although Heidegger’s ideas on animal life are limited and simplistic in light of critiques of his work and given contemporary burgeoning research in animal studies as well as posthuman studies (e.g., Derrida, 2008; Agamben, 2004; Krell, 1992), his structure of animality, nevertheless, serves as a useful frame from which to understand how the animalization of thinking is at play in the discursive world of neuromarketing. A Heideggerian frame using the structure of animality allows us to see how neuromarketing seeks to disrupt and override our communicative processes. Through animalizing consumer thinking, neuromarketing reduces the consumer to a “lower thing,” a non-human human (Agamben, 2004) 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.”

Critiques of the neuromarketing industry address issues of privacy and data protection. For instance: Is brain imaging technology an invasion of privacy, specifically a disruption to identity and personhood? If so, there is a serious casualty here: autonomy. Scholars critical of neuromarketing have written on this ethical issue in various iterations. Murphy et al. (2008), for example, ponder “whether the new tools of neuromarketing will provide sufficient insight into human neural function to allow manipulation of the brain such that the consumer cannot detect the subterfuge and that such manipulations result in the desired behavior in at least some exposed persons” (p. 297). In sum, the authors argue that the most “vexing” of the challenges raised by neuromarketing is the issue of autonomy. Schneider and Woolgar (2012) ask important questions as well: “Why is this form of reductionism rampant at this point of our history? What explains the general preference for accounts of human behaviour that privilege the gene, the brain, and so on, over the person?” (p. 186).

The form of consumer persuasion emerging from neuromarketing differs from rhetorical appeals of traditional advertising and market research. While traditional market research also plays on emotion and desire, the application of new and improved technologies of consumer surveillance neuromarketing goes further by seeking to bypass the consumer’s critical/reflective sense-making. Since the relation to meaning-making is what makes possible critical resistance to rhetorical manipulation, neuromarketing aims at a much deeper level of manipulation [instinctive responses] that cannot be resisted, and it is using neurotechnologies
to gain more advertising precision. It is precisely here that, arguably, the most significant and urgent ethical issue arises regarding neuromarketing. As consumer rights activist Gary Ruskin argues: “It is wrong to use medical research for marketing instead of healing” (Lovel, 2002, para. 6).

**Chapter outlines**

My project is intended as an exposition and critique of an affront to human agency: the technique of neuromarketing and its methods of disrupting and overriding the human capacity to engage in thoughtful and reflective evaluation of the world and the entities within. The motives of neuromarketing are geared toward the perpetuation and expansion of a consumer society grounded in uncritical acts of consumption, and resulting in what communications scholar Wilson Brian Key (1989) would call a socio-cultural environment that exists as “an enormous vending machine” (p. 114).

Chapter One traces the developmental trajectory of neuromarketing, offering a brief overview of the history of advertising and market research in the West. I have delineated 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 of the main industry players include Dr. A. K. Pradeep (CEO of NeuroFocus), Dr. Stephen Sands and Mr. Ron Wright (co-founders of Sands Research), Martin Lindstrom (author of Buyology and branding expert); Roger Dooley (president of Dooley Direct), Diana Lucaci (founder and CEO of True Impact Marketing), Eric du Plessis (Chairman of Millward Brown, SA), and Dr. Christophe Morin and Patrick Renvoisé (co-founders of SalesBrain). These individuals are spokespersons for neuromarketing and all have interests in a marketing business. Some agents with a stake in a neuromarketing company[ies] are also attached to universities as either professors and/or researchers, including Doctors Gerald Zaltman (Olson Zaltman Associates) and Gemma Calvert (founder and managing director of Neurosense).

Features I associate with the dominant pro-neuromarketing narrative include:

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

While a range of individuals are increasingly turning their attention to the emergence and implications of neuromarketing, those who have most explicitly critiqued the industry include – but are not limited to – consumer surveillance scholar Mark Andrejevic; science and technology scholars Tanja Schneider and Steve Woolgar; World Business Academy executives Rinaldo Brutoco and Madeleine Austin; ethicists Emily Murphy, Judy Illes, and Peter Reiner; business scholars Mark Wilson, Jeannie Gaines, and Ronald Paul Hill; consumer rights activist Gary Ruskin of Commercial Alert; neuroscientists Molly Crocket and Ruth Lanius; editor-in-chief of the *Advertising Age* Rance Crain; and journalists Thomas Mucha, Matt Wall, and Adam Penenberg.

To situate the story of neuromarketing in a larger narrative context, Chapter Two offers an account of cognitive science and key guiding metaphors for the mind. The chapter considers the disciplines of artificial intelligence, cybernetics, neuroscience, and psychology as part of a larger paradigm of science and technology that informs neuromarketing methodology.

In Chapters Three and Four, I draw centrally on Heidegger’s writings on world disclosure and animal life as they pertain to Being and Time (2010), Fundamental Concepts of Metaphysics: World - Finitude - Solitude (1995), and The Question Concerning Technology (1977). As intimated earlier, I have two primary reasons for choosing a Heideggerian frame for my project. First, sections of his analytic approach are useful as heuristic devices to illustrate how, through textual artifacts (i.e. discourse structures), neuromarketers construct consumer subjects and animalize consumer thinking. This construction process occurs in socio-cognitive terrain and requires a grasp of how human beings make meaning in order to identify how neuromarketing violates consumer agency. Heidegger’s ontological inquiry into understanding has informed the discipline of artificial intelligence (AI) with regards to breaking down human information processing (structures of understanding) into components that can be used to guide development of computer intelligence (e.g., Dreyfus, 2007; Agre, 1997; Preston 1993). Using a Heideggerian frame to explore the process of understanding in the context of neuromarketing is a reasonable extension. Such a reading can serve to foreground structures of understanding in relation to the consumer subject (consumer as animality) and the neuromarketing process as communicative surveillance. Second, Heidegger’s philosophical reflections offer a critical
reading of the force of modern technology and its capacity to enframe and disclose consumer worlds for instrumental ends.

The fifth and sixth chapters offer an analysis of the text/talk of neuromarketing as it applies to Heidegger’s first and second theses: the stone is worldless and the animal is poor in world. I use thematic textual analysis and a Heideggerian analytic frame as a hybrid approach for conducting a critical hermeneutic of the themes and rhetorical tropes operating in the text-world of neuromarketing. Thematic textual analysis is a qualitative analytic research method for identifying, analyzing, and reporting patterns (themes) within a specific set of data as important to the description of the phenomenon under inquiry (Guest et al., 2012; Braun & Clarke, 2006; Daly et al., 1997). This mode of analysis is complementary to the practice of phenomenological hermeneutics in that it allows for deductive thematic analysis, (derived from a Heideggerian philosophical framework), while also allowing themes to emerge from the data through inductive coding (Fereday et al., 2006). My qualitative research strategies include memoing, selecting, summarizing and coding, theme construction, comparison and theory building (Denzin & Lincoln 2005; Mason 2002). I consider emergent themes, assumptions, and key guiding metaphors. For an elaboration on my method, an overview of the artifacts I have collected for my project, and a consideration of the limitations of my research, see Appendix I.

In Chapter Six, I focus exclusively on the notion of augmenting animality. I draw on Heidegger’s second thesis that the animal is poor in world as a conceptual frame for showing how neuromarketing works to instrumentalize the consumer as a thing to study, disinhibit, augment, and manipulate for instrumental ends, thereby constructing particular kinds of consumer ontologies in line with the socio-political grammar of the modern anthropological machine (Agamben, 2004). Heidegger’s thesis is useful heuristically as a method for revealing the crudeness of certain dimensions of the neuromarketing program inasmuch as they assume the consumer is situated in an understandable world/niche without explicating the process of understanding and/or the concept of world when meaning-making. To simplify the concept of animality as a frame for revealing how neuromarketing animalizes consumer thinking, I summarize animality as follows:

**Animality (essence: captivation)**

- Inability to grasp the nature of an object as such;
- Inability to move beyond simply behaving within a world from animal instinct;
• Possibility of having one’s niche [encircling ring/subjective world] disrupted [disinhibited] and manipulated by an external stimulus.

I will argue that the language of neuromarketing captivates and places the consumer in a state of augmented animality: a cybernetic organism. This chimera exists somewhere between human and machine—the consumer as subject is rejected conceptually as a person and reduced to an animal-machine through neuromarketing technologies and the animalization of thinking.

Chapter Seven ends my project with conclusions regarding how neuromarketing as a public pedagogy of communicative surveillance constructs the consumer subject. I use the concept of “pedagogy” ironically as a rhetorical strategy in line with Haraway’s (1991) thinking where “irony is about contradictions that do not resolve into larger wholes, even dialectically, about the tension of holding incompatible things together because both or all are necessary and true” (p. 149). Identifying neuromarketing as pedagogy signals to readers that they are being subjected to a teaching and learning process of communicative surveillance whether they like it or not. In this sense, pedagogy does not aim at the development of the human being through critical-democratic education as Dewey (1916) or Freire (1972) would conceive of it; rather it becomes a public pedagogy of conditioning that infiltrates the world as a cultural media environment, seeking to disrupt a democratic way of life and conditioning consumers into a particular mode of being-in-the-world that is instrumental for the expansion of a consumer society. I also consider the debates around ethics and privacy and their implications. Using a philosophical frame, I highlight how the technique of neuromarketing violates consumer freedoms through the animalization of thinking (mind as animality). Following this I present my suggestions for further research.
CHAPTER ONE
The World of Neuromarketing

Thanks to fMRI we now know the extent to which the senses are intertwined; that fragrance can make us see, sound can make us smack our lips, and sight can help us imagine sound, taste, and touch—that is, if it’s the right pairing of sensory input … this assault on your senses will be more effective in winning your mind, your loyalty, and your dollars than you ever thought possible.

-- Martin Lindstrom

Well before “propaganda proper,” it was advertising that introduced the concept of efficiency into the field of persuasion. As Ellul (1964) points out, “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” (p. 364). Forms of persuasion in politics and advertising were distinct in the early twentieth century—conditions in advertising were much more favourable to the partnership of mechanical and psychological means than other realms such as political conditions, for example. The combination of two categories of techniques - mechanical and psychological - is what provided advertising with its brute force. Whereas political manoeuvres were targeted at the elite and attempted to elicit an intellectual reaction, advertising was targeted to a wider population, and “in advertising the end was to produce reflex action” (p. 365). Here, the primary purpose of advertising as a technique is the creation of a particular way of life. On this view, 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, appealing to affect over reason.

Given rapid developments in neuro-technologies and technologies of augmentation, Ellul’s conception of the mass man, formed through advertising as a psycho-social technique of persuasion, is especially relevant in a network society. In the context of neuromarketing, we ought to ask ourselves: What are the dimensions to the technique being used to attain persuasive advertising force? How are consumer subjectivities constructed through neuromarketing discourse structures and neurotechnologies? For whom are these technologies working? In this chapter I provide an account of the developmental trajectory of
neuromarketing, including an overview of the history of advertising and market research as a psycho-social technique in the West. My focus is on the behavioural psychology from which modern forms of market research and advertising emerge. Much of advertising and market research history has been recounted by others, so this section provides a snapshot of that history in order to place neuromarketing on a historical continuum as a symptom of late capitalism.

**Consumer surveillance: Market research as an advertising tool**

While we tend to think of advertising as having roots primarily in modern consumer culture, its history can be traced back to Aristotle’s *Rhetoric*, a philosophical system of persuasion grounded in early forms of social psychology (see, for e.g., Clark et al., 1994). Although the kind of persuasion Aristotle (2004) examined was primarily in relation to politics, persuasion designed for the promotion of goods and services emerged with basic advertising techniques. The term “advertising” is derived from the Latin word *advertere*: turn, face to, towards, which is also attached to the Latin word *vertere*: to turn; turn around; change. In the late fifteenth century, the sense shifted to “give notice to others, warn,” The meaning “to call attention to goods for sale, rewards, etc.,” appeared in the late 18th century. By 1897, *marketing* emerged as a term that referred to the “process of moving goods from producer to consumer with emphasis on advertising and sales” (Online Etymological Dictionary, 2012).

Writing for the *Journal of Marketing*, Lawrence Lockley (1950) claims that marketing as an informal practice can be dated back to the 9th and 10th centuries B.C. where, “[e]ven the Children of Israel sent out interviewers to sample the market and the produce of Canaan” (p. 733). However, evidence of market research as a formal tool of advertising and as an independent field of study did not become “endemic” until the period between 1910 and 1920. Clark et al. (1994) note that between 1910 and 1930 major manufacturers established their first market research companies. Over the years, market research and advertising have remained connected intimately, evolving into a more efficient surveillant assemblage alongside modern technological developments (Haggerty & Ericson, 2000; Gandy, 1993).

Prior to the industrial revolution, goods were produced on a small scale and locally 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 printing-press technology,
ushering in the capacity to increase the production of texts while decreasing costs, thereby allowing the dissemination of information to a larger audience (Eisenstein, 1983; McLuhan, 1962). Harold Innis (1951) claims that such significant developments in technologies of communication “involved a revolution in the extension of communication facilities” (p. 27) and became the driving force behind social change. In this sense, technology shaped both individual understanding and societal consciousness. 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 with consumers often located at larger distances from the factories in which goods were produced. 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 (Pope, 1993). The development of the radio and broadcast network saw print advertising move from static visuals to dissemination in aural form, earning advertising technique 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 (Clark et al., 1994). Of this medium as an advertising technology, McLuhan (1964) points out that radio, with its cloak of invisibility, “[c]omes 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” (p. 302).

Serious market research into consumer tastes, habits, and buying practices took off during the years after World War I. Surveillance scholar Adam Arvidsson (2004) explains that “the main enemy was the perceived mutability and ‘irrationality’ of existing consumer patterns” (p. 459). Market research at this time, he argues, was grounded on the dominant paradigm of scientific management and aimed to engineer consumer demand (see Calkins & Holden, 1905). Similar to the “scientifically” managed work process, Arvidsson notes that information gleaned from market research was used to compartmentalize consumer demand into identifiable segments that could then be “targeted by advertising that sought to educate, rationalize and shape attitudes and behaviour” (p. 459). Communications scholar and historian Stuart Ewen (1976) points out that “[c]onsumer goods manufacturers were coming to
recognize that mass production and mass distribution were ‘necessary’ steps toward survival in a competitive environment” (p. 24).

Determining how to access new markets and create demand was vitally important. In the 1920s, consumerism - “the mass participation in the values of the mass-industrial market” - emerged as “an aggressive device of corporate survival” (p. 54). Cultural historian Jackson Lears (1994) observes that 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 (p. 225), and with the growing prestige of psychology, the focus of advertising executives shifted from the product to the consumer. Advertising historian Stephen Fox (1984) highlights that the industry was at its peak during the twenties: “Given a heady mix of general prosperity, a pliant consumer, an agreeable government, and an unprecedented flow of new products, Madison Avenue sold its materialist visions without hindrance” (p. 272).

Writing on advertising and market research, particularly in the postwar era, journalist and social critic Vance Packard (1957) discusses how behavioural psychology and subliminal attacks were used to manipulate consumer desires for goods and services. He identifies eight “compelling needs” that drive individuals to desire goods and service. These needs include emotional security; reassurance of worth; ego gratification; creative outlets; love objects; sense of power; roots; and immortality. Packard was concerned with persuasion and social manipulation. Upon the development of behavioural psychology, he argues, advertising agencies began to hire 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 new scientific knowledge, market researchers started to question the three basic assumptions held with respect to consumers up to that point:

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 that people can be trusted to behave in a rational way.

Foundational to the continued advancement of capitalism, market research (and advertising) grounded in behavioural psychology increasingly became a primary tool for businesses to promote their products in an ongoing search for growth and rising profits within
a finite market (Fox, 1984). In the process, advertising became instrumental for imprinting values onto the mass population, including, as Merritt Roe Smith (1994) observes, “the ethos of mass consumption” (p. 13). Pamela Laird (1998) argues that advertising moved away from simply informing consumers and set out to deliberately create desires and demand. With instruments of applied [behavioural] psychology informing market research practices, advertisers aimed to evoke consumer needs by associating these needs with intangible desires (see also Baudrillard, 1988a; Marcuse, 1964).

Advertisements were developed with the specific intention of appealing to “such thoughts and feelings as efficiency, elegance, family affection, and freedom, modernity, patriotism, sexuality, status, and youth” (Smith, 1994, p. 13). Similarly, Edwards (2003) claims that advertising, as a way of generating demand, often creates “needs” from thin air, and market research, acting as feedback, is used to increase the efficiency of sales and distribution. With the invention of television, advertising gained an even sharper edge in that it was able to offer the consumer, through the magic of film, a hypnotic escape from the finitude of life that mimicked the temporal movements of life itself (Ellul, 1964). With television, the viewer became “involved and participant” (McLuhan, 1964, p. 318).

On the evolution of advertising and culture as a psychotechnique, Horkheimer and Adorno (2002) observe: “Advertising and the culture industry are merging technically no less than economically … In both, under the dictate of effectiveness technique is becoming psychotechnique, a procedure for manipulating human beings” (p. 133). On this technique, Ellul (1964) writes:

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. (pp. 363-64)

As the search for expanding markets continued, control through information and communications was challenged with creating new markets as existing markets, even far and
wide, became saturated with mass-produced goods (Edwards, 2003). Author and social activist Naomi Klein (2000) claims that given the overflow of the market with a range of newly invented products, advertisers sought to alter the way consumers lived their lives: “Ads had to inform consumers about the existence of some new invention, then convince them that their lives would be better if they used, for example, cars instead of wagons, telephones instead of mail and electric light instead of oil lamps” (p. 5).

Klein focuses on the trajectory of “branding” as a practice that came to be attached to market research and advertising. The brand can be considered “the core meaning of the modern corporation, and the advertisement as one vehicle used to convey that meaning to the world” (p. 5). Advertising went from spreading messages orally to building an image, via market research data, around a particular brand name product that set it apart from its competitors (Moore & Reid, 2008; Arvidsson, 2006).

Marketing and advertising gained an even stronger foothold in society with the genesis of the digital economy. Advertisements could suddenly be disseminated from one culture to another at the speed of a mouse-click (Pariser, 2011; Turow, 2006, 1997). As the Internet (and information and communications technology, ICT, more generally) evolved into a more intelligent digital ecosystem, so too did advertising and market research techniques. Amazon, for example, was arguably the first e-commerce website to introduce the concept of personalized advertisements. Involving a process of crunching algorithms to personalize the online store for each customer, a list of recommended items were generated based on data input on the customer’s interests (McStay, 2009; Linden et al., 2003).

As digital technologies develop they are providing increasingly fertile ground for market research and advertising to become more intelligent and predictive psycho-machinery, able to streamline consumer experience into a feedback loop of augmented personalization. In a race to capitalize on these moves, corporations are developing [communicative] consumer surveillance methods grounded in neuroscience, giving rise to neuromarketing as a technique of consumer manipulation and control. Using introspective questioning to unearth the ways in which individuals structure and respond to reality through metaphor (Zaltman & Zaltman, 2008; Lagace, 2008), and instruments of measurement such as fMRI and EEG to monitor responses in the consumer brain when [re]presented with advertising stimuli, their primary goal is to probe the unconscious mind to understand how to better uncover individual “needs,” and, in the process, manufacture consumption.
No longer is advertising merely a form of calling attention to products or a method of persuasion that encourages one to purchase a good or service through appeals to sight and sound; rather, with developments in modern technology and market research methods, it is now a comprehensive technique that aims to calibrate one’s “brand soma” (du Plessis, 2011, p. 13), or how one feels about a particular brand (or commodity) in order for that individual to make a purchase and develop lifelong loyalty (Dooley, 2012; Lindstrom, 2010; Fugate 2008; Walvis, 2008). Neuromarketing presents itself as being able to provide “objective” and “predictive” data that can be used to develop advertising messages (or brand design) for evoking consumer instincts and affect, triggering desirable buying responses.

What is the relationship of neuromarketing to traditional advertising and marketing persuasion?

At this point, one might ask: Does neuromarketing represent an entirely new form of marketing? Or is it an extension of traditional marketing techniques, differentiated simply by the development of new technologies (which I outline below)? To the extent that neuromarketing is defined as seeking to bypass the consumer’s reflective awareness and instead target the “reptilian” brain or what I will call animality following Heidegger (1995), is it correct to see this as a break from traditional advertising and market research assumptions about the person?

My research evidences that a key difference between traditional modes of marketing and neuromarketing lies in the tools used: neuromarketing has access to powerful biotechnological and neurotechnological equipment for consumer persuasion. These new tools allow neuromarketers to access and measure the consumer in a way that was not possible in the past. There is also a difference in terms of the animalization of thinking embedded with new assumptions about the human being. What I seek to do in this dissertation is analyze how the consumer is constructed in the intersection of neuroscience and marketing, while also drawing attention to the differences between neuromarketing and traditional market research techniques as methods of consumer persuasion.
Neuromarketing: A global phenomenon

Neuromarketing claims to offer snapshots into consumer subconscious brain/mind activity with the primary task of tracking consumer affective and/or instinctive responses to advertising stimuli. Voorhees et al. (2012) posit that neuromarketing is framed as a “breakthrough” in the scientific understanding of thought processes. Proponents generally argue that because brain imaging technologies can “objectively” represent the impact of an advertising stimulus on a consumer’s attention, emotion, and memory, advertisers can finally predict with greater accuracy the specific characteristics of an advertisement or product design that will deliver the “greatest positive appeal.” Douglas Fugate (2008), professor of marketing at Western Kentucky University, argues that such data can help market research and advertisers target consumers more precisely through the unravelling of the “black box” mystery of subconscious decision-making processes. He writes: “Even the most determined research subject is unlikely to be able to accurately represent his or her conscious and subconscious thought processes. Neuroscience removes this methodological barrier” (p. 171).

The earliest reported use of the word neuromarketing is 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 (functional Magnetic Resonance Imaging) technology for market research purposes. Neuromarketing became a U.S. 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 (see Reid, 2005; Thompson, 2003). The study was financed by the National Institute on Drug Abuse and the Kane Family Foundation. 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, researchers observed that each soft drink lit up the brain’s reward system, and the participants were equally split in terms of their preferred drink (Blakeslee, 2004). Montague claims this experiment shows that 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 (The Lancet Neurology, 2004).

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 claims his results “prove” that conscious and subconscious responses are often in conflict when consumers interact with brands (Reid, 2005), and that the study shows 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, “namely the strong brand identity of Coca-Cola” (Blakeslee, 2004). Writing for *The Globe and Mail*, Jill Mahoney (2005) understands the results of this test as “scientific proof of the effectiveness of branding” (p. 3) and maintains 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” (p. 2).

**Professionalization of neuromarketing**

Textual evidence of the increasing popularity of neuromarketing includes the May 2005 advertising and marketing magazine *Admap* that presented a selection of articles on the subject matter. The Market Research Society’s conference in June 2005 (MRS, 2005) paid close attention to the use of neuroscience in marketing. In September 2005, the ESOMAR Congress, a world association of research professionals, featured numerous papers on neuromarketing (ESOMAR, 2005). The *Journal of Consumer Behaviour* published a special edition on neuromarketing in 2008 (Senior & Lee, 2008). In 2012, the *Covington White Paper* emerged to offer “a preliminary overview of the major legal and policy issues that neuromarketing raises for the global advertising industry” (p. 4). The first neuromarketing World Forum was held in Amsterdam in 2012 (Think Neuro, 2012), and on March 7, 2012, a press release was circulated widely to announce that a group of neuromarketing practitioners had formed a professional trade association called *The Neuromarketing Science & Business Association* (NMSBA, 2012). In April 2012, NMSBA published the first edition of the *Neuromarketing Theory & Practice* magazine.

Based in Venlo, Holland, the NMSBA Headquarters was founded by the director and owner Carla Nagel with the help of “spiritual father” Martin de Munnik. Carla Nagel is also the founder of the Neuromarketing Trade Forum. The NMSBA (2012) has local representatives in 37 different countries, seeks to provide professional support to neuromarketers and neuromarketing scientists, and engages actively in the “development and implementation of international guidelines on ethics, as well as promoting standards in the discipline of neuromarketing” (p. 1). The NMSBA mission rests on three “pillars”: knowledge sharing and
univocal interpretation of new data; a strong international network; and protection of general social interests related to the discipline. The NMSBA (2014) recently declared September 2014 *Neuromarketing Awareness Month*. At the time of writing, at least thirty-eight universities from around the world offer both undergraduate and graduate courses and programs in neuromarketing-related studies.xxviii

**A psycho-social technique: How is neuromarketing “done”?**

Psychologist B. F. Skinner (1971) made a distinction between technology as hardware, such as computers, and non-hardware, such as behavioural technology involving rules. While neuromarketing builds on traditional forms of market research comprising both hardware and non-hardware, its hardware has come to incorporate advanced neuroimaging and other biometric tools to measure, collect, and interpret consumer data broken down into demographics and behavioural categories in a way that is more intrusive to the integrity of the body than ever before. This combination of hardware and non-hardware illustrates Ellul’s (1964) idea of advertising as a technique that incorporates mechanical and psychological dimensions as well as a set of procedural rules. Most of the brain measurements presently supplied by neuromarketing are captured through the brain imaging machinery of fMRI and EEG, xxix although MEG and SST are also used. Schneider and Woolgar (2012) offer a helpful layperson’s summary of the practice of neuromarketing:

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 protocol 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. (p. 5)

A significant difference between traditional modes of advertising and neuromarketing lies in the tools used: neuromarketing has access to powerful biotechnological and neurotechnological tools for [subconscious] persuasion. I will now offer a brief outline of the primary hardware/non-hardware being used by neuromarketing to illustrate the kinds of
equipment deployed in the industry. The scholars I draw upon to provide the overview below have written specifically on these technologies in terms of their application to the practice of market research.

**Hardware: Neurotechnologies**

*Functional MRI (fMRI)*

This technique uses an fMRI scanner to measure 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 artifacts, potentially compromising the information obtained. When researchers use fMRI they are able to map neural functions connected to vision and cognitive and affective responses that individuals have to print advertisements (Ariely & Burns, 2010).

*Electroencephalography (EEG)*

This technique 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. As highlighted by Ariely and Berns (2010), because the skull disperses the electrical field EEG has low spatial resolution (~1 cm) which is dependent on the amount of electrodes used, the greater the number of electrodes the better the spatial resolution. EEG has poor sensitivity for “deep brain structures.”

*Magnetoencephalography (MEG)*

A more expensive version of EEG, MEG measures changes in the magnetic fields induced by neuronal activity. MEG has the same advantage of EEG with its high temporal resolution. As the magnetic field is less distorted by the skull than the electrical field, MEG also has better spatial resolution. MEG is most sensitive to superficial cortical signals. MEG requires a magnetically shielded room and superconducting quantum interference detectors to measure the weaker magnetic signals in the brain (Ariely & Berns, 2010).
Steady state topography (SST)

This technique generally involves monitoring electrical activity in the brain using EEG as a steady “flicker” occurs in the subject’s peripheral vision. The flicker evokes a response in the brain known as the Steady State Visually Evoked Potential (SSVEP). A professor in the Department of Management and Marketing at the University of Massachusetts, Leon Zurawicki (2010) explains that when a subject is presented with a stimulus the elicited response can be identified by contrasting it with the steady SSVEP. SST is lauded for its capacity to show the rapid variations in brain activity over time. The SST indexes brain activity over continuous exposure to a steady visual moving stimulus, offering a signal less distorted by random interference such as head movements and blinking. SST also aids in the establishment of “the relative role of (visual) attention and the involvement of the working memory which alone prove insufficient to account for the implied choice changes as a function of advertising” (p. 215). Zurawicki claims that data obtained offers an estimate of buying intentions.

Other biometric measurements

Neuromarketing tools for measuring consumer responses have also moved beyond brain imaging to include a wider biometric taxonomy (including heart rate, galvanic skin response, respiration, muscle movements, and pupil dilation). Nielsen Research (2014), for instance, uses neuroscience methods to measure the consumer’s real-time brain activity, “capturing purchase considerations at the moment they are formed in the brain” and to understand “consumers’ deep subconscious responses to stimuli” (para. 3). Companies such as Procter & Gamble, Unilever, and Kimberly-Clark use eye-tracking technology with three-dimensional simulations of product design and store layout which allegedly helps “them roll out new products faster and come up with designs and shelf layouts that boost sales” (Glazer, 2012, para. 3).

General biometric measurements such as heart rate, skin conductance, respiration, movement, muscle, pupil dilation, and pulse volume offer, according to Sands Research (2010), a “very broad value of activation in the brain.” In fact, the company identifies these biometric recordings as “peripheral measures of the autonomic nervous system.” To obtain a “true sense” of neurological activity as affected by advertising stimuli, Sands Research asserts that their “full spectrum EEG recordings … delivers objective and empirical results from the brain’s response to the marketing medium” (para. 2).
Neurological boosts and consciousness moulding

At its core, neuromarketing aims at consciousness moulding. For instance, Gary Ruskin of Commercial Alert argues that neuromarketing studies are a threat to society in that they are “probing the human psyche for the purpose of influencing it ... at its best, neuromarketing would make advertising more effective. At it worst, neuromarketing could make propaganda more effective, potentially leading to new totalitarian regimes” (Blakeslee, 2004, p. 34).

Neuromarketing methods are based on a framework of rules, principles informing strategies, and theories and methods interpreted from a larger context, that of behavioural psychology and neuroscience. Given its potential use-value, neuromarketing is attracting significant investments by market research companies (Schneider & Woolgar, 2012). As Adam Penenberg (2011) notes, the potential of neuromarketing to offer more precise results than what traditional focus groups and other market research methods can achieve might explain why companies such as Citi, Google, HP, and Microsoft, soda companies, brewers, retailers, manufacturers, and media companies became clients of NeuroFocus, xxx for example.

As of 2013, NeuroFocus (now Nielsen NeuroFocus, a consumer-research firm specializing in brain-imaging techniques) is a wholly owned subsidiary of Nielsen Research. CEO and founder of NeuroFocus Dr. A. K Pradeep claims that his brain-mapping product Mynd can collect streams of data that can be used to analyze a consumer’s “deep subconscious responses to the commercials, products, brands, and messages of its clients” (Penenberg, 2011, p. 124). NeuroFocus then interprets this data to identify products and brands that are most appealing (and unappealing) to the consumer “mind.” Pradeep positions his neuromarketing methods as integral to the success of advertising and market research, not only more efficient but also more cost effective and more precise than traditional market research methods. He claims that “measurements at this deep level of the subconscious are essential for companies to understand fully how consumers truly respond to their products, their packaging, their brands, their marketing, and the in-store shopping experience. The brain whispers those truths and we listen” (in Andrejevic, 2013, p. 101).

Subliminal hits

Writing on media technologies as extensions of human beings that bring a “never-explained numbness” to the individual and society, McLuhan (1964) claims that advertisements are not
designed and deployed for conscious consumption: “They are intended as subliminal pills for the subconscious in order to exercise a hypnotic spell” (p. 228). Also critiquing the use of subliminal advertising tactics, Key (1973) argues that such techniques directed at the unconscious consumer mind are employed by media, advertising, public relations agencies, industrial and commercial corporations, and governments to achieve instrumental ends. Subliminal “hardsells,” on his view, are aimed at unconscious perception, seeking to “manipulate, manage, or control human behaviour, but of which humans are consciously unaware” (p. 3). A “critical” and “disturbing” implication of subliminal manipulation, Key notes, is that the mass media have the capacity to change the value norms of the individuals under attack, or change the “position (anchor point) from which an individual evaluates the world” (p. 29). Neuromarketing builds on subliminal advertising strategies used for decades, but now incorporates new technologies that have the capacity to monitor consumer responses to advertising stimulus at a level of intrusion that was not possible in the past.

For instance, raising the spectre of subliminal advertising in a contemporary context, Neuroco, a market research company in Weybridge, England, conducted neuromarketing experiments for large global corporations including Bridgestone, Hewlett-Packard (HP), and various others in the food, beverage, and cosmetics industries. HP hired Neuroco to assess which images would give a newly developed digital photography advertising campaign the biggest “neurological boost.” Research participants were presented with two almost identical shots of the same woman smiling. In face-to-face interviews, the subjects articulated an even split in their choices between the two photos; however, EEG analysis showed that there was a strong preference for one image where the woman was wearing a slightly warmer expression. HP used the EEG data to choose the picture for their campaign. Alex Wood of Porter Novelli, the marketing agency that commissioned the research for HP, claims the EEG data “gave us insight that goes beyond normal market research” (para. 6). The firm engages in an array of activities, including evaluation of the subliminal power of colors, 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 (para. 7). The company also tests neurological responses to smell and touch (Mucha, 2005).

Such re-engineering of consumer thinking through subliminal moves lines up with my claim that neuromarketing tactics violate consumer freedoms, specifically freedom of intelligence. 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” (Reyes, 2013, para. 4). Using bio- and neurotechnologies, 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” (para. 6; emphasis added). The aim is to engage the subconscious “emotional” consumer brain—the reptilian brain.

A troubling consequence of targeted messages aimed at the “unthinking” reptilian brain is that consumers are stripped of their ability to consciously and reflectively choose from available options. In this capacity they become unfree. My concern here is with the difference between technologies used for deploying subliminal tricks in traditional advertising and market research, to the techniques used now. With the advent of sophisticated bio- and neurotechnologies 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 dangerous threat to manipulating consumer consciousness and re-orienting individual and group values to fit with the logic of uncritical and unreflective consumption that drives the machinery of late-capitalism.

**Affect: Moods, emotions, feelings … and instincts**

Reducing the essence of the consumer to a brain process and also evoking the nanosecond lapse (a recurring theme in the text/talk of neuromarketing), author of *Buyology: How Everything We Believe About Why We Buy is Wrong*, Martin Lindstrom (2010) claims:

That’s why 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. (p. 22)

Neuromarketing proponents are in agreement that affect (feelings, emotions, moods) and instinctive drives play a primary influence in consumer decision-making processes when it comes to how our brains respond to advertising. Zurawicki (2010) argues that understanding emotions can offer insights into how consumers make choices and final decisions to purchase a good or service. He claims that a comprehensive understanding of an individual’s experience
of consumption itself and all of the attached sensations is key to marketing a product, and applying the findings of neuroscience provides “useful clues” when trying to understand the consuming brain: “The field of the affective neuroscience addressing the neural causation of pleasure offers a broadened perspective on the consumers’ experience” (p. 57).

Until the groundbreaking work of Antonio Damasio (1994), who, in *Descartes’ Error*, argues that emotions are intimately connected to reason, scientists (including neuroscientists and psychologists) assumed that economic decisions and the perception of economic benefits were processed in the frontal cortex—the region where rational thought occurs. While scientists now 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, the “reptilian” sections of the lower brain where emotions are processed (Mucha, 2005). There is general agreement in the industry on this claim and an understanding that it is the “reptile” brain that must be targeted in order for an advertising message to sneak through our consumer defenses (see for e.g., Lindstrom, Morin, Renvoisé, Dooley). This imagery gives rise to the theme of *animality* (*augmented animality*) in terms of consumer construction in the intersection of neuroscience and marketing technologies and the animalization of thinking through discourse structures. I will return to *animality* in the following chapters.

**Hardware/non-hardware and rules**

**Metaphor elicitation**

Doctor Gerald Zaltman³³ is the Joseph C. Wilson Professor Emeritus at Harvard Business School and author of *Marketing Metaphoria: What Deep Metaphors Reveal About the Minds of Consumers* (2008). In 1997 he founded the market research agency Olson Zaltman Associates with Jerry C. Olson, Professor Emeritus of Marketing, Smeal College of Business at Pennsylvania State University. In August 2000 Zaltman and Stephen Kosslyn of Harvard University were granted a patent for “Neuroimaging as a Marketing Tool.” The abstract for the tool is as follows:

> Neuroimaging as a means for validating whether a stimulus such as advertisement, communication, or product evokes a certain mental response such as emotion, preference, or memory, or to predict the consequences of the stimulus
on later behavior such as consumption or purchasing. Subjects are exposed to stimuli of varying types. Their brain responses are then measured by any one or a combination of neuroimaging devices. The results of neuroimaging are then used to predict future behavior of the subject and those similarly situated with respect to purchase or consumption of products, based upon the non-subjective evidence of neuroimaging. (Google, 2000)

In November 2001, Zaltman was also issued a patent to protect the right for using the Zaltman Metaphor Elicitation Technique (ZMET), a method (non-hardware) to be used in tandem with the hardware of neuroimaging to delve into the “unconscious thinking” that drives human behaviour. The metaphor elicitation technique is supposed to be used with physiological function monitoring to “elicit, organize, and analyze data pertaining to a research topic” … “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” (Google, 2001, para. 1).

Sands Research

Sands Research (2010) stress their analytic approach and emphasize the importance of the amount of time it takes an advertisement to affect the viewer. As Schneider and Woolgar (2012) point out, in one of their online presentations called “Just a Few Seconds to Engage,” we see a multicoloured cross-section of a cranium showing activity in the brain upon a research participant’s reaction to advertising stimulus: “The critical first seconds – the Viewer’s frontal lobe (red) which performs executive functions related to memory and planning communicates to the parietal lobe (yellow) that integrates sensory information which in response determines the level of brain activity to be deployed” (p. 174).

The Sands Research online presentation also outlines neuromarketing methods, describing how their neuromarketing focus group research participants were “fitted with a 68 channel (electrode sites on the scalp) EEG cap and light weight eye tracking glasses with two cameras. One directed at the participants’ pupil and the other at their viewing target.” The participants were then moved to “a relaxed living room-type setting and sitting in a comfortable lounge chair” as they watched television commercial messages. The test was conducted to identify the level of viewer engagement (p. 6). A graph illustrates variances in the level of electrical activity in the brain during the advertisement. Schneider and Woolgar note that Sands Research claims “increased activity directly correlates to increased recall” (p. 7).
Sands Research methods include neuroscientific metrics, eye-tracking metrics, on-screen and verbal behavioural metrics which are then analytically triangulated to provide “Integrated and Multidisciplinary Actionable Insights” (Sands Research, 2010a). The patent pending software (Neuromedia™) “analyzes and scores media by a target subject group’s engagement” (para. 1). The software measures how consumer brains respond to advertising stimuli, which is translated as the Sands Research Neuro Engagement Score™ (NES). The NES shows the rank of an advertisement on a scale of one to five. A higher NES equates to an increased engagement level by that particular demographic group. The NES is then broken down into seven primary functional brain metrics to offer clients “objective” results on how various forms of media stimuli affect a target consumer group’s level of engagement. I quote their description of metrics here at length, taken from their website (2010a):

- **Emotional Valence** – Response from the Inferior Frontal Gyrus, including right and left hemispheres. The *Emotional Valence Score (EVS)*™ quantifies the magnitude of asymmetrical (right vs. left) activation to index the positive and negative emotion.

- **Cognition** – Response from the entire frontal lobe, including right and left hemispheres. The *Higher Cognition Score (HCS)*™ quantifies the magnitude of activation in the frontal lobe which directs the mental processing of knowing, including reasoning, judgment, behavior, decision-making, perception, and awareness. The frontal lobes assist in planning, coordinating, controlling, and executing behavior.

- **Attention** – Response from the Parietal Lobe, including right and left hemispheres. The *Sustained Attention Score (SAS)*™ quantifies the magnitude of activation in the parietal cortex which regulates the process of selectively concentrating on something in our environment while ignoring other things. The parietal lobe plays important roles in integrating sensory information from various parts of the body, knowledge of numbers and their relations, and in the manipulation of objects.

- **Visual** – Activity taking place in the Occipital Lobe (visual cortex): The Occipital Lobe is responsible for one’s ability to see and interpret sight. The *Visual Activation Score (VAS)*™ quantifies the magnitude of activity taking place in the visual region of the cortex.

- **Motor** – Response from the Primary Motor Cortex which is the region of the cortex responsible for planning and refining all of our movements. The *Motor Activation Score (MAS)*™ quantifies all of the activity related to the planning of, and moving of our bodies.

- **Memory** – Structures within the temporal lobe are involved in memory function. The dominant temporal lobe is specialized for verbal (word-based) memory and the names of objects. We rely upon our non-dominant temporal lobe for our memory of visual (non-verbal) material, such as faces and scenes. The
Correlational Memory Score (CMS)™ quantifies all activation related to memory systems in the cortex of the brain.

- **Recognition** – Response from the Anterior Temporal Lobe (a subset of the MASTM) which is the region of the cortex responsible for perceiving and recognizing things in our environment. The **Stimulus Recognition Score (SRS)**™ quantifies all of the activity related to recognizing familiar things that we encounter with our senses. (Sands Research, 2010b)

**Government-business partnerships**

In the Canadian context, a peer-reviewed study linking neuroscience and marketing was conducted by Maurice Ptito, a neuroscientist at Université de Montréal. Funded by the Canadian Tobacco Control Research Initiative, the research was the first neurological study on the impact of the Canadian government’s anti-smoking campaign (Staples, 2006). Research participants included 12 young female volunteers who had their brains scanned by magnetic resonance imaging to gauge their reactions to photos that have appeared on cigarette packs since 2001.

The images were presented alongside messages such as “cigarettes are highly addictive.” Smokers were not affected by the most disgusting visuals—the messages that did show an effect on participants activated brain regions linked to aversion. “Milder” images of smouldering ashtrays or pregnant women smoking did not present a measurable impact on any participants. The researchers claim the study offers “proof” that the brain is immune to certain advertising messages. Ptito argues that the results demonstrate an urgent need to “retool” the federal advertising campaign. Further, he states that evidence suggests: “if I find the right advertising to stimulate the reward systems of the brain, I could push you to consume anything” (para. 11). In this light, neuromarketing has the potential to engage in a form of consciousness moulding, turning the consumer into a thing that can be manipulated for instrumental ends. As Wilson et al. (2008) emphasize, 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” (p. 403; emphasis added).

**Evocation and faith-related triggers**

Interested in the power brands seem to have over their “followers,” Lindstrom (2008) set out to decipher the parallels between brand management and the characteristics of religious
practice/devotion. He partnered with neuroscientists who used fMRI to compare brain activity between devout Christians and brand fans. Lindstrom asked the following question: “Have some brands actually managed to create their own religions by, coincidently or deliberately, adopting triggers and tactics from the world of religion?” (p. 16). He concluded that brand iconography activated the same area in the brains of brand fans that was activated in the brains of Christians when they were exposed to faith-related triggers.

However, such brain activation was only true for emotionally powerful brands such as Apple, Harley, and Guinness. Brands that were not included in the “rarified group” (e.g., BP, KFC) evoked less brain activity and engaged fewer brain regions than the brands holding a dedicated fan base. Inquiring into what causes emotionally engaging brands to stand apart from the rest, Lindstrom interviewed fourteen religious leaders from across the globe. The nine components that powerfully engaging brands share with religion include clear vision, a sense of belonging, an enemy, sensory appeal, storytelling, grandeur, evangelism, symbols, and rituals. Lindstrom disseminated his findings to better equip marketers. His conclusion: “Rituals build brands” (p. 17). His explicit aim is “[t]o establish the components of a powerful religion and a powerfully engaging brand” (p. 16). Less explicit is his intention to present ideas and rituals that could be used to trigger faithful loyalty to goods and services through engaging consumers at a subconscious level.

Writing on neuromarketing and branding, and offering an example of how neuromarketing seeks to disrupt consumer meaning-making processes, branding strategist Tjaco Walvis (2008) begins with the claim that brand associations influence consumer preference and behaviour. Walvis defines a brand as “a network of associations with a (brand) name in the brain of a person” (p. 180). On this view, brands “are pieces of information, meanings, experiences, emotions, images, intentions, etc interconnected by neural links of varying strength” (p. 180). Because brand decisions are memory-based, he argues, marketing literature and practice would benefit from the “reductionist body of knowledge” (p. 179) that comes from neuroscience. Walvis attempts to deduce three branding laws governing the probability of a brand entering a consumer’s awareness as a positive candidate for selection. Walvis focuses on brand choice processes that include two conceptually distinct phases: evocation and conscious evaluation. Evocation refers to the process in which a group of brands an individual might choose from is recalled from long-term memory, and it occurs largely
outside our awareness. Conscious evaluation refers to the process in which the individual’s end choice is made.

For a brand to be chosen, the consideration set model claims that the brand must first be recalled from the consumer’s memory and then evaluated positively. In the majority of choice occasions, a large part of this process of selection takes place beyond conscious attention. Affect plays a fundamental role in brand management. The relevancy of brands 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 then is to influence consumer decision-making by increasing the probability that the brand wins the competition for conscious awareness (selective attention). The implicit message of Walvis’s essay is that with the aid of neurotechnologies of measurement, it is possible to capture what connects with the consumer at a subconscious level and use this data to design advertising stimulus that would direct the consumer’s attention accordingly.

Can neuromarketing do what it says it can do?

Can neuromarketing do what it claims it can do? Can it really penetrate and mine our subconscious terrain as neuromarketing proponents maintain? And if it can, what are the ethical implications of these practices? Critical scholars and ethicists have concluded that current technological limitations constrain the capacity for neuromarketing to access the mind at a subconscious level (e.g., Murphy et al., 2008; Alpert, 2007; Farah & Wolpe, 2004). Individuals in the cognitive sciences more broadly have been less than impressed with the accuracy of neuromarketing’s “scientific” predictions. In her TED talk Beware Neuro-Bunk, neuroscientist Molly Crocket (2012), for instance, notes that while headlines might claim cheese sandwiches help with decision-making, and a “neuro” drink might claim to reduce stress, the benefits of “neuro-enhancements” are not proven scientifically. Crocket draws attention to a Lindstrom study in an op-ed in The New York Times: “You Love Your iPhone. Literally…” It is best to quote Crockett at length to illustrate the flaws in neuromarketing methods:

So how’d they figure this out? They put 16 people inside a brain scanner and showed them videos of ringing iPhones. The brain scans showed activation in a
part of the brain called the insula, a region they say is linked to feelings of love and compassion. So they concluded that because they saw activation in the insula, this meant the subjects loved their iPhones.

Crocket sees a significant problem with this line of reasoning:

[T]he insula does a lot. Sure, it is involved in positive emotions like love and compassion, but it’s also involved in tons of other processes, like memory, language, attention, even anger, disgust and pain. So based on the same logic, I could equally conclude you hate your iPhone. The point here is, when you see activation in the insula, you can’t just pick and choose your favorite explanation from off this list, and it’s a really long list. My colleagues Tal Yarkoni and Russ Poldrack have shown that the insula pops up in almost a third of all brain imaging studies that have ever been published. So chances are really, really good that your insula is going off right now, but I won’t kid myself to think this means you love me. (Crocket, 2012)

Neuroimaging techniques currently in use cannot produce an accurate account of an individual’s thoughts as bioethicist Sheri Alpert (2007) argues. fMRI, for instance, can illustrate the metabolic correlates of neural activity but not the activity itself. These images are constructed “based on blood-oxygenation-level dependent contrast” (p. 45). Similarly, ethicist Judy Illes (2007) asks whether brain imaging can visualize human thought. Her answer is that it cannot.

Neuromarketing proponents such as Genco et al. (2013), Renvoisé (2013), Lindstrom (2010), Fugate (2008), and Zaltman (2008) claim that when researchers use fMRI they are able to map neural functions connected to vision as well as the cognitive and affective responses that individuals have to print advertisements. However, Wilson et al. (2008) claim that conclusions drawn from the correlations between brain functions and blood flow should be approached with caution; such interpretations require drawing connections between cognitive or affective responses to neural activity and then neural activity to a blood response to a section of the brain. The authors observe that while neuroscience has made advancements in connecting neural activity to blood response, “much remains to be learned about the relationship between a task-related thought or emotion and neuronal activity” (p. 394).

EEG (one of the most common tools for neuromarketing) can measure electrical functioning of the brain, but not unconscious thoughts (Alpert, 2007). The weaknesses of EEG and MEG, as Shiv et al. (2005) point out, include difficulty with three-dimensional spatial
resolution in that they are only capable of monitoring signals on the surface of the head—“any 3-dimensional localization of brain activity within the head has to be generated based on data collected at or just outside the scalp” (p. 381). Green and Holbert (2012) observe that EEG measures the electrical activity from outside the head not inside the brain. Although this form of measurement might not affect the usefulness of the data, it would be “a mistake to assume that simply because a particular electrode responds, that a particular chunk of brain tissue is lighting up.” Writing for Slate, Matt Wall (2013) claims:

Despite the new user-friendly EEG technology, performing brain research is still a difficult endeavour. The challenge (as it has always been) is to perform well-designed experiments that are as unambiguous in their interpretation and conclusions as possible ... In the mad rush to commercialize the new EEG technology, the neuromarketing researchers are currently gleefully painting over the logical and technical cracks in their methods with glossy results graphs and 3-D pie charts. Those considering using these new research methods for their latest advertising campaign would do well to heed the classic commercial advice: 

_caveat emptor._ (para. 14)

As Canadian bioethicist Walter Glannon (2011) would assert, knowing _that_ doesn’t mean knowing _how_. Glannon notes that predictive neuroimaging is laden with uncertainty which leads to potential harm and potential benefit when using brain scans for predictive purposes:

Similar concerns surround diagnostic imaging, especially if it is used for non-medical purposes. There is considerable ambiguity regarding the significance of the information derived from brain imaging. Parties both inside and outside the health care system may have access to this information, and interpret it in different ways. Information about the brain may be used to form judgments about whether or to what extent people can control their behaviour, which could have significant ethical and legal implications. (p. 45)

Although current brain imaging technologies cannot probe into the deepest levels of consumer subconscious as some neuromarketers are suggesting, Murphy et al. (2008) are correct to suggest that the mere possibility of such a breach merits immediate discussion around how society might manage such information should it become “technically feasible” (p. 296). They say the most “vexing” of the challenges raised by neuromarketing is the issue of autonomy: “a ‘soft’ attack on autonomy” (p. 297). I concur, especially in light of what bio- and neurotechnologies are increasingly capable of achieving as technological progress cycles on.
As my dissertation seeks to show, the ways in which neuromarketing banks on augmenting the animality of consumers suggests a distinctive conceptual, scientific, and metaphoric shift from traditional market research studies and practices. While I would argue that neuromarketers cannot read the consumer’s subconscious thoughts and determine what the consumer “truly wants” based on brain focus group studies and interpretations of brain imaging and biometric data, my research into the field indicates that neuromarketing ultimately aims to manipulate and control consumers through application of new technologies. This is an ongoing reason to be concerned about the practices of the industry and demands an urgent need to follow, understand, and critique the conceptual and strategic dimensions of neuromarketing as a psycho-social technique of consumer surveillance.

Summary
This chapter has offered an overview of neuromarketing and a snapshot of its roots in the psycho-social dimensions of advertising and market research. The application of neuroscience to marketing methods has opened up a new approach to consumer behaviour research. These new methods have access to advanced bio- and neurotechnologies, apparatuses that hold the capacity to measure consumer responses to advertising stimuli in a way that was not possible to do in traditional focus group studies. Such an approach is accompanied by claims ranging from ideas that neuromarketing can offer accurate insights into the affective and cognitive activities influencing buying behaviours, to promises that neuromarketing can offer objective data on the subconscious mind of a consumer who does not know what s/he “truly” wants.

Although it is debatable whether or not neuromarketing can achieve what its proponents promise it can do, the merging of neuroscience and market research has, nevertheless, given rise to significant ethical concerns, including claims that by wielding powerful technological instruments, advertisers will be able to condition consumers like Pavlov’s dogs. To reiterate, my research evidences that neuromarketing is an extension of traditional modes of marketing, but it can also be distinguished from previous marketing approaches by its use of advanced bio- and neurotechnologies in brain focus groups. The application of neuroscientific research methods and new technological apparatuses to the realm of marketing urgently requires critical analysis given the ethical implications arising around the freedom of consumers as persons. In light of these fundamental freedoms, such as freedom of intelligence, is neuromarketing manipulating consumer consciousness for advertising ends? If
it is, what are its techniques? How is the consumer constructed in the discursive world of neuromarketing?

With this in mind, the following chapter begins laying out a series of building blocks, conceptual structures I will be using to frame my analysis of [augmenting] animality in Chapter Six. The next chapter provides an overview of the context of science and technology to situate neuromarketing as part of a larger techno-cultural narrative. I will consider cognitive science (such as neuroscience and psychology) as an umbrella informing neuromarketing. I will also examine guiding metaphors of cognitive science as devices for structuring how scientific communities and other communities of practice understand notions of self or subjectivity. These metaphors for the mind are relevant to neuromarketing in that they serve to illustrate how the consumer is reduced to a brain for exploitation and how the animalization of thinking occurs through discursive moves and neuromarketing brain focus group practices. Following consumer rights activist Gary Ruskin (in Lovel, 2003), I proceed with the basic assumption that it is wrong to use medical technologies for marketing consumption.
CHAPTER TWO

A Larger Scientific Context: Metaphors for the Mind

I should like you to consider that these functions (including passion, memory, and imagination) follow from the mere arrangement of the machine’s organs every bit as naturally as the movements of a clock or other automaton follow from the arrangement of its counter-weights and wheels.

-- René Descartes

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. Descartes, a substance dualist, argued that the body is comprised of material properties and works like a machine. In this sense, his conceptualization of the human organism is mechanistic. Although Descartes (2009/1637) 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.

Descartes (1996) then relegated 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 humans possess an immortal and rational soul (the mind and the soul are one and the same here) machines do not, nor do animals. Another significant claim is that 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.

Descartes also argued that 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. That said, Descartes would argue that the mind as soul has direct connectivity to God as a “substance that is infinite <eternal, immutable> independent, supremely intelligent, supremely powerful, and which created both myself and everything else” (p. 31). With regards to machines, Descartes 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 cannot think or feel.

Fast forward several hundred years to a “network society” (Castells, 1996) and a form of Cartesianism is still influencing some scientific conceptions of the mind. This kind of mechanization is found most noticeably in cognitive science, an overarching scientific research program that emerged in the 1950s, integrating psychology, neuroscience, linguistics, computer science, artificial intelligence (AI), and philosophy. A primary aim of cognitive science is to make explicit the principles and mechanisms of cognition, setting it apart from earlier approaches in psychology and philosophy (Thompson, 2007).

Given neuromarketing techniques are guided by research and development in certain strands of cognitive science, specifically neuroscience and behavioural psychology, the purpose of this chapter is to present metaphors and conceptions of the mind 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.

As we shall see in later chapters, the guiding metaphors most directly influencing the project of neuromarketing are mind as animal-machine and mind as reflex-machine with some connections to mind as digital computer. While these models are indeed reductionist, neuromarketing has further reduced consumer subjects to brain processes that fall under the metaphors of brain as buy button and mind as animality. Although the buy button metaphor is an exaggeration, in this case it also seems to be a research program; neuromarketers are
attempting to realize the metaphor in reality through their innovations. Tendentially, they seek to achieve such a level of control that the neuromarketing assemblage incorporates the consumer as a part rather than as an agent, rendering the consumer “worldless,” a thing.

The reduction of the consumer subject to the metaphor of mind as animality entails the animalization of thinking. This construction results in the dehumanization of human beings for advertising ends, also turning the consumer into a “lower thing” (Agamben, 2004) but one that has some access to the world in terms of the possibility to be conditioned into behaving according to a particular way of life—an unreflective and uncritical entity that can be triggered into desirable buying responses through an external advertising stimulus calibrated to instinctive drives.

This contextual chapter serves as a building block for the framework I will use for my analysis in Chapters Five and Six. It is an attempt to synthesize metaphors for the mind that have guided cognitive science as a dominant paradigm for understanding human brain processing structures. These views, however, are constantly evolving as new insights, technologies, and socio-cultural and political influences emerge. While not all of the metaphors I present have direct bearing on neuromarketing, I am including them to offer an illustration of the general environment of cognitive science in order to situate neuromarketing against a backdrop of various scientific perspectives.

Throughout this section, I draw primarily on the works of Evan Thompson (2007), Hubert Dreyfus (1992; 1972), Andrew Pickering (2011), and Paul Edwards (1996) as these scholars offer rigorous accounts of the disciplines and concepts relevant to my project. I begin with artificial intelligence (AI) as a field of research that grew out of cognitivism and as an example illustrating the evolution of dominant metaphors for the mind. I will then consider British cybernetics as a counterview to cognitivism and the ensuing development of connectionism as a response to cognitivism. Following this, I present embodied dynamism and enactive theory and their increasing prevalence in neuroscience. I will also offer an overview of the work of Antonio Damasio (2000, 1994) whose research has been a significant influence on the project of neuromarketing (via neuroscience and psychology). As Andrejevic (2013) suggests, “neuromarketers tend to trace the emergence of their field to the crossover of publications on the nature of decision-making by neuroscientist Antonio Damasio during the 1990s” (p. 101). I will end the chapter with a consideration of the metaphors of mind as animal-machine and mind as reflex-machine.
GUIDING METAPHORS

(i) Cognitivism: Mind as computer

Although interest in the brain and mind can be dated back to Plato and Aristotle, the term *cognitive science* did not emerge until the late 20th century with the aim of making explicit the principles and mechanisms of cognition. Evan Thompson (2007) writes: “Cognitive science, in providing a whole new array of concepts, models, and experimental techniques, claimed to be able to provide rigorous scientific knowledge of the mind beyond what earlier forms of psychology and philosophy had offered” (p. 3). In the past, researchers argued that cognitive science focused on cognition but neglected affect and motivation (LeDoux, 2002). However, contemporary research in some areas of cognitive science, such as neuroscience and consumer psychology, have certainly paid close attention to the relations between affect and cognition (e.g., Mind & Life Institute, 2014; Sunghyup et al., 2011; Labroo & Rucker, 2010; Fishbach & Labroo, 2007; Han et al., 2005; Raghunathan & Pham, 1999). These empirical studies have provided the advertising industry with what neuromarketing proponents would call “scientific proof” of the connections between shifts in affect/cognition and consumptive action.

There are three major approaches to the study of the mind within cognitive science according to Thompson (2007): cognitivism, connectionism, and embodied dynamicism. He also presents the enactive approach developed by Varela, Thompson, and Rosch (1991). Each major approach is guided by a theoretical metaphor as a framework for studying and understanding the brain and mind.

Philosophical inquiries into metaphor (e.g., Ricoeur, 1978, 1977; Black, 1962; Pepper, 1942; & Richards, 1936) 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 (understanding the world). The first systematic account of metaphors can be attributed to Aristotle (2004) who offers clues into what Ricoeur (1978) calls the “semantic role of imagination (and by implication, feeling) in the establishment of metaphorical sense” (p. 144). On Ricoeur’s interpretation, Aristotle claims that of the lexis in general (diction, elocution, and style), metaphor is one of the tools that disclose discourse (logos). For Ricoeur, 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” (p. 144).
In their seminal work, *Metaphors We Live By*, Lakoff and Johnson (1980) 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 “central role in the construction of social and political reality” (p. 159). The authors write:

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. (p. 158)

On this view, conceptual metaphors are helpful when used to understand theories and models (see also Lakoff & Johnson, 1999). A primary claim of their understanding is that conceptual metaphors are structures of thought and not simply language. Furthermore, “conceptual metaphors typically employ a more abstract concept as target and a more concrete or physical concept as their source” (Kövecses, 2010, p. 7; emphasis added).

Writing on how to improve market research methods by incorporating insights into the cognitive structures consumers use to understand the world, in his essay “Putting people back in” Zaltman (1997) explores the implications of research into emotions, metaphors, non-verbal communication, and visual imagery. 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” (p. 425). Further, Zaltman highlights that metaphors are central to imaginative activity and can 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 (2008) acknowledge the general understanding of a metaphor as the “representation of one thing in terms of something else;” they use a broad definition of the trope as “shorthand for many forms of idiomatic, nonliteral expressions of representations” (p. xi). 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), Zaltman and Zaltman claim there are two other relevant levels of metaphors at play in an individual’s thinking process: 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” (p. xi). 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 (p. xiii).

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 (Perinbanayagam, 2011). As Kenneth Burke (1969) observes, when people are at odds with each other they use rhetorical devices to persuade audiences to take one course of action or another. Burke claims that “perspective” could be used as a substitute for metaphor; he is concerned not only with purely figurative usage but with the role of metaphor (and other tropes) in the discovery and description of “truth.” Monin and Monin (1997) note that “those who will control the metaphors will ultimately control the action: and those who change the metaphors will ultimately change the action” (p. 57). I am interested in metaphor as a rhetorical device that shapes/disrupts meaning-making through narrative structures (Bridgman & Barry, 2002; Becker, 1999) and as a political object that “focus attention on some aspects of the situation or experience at the expense of others” (Edwards, 1996, p. 157).

In cognitivism, the dominant metaphor is the mind as digital computer; connectionism is the mind as neural network; and embodied dynamicism is the mind as embodied dynamic system. These guiding metaphors influence the way various social worlds and communities of practice understand how human beings process information. As Edwards (1996) notes, these theories and metaphors of the mind 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” (p. 165). Edwards argues that just as democratic theory plays a central role in the creation of political subjectivities, theories of the mind are significant in the construction of subjectivity more generally.

Cognitivism was the dominant approach from the 1950s to 1970s. In the eighties, connectionism challenged the cognitivist metaphor; evolving from this was embodied dynamicism which emerged in the nineties (Thompson, 2007). In contemporary research the three primary approaches coexist either separately or as hybrid forms. The “cognitive
revolution” in 1952 against behaviourist psychology brought with it a new way of understanding the brain and mind (Gardner, 2008), and, as Thompson (2007) notes, 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 computer model of the mind, the brain is a computer, a “physical symbol system,” and mental processes are enacted by the “manipulation of symbolic representations in the brain” (p. 5). Although cognitivism made meaning (representational semantics) acceptable scientifically, it dismissed consciousness from the science of the mind. Thompson writes:

Mental processes, understood to be computations made by the brain using an inner symbolic language, were taken to be entirely non-conscious. Thus the connection between mind and meaning, on the one hand, and subjectivity and consciousness, on the other, was completely severed. (p. 5)

Prior to cognitivism Sigmund Freud’s work had undermined simplistic identifications of mind and consciousness. In Freud’s (1915) 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. The difficulty with this idea, Thompson (2007) argues, is that real human computation (original source domain for conceptualizing computation in the abstract) is both an internal psychological process as well as a sociocultural activity:
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. (p. 8)

Cognitivism’s radical separation of cognitive processes from consciousness created an “explanatory gap” in theorizing 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. For Thompson: “Cognitivism offered no account whatsoever of mentality in the sense of subjective experience” (p. 6). As a result, new mind/body problems emerged:

1) The phenomenological mind-body problem: How can a brain have experiences?
2) The computational mind-body problem: How can a brain accomplish reasoning?
3) The mind-mind problem: What is the relation between computational states and experience? (pp. 6-7)

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 (Dreyfus, 1992; 1972). 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. As we shall see in Chapter Five, 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 worldless thing that can be manipulated by external inputs.

Artificial intelligence: Structures of understanding into parts

Scientists in the field of AI have visions of creating adaptive artificial intelligence, expanding Descartes’ notion of the robot machine to an intelligence that exceeds human intellectual capacity. In fact, proponents of an artificial “intelligence explosion” (e.g., Ray Kurzweil) have gone as far as arguing that society is headed for a technological singularity (or the singularity),
a hypothetical moment in history (approximately 2045) when AI will surpass human intelligence (see Eden et al., 2013). Some AI communities have been guided by a Heideggerian frame. Scholars such as Hubert Dreyfus (1992; 1972) have used a Heideggerian analytic to conduct research into artificial intelligence and conceptions of structures of understanding. Examining how the mind is conceived and understood in AI offers an excellent example of the levels of complexity afforded to human information processing, or thinking, by the larger cognitive sciences—a helpful comparison when thinking about how neuromarketing conceives the consumer mind. I will return to this in my analysis in Chapters Five and Six.

Dreyfus’s inquiry tracks the history of developments in AI and is concerned with exposing the incorrect assumptions (psychological, epistemological, and ontological) made by researchers working in the field. Throwing light on the discursive moves used to understand the human brain/mind as reducible to the processes of a digital computer, Dreyfus concentrates on the two subfields of artificial intelligence: cognitive simulation and artificial intelligence. These two fields, he argues, have led to the examination of two distinct but interrelated questions: 1) Does a human being when “processing information” actually follow normal rules like a digital computer? and 2) Can human behaviour, no matter how generated, be described in a formalism that can be manipulated by a digital machine?

Dreyfus notes that given the difficulties AI experienced during Phase I and Phase II of its development (e.g., failure to successfully implement GPS), cognitive simulation hung onto the idea that the information processes of a computer revealed “the hidden information processes” of a human being. He also asks a pertinent question still relevant today: Why do those working on artificial intelligence assume that there must be a digital way of performing human tasks? He claims that researchers who believe that formalization of intelligent behaviour is possible seem to base their arguments on an ontological assumption that the world can be examined as “independent logical elements,” and an epistemological assumption that human understanding of the world can be recreated by arranging these elements according to heuristic rules. Descriptive or phenomenological evidence, when considered separately from traditional philosophical prejudices, Dreyfus claims, suggests that non-programmable human capacities are involved in all forms of intelligent behaviour.

The conception of the human being as an organism whose cognitive machinations can be reduced to the workings of a digital computer remains the dominant framework for understanding the brain/mind in the field of AI. On this view, the brain, mind, and body are
split in a manner not unlike Descartes’ explanations, but the immortality of the mind as soul is
replaced with the efficiency of mind as software powered by the brain. This move is largely
attributed to Alan Turing or Turing Machine Functionalism. On his view, mental kinds can be
identified with the computational kinds of an adequately programmed universal Turing
machine.

While scientists were designing the first electronic digital machine at the University of
Pennsylvania, Turing, a theorist, was interested in the nature of reason itself. In his influential
essay *Computing Machinery and Intelligence*, Turing (1950) writes, “the present interest in
‘thinking machines’ has been aroused by a particular kind of machine … a digital computer.”
He asks: “Can [such] machines think?” To answer his question, he develops a test he names the
Imitation Game, now widely known as the Turing Test. Following Lakoff and Johnson
(1980), Edwards (1996) suggests that a way to evoke the range of a metaphor’s cultural
potentialities is to examine its entailments (also called strict implication—the necessitation of
material implication). The most common entailments from the Turing Test metaphor that the
mind is a computer system are as follows:

- The brain is *hardware*.
- The brain is a rapid, *complex calculating machine*.
- The brain is made up of *digital switches*.
- The mind is *software*.
- The mind is a *program or set of programs*.
- The mind *manipulates symbolic representation*.
- The mind is an *information machine*.
- Thinking is *computation*.
- Memory is *looking up stored data*.
- The function of the mind and brain is *information processing*. (p. 162)

Cognitive scientists have been making these kinds of claims for decades. As Edwards points
out, these claims have achieved such currency that some of the ideas (e.g., the brain processes
information) no longer seem metaphorical. The entailments of the computer metaphor go off in
various directions: the metaphor depicts the mind as “a set of programs, or symbolic
instructions that process inputs and control inputs, provides a rich set of analogies that allow us
to portray the complex, hidden, abstract processes of thinking and more concrete ones involved
in computer programming” (p. 161). Exploring these entailments further, Edwards maintains
that similar to human behaviour, most computer programs are not built-in or “hard-wired.” This implies that behaviour and thought patterns can be changed, erased, or replaced:

Imperfect computer programs have “bugs”—flawed instructions that cause erratic, unwanted results. The computer metaphor implies that with diligence “bugs” can be located and corrected. Programs, especially simple ones, are quite rigid, prescribing patterns of action that are not always right for the situations that trigger them. Thus to say that someone “acts like a computer” has the negative connotation that s/he responds in rigidly patterned ways, rather than flexible, appropriate ones. (p. 162)

The computer metaphor privileges one mode of human thinking at the expense of other, paralogical or tropological modalities, as Edwards argues. The metaphor offers a reductive explanation of the paralogical, the tropological, and the intuitive: “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” (p. 162).

The influence of Heidegger’s (2010) fundamental structures of understanding is evident in Dreyfus’s (1992) work where he puts forward four fundamental structures of human “information processing” to highlight the differences between human information processing and that of a computer: fringe consciousness, ambiguity tolerance, essential/inessential discrimination, and perspicuous grouping. In the context of GOFAI (Good Old Fashion Artificial Intelligence) research, for example, each of these kinds of human processing includes a symbolic analogue that cannot be mapped directly onto the essential intelligence of human beings who are able to demonstrate the four models mentioned above. The symbolic analogues relevant to digital computers are as follows: heuristically guided search, context-free precision, trial and error search, and character lists. Dreyfus claims that descriptive or phenomenological evidence, when considered separately from traditional philosophical prejudices, suggests that non-programmable human capacities are involved in all forms of intelligent behaviour.

Dreyfus also inquires into the ability of human beings to “zero in” on relevant features of their environment while – at the same time – bracketing out a range of irrelevancies. He argues that a huge difficulty for AI is in determining what is relevant for computation when the environment presented to the computer has not been artificially constrained. The central statement of this theme is that a human being experiences the objects in the world as already
interrelated and full of meaning—this kind of existence is embodied and embedded (see also Merleau-Ponty, 1966). Dreyfus (2007) writes:

AI researchers need to consider the possibility that embodied beings like us take as input energy from the physical universe, and respond in such a way as to open themselves to a world organized in terms of their needs, interests, and bodily capacities without their minds needing to impose meaning on a meaningless given … nor their brains converting stimulus input into reflex responses. (p. 1142)

Dreyfus (1992) calls this kind of experience of the world “non-formal behaviour,” a set of behaviours human beings learn through an intuitive relationship with the world, without following a set of explicit or formalized rules. For Dreyfus (2007) one of the most basic ways in which human beings exist in the world is through “everyday coping” (I will return to this idea in the next chapter) which cannot be understood in terms of inferences from symbolic representations. The key point Dreyfus (1992) makes is that the complex information processing humans are capable of doing, and human cognitive processes more generally, cannot be reduced to the systematic rule-driven workings of a digital computer. In this sense, Dreyfus argues that AI is limited by its assumption that the world can be explained in terms of elementary atomistic concepts, a view that dates back to the Greeks (i.e. to Plato). That said, today AI has evolved by leaps and bounds. Developing computer systems that are increasingly intelligent such as Angelina the field of AI has become one of the most significant components in technological research and development (Nave, 2014; Aron, 2012).

Although Dreyfus was incorrect about the implementation of GPS, his arguments are still relevant for contemporary analyses of the tendency toward the mechanization of the human brain/mind, especially in the project of neuromarketing where the complexities of human information processing are not taken into account when reducing the consumer to a simple reflex-machine or an animal-machine, readily triggered into desirable responses by external inputs or stimulus.

**British cybernetics: The adaptive brain**

Despite the popularity of mechanization of the mind and associated metaphors, a small group of British researchers, active from the end of WWII to almost the present challenged the view of the mind as a thing that is simply reducible to a machine for representation. This form
of AI research came to be known as cybernetics and operated with a different kind of metaphor altogether: the view that the brain is adaptive, performative, and interrelated with mind and society. These researchers and scientists understood the brain/mind as a dynamic of social and individual; a holistic similar to the kind of discursive text-world relationship with the social that human beings experience, where the social world is prior to and shapes the subjective/phenomenal world. These kinds of depictions of human information processing have come to offer a more organic portrayal of the brain/mind and its role in meaning-making. Although such understandings of the brain and mind can be related to the research that informs neuromarketing (e.g., Damasio, 2000; 1994), and the industry seems to recognize the complexities of the embodied brain/mind, the reduction of the consumer through discourse structures ultimately amounts to a reflex trigger.

British cybernetics emerged as a counter-narrative to challenge dominant constructions of the mind. The cyberneticians held the view that the brain is not representational like the depiction of the mind in GOFAI (Good Old Fashioned Artificial Intelligence). Rather, the brain is an embodied organ intrinsically connected to bodily performances. Within this performance the brain’s special role is one of adaptation. Andrew Pickering (2010) claims that British cybernetics provided a “nonmodern ontology” that undoes the Western dualism of mind and matter and connects to a performative understanding of the brain, mind, and self as part of a psycho-social complex. The brain/mind/self is performative. Whereas the representational brain was imagined as a Black Box available for examination, a metaphor that emerged in engineering, as Thompson points out, the performative brain of cybernetics was “opaque and mysterious.” So how did cyberneticians conduct research on the adaptive brain? They designed and built electromechanical devices that were adaptive.

Cybernetic machines were considered useful models for understanding the mind as a part of a complex of brain/mind and society. The simplest system is the servomechanism—an engineering device that reacts to changes in its surroundings in a way that cancels them out. According to Pickering, W. Grey Walter’s robot tortoises and Ross Ashby’s homeostat provide “striking and original” examples of servomechanisms. These machines held an important place in the brain sciences in the late 1940s and through the 1950s as models for understanding the adaptive brain.

Pickering argues that cybernetics staged a nonmodern ontology for us in two senses: cybernetic mechanical systems served “as aids to our ontological imagination, and as instances
of the sort of endeavours that might go with a nonmodern imagining of the world” (p. 22). For instance, thinking about thermostats, tortoises, and homeostats helps us understand the general cybernetic ontological vision of the world as a place of continuous interconnected performances. Early cybernetic machines confront us, he claims, with interesting and engaged material performances that do not entail a detour through knowledge. The term Pickering uses to depict these performances is *ontological theatre*.

The tortoise was used to explore its world as a smaller model of what the world is like more generally. In this capacity, the tortoise is an *ontological icon*. Pickering claims that if one is able to grasp the ontological vision presented by British cybernetics, building homeostats and tortoises offers examples of how the vision plays out in practical applications such as robotics, brain science, psychiatry, and so forth. Pickering suggests that cybernetics stages for us “a performative epistemology that engages directly with its performative ontology—a vision of knowledge as *part of* performance rather than as an external controller of it” (p. 25). Cybernetic processes and artifacts emerged as brain science and psychiatry, eventually spreading to other fields such as robotics, engineering, biological computing, management, politics, architecture, and education. For Pickering, cybernetics is best seen as a form of life, “a way of going on in the world, even an attitude” (p. 9). This kind of thinking about the brain/mind society connection was reinvigorated with the emergence of connectionism.

(ii) Connectionism: Neural networks

Connectionism emerged in the late 1980s to challenge cognitivism. The primary connectionist critique revolved around the “neurological implausibility” of a model of the mind as a physical-symbol system. Further, it maintained perceptual pattern recognition as the model of intelligence as opposed to the deductive reasoning emphasized by cognitivism. Thompson (2007) explains that where cognitivism lodged the mind in the head, connectionism presented a more dynamic picture of the links between cognitive processes and the environment. He writes: “they hypothesized that the structural properties of sequential reasoning and linguistic cognition arise not from manipulations of symbols in the brain, but from the *dynamic interaction of neural networks with symbolic resources in the external environment*, such as diagrams, numerical symbols, and natural language” (p. 9). The connectionist critique saw deficiencies of symbol processing compared to [artificial] neural networks that are comprised of layers of basic neuron-like units connected to each other by numerically weighted
connections. The strength of the connections varies in accordance with different learning rules and the system’s activity history.

A connectionist network is an example of a self-organizing dynamic system rather than a physical symbol system. This kind of network is trained to convert numerical input representations (rather than symbolic as in cognitivism) into numerical output representations. With suitable input and training, the network aims at a form of cognitive performance such as producing speech sounds or categorizing words depending on their lexical role. Thompson claims that these cognitive performances correspond to emergent patterns of activity in the network. Although these patterns are supposed to be “approximately describable” in terms of symbols, the patterns are actually not symbols in the traditional computer sense:

Connectionist explanations focus on the architecture of the neural network (units, layers, and connections), the learning rules, and the distributed subsymbolic representations that emerge from the network’s activity. According to connectionism, artificial neural networks capture the abstract cognitive properties of neural networks in the brain and provide a better model of the cognitive architecture of the mind than the physical systems of cognitivism. (p. 9)

Although the connectionist model of the mind had evolved from the cognitivist sketch of the mind situated within the brain, connectionist built systems did not comprise sensory and motor transactions with the environment; instead, they operated according to artificial inputs and outputs set by the system designer. Thompson notes that connectionism inherited the idea that cognition is simply the solving of predefined problems given to the system by an external party, an observer or designer. Also inherited is the idea that the mind is in essence a “skull-bound cognitive unconscious, the subpersonal domain of computational representation (symbolic for cognitivists, subsymbolic for connectionists)” (p. 10).

(iii) Embodied dynamicism and enaction: Self-organizing dynamic systems

Of all the models of the mind, this model is most directly related to the research informing neuromarketing (e.g., neuroscience and psychology). The work of Antonio Damasio (2000, 1994) resonates with the general category of scientists working on embodied cognition. However, his approach is not “enactive” in the specific sense that Thompson (2007) defines in his project. That said Damasio’s work is certainly compatible with enactive ideas. I have included an overview of embodied dynamism to highlight the research lineage that
neuromarketing claims to possess by virtue of its connections to Damasio. I will also offer an overview of Damasio’s work on the somatic marker hypothesis and his theorizing on the tripartite self (or brain) both of which have influenced neuromarketing research programs in terms of their understanding of consumer decision-making processes.

Embodied dynamicism arose in the 1990s during a revival of scientific and philosophical interest in consciousness. It involved a critical stance toward computationalism in both its cognitivist and connectionist forms. Thompson (2007) points out that cognitivism and connectionism did not address the relationship between cognitive processes and the “real” world. As a result, their models of cognition were disembodied and abstract. Embodied dynamicism problematized the assumptions made by cognitivism and connectionism, particularly the conception of cognition as a disembodied and abstract mental representation. Like connectionism, embodied dynamicism understands the mind as a self-organizing dynamic system rather than a physical symbol system. The school of thought also holds that cognitive processes “emerge from the nonlinear and circular causality of continuous sensorimotor interactions involving the brain, body, and environment” (p. 11) and emphasizes the formative role the environment plays in the development of an organism’s cognitive activity. The central metaphor for this view is the mind as embodied dynamic system in the world in contrast to connectionism’s idea of the mind as neural network in the head (manipulated inputs and outputs). This guiding metaphor is an exception to the understanding of conceptual metaphors typically employing more abstract and complex concepts as target domains and more concrete, physical or simplified concepts as their source. Of this approach, Thompson writes:

The central idea of this approach is that cognition is an intrinsically temporal phenomenon and accordingly needs to be understood from the perspective of dynamic systems theory … A dynamic systems model takes the form of a set of evolution equations that describe how the state of the system changes over time … Inputs are described as perturbations to the system’s intrinsic dynamics, rather than instructions to be followed, and internal states are described as self organized compensations triggered by perturbations, rather than as representations of external states of affairs. (p. 11)

Embodied dynamicism merges two primary theoretical commitments: a dynamic systems approach to cognition and an embodied approach to cognition. Thompson claims that dynamism and embodiment are logically dependent theoretical commitments but they are well paired and have a close connection for certain theorists. Embodied dynamicism conceives of
the cognitive unconscious not as a disembodied symbol manipulation system or a pattern recognition system separate from emotion and locomotion in the world: “the cognitive unconscious consists of those processes of embodied and embedded cognition and emotion that cannot be made experientially accessible to the person” (p. 12). The characterization of the cognitive unconscious was not a hypothetical construction situated in an abstract functionalist model of the mind; rather, it was a “provisional indication of a large problem-space in our attempt to understand human cognition” (p. 12).

The enactive approach sought to address the gap between embodied dynamic accounts of the mind and phenomenological accounts of human subjectivity and experience. The term “enactive approach” and the associated concept “enaction” were introduced to cognitive science by Varela, Thompson, and Rosch (1991) in *The Embodied Mind*. The enactive approach to perception and the embodied cognition approach to cognitive science are two parts of the same research program. Strictly speaking, the enactive approach emerges from the more general approach of embodied cognitive science. The embodied approach to cognitive science is a substantial thesis about what cognition is and the enactive approach is a specific way of cashing out this thesis in terms of the metaphysics of perception. The enactive approach conceptualizes selfhood and subjectivity from the ground up by taking into account the autonomy “proper to living and cognitive beings” (Thompson, 2007, p. 14).

*Neuromarketing and the tripartite brain: Antonio Damasio*

In *Descartes’ Error*, Damasio (1994) argues that emotions are intimately connected to reason. 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. In his critique of neuromarketing, journalist Thomas Mucha (2005) explains that after Damasio scientists came to realize 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.

Damasio’s research is widely used in neuromarketing. His continued popularity in this area is evidenced by his invitation to give a keynote on “Emotions, Feelings, and Decision” at the Neuromarketing World Forum (MdTV, 2014). For neuromarketers, Damasio represents two significant developments in the “science” of market research: 1) a reorganization of the
relations between “emotion and rationality” in the consumer decision-making process (especially in light of his somatic marker hypothesis); 2) the claim that aspects of this decision making process can be measured scientifically and objectively given recent technological advances (Andrejevic, 2013, p. 101).

In *Descartes’ Error* (1994), Damasio presents the somatic marker hypothesis which holds that emotions are intimately connected to reason. His concept of background feelings is similar to Heidegger’s notion of primordial moods which I will return to in Chapter Four. 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” (in Ratcliffe, 2002, p. 297), they are always already present yet tacit, and they underpin our frame of mind when we encounter the world.

Feeling (at its best) can direct us to the proper course of action and point us to a decision-making space. Damasio (1994) argues that “[e]motion and feeling, along with the covert physiological machinery underlying them, assist us with the daunting task of predicting an uncertain future and planning our actions accordingly” (p. xxiii). Further, reason is dependent on several brain systems working together across a range of levels of neuronal organization and not on a single brain center. 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. The lowly orders of our organism are in the loop of high reason (p. xxiii)

On this view, the body as represented in the brain “may constitute the indispensable frame of reference for the neural processes that we experience as the mind; that our very organism rather than some absolute external reality is used as the ground reference for the constructions we make of the world around us and for the construction of the ever-present sense of subjectivity
that is part and parcel of our experiences” (p. xxvi). The mind, Damasio suggests, exists in and for an integrated organism. 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. Damasio claims that 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. (p. xxvii)

In another work, Damasio (2000) presents three levels of “self” that build upon each preceding level to form a holistic sense of organism as self. This theorizing is central to the research conducted and presented by proponents of neuromarketing. 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. These notions of self in terms of a tripartite brain/mind model have been used to ground neuromarketing research as evidenced in the work of Dooley (2011), Morin (2011), Lindstrom (2010), and Pradeep (2010), to offer some examples.
Other metaphors

Mind as animal-machine

There are other metaphors Edwards (1996) identifies as guiding science and technology, and it is here that we find the metaphors most relevant and recurrent in the text/talk 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 (a claim that Edwards argues “entangles” both literal and metaphorical connotations), then humans are reflex-machines. The mind as animal-machine metaphor compares humans to behaviourist experiments such as Pavlov’s dogs, Tolman’s rats, or B.F. Skinner’s pigeons. 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.

Mind as reflex-machine

The mind as reflex-machine metaphor has similarities to the computer metaphor I outlined earlier in this chapter. As Edwards notes, 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. As Edwards claims, this metaphor suggests that deep insights into human behaviour can be gained from the study of animals. The metaphor of reflex-machine “directs the experimenter’s focus toward how behaviour is learned (built up from simple components) rather than toward the structure of (complex) established behaviour patterns” (p. 163). Further:

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. (p. 164; emphasis author’s)

The reflex-machine centres on environmental variables as triggers for behaviour and focuses on a social system of rewards as the ultimate “technology.” In addition, “[s]ince the notion of operant behaviour presumes random creativity, and even reflexes are subject to deliberate
restructuring, the [reflex-machine] metaphor leads us to a view of behaviour as infinitely flexible” (p. 164). The computer metaphor attends to the internal structure of the mind and its representational schemes; it suggests the possibility of “reprogramming” the brain/mind by “creating new thought patterns or restructuring its ‘hardware’ with drugs, surgery, or implanted microchips” (p. 164). Edwards notes that direct entailments of each guiding metaphor point to different sets of questions, ethical positions, and views of human nature.

Summary
This chapter has presented an overview of a range of fields, theories, and models that provide a larger narrative context in which to situate the technique of neuromarketing. These elements show how cognitive science conceives of the human being as reducible to a machine and/or an animal for the purposes of scientific inquiry and classification. These constructions of what it means to be human can be situated on a continuum ranging from a reduction of human beings to basic reflex-machines, to animal-machines, to more nuanced views of human beings as embodied and emergent entities existing in a complex dynamic of self and society. Given that general understandings of the human brain and mind are guided by certain metaphors, the purpose of this chapter has been to highlight the research communities that inform the constructions of the consumer in the discursive world of neuromarketing, specifically neuroscience and the work of Damasio.

In the next chapter I will begin laying conceptual foundations for the Heideggerian structures I will use as frames to analyze how neuromarketing constructs and instrumentalizes consumers as particular kinds of subjects. I am interested in how the text/talk of neuromarketing reduces the consumer to particular metaphors such as the brain as buy button and mind as animality, both of which have ties to the mind as reflex-machine and mind as animal-machine. My overall argument is that the discourse structures of neuromarketing animalize consumer thinking and augment consumer animality (through bio- and neurotechnologies and other technologies of augmentation), turning the consumer subject into a “lower thing” that can be manipulated for advertising ends. As Brutoco and Austin (2010) claim, 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” (para 8). In this capacity, the technique of neuromarketing erodes our core democratic values of freedom and self-determination.
CHAPTER THREE  
Techno-Cultural Horizons in a Digital Media World

A truly objective world, totally devoid of all subjectivity, would—for that very reason—be unobservable.

--- Walter Heisenberg, Nobel Laureate in physics

The potential for brain imaging technology to allow researchers to localize which brain regions control which neural functions and which areas respond to various stimuli opened up possibilities to investigate the neural functions underlying a subject’s decision-making processes (Shiv et al., 2005). In light of this knowledge, proponents of neuromarketing have pushed for the application of neuroscience research and methods to marketing practice—they want to get to the bottom of what makes consumers tick. According to Lindstrom (2010), brand-futurist and expert at predicting: “Until today, the only way companies have been able to understand what consumers want has been through observing and asking them directly. Not anymore.” In well spun words, Lindstrom went sagesse:

… I soon came to see that neuromarketing, an intriguing marriage of marketing and science, was the window into the human mind that we’ve long been waiting for, that neuromarketing is the key to unlocking what I call our Buyology—the subconscious thoughts, feelings, and desires that drive the purchasing decisions we make each and every day of our lives. (p. 3)

Lindstrom goes to mythic proportions and presents neuromarketing as a path to finding the Holy Grail of advertising, our subconscious secrets:

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. (p. 133)

Neuromarketing positions itself as offering valuable insights into consumer subconscious processes, which [allegedly] enables market researchers to decode why an
advertising message eventually succeeds or fails. Data obtained from brain focus groups is then used to design more effective advertising stimuli to “capture” consumers at a level where instincts rule and behaviours can be manipulated to respond in accordance with external triggers. In light of this, the guiding question for my project is whether or not neuromarketing amounts to a reduction of human beings to a set of reflexive animal relations to triggers external to their targeted consumer niche (subjective/phenomenal world).

This chapter offers a sketch of the techno-cultural horizon of neuromarketing, including the aims and assumptions of the industry. I consider how the trope of metaphor reveals explicit and implicit meanings and associations. Metaphor plays a central role in the following chapters where I focus on the neuromarketing technique of augmenting consumer animality, evident in the animalization of thinking and the reduction of consumers to particular metaphors for the mind: mind as animal-machine; mind as reflex-machine; and a derivative, what I call mind as animality. While consumers are also reduced to the brain as buy button, my focus will be on animality according to a Heideggerian frame. As we shall see in the following chapters, having or not having access to the world is key to the distinctions Heidegger makes between the human being and the animal in terms of their modes of understanding the world. To conduct my analysis, it is first necessary to understand the distinctions between how human and non-human animals have and interpret the world, which presupposes an understanding of the concept of world.

Highlighting the comparative media theory of McLuhan, interdisciplinary philosopher Ian Angus (2000) observes that “the content of a medium of communication is another, previous, medium of communication. For example, the content of television is the play, the public announcement, or the town crier … The content of film is the novel; the content of speech is thought.” Angus asks: “What then is the content of thought? One must say the content of thought is, simply, the world.” As Angus reasons, “[e]very experience is an experience of the world” (p. 43). The issue here is how we conceive the notion of world.

The concept of world can help us understand the communicative relationship between the consumer in her own subjective phenomenal world (i.e. socio-cognitive terrain) and the larger world of neuromarketing as a revealer and shaper of consumer worlds. Given that the content of thought, according to Angus, 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), phenomenology would dictate the necessity to be clear on the
structures of the world that play a part in the communicative dynamic in which thought occurs. As a heuristic device, world illustrates the multilayered dimensions of meaning-making for scholars who seek to understand the connection between objectivity (reality) and subjectivity (audience). I draw centrally on Heidegger’s writing on world and world disclosure as they pertain to Being and Time, Fundamental Concepts of Metaphysics: World - Finitude - Solitude, and The Question Concerning Technology. Heidegger’s analytic approach is useful as a philosophical framework for illustrating how, through textual artifacts, the discursive world of neuromarketing constructs consumer subjects and animalizes consumer thinking.

Heidegger (2010) understands ‘world’ in four different senses, the most relevant to my project is the third sense of world, what he calls the ontical-existentiell sense signifying “concrete particulars,” for example “the ‘public’ we-world or one’s ‘own’ most familiar (domestic) environment” (in Carman, 2003, p. 132). While positioning world in its ontical-existentiell sense, I break down the concept further to refer to world as two distinct forms. First, I will present world as a larger social environment, as Heidegger (2010) would call it, the “public world” or the “we-world.” In this version, I would also suggest following McLuhan’s (1964) conceptions of the components of meaning-making within the context of comparative media theory. As such, this larger social world can also be understood as a cultural environment within which media objects, events, values, and assumptions can shape consumer (audience) consciousness. Angus (2000) claims that “the specific prevailing configuration of this cultural environment is defined by a continuous translation between a plurality of media” (p. 43).

The second form of world is the targeted consumer niche which I will attend to in Chapter Five. The niche, or the subject’s phenomenal or subjective world, can be likened to political activist Eli Pariser’s (2011) notion of the online “filter bubble” that “like a lens … 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” (p. 211). The idea of a filter bubble can be extended to online as well as offline neuromarketing practice as a technique of creating and disclosing behaviourally targeted consumer environments, calculated according to brain imaging and biometric response data. I begin by offering a definition of cultural horizon. Following this, I will explicate the concept of world. I will also present themes and assumptions that emerge from text/talk to map out the cultural horizon of the industry as a world of discourse structures.
**Horizons of meaning**

In the larger social “we” world of neuromarketing stretches a horizon of meaning, a haze of hidden and explicit assumptions that represent and shape various visions of the world (social reality and cultural constructions). These visions are conceived and maintained by those in financial power such as advertising agencies, corporations (as persons) or other entities shaping dominant ideologies, educating consumers through a public pedagogy of conditioning into a particular mode of being that binds the consumer to the advertising industry in a master-slave relationship like the one illustrated by Herbert Marcuse (1964):

> The means of communication, the irresistible output of the entertainment and information industry carry with them prescribed attitudes and habits, certain intellectual and emotional reactions which bind the consumers to the producers and, through the latter to the whole social system. The products indoctrinate and manipulate; they promote a false consciousness which is immune against its falsehood … Thus emerges a pattern of one-dimensional thought and behavior. (p. 20)

The binding of corporation and consumer that Marcuse conjures is playing out in the [digital] social world in which we, as Heidegger (2010) would argue, always already exist. Marcuse’s quote is useful to highlight the psycho-social purposes of neuromarketing and advertising more generally. The idea that consumers are “immune” against falsehood resonates with the state of consumer animality, to the poor in world animal’s inability to understand that it is being manipulated (disinhibited/stimulated) by an external party; it illustrates the consumer as lacking an awareness of the properties and coercive dimensions of its neuromarketing environment. In this sense, the “emotional reactions” that connect consumers to a larger advertising assemblage can also be likened to an even more egregious form of “mind slavery” that Smythe (1981) explicated in his inquiry into the consciousness industry.

Neuromarketing seeks to strip the consumer of agency, bypassing critical and reflective thought and reducing the consumer to the point where she becomes incapable of recognizing she is being manipulated into a “false consciousness” in order to disconnect from her affective enchainment at all. Andrejevic (2012) notes, “neuromarketers are interested in more direct forms of influence – in particular those that bypass conscious reflection on the part of consumers” (p. 201). This level of consumer unawareness is what the advertising spectacle seeks to exploit through application of the cutting edge bio- and neurotechnologies of
neuromarketing. Advertising as a spectacle is highlighted by philosopher Guy Debord’s (1967) claim that “in all its specific forms, as information or propaganda, advertisement or direct consumption of entertainments, the spectacle is the present model of socially dominant life” (p. 4).

The hold about which Debord speaks is managed through mass production and consumption, also pointed out by Adorno, Horkheimer, and other members of the Frankfurt School. For Debord, we are spectators drugged by the spectacle created within hegemonic practices. While some are wide awake and/or active in politicking, a large mass is “held hostage” by the media (Terranova, 2004, p. 135). So how does neuromarketing manage this spectacle, the shaping of consumer consciousness for instrumental ends? How might we uncover the explicit and implicit assumptions that underlie the industry and shape the socio-cognitive media environment in which we all exist?

One way to reveal these dimensions of the media environment is by approaching “technology as text” (Grint & Woolgar, 1997). This approach allows us to inquire into neuromarketing technologies (technique: hardware/non-hardware) as open texts that are “written” or configured in various ways by the social groups involved in each stage of development, production, and marketing. As Selwyn (2012) correctly observes, the metaphor of technology as text can lead to a revealing of often hidden work by the various individuals involved in crafting the “materiality and interpretations of devices.” Such a reading can serve to foreground the “rhetorical and material nature” (p. 86) of neuromarketing as a technique of consumer surveillance and control.

**Reading neuromarketing: Technology as text**

Critical scholars such as Eser et al. (2011) don’t see anything inherently problematic about using scientific technology to advance commercial interests; however, they argue that application of brain imaging technologies to probe the inner workings of the human brain, “especially beyond what one might divulge in traditional behavioural testing,” raises ethical concerns: 1) protection of parties who may be harmed or exploited by neuromarketing and 2) protection of consumer autonomy (p. 860). Murphy et al. (2008) break down ethical considerations along similar lines: 1) the protection of various parties who may be harmed or exploited by the process of neuromarketing; and 2) the protection of consumer autonomy if brain imaging technology is developed to the point where it can amount to effective consumer
coercion. Given ethical concerns, especially in light of advances in bio- and neurotechnologies, there is a need for researchers to examine all facets of neuromarketing, and to identify and analyze the implicit and explicit assumptions in the discourse, and reveal how these assumptions, values, and beliefs are used as rhetorical devices to construct meaning for socio-political purposes. In this sense, neuromarketing technique can be read as a text.

When analyzing neuromarketing as text, the horizon of world can be translated into what Feenberg (1992) would call a hermeneutic horizon. The concept of horizon “refers to culturally general assumptions that form the unquestioned background to every aspect of life” (p. 309). Feenberg proposes that some of these assumptions can support dominant hegemonic practices. Following Gramsci (1992), he uses the term hegemony to refer to “a form of domination so deeply rooted in social life that it seems natural to those it dominates” and “that aspect of the distribution of social power which has the force of culture behind it” (p. 309). As Williams (1980) claims, the practice of hegemony can be so totalizing that it can often evade our attention. In this sense, hegemony “supposes the existence of something which is truly total . . . but which is lived at such a depth, which saturates society to such an extent, and which even constitutes the substance and the limit of common sense for most people under its sway, that it corresponds to the reality of social experience” (p. 37).

On Feenberg’s (1992) view, cultural horizon is the second hermeneutic dimension of technology; the first being social meaning which would emerge 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 artifact” (Pinch & Bijker, 1984, p. 428). In other words, technological artifacts accrue meaning through a social process; e.g., the kind of ideological bias Neil Postman (1993) and Langdon Winner (1986) discuss in their work on the relations between technological artifacts and ideology/politics. A critical reading of neuromarketing, then, 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.

Introducing Heidegger’s phenomenological construction of world to analyze subject/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; 2) by understanding this dynamic as a totalizing relation (Heidegger talks about the totality of reference relations that constitute the present-at-handedness of equipment) we start to examine the notion of experience (or phenomenology: the logos of phenomena) in a way that cuts across the subject/object divide.

At the most primordial level of experience there is only authentic or inauthentic Dasein as being-in-the-world, where world is a unified matrix of existential significance. Heidegger conceives of Dasein’s existence as a tripartite union comprising Being, world, and in-ness (Dreyfus, 1995). On this view, world is the space where we – as Dasein – understand ourselves and other entities. Dasein does not simply represent a thinking entity abstracted from the world in which it exists; rather Dasein signifies a mode of being-in the world with other entities—an intersubjective relationship. I will elaborate on Dasein and its relationship with the world in Chapter Four. 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 Dasein exists in relationship to other entities. I now turn to explicating the concept of world to establish the structural framework as a disciplinary matrix within which Dasein exists as an agentic meaning-making entity.

What is world?
The concept of world can help us understand the communicative relationship between the consumer in her own subjective phenomenal world (socio-cognitive terrain) and the larger world of neuromarketing as a revealer and shaper of consumer worlds. Angus (2000) points out: “[e]very experience is an experience of the world. He adds that it is the “of” that interests phenomenologists, a facet of meaning-making that can also be translated to the work of communication theorists who seek to understand the connection between objectivity (reality) and subjectivity (audience).

To describe the phenomenon of world, in Being and Time Heidegger challenges traditional ideas regarding the intentionality of subjects towards objects. As Dreyfus (1995) observes, Heidegger is concerned with the “more basic intentionality of everyday coping (Dreyfus uses this term to designate a primordial mode of understanding), to the context or background, on the basis of which every kind of directedness takes place” (p. 88). On Dreyfus’s interpretation, Heidegger wants to demonstrate that three ways of being-in-the-world.
- availableness, unavailableness, and occurrence - presuppose the phenomenon of world (with the world’s specific way of being referred to as worldliness). I will return to these three concepts in Chapter Four. Worldliness is another name for disclosedness (Dasein’s understanding of being and truth) and is the “guiding phenomenon” behind Heidegger's thinking in *Being and Time*. Dreyfus claims that our basic understanding of world is pre-ontological inasmuch as we always already live in the equipment, practices, and concerns in the world without noticing them or explicating them.

Heidegger’s (2010) view is that the world is a shared phenomenon in that the social world always presupposes the individual’s (I) world. In other words, our internal world is conditioned first by the social milieu in which we exist. On Carman’s (2003) reading of Heidegger, the structures of discourse create “a public space, or a common vantage point from which we survey the world” (p. 240). In this sense, the formation of the self exists in a dynamic relationship with the various social worlds we inhabit and the various entities we encounter in the world. The notion of a shared world of meaning-making connects to the notion of *das man* (the “one” or the “they”) in that the social world shaped by the “one” also shapes Dasein’s consciousness. Heidegger (1992) writes: “This common world, which is there primarily and into which every maturing Dasein first grows … governs every interpretation of the world and of Dasein” (p. 340). Dasein can never escape the influence of the social world and, as Carman (2003) observes, can never “understand itself in fully autonomous terms, untouched by the normative authority structuring its everyday world” (p. 143).

In the context of neuromarketing, the larger concept of world can be understood in light of McLuhan’s (1964) notion of world being a cultural environment as a whole. Here, the relationship of consumer consciousness and world is a relationship of intentionality—of directedness. On this view, socio-cognitive dimensions of the world at large are permeated by discursive processes that shape our individual subjective worlds and influence our understandings of self and others. We might also refer to the outcome of this relationship as a consciousness industry based on identification of advertising and labour as mind slavery (see Smythe, 1981). Such a network interconnects media companies, corporations and organizations, governments, audiences, and advertisers, and turns on the production of audiences and the selling of their own [audience] “consciousness” to advertisers or to political candidates and political causes.
While I will not elaborate on the concept of authenticity in this work, it is worth noting that Heidegger (2010) distinguishes between authentic and inauthentic understanding as aspects of meaning-making. Authentic understanding emerges from Dasein’s own self and accords with it; whereas inauthentic understanding discloses the self in terms of the social norms of the public world—as a way of understanding one’s self from the perspective of others. When applied to neuromarketing, then, one might argue that the world neuromarketing discloses to the consumer is inauthentic, a false consciousness as Herbert Marcuse (1964) would claim, in the sense that it is a world that discloses dominant social codes and norms to manipulate consumers for the benefit of those in power (see Schneider & Woolgar, 2012).

Heidegger (2010) maintains no sharp metaphysical distinction between human beings and world which has “an irreducible normative dimension.” Mind and world (consciousness and reality, in the words of Husserl) are not separately intelligible entities. On Carman’s (2003) interpretation, Heidegger’s view of cognition as a founded mode of being-in refers to the realization that “our practical orientation in the world is a condition of the interpretability of our own cognition as cognition” (p. 126). Heidegger is not concerned with intentionality in general, but with the conditions of human and/or animal interpretation of intentional attitudes as intentional.

In Being and Time Heidegger conducts an inquiry into the lived world of practical activity to derive the “general structure of any world at all.” Philosopher Thomas Sheehan (2005) observes that the purpose of Heidegger’s description of specific worlds of praxis (such as the worlds of the carpenter, writer, tailor, and shoemaker, for example) is to show the common structure of those worlds, or the “worldhood” of any world. Sheehan notes that according to Heidegger’s explication of structure and function, a world is both the “place wherein” human beings live out their interests and purposes, and the “relations whereby” things within that particular realm accrue meaning.

The relation between Dasein and world is a relation of meaning-making: “A world is the range of human possibilities in terms of which anything within that context can have significance … The world, therefore, is what-constitutes-meaning (to aletheuein) insofar as it is the relational context, ordered to the final cause of human fulfillment, that lets things make sense” (pp. 199-200). Sheehan observes that things don’t come with already built-in meanings, rather, they become constituted as meaningful. He writes: “Discursive meaning occurs only in a synthesis, and synthesis presumes a prior distinction between the elements that will get
synthesized into a meaningful whole” (p. 200). Stephen Mulhall (2005) explains that world is 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 disclosed but also contested. The discursive world of neuromarketing is, as critical discourse analysis scholar Norman Fairclough (1992) would say of discursive systems, “a practice not just of representing the world, but signifying the world, constituting and constructing the world in meaning” (p. 64).

Four senses of world: Neuromarketing as a disciplinary matrix

Heidegger (2010) separates the traditional from the phenomenological sense of world in that he describes the categorial and existential ways in which the term world is used. He makes a distinction between an ontical sense of the term (relating to entities) and an ontological sense (relating to the way of being of these entities). Dreyfus (1995) breaks down these distinctions as two senses of “universe” and two senses of “world.” He categorizes them further under Inclusion and Involvement: 1) Ontical-Categorial Sense (Inclusion)\textsuperscript{xix}; 2) Ontological-Categorial Sense (Inclusion)\textsuperscript{xii}; 3) Ontical-Existentiell Sense (involvement); and 4) Ontological-Existential Sense.\textsuperscript{xiii} The most relevant model for my analysis of neuromarketing is world in Sense Three inasmuch as it offers a description of neuromarketing as an assemblage of entities and what such an assemblage might comprise in terms of objects and subjects for analysis.

Sense three: Ontical-existentiell sense (involvement)

The third sense of world refers to “that ‘wherein’ a factual Dasein, as Dasein, ‘lives’” (Carman, 2003, p. 132). This sense of world can be illustrated with terminology such as the world of neuromarketing or the business world, to use two examples. This form of world holds ontic significance, Heidegger claims, as it refers to “concrete particulars, though of a distinctively human sort, for example “the ‘public’ we-world or one’s ‘own’ most familiar (domestic) environment” (p. 132). Dreyfus (1995) clarifies this notion with the idea of a business world as opposed to an individual’s place of business (i.e. the physical space of one’s business). Dreyfus uses the world of physics to illustrate further: the physical world (as a set of objects in sense one) - is different to the world of physics which is “a constellation of
equipment, practices, and concerns in which physicists dwell” (p. 90). Carman (2003) explains that if we were to speak of the world of the mathematician in this sense, we “would be referring not to a domain of possible abstract entities like numbers and figures, but to such things as offices, colleagues, jobs, and journals” (p. 132). Further:

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.” (p. 131)

Both Dreyfus (1995) and Carman (2003) refer to Kuhn’s “disciplinary matrix” when describing the world in sense three. This matrix includes the “entire constellation of beliefs, values, techniques, and so on shared by the members of a given community” (p. 90). Although they exist within a larger totality (e.g., cognitive science), each of the lifeworlds, such as the world of neuromarketing, is also closed or sheltered from other existentiell worlds by various in-group styles of understanding and being-in. In such a world, consumers exist in what cognitive anthropologists Lave and Wenger (1991) call a community of practice: “a unit of analysis that cuts across formal organizations, institutions like family and church, and other forms of association such as social movements” … it is a “set of relations among people doing things together … The activities with their stuff, their routines, and exceptions are what constitute the community structure” (Bowker & Star, 1999, p. 294). On this view, neuromarketing is a world comprised of particular things common to all entities in it, including ideas, assumptions, values, and purpose.

As already noted, Heidegger (2010) claims that “publicness” is a necessary ontological dimension of any shared human world: “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’ – i.e. the world in which Dasein is absorbed such that it has not yet come to itself, as it can constantly be without having to come to itself” (in Carman, 2003, p. 141). Although there are a variety of disclosing activities, these activities presuppose the disclosure of a world that is always already shared.

Disclosure is important for understanding the relations between Dasein and world in that it refers to how the meaning of a word or thing is contingent on the larger context within
which we encounter it. 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. In this capacity, Heidegger (2010) would argue that we first obtain a “practical understanding” of things through our everyday experience of them. Meaningfulness of the thing is derived by virtue 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 within which meaning-making is a transactional and negotiated experience.

When thinking about these ideas in the context of neuromarketing, the phenomenologist’s task is to disclose aspects of the world by looking closely into its various dimensions in an attempt to detect which meanings or senses have to withdraw, hide away, be concealed, or even distorted in order for whatever is indicated by the sense to reveal itself. Heidegger’s well-known example of this is the hammer. Of course, the hammer is a useful tool, but it requires a phenomenologist to discover that in order to be useful, the utility of the hammer must be hidden from the person hammering as she hammers (practical-unthematized 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. As philosopher and political theorist Nikolas Kompridis (1994) argues, world disclosure refers to a process that occurs on two levels. First, it refers to the disclosure of an already interpreted, symbolically structured (socio-cognitive) world; the world within which we always already find ourselves; second, “it refers as much to the disclosure of new horizons of meaning as to the disclosure of previously hidden or unthematized dimensions of meaning” (p. 29).

Heidegger (2010) includes the public “we-world” as well as an individual’s own domestic environment in the possible modes of this kind of world. As such, while we exist in our own subjective worlds we also always already exist in a social world. This kind of world, in the context of neuromarketing, has various dimensions of social space filled with online and offline codes, norms, and values comprising intersectional communities of the physical in augmented practice. The third sense of world, then, can also be analyzed in terms of individual subjective lifeworlds (or as Feenberg would call them, niches) of various entities. I focus on the idea of world as a place of intersubjectivity and social construction where meaning is
encoded and decoded (Hall, 1973) and shared in a network of information: a “type of space that allows distant synchronous, real-time interaction” (Castells, 1996, p. 146).

Furthermore, entities don’t act in a vacuum but always in relation to other entities and/or objects of some kind or another, and within this relationship, tools and material arrangements mediate activity (Engeström, 1990). In this sense, neuromarketing cuts across and influences lifeworlds in a feedback loop of informational meaning-making (i.e. the larger world of cognitive science trickles into neuromarketing which then flows into individual phenomenal worlds). Bearing in mind that worlds seep in and out of each other, the third sense of world is also influenced by, and gains legitimacy from, the discourse of the larger world of cognitive science. For instance, research in critical discourse analysis (Jaworski & Galasinski, 2000) posits that a significant tool of gaining legitimacy is the “reliance” on already established ideologies, “beliefs and representations that are shared by members of a community and that act as providers of meaning for their everyday practices” (Ritivoi, 2008, p. 34). This dynamic is revealed through analysis of the role metaphor plays in shaping ideas of what it means to be a consumer subject in the intersection of neuroscience and marketing.

The interrelationship of worlds is evident in the way in which neuromarketing seeks legitimacy for itself as a “science” by referring to scientific studies in neuroscience on which its research methods are grounded. For example, in order to obtain a “true sense” of neurological activity as affected by advertising stimuli, neuromarketing company Sands Research (2010c) claims that their “full spectrum EEG recordings … delivers objective and empirical results from the brain’s response to the marketing medium” (emphasis added). Proponent of neuromarketing Douglas Fugate (2008) writes on the matter of manipulating trust by activating certain reactions in consumers: “Neuroscience holds open the possibility of empirically testing this and other inferential models that were developed using traditional research methods” (p. 171). On selling to the consumer brain, neuromarketing company SalesBrain (2014e) writes on its website: “With SalesBrain’s NeuroMap™ model, you can scientifically CAPTURE, scientifically CONVINCE and scientifically CLOSE more customers” (para. 1). And Toronto neuromarketing company True Impact (2013c) suggests: “Transcending language or cultural barriers, neuroscience adds an accurate and predictive scientific perspective to business” (para. 4).

The concept of world is useful for the scholar who seeks to establish a comprehensive account of the subject/object relation in a media environment. Thus, to understand
neuromarketing as *world* in sense three (ontical-existentiell sense) a scholar 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 ontological assumptions, posits, and claims to truth (all the essential features, properties, and relations cited in sense three), have they *really* examined what any of these essential features *are* or *mean*? Or are they forgetting something, relying on concepts handed-down from cognitive science that distort the phenomenon in some crucial way(s)?

In light of these questions, where might this analysis begin? With developments in bio- and neurotechnologies, as well as technologies of augmentation, neuromarketing and advertising more generally wield the potential to shape consumer consciousness using particular strategies of persuasion. One of these strategies is the manufacture of “objective” truth. On Key’s (1989) view of the media communications industry, “[t]ruth is a product of human perception” (p. 5). Key’s observations are relevant to the context of neuromarketing, where “[t]ruth becomes credibility and is validated in the eyes of the beholder instead of within a rigorous structure of confirmable facts. Truths are manufactured to order; audience-perceived realities are manipulated to appear as objective realities” (p. 7). Media technicians must hide the illusions and fantasies they create from consumers who are never “permitted backstage” in case these illusions are destroyed as “media illusions are worth a great deal of money” (p. 7).

As Ewen (1976) notes of the history of advertising (and market research), the elevation of commodities and values of mass production to the realm of truth was a main task for individuals who aimed to educate and indoctrinate the mass population into a logic of consumerism; this elevation of commodities and particular values resonates with contemporary advertising practices. So how might neuromarketing “truth” be produced and circulated? Presupposition is one strategy individuals use to “insinuate their constructions” of the world into the consciousness of their audience (see Flowerdew, 1997). Further to this, Fairclough (1989) argues that “having power may mean being able to determine the presuppositions” (p. 152). Neuromarketing has consistently managed dominant presuppositions about the consumer. For example, in the patent “Neuroimaging as a Marketing Tool” (Google, 2000) Zaltman refers to the consumer data obtained through neuroimaging technologies as “non-subjective” evidence. In the discursive world 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 technique offers objective or “non-subjective” truth; neuromarketing can predict which products will be successful thereby avoiding the “common pitfalls” of traditional market research methods. I begin with examining the theme of “truth.”

**Objective subjectivity: The truth and nothing but the truth**

In the fifties Vance Packard (1957) observed how advertising agencies used the research of cognitive psychology and behavioural scientists to probe the consumer mind as deeply as they could in order to design effective advertising campaigns. Marketers started to question the three basic assumptions they had been making 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 if they know them;
3) It is dangerous to assume that people can be trusted to behave in a rational way.

Fast forward to the early 2000s, neuromarketing uses psycho-social strategies of traditional market research with the addition of powerful and sophisticated bio- and neuro-technological apparatuses. As Fred Auchterlonie, senior vice-president of PHD Media (a group that plans and buys advertising for clients) states: “We used to joke in this business that it’s not rocket science. Now, we say it’s just brain surgery” (in MacKlem, 2005, p. 2). An evolution of market research, neuromarketing merges modern approaches to psychology with cutting-edge technological equipment, functioning like a “lie detector” (Renvoisé, 2013) and bypassing the consumer’s capacity for critical reflection to extract bio-and neuro data, which then informs design and development of advertising messages set to trigger consumers at an instinctive level into desirable buying responses. Although the technique is new and improved with the key difference between traditional market research and neuromarketing lying in the power of sophisticated technological equipment, the central motives remain the same with extra assumptions emerging as a result of techno-scientific progress:

1) We know you better than you know yourself,
2) Consumers can be triggered to imitate a preferred buying response.
To figure out trigger tactics (or tactics of disinhibition), neuromarketing uses consumer clinical data for consumer research reporting purposes. One of the more common narratives found in the texts in terms of the relation between neuromarketing and the consumer subject revolves around ideas of truth. For instance, a recurring assumption for why marketing should use, and would benefit from, neuroimaging equipment and clinical data is that consumers are irrational and unable to access their “true” subconscious emotions and feelings because a large part of our understanding process occurs beneath our conscious knowing. For instance, the executive vice president at Deutsch Inc, LA, Douglas Van Praet (2012) 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. (pp. ii-iii)

A claim emerging from the text/talk of neuromarketing is that consumer neuroscience research will allow consumers to learn about, and develop a better understanding of, their own behaviours. For example, marketing scholars Kenning and Linzmajer (2010) highlight: “[t]he examination of differences between the brain activity of compulsive buyers, compared with those who maintain appropriate levels of purchasing, helps to explain why these compulsive individuals tend to spend outside of their means” (p. 121), leading to knowing oneself. These kinds of responses also assume there is a momentary lapse between a “true” thought and/or emotion and socially mediated discourses, and that neuromarketing can tap into this “nanosecond lapse” (see Chapter One, p. 50) to extract the secret workings of the consumer subconscious and access scientific truth.

Another theme in the text/talk of neuromarketing revolves around the idea of competition. The language of the field suggests that remaining competitive demands truly understanding consumer behavioural responses to advertising messages and then designing more effective advertisements to persuade consumers through affect and instincts. Advertising, then, would have to get at hidden aspects of consumers to find the source of our deepest instincts and desires—the subconscious. As we shall see throughout this dissertation, a reading of the text/talk of neuromarketing highlights the following general assertions to truth:
1) Neuromarketing draws from scientific truth;
2) Neuromarketing offers objective scientific truth;
3) Neuromarketing is predictive.

**Assumption: Customers do not know or do not have access to truth**

A key assumption (and argument for use of neurotechnologies in marketing) is that consumers do not know themselves, therefore they cannot tell the truth, if there is indeed a truth to be told. For example, Lindstrom (2010) asserts that traditional focus groups have failed. Their techniques are “no longer up to the task of finding out what consumers *really* think” (p. 18). If marketers want to access “the naked truth—the truth, unplugged and uncensored, about what causes us to buy—they have to interview our brains” (p. 22). As I have noted already, the key difference between traditional market research methods and neuromarketing practice hinges on advanced technological apparatus that can monitor and measure consumers in a way that is more intrusive than ever before.

Lindstrom’s (2010) book *Buyology: Truth and Lies About Why We Buy* is based on a three-year neuromarketing study that cost approximately $7 million. He claims that the study was “twenty-five times larger than any neuromarketing study ever before attempted” (p. 11)—the first of its kind in terms of global magnitude. Lindstrom’s research team was overseen by Professor Gemma Calvert (chair of Applied Neuroimaging, University of Warwick, England, and founder of Neurosense in Oxford) and Professor Richard Silberstein (CEO of NeuroInsight, Australia). Using fMRI and SST, the project explored the efficacy of cigarette packet warning labels, product placement, subliminal messaging, and other areas of study. The research included such questions as: Does product placement really work? How powerful are brand logos? Does subliminal advertising still take place? Is our buying behaviour affected by the world’s major religions? Lindstrom argued that neurotechnologies could give advertising strategies a neurological boost:

>[T]he 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. (p. 22)
The “nanosecond lapse” is a recurring theme in the text/talk of neuromarketing, and it is presented as a space to be infiltrated in order for an advertising message to engage the consumer at an instinctual level that lies beneath the human capacity for critical/reflective thinking. Writing for *Fast Company*, Adam Penenberg (2011) observes:

> 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. Whatever happens there is neurologically pure, unlike when your conscious mind takes over and actually changes the data by putting them through myriad mental mechanisms. It’s all the action inside you before your conscious mind does the societally responsible thing and reminds you that artificially flavored and colored cheese dust laced with monosodium glutamate is, well, gross. (p. 123)

The excerpts above illustrate how neuromarketing assumes that it is indeed possible to obtain objective data on subjective consumer experiences. Neuromarketing goes even further to privilege this objective data over the consumer’s own self-knowing. As Andrejevic (2012) claims, neuromarketers assert that people’s “bodies are, for marketing purposes, more truthful than the words they utter” (p. 199). On this view, neuromarketing seeks to bypass the “vagaries of focus groups by going straight to consumers’ brains” (p. 198). Although Lindstrom (2010) positions *Buyology* as an aid for consumers to understand what advertisers are doing, it is intended first as a guide for how advertisers can maximize the success of their advertising messages in accordance with all things bio- and neuro.

**Assumption: Customers might know the truth but they lie about it**

A second assumption is that consumers simply do not tell the truth even when they do know what they want. For instance, 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. Lucaci claims that “[i]n focus groups, what often happens is that you get people skewing their answer to what they think the marketer wants to hear or what will make them sound better in front of the other participants” (Crowe, 2010, para. 10). For Lucaci, the technological apparatuses of
neuromarketing such as fMRI and EEG can overcome this challenge, providing “invaluable information for marketers because it takes a lot of guess-work out” (para. 7).

Steven Quartz argues that neuromarketing can uncover preferences of which we are unaware; preferences rooted in identity and self-image. Quartz claims that the benefit of neuromarketing is it “may hit on subconscious biases that traditional methods, such as focus groups, fail to uncover” (in Singer, 2004). Dissatisfied with these traditional methods, and acting on the assumption that marketers don’t have the tools to probe the consumer psyche to measure the effectiveness of their brand recognition, Quartz and his project manager, Anette Asp, set up CoolScan, a neuromarketing study funded by the David and Lucile Packard Foundation. The aim of the brain focus group was to access “the unconscious” to “discover radical differences in how people’s brains respond to the pervasive notion of ‘cool’” (Mahoney, 2005, p. 2). In a PBS online article, Maggie Villiger (2005) interviewed Asp, who 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. (para. 7)

Quartz notes that when his research participants were shown what the research designers considered a “cool” product (e.g., brands such as an Apple iPod, a Christian Dior purse, an Audi car), certain individuals displayed rushes of blood to the area of the brain that governed self-image. There was also activity in a region involved in planning movement. When the same participants were presented with “uncool” products (e.g., loafers, a handmade purse, Nascar sunglasses), certain individuals showed little brain activity. The researchers dubbed this group “cool fools.” There was also a group of “uncool connoisseurs.” Quartz writes: “Cool is basically kind of a positional good. People buy things that they think are going to advertise to other people who they are” (p. 3). Quartz claims that this kind of brain imaging data can be used to inform advertising strategies. Instead of developing a one-size-fits-all advertisement, luxury car makers, for example, might appeal to cool fools by illustrating how owning one of their vehicles equates to membership in an elite group. Quartz suggests that this kind of tactic may not work with the uncool connoisseur who might instead be motivated by an
advertisement that shows a person being embarrassed to drive a jalopy to a country club where the parking lot is packed with luxury cars.

Asp volunteered to have her brain examined and was surprised to discover she was uncool. As Mahoney (2005) notes, Asp pointed out that the experiment measured unconscious brain activity and not the “coolness factor” of the research participants. Asp claims: “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?” (p. 4). Asp’s trust in neuromarketing [scientific] methods and objective data evokes Ellul’s (1964) 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, “creating a psychological collectivism by mobilizing certain human tendencies … 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” (p. 407).

In our contemporary digital society, the spectacle of advertising becomes a narcissistic assemblage, swallowing our perceptions and regurgitating them back to us in desirable forms to keep us happily and uncritically consuming reifications of ourselves in the form of goods and services. Such an existence is expounded by Pariser (2011) who writes about the “filter bubble” where: “Personalization filters 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” (p. 211). Such an existence, as Marcuse (1964) might argue, 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” (p. 14).

Assumption: Neuromarketing can predict which products will be successful

Another theme that emerges as recurrent in the text/talk of neuromarketing is the theme of prediction. For Tim McPartlin, Senior Vice President at Lieberman Research Worldwide, neuromarketing methods offer a better measurement than traditional 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 (Villiger, 2005). Villiger (2005) asks: “What does that ‘better measurement’ really tell you?” To which McPartlin responds: “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. It seems to make sense.” In this capacity, neuromarketing is seen as a more efficient tool for prediction than what traditional focus groups have been using thus far. The excerpt below is from a British news report about neuromarketing and its capacity to predict. Of course, advertisers have been peering into the consumer mind for what seems like an eternity. The difference in contemporary contexts, however, is largely thanks to technological developments and the availability of medical imaging equipment now accessible to industries beyond the health sector. Where traditional advertising peer[s], 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 (Hannaford, April 13, 2013)

Whether or not neuromarketing can do what it claims to do, to survive in a competitive atmosphere its proponents must claim they can predict with objectivity how texts [advertising stimuli] will affect consumers. In their sharp critique of neuromarketing, science and technology scholars Schneider and Woolgar (2012) write: “The hope of revealing hidden information is central to the case for generating and sustaining research in the field” (p. 178). And Andrejevic (2012) observes: “A gesture towards interior truths may be retained, but is simultaneously displaced by the goal of prediction” (p. 213).

The theme of prediction (which relates to predictive technology) emerges across a range of textual artifacts, explicitly by Lindstrom (2014) who has dedicated a section of his personal website to a visual timeline of his predictions. A good 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” (Google, 2000). I would like to draw attention to two things in the text below. 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 kind of reduction of consumers to a set of reflexive triggers equates with the animal-machine metaphor: Animals are reflex machines. Humans are also animals. Then humans are reflex machines (Edwards, 1996). 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. The patent includes the following “claims,” which I quote 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;
   • 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. (Google, 2000)
The excerpt above shows how neuromarketing aims to predict consumer behaviours through specific brain focus group methods. Behavioural measurements are correlated with measures of activation in the set of brain regions of interest. Subjects are exposed to various stimuli and their physiological responses are recorded in real-time by a neurological and biometric measurement apparatus. The focus on behavioural prediction is illustrated by the patent 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 also a focus in the patent on correlation. Addressing the tendency of neuromarketing methods to rely on correlation, Andrejevic (2012) maintains that amidst the “complexity and vagaries of the data and its interpretation” there is an understandable temptation to turn to correlation. Correlation, he argues, “promises to resolve the paradox of attempts to bypass representation with more representations” (p. 212). 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” (p. 212). When examined through this lens, Andrejevic notes how neuromarketing aligns itself with strategies Patricia Clough (2009) identifies with emerging practices of social control in a dynamic background. Of this environment 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” (p. 50). This form of control can be mapped onto the framework of animality, specifically the concepts of captivation and disinhibition of animal niche by an external [advertising] stimulus. I will address these ideas in depth in Chapters Five and Six.

**Selling neuromarketing to consumers**

Offering another approach to how using consumer data for predictive purposes works in a consumer surveillance setting, Oscar Gandy (2012) discusses the process of “statistical
discrimination.” He argues that in such contexts computerized analysis of data is used as intelligence to inform organizational decision-making. (In the case of neuromarketing, the decision-making is fixed on probing the consumer’s subconscious for behavioural data that can then be used to develop and implement the right advertising message for that consumer - individual and/or demographic). Gandy claims that the overall effect of consumer surveillance is that it promises rewards and benefits to certain consumers (individuals/demographics) and excludes those who do not conform to codes and expectations. This “rational discrimination” carried out in corporate environments results in negative outcomes for some individuals and groups: “The 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” (p. 176), a technological process repeated in cyberspace characterized as a “digital enclosure” (see Andrejevic, 2007).

As Selwyn (2014) argues, 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” (p. 3); this perception is certainly reflected in the text/talk of neuromarketing, especially in the narrative of neuromarketing as a benefit to society because of its accuracy and predictive capacities. Ideas around the theme of benefit to society emerge from a standard script that stretches multimodally through online and offline worlds, including - but not limited to - website content, local, national, and global marketing conferences, TED talks, and books. For instance, Lindstrom (2010) argues that neuromarketing allows us to understand our own “irrational behaviour.” Given that neuromarketing can present us with data that will show us how our “true selves” react to the world, 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 … Seen in this light, brain-scanning, used ethically, will end up benefiting us all” (p. 5; emphasis added).

On a similar note, True Impact Marketing attempts to maintain distance from unethical advertising practices and positions itself as an organization sympathetic to charitable causes. On its website blog dedicated to Ethics and Positive Impact, Diana Lucaci (2013) states: “We will refuse to perform research for causes which do not promote positive human values, like tobacco or gambling. In addition, we dedicate a portion of our yearly earnings to performing
research for non-profit organizations” (para. 4). However, also on the website one can find the language of consumer captivation: “Discover the viewer engagement and levels of attention in order to successfully create programs that captivate.” Further: “Neuroscience gives us the tool to pinpoint the cognitive abilities that are contributing to the consumer’s decision-making. With this insightful information, your brand is better positioned to be remembered; effectively capture consumer’s attention, elicit a positive emotional response” (True Impact Marketing, 2013b, para. 4). While True Impact Marketing positions itself as a neuromarketing company that has the best interests of consumers at heart, the implicit message in its text/talk is that consumers can be reduced to a set of reflexive response triggers that can be manipulated through new technologies into a state of being that is instrumental to advertising ends.

The most curious take on neuromarketing as a benefit to society, which also apparently benefits the health of the natural environment, is expressed in the text/talk of futurist Dick Pelletier (2005-2014) who, in his Positive Futurist blog, writes:

> 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.” (para. 10)

This kind of benefit to the natural environment, however, comes at a cost to the consumer in that the consumer is reduced to a buy button, an instrumental object, a machine that can be turned on and off by external triggers in an effort to make businesses “more profitable.” Elaborating on the concept of the buy button, Andrejevic (2012) claims, “[t]he neuromarketer’s Holy Grail: the attempt to locate a ‘buy button’ (or series of ‘buttons’) in the brain – a response, that when activated, would correlate with the measurable likelihood of the incidence of subsequent desired behaviour: in this instance, a purchase of the product in question” (p. 209).

The buy button approach of neuromarketing evokes what Marcuse (1964) would explain as the outcomes of a consumer society and the politics of corporate capitalism, creating a second nature in the human being that connects him/her “libidinally” and “aggressively” to the form of the commodity. Deviating from the utopian “magical future” expressed by Pelletier (2005-2014), one might consider that the health of the natural environment might be attained
more ethically through the cessation of [subliminal] marketing and advertising practices that deliberately ramp up consumer desires for products they don’t even know they “really want” (True Impact Marketing, 2013a). In this capacity, the eradication of such unethical media practices not only benefits the health of the natural environment but also the consumer in terms of agency—specifically the freedom of intelligence to create values not forcibly grounded in the habitus of unreflective and uncritical consumption.

The script of neuromarketing as a benefit to society can be reduced to the following claims: 1) Neuromarketing can result in increased corporate profits which will drive competition and lower prices which benefit companies and consumers; 2) Limiting the production of goods to what consumers actually buy will lower waste at a global level, leading to a healthier environment; 3) By seeing how advertising works at a subconscious level to deliver messages about a good (or service) that biases consumers in its favour, consumers will be empowered to guard themselves against those methods; and 4) By showing consumers how they “really” think, “objective” neuromarketing data allows them to know themselves.

Assumption: We know you better than you know yourself

In February 2008 the Nielsen Company became a strategic investor in consumer-research firm NeuroFocus. Dr. A. K. Pradeeplxvi (Engineer PhD) is CEO of NeuroFocus. Pradeep (2010) claims to have developed a tool that can get into the subconscious brain: Mynd, a portable, wireless (EEG) scanner which “promises an accurate read of the subconscious mind” (Penenberg, 2011, p. 119). The skullcap-size brain scanner includes dozens of sensors covering the area of the brain. With modern technologies integrated into the capacity of the brain scanner, Mynd is intended to deliver consumer clinical data over to advertising clients at the blink of an eye.

Pradeep is also the author of The Buying Brain (2010), a book that purports to teach advertisers how to access consumers at a deep subconscious level. With the added credibility of Nielsen Research to back him,lxvii Pradeep offers 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 “unique” aspects of male and female consumer minds at the “preconscious, precognitive” level, where responses are “unbiased and unfiltered” and “[e]ngage the unique aspects of male and female brains.” The book blurb states:
The Buying Brain gives you a one-stop playbook for understanding and applying the latest research using findings from sophisticated neuromarketing techniques. Covering everything from product development to packaging to point-of-sale marketing, this is the only guide you need to access today’s newest business frontier: the human brain.

With the new technology of Mynd, Nielsen consumer research tools went mobile to “capture, amplify, and instantaneously dispatch a subject’s brain waves in real time, via Bluetooth, to another device” such as a laptop, iPhone, or iPad (p. 124). The idea of capture is recurrent in the texts and can be mapped onto the idea of captivation as the essence of animality that I will explore in Chapter Five. This technique seeks to engage us - as consumers - at a level that lies just beneath our conscious ability to recognize its presence; i.e. the subliminal level (below threshold). In such a capacity, “neuromarketing captures the essence of desire before it is released into the world, while it is still locked up, in its essential form” (Andrejevic, 2012, p. 207).

In light of the textual artifacts examined thus far, it is increasingly evident that neuromarketing aims to 1) reduce the subject [consumer] to a set of reflexive trigger relations to the environment that acts first from instinctive reactions that can be manipulated by a third party (external stimuli): “animality”; and 2) reduce the subject [consumer] to a mechanical thing: “buy button.” The neuromarketing tendency toward reductionism is also addressed by Schneider and Woolgar (2012) who ask: “Why is this form of reductionism rampant at this point of our history? What explains the general preference for accounts of human behaviour that privilege the gene, the brain and so on, over the person?” (p. 186).

Summary
This chapter offered a preliminary illustration of the concept of world and a sketch of the techno-cultural horizon of neuromarketing, including the main themes and assumptions that emerge from discourse structures. The assumptions I explored include: customers do not know or do not have access to truth; customers might know the truth but they lie about it; neuromarketing can predict which products will be successful; and we know you better than you know yourself. I also considered neuromarketing as a form of consumer surveillance (specifically dataveillance) that can marginalize, categorize, and normalize. Dataveillance is a
A useful concept for understanding entailments of the various metaphors that emerge from neuromarketing as a technique of surveillance. In this sense, neuromarketing is an example of the fluid relationship between consumers and technologies of surveillance that exists in the digitized worlds of late capitalism.

The next chapter will consider the fundamental structures of how human beings (as Dasein) make meaning in and from the world, and demonstrate the complexity of the process of understanding (sense-making) not captured by the research project of neuromarketing when constructing the consumer subject. Our capacity for understanding the world moves from practical understanding to a more critical hermeneutics comprising thinking skills such as reflection, synthesis, and interpretation. I will present existential structures such as practical understanding (e.g., coping and comportment), interpretation, and attunement to highlight the process of understanding [communicative practice] that neuromarketing seeks to disrupt and override in its search for desired buying responses.
CHAPTER FOUR
Dasein and the Critical Reflective Human

If we look more closely at the distinction between poverty in world and world-formation in this form, this distinction reveals itself as one of degree in terms of levels of completeness with respect to the accessibility of beings in each case. And this immediately supplies us with a concept of world: world initially signifies the sum total of beings accessible to man or animals alike, variable as it is in range and depth of penetrability. Thus “poor in world” is inferior with respect to the greater value of “world-forming.”

-- Martin Heidegger

As we began to see in the previous chapter focusing on techno-cultural horizons and world, a reading of collected textual artifacts reveals that the neuromarketing project assumes the consumer subject is an instrumental thing situated in an understandable world, and able to be triggered by an external stimulus, like an animal-machine, into desirable consumer responses. In this chapter I attend to the concepts of world and understanding as part of the framework I will use to demonstrate how neuromarketing constructs consumers while failing to provide a substantive account of the complexity of the human thinking process and the structural dynamics between consumer and world. Heidegger’s (1995) schema in the Fundamental Concepts of Metaphysics, the tripartite division of “no world” (inanimate/mechanical realm), “poor in world” (animal realm), and “world-forming” (human realm), is useful heuristically, despite its limitations, to illustrate how the animalization of thinking occurs in neuromarketing. This chapter draws from Heidegger’s work to develop a form of inquiry that helps us understand how neuromarketing reduces consumers to non-thinking beings. Heidegger’s analytic is especially useful as it allows me to outline the metaphor of mind as animality, a derivative of the guiding metaphors used by cognitive science and neuromarketing of mind as animal-machine and mind as reflex-machine described in previous chapters.

Using this Heideggerian framework, I seek to show that as part of a larger techno-scientific grammar (grounded in cognitive science as detailed in Chapter Two), the discourse of neuromarketing animalizes consumer thinking and, through bio- and neurotechnologies,
augments consumer animality, constructing the consumer subject into a “lower thing” (Agamben, 2004) that can be conditioned into specific responses for advertising ends. As a technological evolution of market research, neuromarketing seeks a form of direct control ultimately attained through bypassing the consumer’s capacity for conscious reflection (see also Andrejevic, 2012). This construction of the consumer is not in line with Heidegger’s vision of the human being as a world-forming agent with the capacity for critical resistance to external manipulations.

Heidegger’s phenomenological inquiry into understanding has informed the discipline of artificial intelligence (AI) with regards to breaking down human information processing (i.e. structures of understanding) into components that can be used to guide the development of computer intelligence (e.g., Dreyfus, 2007, 1992). Using a Heideggerian frame to explore understanding in the context of neuromarketing is a reasonable extension in that it can offer clarity into the structural aspects of the consumer’s communicative process that neuromarketing seeks to disrupt and override. A Heideggerian frame offers scholars analytic tools to interrogate the world as a cultural environment within which media objects, events, values, and assumptions can shape consumer [audience] consciousness (McLuhan, 1964). A critical hermeneutics of neuromarketing also offers surveillance studies a philosophical framework to interrogate the imaginative work of consciousness moulding undertaken in the socio-cognitive terrain of contemporary consumer surveillance practices.

The purpose of this chapter, then, is to illustrate how human beings as Dasein make meaning in and from the world, and to foreshadow the complexity of the process of understanding not captured by the program of neuromarketing. Our capacity for meaning-making moves from practical understanding such as unreflective coping with the world to thematizing, 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 will help us identify how consumer subjects make sense of the world which can serve as a launching pad into analysis of how neuromarketing animalizes consumer thinking. I will first offer a delineation of relevant concepts on the philosophical level that will allow the reader to grasp the conceptual framework I am using for my inquiry. Thus, this chapter illustrates how Heidegger’s analytic concepts can be applied to neuromarketing before I present a focused analysis of augmenting animality in Chapter Six.
Although Heidegger claims that his metaphysics does not seek to create a hierarchical division between human and [non-human] animal, it is, nevertheless, evident that he conceives of Dasein’s world-forming potential as an idealized mode of being-in-the-world compared to the poor in world capacities of the animal. The concept of Dasein is, I suggest, useful as a model of a (consumer) subject who holds the cognitive capacity to resist the coercive techniques of neuromarketing. Dasein, as a portrait of what it means to be complexly human, stands in stark opposition to Heidegger’s conception of the animal (in neuromarketing language, the reptilian brain) that is essentially captivated within itself and unable to identify when it is being manipulated (disinhibited) by external entities (e.g., a neuromarketing stimulus). Despite its handiness as a frame for analyzing the relations between consumer and neuromarketing, the fundamental ontology of Dasein is compromised by its grounding in racist and anthropomorphic foundations (e.g., Derrida, 2008; Sikka, 2003; Krell, 1992). I close this chapter with a consideration of the limitations of using Dasein for analyses of contemporary digital worlds.

**What does it mean for human beings to be in the world?**

Key to Heidegger’s thesis is the difference between the way human beings (Dasein) and animals have or don’t have a world. The distinction between the two is central to my project in terms of showing how the animalization of thinking occurs through the discourse structures of neuromarketing, and what the reduction of consumer to animality does in terms of denying or manipulating consumer access to the world. The following statement from Lindstrom, a neuromarketing proponent, implies that a consumer’s “true self” is an internal set of trigger relations that exists beneath conscious awareness and ultimately controls how we behave in the world. He (2010) 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)” (p. 11). This kind of reductive process illustrates the neuromarketing tendency to reduce the consumer subject to reflexive reactions, bypassing the complexities in thinking demonstrated by Dasein as an agentic entity that has the possibility to access the world in a reflective and critical manner.

Illustrating how neuromarketing aims at skirting conscious reflection, Asp, the project manager of the neuromarketing study *CoolScan*, writes: “[t]he 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” (in Villiger, 2005, para. 2). Upon closer examination, such reductions can be understood in light of the poor in world animal’s lack of capacity to access the world in the way Dasein has access. In order to understand the different forms of having or not having a world from the framework of Heidegger’s tripartite thesis that the stone (inanimate/mechanical) is worldless, the animal is poor in world, and man (Dasein) is world-forming, 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?

Dasein is commonly translated as being-there or as human existence. You and I are Dasein, my teacher is Dasein, a consumer is Dasein, and so forth. Heidegger uses Dasein to signify the structures that define what it means to exist in the world as a human being. Despite serious shortcomings pertaining to race, gender (Maldonado-Torres, 2007; Sikka, 2003; Wolin, 1995), and anthropocentrism (Wolfe, 2013; Buchanan, 2008; Calarco, 2008; Agamben, 2004; Krell, 1992), there are certain structures in Heidegger’s attempt at a fundamental ontology that are useful when sketching out a story to illustrate consumer construction. While I will not be using all of the following concepts to conduct a hermeneutics of neuromarketing technique as text, I have included them to give a fuller picture of the complex structures of understanding involved in the communicative process (i.e. in meaning-making and/or sense-making) that a consumer engages in as s/he interacts with world as a media environment. The two constituent moments I will take up in my analysis are understanding and attunement as they are central components to revealing the imaginative work neuromarketing engages in to construct consumer ontologies.

In *Being and Time* Heidegger explores attunement (*Befinlichkeit*), understanding (*Verstehen*), and discourse* (Rede) as fundamental moments in the *da* (there) of Dasein (Powell, 2013), in how Dasein makes meaning in and from the world. These fundamental structures (*existentialia*), or equiprimordial modes of Dasein’s being-in, are essential to understanding and framing how Dasein* interprets world/s and self. It is important to point out that Dasein can live in many worlds, not just the one. This claim is illustrated when we consider the numerous (physical and virtual) worlds in which an individual might exist, such as the world of advertising, the world of mathematics, the world of massively multiplayer
线上角色扮演游戏（MMORPG）、大规模开放在线课程（MOOC），等等。

海德格尔（2010）分析了存在，为一个关于存在的形式的一个调查提供了起点：存在的意义是什么？对于海德格尔，存在是一个人的根本状态，是存在-在世（In-der-Welt-sein）。存在-在世也可以被描述为一种存在的形式（Buchanan，2008）。哲学家威廉·布莱特勒（2011）认为，存在-在中的方式不应该被理解为空间的包容（在）而是“居住、居所、生活”。

这种基本的日常性产生了一种对其他实体的原始熟悉，特别是在与工具的便利性或我们如何使用工具/事物的关系上。存在也总是与他人一起存在（mitsein）和非人类的内世界实体一起存在。

海德格尔将存在-与他人一起作为更基本的形式，它优先于与特定他人的关联（Dreyfus，1995）。尽管海德格尔的这种观念与人类存在的世界一般有关，但这些结构可以应用于营销神经科学的语境中，以说明消费者意识与媒体作为文化环境的关系。

虽然海德格尔的这种看法与人类在世界中存在的一般性有关，但这些结构可以应用于营销神经科学的语境中，以说明消费者意识与媒体作为文化环境的关系。它是一个数字市场研究的进化。

神经市场营销将现代行为心理学与尖端技术装置相结合，这种技术装置就像一个“测谎仪”（Renvoisé，2013）。通过应用这种心理-社会技术，神经市场营销试图绕过消费者的批判性反思能力，提取生物和神经数据，然后用于指导目标消费者在本能层面做出购买反应。

神经市场营销作为消费者监控技术的潜在危险被安格斯（2000）提出，他指出，可以理解为存在历史的媒体关系（即传播媒体与人类感知关系）的历史。
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” (p. 53). It is this relation between knower (subject) and known (world) in the environment of neuromarketing that I seek to reveal through a philosophical lens. I begin with the subject/object schema.

**Structures of understanding: How do human beings make meaning in and from the world?**

Heidegger (2010) 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 (Blattner, 2011). He rejects the subjectivism of Descartes and the internalism of Husserl, his former teacher. He also rejects scientific naturalism and reductionism. Carman (2003) argues that Heidegger’s interpretation of human existence as *being-in-the-world* is an attempt to conceive of “mundane intentional phenomena” in neither exclusively subjective nor exclusively objective terms. Although minds and objects play a role in our understanding of self and the world, “we understand them only with reference to the background milieu or situation in which they show up for us” (p. 121). This point is relevant to the way neuromarketing discloses consumer worlds and directs consumer attention to a particular stimulus calibrated to consumer behaviours and affective/instinctive responses. (I explore this point further in Chapter Six).

On Heidegger’s view, Husserl neglected, in his work on intentionality, the mode of being of the entity who/that has a “world.” Carman explains that 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? (p. xx). In the context of neuromarketing, how are we capable of interpreting ourselves as consumer subjects in the intersection of neuroscience and marketing?
Heidegger’s fundamental ontology is not interested in the general conditions of intentionality, “but in the practical conditions of our interpretation of intentional attitudes, our own or those of animals, as intentional” (p. 126). Heidegger aims to provide an account of the conditions that render “intentionality intelligible as such for the entity whose intentionality it is” (p. 102). Angus (2000) maintains that a phenomenological approach to consciousness (e.g., structures of understanding and an elaboration on intentionality toward the world as a wider cultural environment) can benefit comparative media theory in that it can shine a light on the relations between the knower and the known. Simply, intentionality refers to a “relationship of direct attention” and not to “deliberate attention” as common usage of the term might suggest (p. 44).

Heidegger (2010) asserts that our practical “dealing” (Umgang) with things in a meaningful world is connected to intentionality. He refers to such intentional directedness as “comportment” (Verhalten). Dreyfus (1995) claims that comportment has “the structure of directing-oneself-toward, of being directed-toward” (p. 49), a “more fundamental involvement of people with things than the traditional relation between self-referential mental content and objects outside the mind” (p. 62). Comportment is “adaptable” and copes with situations in various ways. 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” (p. 123). Heidegger claims that a distinction between Dasein and the animal is that Dasein comports itself toward the world where the animal unreflectively behaves.

Using Dasein’s structures of understanding as part of a framework for analysis can reveal the way in which the metaphor of mind as animality, a derivative I have attached to the metaphor of mind as animal-machine and mind as reflex-machine, plays out as a guiding metaphor in the discursive world of neuromarketing. As I noted in Chapter Two, scholars have applied a Heideggerian analytic to conduct research into human information processing (understanding: meaning-making, sense-making) in order to break down into parts a complex thinking process that can be used to map out rules and principles upon which to develop artificial computer intelligence. I have chosen to explore certain aspects of understanding to illustrate how consumers construct meaning in their encounters with the world. I will use these ideas in Chapter Six as foundations for my inquiry into how neuromarketing constructs the consumer subject through text/talk.
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 being-in. As we saw in Chapter Three and will see further in Chapters Five and Six, neuromarketing seeks to bypass certain aspects of consumer understanding (critical reflection, for example) and target the consumer at an affective and instinctive level in order to trigger desirable buying responses. For instance, 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” (Mellilo, 2006). Writing for Maclean’s, Katherine MacKlem (2005) tells the story of PHD Media and its partnership with Neurosense (a neuromarketing consumer research firm) to study 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 audiovisual advertisements were most effective at “disrupting existing perceptions” (emphasis added). 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.

Developing the idea of understanding as a cognitive capacity, Heidegger (2010) explains that Dasein’s understanding of the world has the existential structure of “projecting” (Entwurf) onto various possibilities. He claims that a projective existential understanding of the world “grounds our cognitive grasp of and explicit experiences of things” (Dreyfus & Wrathall, 2005, p. 5). The first form of understanding (practical understanding) comprises knowing how not knowing that. Carman (2003) writes: “understanding means knowing how, and it precedes and makes possible cognition, or knowing that” (p. 207). The structure of understanding “involves the purposive use of available (zuhanden) things in practical situations” (p. 20). Understanding is always - in part - thematic:

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. (p. 5)

On Dreyfus’s (1995) interpretation, Heidegger divides understanding 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. Dreyfus (2014) claims that skillful coping, for example, differs from mindless, mechanical coping in at least three ways: 1) skillful 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” (pp. 88-89). While Dreyfus’s conception of coping has been critiqued (see Carman, 2003), 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.

My analysis of how neuromarketing constructs consumer ontologies will focus on “mindless” everyday coping and interpretation as structures consumers (as Dasein) use when making sense of the world. Although mindless coping is a structure of Dasein, as a heuristic it can also be superimposed onto the “unreflective” consciousness of animality. In the *Fundamental Concepts of Metaphysics* lectures, Heidegger (1995) himself seems to draw an implicit link between Dasein’s way of being unreflectively absorbed in its surrounding world and the animal’s state of captivation in an encircling ring of instinctive drives. While some form of everyday mindless coping can be attributed to both human and non-human animals, interpretation and comportment remain specific to how Dasein makes meaning in and from the world. This comparison between structures of understanding can serve to identify how consumer thinking is animalized in the project of neuromarketing.

**Unreflective coping: Dasein’s most basic mode of understanding**

At the foundation of Heidegger’s analytic of Dasein, Dreyfus (1995) claims, is a “phenomenology of ‘mindless’ everyday coping skills as the basis of all intelligibility” (p. 3).
Understanding as coping is the most primordial of the forms of understanding. Heidegger (2010) gives an example of this mode of understanding as “unreflective, everyday, projective activity” (p. 195). He refers to this basic state of being-in-the-world as “everydayness” which is how Dasein usually exists, no matter how reflective or unreflective it is. On Heidegger’s view, there is no break from everydayness, only more or less radical modifications or transformations of it (i.e. philosophical cognition is supposed to effect a transformation in human beings, insofar as such reflection, unavailable to non-human animals, involves an extreme effort to resist the pull of familiarity which tends to take beings for granted as unquestionable or obvious in their various ways of being).

“Coping” can be situated on a continuum to illustrate the complexity of Dasein’s ability to understand the world, which can then be used to locate where, compared to Dasein, the consumer subject sits in terms of its reduction to the metaphor of mind as animality through the discourse of neuromarketing. It is precisely in the state of animality that neuromarketing seeks to capture the consumer, bypassing the kind of critical reflection (and more sophisticated forms of understanding such as interpretation) that Dasein is capable of achieving.

Although (2010) 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 text/talk of neuromarketing to illustrate the process of Dasein coping with the world begins with the claim made by Zaltman and Zaltman (2008) that 95% of the time our minds are working on “autopilot.” Here, most of our everyday decisions are arrived at with “minimal conscious involvement.” When applied to neuromarketing, autopilot is a state where consumers are not explicitly aware of the entities they encounter in the world; rather, 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 thematize the entities they encounter in the world.

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 can only ever react to an external stimulus according to affective and instinctive responses, for example, rather than with the critical
capacity to analyze how the message’s individual parts have been especially calibrated to engage a particular demographic or a particular behavioural category.

To use a specific example from a neuromarketing study, Karl Moore, a management professor at McGill University, explains that the goal of neuromarketing is to understand what creates a positive emotional response in the consumer and how to “boost” that feeling: “What we are trying to do is understand what people’s emotional visceral responses are to marketing stimuli so we can be more effective in things we design” (MacKlem, 2005, p. 2). In an experiment conducted by Moore’s partner in Britain, Gemma Calvert (a founder and director of Neurosense) recorded consumer brain activity in response to smell and colour. When the smell of strawberries was placed under the noses of research participants, Calvert observed that an area of the brain lit up. As the subjects smelled the strawberries while simultaneously watching a screen that represented the colour of strawberries, brain activity intensified significantly. When the screen was replaced with a blue one, brain activity dropped to a level lower than when the subjects were only presented with the smell of strawberries. Calvert concluded that “the total of your senses is greater than the sum of its parts” (p. 2). While research participants were aware of being presented with a stimulus, there was no critical and reflective interpretation occurring when encountering the stimulus, only bio-and neuro-responses. One might argue that the aim of this study was to perfect a subliminal hit on the consumer.

Critical reflection becomes necessary in situations where our “ordinary way of coping is insufficient” (p. 4) or when something ceases to run smoothly. When things are not working smoothly, as Dreyfus (1995) explains, “we have to pay attention to them and act deliberately.” The world Dasein has already understood “comes to be interpreted [literally, ‘laid out’]. The available comes explicitly into the sight which understands … When we are no longer able simply to cope, understanding may develop a new form” (p. 196). Understanding as interpretation (Auslegung) emerges from understanding as coping. Unlike everyday coping, interpretation includes explicit cognitive processes such as reflection and synthesis. Interpretation also includes assertion. (Given the scope of my project I will not be explicating the concept of assertion). It is Dasein’s capacity for critical reflection, synthesis, and interpretation that neuromarketing seeks to bypass in its quest to reach the “reptilian brain” and trigger consumer buying responses.
Autopilot coping vs. interpretive understanding

A key aspect of the way human beings make meaning as opposed to how animals encounter the world, according to Heidegger (1995), is the process of interpretation, specifically the capacity of Dasein to access the nature of things (or the as structure of the entities it encounters). A fundamental structure of animality, as we shall see, is the animal’s inability to grasp the nature of things. Unlike Dasein, the animal lacks access to the as structure of entities. To understand the difference between how Dasein and the animal have [or don’t have] access to the world, which can then lead to an analysis of how neuromarketing animalizes consumer thinking, it is necessary to first grasp the basics of the act of interpretation, specifically how the as structure is a feature of understanding that Heidegger has only relegated to the human being and not to the animal.

In Being and Time, Heidegger (2010) describes interpretation as “the working out (Ausarbeiten) and appropriation (Zueignen) of an understanding” (p. 231). Interpretation, on this view, refers to understanding made explicit. For Carman (2003), if understanding is knowing how, interpretation is a form of showing how. He claims, “[u]nderstanding precedes and conditions interpretation; interpretation presupposes understanding” (p. 208). Furthermore: “Interpretation is no mere contingent or inessential modification of understanding; it is rather the explicit realization or manifestation of the content and substance of understanding itself” (p. 22). The projective nature of understanding “allows us to differentiate the meaningful elements in the referential context of significance” (p. 252). The distinction between understanding and interpretation is the “emergence of an explicit phenomenological difference between what we understand and how we understand it” (p. 246).

Interpretation, on Carman’s view, “always only takes care of bringing out what is disclosed as a cultivation of the possibilities inherent in an understanding” (p. 260). Through interpretation, understanding “becomes itself.” The as-structure of interpretation presupposes the fore-structure of understanding, which consists of three hermeneutic conditions: “fore-having” (Vorhabe), “fore-sight” (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 resulting in explicitation. “Interpretive activity … makes manifest normative aspects of everyday intelligibility in a way that is itself sensitive to norms, in this case the norms governing *how* things are to be made properly manifest or explicit” (p. 215).

Understanding, according to Dreyfus (1995), “consists in *using as or treating as*, which is normative and aspectual but typically tacit and unthemetic (*available*). Interpretation, by contrast, consists in *taking as or seeing as* (in a broad, nonliteral sense of ‘seeing’)” (p. 246). On Dreyfus’ (1995) interpretation, 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*. To explain: practical understanding (unreflective, everyday, projective activity) becomes explicit in the practical deliberation that occurs in breakdown/disturbance. What becomes thematic can be articulated in statements such as, “*[t]his hammer is too heavy*.” What is laid out as *unavailable* (in interpretation) can then be selectively thematized as *occurrent* by means of assertions attaching predicates to subjects such as “*[t]his hammer weighs one pound*.” Dreyfus claims that interpretation “enriches our understanding” by working out the possibilities projected in understanding (p. 196).

Neuromarketing seeks to bypass our ability to identify and understand other entities as occurrent. This distinction will serve to highlight the animalization of thinking that arises in neuromarketing discourse structures. 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 beings are revealed in both breakdown and when we take a detached stance toward things to decontextualize them.\textsuperscript{lxxvi} In this detached stance, “we encounter occurrent entities as substances with properties” (p. 256). 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 decontextualize and theorize) 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 bypass in its efforts to influence consumers through more primordial [instinct-driven] levels of action.

According to Heidegger (2010), we can exist in the world as a practical experience, but it is when we encounter things as broken, and we begin to pick these things apart that we begin to experience the world thematically and/or theoretically. The text/talk of neuromarketing reveals that the technique aims to bypass the consumer’s cognitive capacity to identify and understand other entities thematically. For example, Kenning and Linzmajer (2010) support the use of consumer neuroscience in market research, noting it is a “win–win situation for both consumers and companies” (p. 121). 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 behavior” (p. 112). This scientific reduction constructs the consumer as fundamentally driven by instinctive and affective responses that lie beneath their conscious awareness. The text/talk implies that neuromarketing proponents seek to engage consumers at a level where they cannot understand entities (i.e. advertising stimuli) as occurrent. Heidegger’s distinction between forms of understanding can be used to highlight the animalization of consumer thinking that occurs in neuromarketing discourse structures.

The “as” of interpretation comprises the structure of the explicitness of something understood; it constitutes interpretation (Heidegger, 1995). For example, it is only because I understand my dog as a beagle or as part of the subspecies \textit{Canis lupus familiaris} that I am
able to draw broad theoretical distinctions between how I am viewing it and the dog itself. Applying this thinking to neuromarketing, it is only because the consumer understands an advertising stimulus as a persuasive advertising strategy that the consumer is able to see the text for what it is, as occurring, as present-at-hand, and is able to reflect on it and interpret it critically and reflectively.

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. 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 intention of neuromarketing is to bypass the consumer’s capacity to grasp the as structure of things, such as an advertising stimulus. This intention is illustrated by the focus on targeting the “reptilian brain,” a theme that recurs across the text/talk of neuromarketing.

To offer an example of the animalization of thinking, SalesBrain president and active neuromarketing proponent Patrick Renvoisé (2013) claims in a TED talk on finding the Buy Button in the brain that “[t]he reptilian brain is very fast but it’s very limited … it’s kinda stupid … your reptilian brain does not have any notion of past or future, it only lives in the present. It’s a brain that is unconscious, and … completely uncontrollable” (5:50-6:28). In other words, if an advertising stimulus can first target the consumer at a level s/he cannot register, behavioural drives will kick in and prime the consumer to respond instinctively to products and services that can then be presented to them through multimodal texts. As Christine Comaford (2012) explains in a Forbes article on how our brains block performance, the reptilian brain, “acts out of instinct and is primarily a stimulus-response machine with survival as its focus” (para. 8). In this capacity, the consumer as a reptilian brain is constructed as a thing driven by instincts and not the interpretive potential that Dasein possesses. Interpretation is a fundamental structure of Dasein’s being-in-the-world.

Interpretation does not exist only in our thoughts or experiences, it also plays out in our “overtly demonstrative practices.” The as-structure of interpretation is “at bottom the structure of the intelligibility of being, that is, the intelligibility of entities as entities,” it is the “structure of our understanding of being even though the understanding is not always explicit or thematic” (Carman, 2003, p. 208). Because there are socially appropriate ways of expressing and interpreting [norms], expressions and interpretations can draw attention to
aspects of our understanding that exist prior to these understandings being made explicit. In
this sense, there is a social character to the explicitation of interpretation. Simply, Dasein can
never escape the influence of the social world and, as Carman (2003) observes, “understand
itself in fully autonomous terms, untouched by the normative authority structuring its
everyday world” (p. 143). Heidegger (1992) writes of “[t]his common world, which is there
primarily and into which every maturing Dasein first grows, as the public world governs
every interpretation of the world and of Dasein” (p. 340). Carman (2003) claims that because
interpretation is essentially public and social it must have its roots in discourse.

**Discourse: Social dimensions of communicative practice**

Although my analysis will not be focusing on the concept of discourse, in that I cannot do
justice to the concept given the scope and limitations of my project, it is nevertheless useful to
include a brief commentary to offer context for how meaning (including signs and
significations) hangs together in the world of the human being. Furthermore, discourse points
to the social dimensions of Dasein’s communicative practices, highlighting the fact that
consumers in their targeted niche, for example, exist in a dynamic interrelationship with the
larger discursive world of neuromarketing as a cultural media environment.

Discourse (*Rede*) is an essential condition of interpretation in the analytic of Dasein and
forms part of the existential structures of Dasein’s disclosedness (i.e. Dasein’s understanding
of being whereby beings are rendered intelligible). Carman (2003) explores 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 and
phenomenological connection between discourse and interpretation:

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. (p. 205)
It is not reason or action that Heidegger considers the distinguishing feature of human understanding, over animal experience and behaviour; rather, it is discourse, which is why, as Carman notes, Heidegger rejects the Latin rendering of the Greek zōon logon echon as animal rationale for the observation that “[m]an shows himself as the entity that talks (redet)” (p. 49). On Carman’s interpretation, 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, they “lack the understanding of being that allows us to make sense of entities as entities and of our attitudes as intentional” (p 52).

Discourse holds a place of privilege in the conditions pertaining to the explicitness of understanding. It underpins interpretation and assertion and is more primordial than interpretation because it is a hermeneutic condition of interpretation: “What can be articulated in interpretation, thus even more primordially in discourse, we have called meaning (Sinn)” (p. 205). For Heidegger we “begin by understanding even ourselves as embodying the anonymous normative authority of our received practices.” As Heidegger argues: “The self of everyday Dasein is the one-self . . . I am ‘given’ to my ‘self’ in the first instance in terms of, and as, the one” (in Carman, 2003, p. 129). On Carman’s reading of Heidegger, discourse “creates what one might call a public space or a common vantage point from which we survey the world together … [i]t serves to found public space, that is, to place certain matters before us” (p. 240). This point relates to the idea of neuromarketing as a public pedagogy in that through discourse it is able to manufacture a way of being-in-the-world that cuts across communities of practice through a plurality of media events and relations that target socio-cognitive terrain. The idea of discourse also illustrates the discursive system of neuromarketing as an assemblage comprised of many parts that can disclose consumer worlds.

**Neuromarketing as a technique of world disclosure**

Technology shapes the world and discloses the world to us according to particular ideologies. Neuromarketing is a revealer of worlds in two ways. First, focus group researchers position themselves as the experts of revealing subjective consumer worlds to the consumer as interpretations of [objective] clinical data, which then informs advertising stimuli that will be targeted at specific consumer demographics. An excellent example of how the world is
revealed to consumers is found in the text/talk of the company Neuromarketing Labs. Their website (2014) 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” (para. 6). As with 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” (para. 6; emphasis added). 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 (verbalize)” (para. 2).

The consumer data gleaned from this neuromarketing process is then included in a report given to clients, creating consumer worlds and consumer identities grounded on bio- and neuro data interpreted by an “objective” external party, namely, the neuromarketing brain focus group leader. Such worlds are also disclosed to the consumer in terms of revealing their “true self.” Another layer of world is revealed when consumer bio- and neuro data is built into advertising messages that are deployed at that specific category of consumer, revealing a manufactured world as a path to consciousness moulding and consumer buying response elicitation. However, in light of Andrejevic’s (2012) pertinent observations on the kind of revealing that occurs in such a context, this mode of revealing is a misreading of the consumer on the part of the neuromarketer. He writes: “Although the language of neuromarketing seems to recapitulate a logic of depth by mobilising the promise to excavate below the surface of discourse into the recesses of the reptilian brain, this formulation turns out to be self-misreading on the part of neuromarketers” (p. 207).

The creation of worlds also relates to the development and implementation of advertising strategies using multi-media apparatuses that increasingly augment reality in a way that allows us to immerse ourselves in the multisensory potentials of digital worlds. What we’re presented with in the cycle of advertising in a networked world is neuromarketing as a market research tool informing advertising messages tweaked behaviourally to trigger consumer “instinctual driveness,” a capacity that, drawing from Heidegger (1995), “characterizes all such animal performance” (p. 237).

Neuromarketing also reveals a world that understands consumers as energy resources (i.e. as exploitable “terrain”), both present-at-hand entities to study and ready-to-hand tools from nature. Heidegger (1977) would use the term standing reserve to indicate the
instrumentality that results from enframing Dasein in this manner. In the mechanization and industrialization of everyday life, reality (world) becomes technologically enframed denying Dasein access to “a more original revealing” of the world and “truth.” An example of the construction of the consumer as standing reserve is found in the Neuromarketing Canada (2013) 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. (para. 32)

The excerpt above depicts consumers as bodies of data to be optimized for profit. Such a construction can also be understood in light of consumer surveillance, a technique of dataveillance that, as Selwyn (2014a) observes, monitors, mines, and processes information that supports a range of data profiling activities. Here, “[t]he data processing arising from dataveillance allows for the identification, classification and representation of social entities (be they people, places or events) in the form of automated data profiles – sometimes described as ‘data doubles’ or ‘data shadows’” (p. 10). This collection of data can also be used for what Gandy (2012) would call “statistical discrimination,” where computerized analysis of consumer data is used as intelligence to inform organizational decision-making.

In the case of neuromarketing, the organizational decision-making is fixed on probing the consumer’s subconscious for valuable data that can then inform development and implementation of behaviourally/demographically targeted advertising messages. The consumer can then be “optimized” according to business needs. Gandy claims that the overall effect of consumer surveillance is that it promises rewards and benefits to certain consumers individuals/demographics and excludes those who do not conform to codes and expectations. “Rational discrimination” carried out in corporate environments results in negative outcomes for some individuals and groups.

In *A Question Concerning Technology*, Heidegger (1977) identifies the essence of technology as a revealing. He argues that technology points to something essential about the constitution of our way of *being-in-the-world*. In this sense, technology can be understood as a revealer of socio-cognitive worlds, as having the capacity to inform and shape consumer worlds (or targeted consumer niches), for example. Heidegger’s essay calls our attention to
the ontological and social crises brought on by modern technology’s new and distorting methods for ordering the world, resulting in the reconstruction of our cognitive perceptions of “reality” or world. Enframing is not a neutral concept (Wolfe, 2013). For Heidegger (1977), modern technology is not poetic and it presents a different kind of truth-revealing or world disclosing. While it is also enframing, the revealing of the world through modern technologies is different to what occurs with pre-industrialization technologies.

Under the conditions of modern technology, “the earth,” as Heidegger notes, “reveals itself as [only] a coal mining district, [its] soil as a mineral deposit” (p. 296) … “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” (pp. 297-298). In other words, technological enframing in modern technological contexts reveals the world/nature as an energy resource, a thing to be used: “standing-reserve.” At its core, how the neuromarketing program (and advertising more generally) understands the consumer as standing-reserve is expressed best by Roger Dooley (2012) 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.” So how are consumer subjectivities shaped by neuromarketing technologies? And for whom do these technologies work?

Technology has the capacity to disclose the world not just simply to give us information, as Coyne (1998) would argue, “but to reveal something about the world in a way that presumes neither uncovering something pre-existing nor creating something new” (p. 346). Computer technologies, for instance, “disclose practices and prompt us to construct narratives around such disclosures” (p. 346). These observations can be applied to neuromarketing as a way of disclosing the world or as a revealer of consumer worlds, a mode of revealing Schneider and Woolgar (2012) call ironic because “justification for the use of these technologies depends on a constructed incongruity between what is expected and what actually is the case” (p. 3). This is further illustrated by Renvoisé (2013): “We’re going to ask them [consumers] what do you want but we’re not going to trust their answers because we know they don’t know.” Relevant to this practice is Andrejevic’s (2012) point on the paradox of neuromarketing where the aim of neuromarketing technique is to bypass mediation with even more mediation. Andrejevic is correct to observe that despite the promises of
neuromarketing proponents, brain scans fail to offer direct insights into the “recesses of authentic selves.” Rather, the scans offer “highly mediated images subject to the very vagaries and interpretive impasses they purportedly avoid” (p. 211). Schneider and Woolgar (2012) explain that such use 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” (p. 3). Furthermore, these ironic technologies do not act in isolation. They form “part of an assemblage of devices, neuromarketing texts, the proposals and portfolios of marketing and advertising agencies, popular media reports and comments and so on” (p. 17).

This assemblage can be related to the interdisciplinary matrix of neuromarketing as a social world in the Heideggerian (2010) sense (sense three) and also in the sense of the social world as a cultural media environment that can shape consumer consciousness, following the thought of McLuhan (1964). As part of this assemblage of modern technologies, neuromarketing enframes consumer brain/mind as “nature” in order to capture it, not as an occasion for the poetic “truth” of being to disclose itself to the consumer, but nature disclosed solely as a valuable material resource to be tapped and exploited. With the aid of neuromarketing techniques and advertising in general, capitalism is no longer simply a mode of production but becomes the producer of worlds within which advertising can manufacture subjectivities and affect, creating the consumer prior to creating the product (see Palmås, 2011; Lazzarato, 2004). In the world of neuromarketing (as part of modern technological conditions), Dasein becomes itself something technological: a cybernetic organism, connected increasingly to technologies of augmentation that hold the potential to manipulate consumers in a way that was “inconceivable” in the past to traditional modes of market research and advertising (Hipperson, 2012). Here, the poetry of technē as poiesis is denied for the sake of scientism, and neuromarketing engages in scientific reductionism of the consumer to a brain for instrumental use.

Although scholars have argued that current neurotechnologies do not have the capacity to probe into the deepest levels of consumer subconscious (e.g., Alpert, 2007; Illes, 2007; Farah & Wolpe; 2002) as some neuromarketers are claiming, the possibility of such a breach merits debate on how society might regulate and manage such an event should it occur. Murphy et al. (2008) are correct to note that a central question is whether or not
neuromarketing technologies can offer “sufficient insight into human neural function to allow manipulation of the brain such that the consumer cannot detect the subterfuge and that such manipulations result in the desired behavior.” While this form of “stealth neuromarketing” is not possible with existing technologies, “if developed, [it] would represent a major incursion on individual autonomy” (p. 297).

Despite the technological limitations that constrain the potential brute force of neuromarketing as a technique of consumer control and persuasion, as an ethical responsibility, we must understand how the technique “elicits the best desired response, e.g., the highest desire to buy” (Neuromarketing Labs, 2014) through neuro- and bio-technologies, and how the technique works through the animalization of the consumer to prevent the consumer from realizing that s/he is being triggered into a desired behaviour. In order to obtain such an understanding, it is necessary to identify how neuromarketing seeks to disrupt the consumer’s communicative processes. This communicative (meaning-making) process is linked to how the consumer understands the world, and, in turn, how the world is revealed to the consumer. To comprehend how the world is disclosed to the consumer it is helpful to elaborate a little more on the process of world disclosure.

**Branding consumers: Revealing the world through signs and disturbances**

The project of advertising informed by the data gleaned from neuromarketing techniques focuses on drawing the consumer’s selective attention to particular signs in advertising messages that are calibrated behaviourally. In disclosing consumer worlds, neuromarketing technique arranges signs and symbols in advertising messages in such 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 I have argued is a basic form of understanding comparable to a reduction of consumer thinking to the status of animality. An example of how neuromarketing may work to manipulate consumer attention toward certain brands, for example, through targeting the consumer’s subconscious, “branding strategist” and neuromarketing proponent Tjaco Walvis (2008) begins by asking whether or not neuroscience can help identify regularities in the way branding can influence the outcome of memory-based choice situations.
Given brand decisions are memory-based, and brand associations are known to influence consumer preference and behaviour, market research practice, as Walvis proposes, would benefit from the “reductionist body of knowledge” that comes from neuroscience. He defines a brand as “a network of associations with a (brand) name in the brain of a person” ... brands “are pieces of information, meanings, experiences, emotions, images, intentions, etc interconnected by neural links of varying strength” (p. 180). Walvis adds that branding seeks to influence decision-making by increasing the probability of the brand winning the (unconscious) competition for conscious awareness. He maintains that connecting the brand to primary choice cues is necessary for securing this win.

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 activates 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 that lies 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 toward capturing the consumer at a subconscious 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. Here then 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.

On Dreyfus’s (1995) interpretation of Heidegger, 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 it” 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 example, 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 our activity becomes apparent to us” (p. 100).
The second way the world can be revealed to us is through signs and is the most directly relevant to how neuromarketing as a technique shapes and discloses 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 work against the “practical background they presuppose and to which they direct our attention” (p. 100). Heidegger (2010) 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. (p. 77)

Human beings can cope with signs without being aware of them thematically. This point is key to understanding implications of the reduction of the consumer to animality in the world of neuromarketing in that the consumer can be viewed as coping and reacting with signs as advertising messages, for example, without being critically aware of and able to interpret these signs as behaviourally calibrated advertising tactics. 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 (1995) notes 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” (p. 101) into a dynamic context. Signs point out the context of shared practical activity.

Heidegger (2010) asserts that disclosing and discovering are two modes of revealing. In order for Dasein to discover entities, disclosedness of the world is required: “disclosedness is the condition of the possibility of anything being discovered” (p. 102). The idea here is that for an individual to be directed toward a certain piece of equipment (or a tool) whether that individual uses it, perceives it, and so on, “there must be a correlation between that person’s
general skills for coping and the interconnected equipmental whole in which the thing has a place” (p. 102).

Returning to the context of neuromarketing, the notion of a consumer’s attention being directed toward certain things as a referential whole is highlighted by Walvis (2008) 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. He justifies the infiltration of the consumer’s unconscious 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” (p. 181). Important, then, is to understand how brands connect 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. (p. 183)

On this view, branding aims at influencing consumer decision-making by increasing the “probability” that the brand wins the competition for conscious awareness by drawing the consumer’s attention to particular signs. Walvis also stresses the importance of “emotions” in the act of brand choice. The importance of affect on consumer buying responses is a focus of neuromarketing. As Renvoisé and Morin of SalesBrain (2014e) explain on their website, 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” (para. 7; emphasis added). This brings me to the concept of attunement (or affect: moods, emotions, and feelings).

**Triggering affect: Manipulating mood, emotions, and feelings**

Discovering the world also implies that Dasein is always situated in the world in a particular manner. Dreyfus and Wrathall (2005) 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” (p. 5). 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 (p. 5). Blattner (2006) identifies disposedness as 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 toward things in the world, or a moment of felt experience which varies in temporality depending on type of affect (e.g., boredom, anxiety, fear, and so on).

Mood setting is a primary aim for neuromarketing. As marketing scholar Meryl Gardner (1994) 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” (p. 207). The chairman of Millward Brown and author of The Branded Mind, Erik du Plessis (2011), a neuromarketing proponent, 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” (p. 50). The foundation of touchpoint advertising is that it is designed to attract the consumer’s attention through manipulating perceptions and affect.

On Heidegger’s (2010) view, our mood directs our experience of the world. Here, various kinds of understanding of the world are grounded in an already existing affective stance toward 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, priming them before deploying advertising messages at them. As Byron Reeves, a communications professor with Stanford University, explains, “[i]f you get the emotional impact of the message right, everything else will follow” (in Mucha, 2005, p. 3). 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 grasp what comprises attunement.
Attuning consumers to a mood of consumption

Attunement (Befindlichkeit) is one of three interrelated structures of human existence and maps directly onto how neuromarketing aims to trigger 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 understanding and discourse. 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. The ontic relation is grounded in the “real” as opposed to the ontological relation that refers to phenomenal structures of existence. Heidegger uses the term Befindlichkeit to refer to what is commonly called “being in a mood” and also what is called “feeling” and “affect” (Gendlin, 1978/79). Dreyfus (1995) translates Befindlichkeit as “affectedness.” On Dreyfus’s interpretation, mood is one of the ways through which Dasein can show its affectedness. I will use the term “affect” when mapping these structures onto the terrain of neuromarketing.

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. Comparative philosopher Mahon James O’Brien (2011) observes that at the bottom of the way we experience existence is the fact that things matter to us. We have desires and goals invested with various degrees of “affective urgency.” Philosopher Matthew Ratcliffe (2002) notes that 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” (p. 289).

Moods are constitutive of our understanding of being whereby beings are rendered intelligible. Moods also help us make sense of the world; they inform our understanding of the world. Affectedness and its moods are key neuromarketing targets. They hold the capacity for consumers to be manipulated, that is, to be predisposed to an advertising message through attunement. An example of this can be found in the work of Comaford (2013) 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. (para. 8)

Heidegger (2010) asserts that “[m]ood is not a property of the theoretically characterized ‘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” (p. 290). Philosopher and psychotherapist Eugene Gendlin (1978/79) explains that Befindlichkeit (being in a 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” (section III). Ratcliffe (2002) ties the concept of mood to Antonio Damasio’s work on emotions. A foremost thinker in neuroscience, as I have already noted, Damasio’s research is used widely in neuromarketing.

In his seminal work, Descartes’ Error, Damasio (1994) presents the somatic marker hypothesis which holds that emotions are intimately connected to reason. 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” (in Ratcliffe, 2002, p. 297). They are always already present yet tacit, and they underpin the frame of mind in our approach to the world. Background feeling, Damasio (1994) explains, “is not the Verdi of grand emotion, nor the Stravinsky of intellectualized emotion, but rather a minimalist in tone and beat, the feeling of life itself, the sense of being … it is our image of the body landscape when it is not shaken by emotion” (pp. 150-151). Ratcliffe (2002) adds that these descriptions, when juxtaposed with Damasio’s research on neurological patients, suggest mood is not simply something that “clouds explicit judgment but something that
determines the way in which the world is opened up for explicit deliberation” (p. 299). Moods, then, serve as a background for existence comprising our sense of self, world, and our place in the world: “They are, if you like, the rhythm of life, a quiet metronome, whose beat structures, or ‘attunes’, all our interactions with the world and underlies explicit cognitive deliberation” (p. 298).

Affectedness and its moods reveal important aspects of the fundamental structures of the world and Dasein’s way of being-in-the-world. Moods make it possible for us to encounter other entities in the world by determining how those entities will matter to us, and whether or not we will pay attention to these entities. In addition, moods are not private, inner phenomena, but can be shared, such as when people speak about the mood of the party, or the mood of the nation. We can also refer to the mood of a network of consumers in light of recent studies on emotional contagion. For instance, a recent 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, data from a large, real-world social network collected over a 20-year period suggests that longer-lasting moods (e.g., depression, happiness) can be transferred through networks as well” (Kramer et al., 2014, para 1). The strategy of mood manipulation through emotional contagion suggests that modern technologies have the potential to manipulate consumer affect using particular kinds of techno-triggers, which holds implications for what neuromarketing could do to consumers in terms of manipulation and control vis-à-vis the sophisticated technologies to which it has access.

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, “the ‘reptilian’ sections of the lower brain where emotions are processed” (Mucha, 2005, p. 3). When it comes to the sales pitch, moods and emotions happen first. As Heidegger writes (1995), “*Dasein as Dasein* is always already attuned in its very grounds. There is only ever a change of attunement” (p. 68). The force of affect exacts a strong pull over the way the brain processes the information that follows. It is clear that neuromarketing understands the importance of mood and its relation to sales. Neuromarketing seeks to augment consumer animality through bio- and neuro-technologies, numb capacity for critical reflection on and resistance to advertising messages, and attune consumers to a mood of consumption.
To offer an example, neuromarketing proponent, Douglas Fugate (2008) writes on manipulating consumer trust: “service marketers could theoretically experiment with different levels of trust to see which generates satisfying levels of oxytocin given services production parameters. It would also allow the services marketer to determine how quickly these levels are internalized; meaning the level of trust might need to be increased to maintain that sense of pleasure” (pp. 171-172). Taking a more conservative approach, Dooley (2007) explains that most marketers use sound to set moods: “music may be a powerful mood-setter, but other auditory inputs can have a profound impact as well.” He also argues that it is “possible … to go beyond the obvious” when it comes to manipulating buying responses through mood setting techniques. It can be argued that “going beyond the obvious” might refer to the subliminal tactics deployed into consumer consciousness via the reptilian brain.

**Dasein: Limitations**

Although Heidegger offers useful analytic frames to examine the consumer as subject in a digital age in terms of Dasein’s structures of understanding, there are certain limitations regarding the applicability of Dasein as a holistic to cross-cultural groups and Dasein’s ability to adapt to the flows of online/offline worlds. Dasein does not account for divergent perspectives. To use one example, race in Heidegger’s thought is highlighted by philosopher Sonia Sikka. 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” (Wolin, 1995, p. 10). 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 (Bernasconi, 2003). Sikka (2003) argues that such an assertion poses several challenges: First, that there can even be a homogenous group that falls under the title “negroes,” a group unified *viz* biological characteristics, for instance. Second, that negroes have no historical consciousness, and can therefore be relegated to the realm of nature over culture. Third, Heidegger is making [truth] assertions on behalf of a group of people about whom he knows little or nothing.

Other scholars have written on this point, specifically in the language of the *coloniality of being*. Comparative literature scholar Nelson Maldonado-Torres (2007), for
instance, claims that Heidegger “took European Man as his model of Dasein, and thus the colonized appeared as a ‘primitive’” (p. 251). He notes that Heidegger’s concept of mitsein is not a “‘being with’ colonized groups nor does it imply a concern for the racialized 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’” (p. 251). Similarly, educational philosopher Troy Richardson (2012) claims that the concept of “ontology” must be understood as part of a hierarchical knowledge system that maintains colonial/modern social relations.

While Dasein is central for my inquiry into structures of understanding in a socio-cognitive terrain, in the context of the techno-scientific world of neuromarketing, it can be useful to think of Dasein in terms of Haraway’s cyborg to reflect the dynamic lived realities of consumer subjects in a network society. The cyborg offers a way out of Dasein’s essentializing and racist limitations and an ontological entry-point into the digital environment akin to the digitization of cyborgs that sociologist and public policy scholar Deborah Lupton (2012) takes up in her work on digital health technologies, digital cyborgs, and surveillance society. The cyborg is an adaptive model for making sense of the mutability of corporeal borders under contestation in late capitalism. Unlike the totalizing ontology of Dasein, the cyborg comprises an affinity for race, class, gender, and animality.

Another pertinent criticism of Dasein comes from Merleau-Ponty (1945), who points out the quasi-disembodied character of Heidegger’s analytic, specifically the way in which ontological structures of understanding are always already privileged by Heidegger in relation to the body, its perceptions and sensations, and its sensory-motor functions. This neglect of the body is a challenge for any attempt to bring Heidegger’s account to bear on neuromarketing which requires references to the embodied multisensory subject.

Summary

This chapter has considered the fundamental structures of how human beings as Dasein make meaning in and from the world. It also aimed to foreshadow the complexity of the process of understanding (or sense-making) not captured by the project of neuromarketing when constructing the consumer subject. Our capacity for understanding the world moves from
practical understanding to a more critical hermeneutics comprising thinking skills such as reflection and interpretation. Existential structures such as practical understanding (e.g., coping and comportment), interpretation, and attunement highlight the process of understanding (i.e. the communicative practice) that neuromarketing seeks to disrupt and override.

I have argued that 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 shape consumer consciousness (in a targeted consumer niche). Using Dasein’s structures of understanding as part of a framework for analysis can reveal the way in which the discourse of neuromarketing reduces consumers to the metaphor of mind as animality, a derivative I have attached to the metaphor of mind as animal-machine and mind as reflex-machine. This discourse seeks to bypass the consumer’s capacity for conscious and critical reflection.

Although Dasein serves as a useful frame for inquiring into the relations between the consumer in her targeted consumer niche (phenomenal/subjective world) and the social (or public) world of neuromarketing, its fundamental ontology is compromised by a grounding in racist and anthropomorphic foundations. xcv This chapter also considered the limitations a Heideggerian approach brings to analyses of cross-cultural digital worlds. In the next chapter I present two aspects of Heidegger’s thesis on bare life, that the stone is worldless and the animal is poor in world, both key for my analysis of consumer construction and the animalization of thinking. In order to conduct a comparative analysis of the world-forming potential of Dasein and the poor in world capacity of the animal in the context of neuromarketing discourse structures, I begin by returning to the following question: What does it mean to have a world?
CHAPTER FIVE
Mechanics of Stone: The Worldless Consumer

When the consciousness of science is fully impregnated with the consciousness of human value, the greatest dualism which now weighs humanity down, the split between the material, the mechanical and the scientific and the moral and ideal will be destroyed.

-- John Dewey

The previous chapter considered the structures of understanding exhibited by Dasein as an agentic and world-forming entity. Dasein’s modes of understanding range from relating to things in the capacity of unreflective coping to accessing the nature of itself (as structure) and entities it encounters in the world through a hermeneutic process that extends to acts of interpretation, including decontextualization and thematization. The chapter also presented the concept of attunement and its relation to how neuromarketing seeks to attune consumers to a mood of consumption. In this chapter, I elaborate on Heidegger’s first thesis that the stone is worldless and how it applies to the way the consumer is constructed as a reflex-machine in the discursive world of neuromarketing. My focus will be fixed on explicating the first scientific reduction that occurs in the text/talk of neuromarketing: the reduction of the consumer to the metaphor of brain as buy button. I will also consider entailments resulting from the construction of the consumer in this sense.

As Heidegger begins his philosophical inquiry with a provisional sketch of the poor in world animal before moving to the inanimate stone, I will also offer a preliminary of Heidegger’s second thesis that the animal is poor in world which will set the stage for my analysis of animality in the next chapter. The explication of worldless and poor in world serve as comparative devices to show how Dasein is world-forming in opposition to the stone and the animal inasmuch as the relation Dasein possesses to the world is greater in depth, range, and accessibility to the manifestness of entities as such. The comparison of different modes of being-in-the-world will serve to highlight how the animalization of consumer thinking plays out in the discourse structures of neuromarketing, in other words, what occurs in the
intersection of neuroscience and marketing when the consumer is reduced to an instrumental thing used for advertising ends.

Over the course of the next two chapters, my intention is to trace how neuromarketing technique augments consumer animality, mediated by cutting edge bio- and neurotechnologies, as well as technologies of augmentation, aimed at manipulating and coercing consumers into desirable buying responses. The study of the consumer’s buying preferences can be understood as the neuromarketer’s discovery of the consumer’s targeted niche (in Heideggerian terminology niche is an *encircling ring* or *disinhibiting ring*). Niche is a fundamental structure of animality, a phenomenal/subjective world within which I contend consumers become captivated in themselves. As the phenomenological construct of world is key for understanding the comparative relations between the stone, the animal, and the human being (Dasein), I begin this chapter with the question: What does it mean to *have* a world?

**Privileging human over animal: What does it mean to *have* a world?**

In Part Two of his 1929-30 lecture courses, *Fundamental Concepts of Metaphysics: World - Finitude - Solitude*, Heidegger (1995) asks the question: What is *world*? He undertakes an examination of the concept of *world* and what it means for Dasein (human being) to *have* a world. By the end of the lectures he concludes that Dasein has a world much richer and deeper and more “expansive” than the world of the animal. Heidegger’s (2010) point of departure for his analysis of what it means for human beings (Dasein) 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 material/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?” (p. 177). 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*;
Seeking to disclose the essence of wordlessness, poverty in world, and world-formation, Heidegger (1995) 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. Heidegger maintains it is easy to claim that the difference between the two is reason in that man is a rational, reasoning being 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 the animal and Dasein is that the human being 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, as I pointed out in the last chapter. On Carman’s (2003) interpretation of Heidegger, although animals might recognize things or anticipate other things causally related to them, they do not use things as tools or signs as humans do: “This is because there is for them no difference between an appropriate and an inappropriate use of anything, that is, there are no normative conventions governing the use of things” (p. 234). While Heidegger insists his philosophizing 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).

Given the scope of this work, I will not enter into a critique of Heidegger’s conceptions of non-human animal life; however, I would like to note that his view of animals as entities that cannot use tools or equipment like human beings can has been challenged by contemporary research in ethology, such as observations of tool construction and use in primates, dolphins, insects, and birds (e.g., Roach, 2007; Krützen et al., 2005; Pierce, 1986; Jones & Kamil, 1973). 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 (Dasein) over non-human animals, in terms of modes of being-in-the-world. Nevertheless, as I mentioned previously, Heidegger’s fundamental structures are useful heuristically for revealing the crudeness of certain aspects of the neuromarketing program inasmuch as they assume 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. So how does the animal have a world and how does this compare to Dasein’s world-forming capacity?

Poverty as deprivation: The animalization of thinking
Heidegger (1995) begins his inquiry into having or not having a world with the language of poverty and deprivation. In § 46 of FCM, he claims that poverty in world refers to a deprivation of world:

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. (p. 192)

To be poor in world means to be deprived of access to the manifestness of beings as beings in a world. Animals cannot penetrate to the deepest levels of meaning as a human being can, as Dasein can. Carman notes (2003) that while animals do not have access to entities as entities, they do not lack access to things in the world altogether. He writes: “Short of any understanding of being … Heidegger does seem to credit animals with something like intentionality in the primitive sense of a certain form of ‘directedness’ toward objects” (p. 47).

To illustrate his point on animal understanding, Heidegger (1995) 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.” This bounded world (or as Feenberg would call it, this 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 stamens of the blossoms *as* stamens. In Heidegger’s words: “[i]t knows nothing about the roots of the plant and it cannot know anything about the number of stamens or leaves” (p. 193). In opposition to the world of the bee (the animal), the world of the human being 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. (p. 193)

Heidegger claims that 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 regards to “levels of completeness” related to the accessibility of beings. For Heidegger, poor in world capacity is “inferior” to the “greater value” of world-forming potential. He reasons: “Consequently we can characterise the relation man possesses to the world by referring to the extendibility of everything that he relates to. This is why we speak of man as world-forming” (p. 193).

Heidegger maintains that we rarely use or understand the concept of poverty in the sense that he uses it, in the “proper sense” that indicates the general way the human being is poor. He claims that we have a tendency to use the term in a more extended yet weaker sense of “poor” that must be differentiated from a form of being poor that refers to a kind of *being in a mood* (*Zumuteseins*). Such a sense must be indicated by the idea of being “in a mood of poverty” (*Armmütig*). He suggests that this usage is intended to show that poverty is not only a characteristic property but the way man “comports and bears himself.” Poverty in the proper sense of human existence is also a form of deprivation. The difference is, however, that from this kind of deprivation of man “we can draw our own peculiar power of procuring transparency and inner freedom for Dasein” (p. 195).

Poverty as being in a mood of poverty (*Armmütigkeit*) does not merely represent the indifference to what Dasein has but also the “pre-eminent kind of having in which we seem not to have … poverty does not express a purely quantitative difference” (p. 195). Heidegger explains that he has placed his thesis that animal is poor in world 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, yet 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 than “the richness of all those relationships that human Dasein has at its disposal” (p. 192). To inquire further, Heidegger turns to the stone as a comparative device to the animal. In his words: “The stone is worldless, it is without world, it has no world” (p. 196).

**Mechanical/inanimate: Worldlessness**

The stone is worldless; that is *without* world. (Krell, 1992)

In § 47 Heidegger moves to his first thesis: the stone is worldless, meaning that inanimate objects have no access whatsoever to entities and beings. While he claims that neither the stone nor the animal have a world, this “not-having” of world cannot be understood in the same sense. He explains that 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 *cannot even be deprived* of something like world” (p. 196). The deprivation of world with regards to the animal, he argues, requires further conditions which he 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 characterization of world as the accessibility of beings, Heidegger inquires into the differences between machine, equipment, and instrument in an attempt to work toward a conception of organisms and, ultimately, a conceptualization of the world of the poor in world animal versus the world-forming capacity of Dasein.

For Heidegger, a machine falls under the category of equipment, and equipment (or tool) is an object to be used for something, so the essence of equipment is to “serve some purpose” (p. 214). The *in-order-to* of equipment does not involve drive. Furthermore, things are capable “inasmuch as capability is in general *instinctually driven* (*triebhaft*)” (p. 229). Capacity, then, can only be located where there is drive [*Trieb*]. Equipment and tools do not have internal drive.
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. On the other hand, something capable isn’t subject to this prescription but is “*intrinsically regulative and regulates itself*” (p. 228).

The conception of the worldless stone can be superimposed onto the act of reducing the consumer to a *mind as reflex-machine* in that the scientific reduction renders consumers as instrumental objects, “ready-to-use” (Bauman & Lyon, 2013) tools for advertising ends. The consumer, here, like Heidegger’s (2010) conception of ready-to-hand equipment (i.e. equipment being used prior to dewatering or thematizing which would render it present-at-hand), serves some already prescribed purpose, a purpose manufactured by advertising and its market research technique of neuromarketing. This leads us to the metaphor of the *brain as buy button* (or reflex-machine) that emerges from the text/talk of neuromarketing.

**Metaphor: 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* (see Edwards, 1996). The *mind as reflex-machine* metaphor 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. As Edwards (1996) writes, the *mind as reflex-machine* metaphor “directs the experimenter’s focus toward how behaviour is learned (built up from simple components) rather than toward the structure of (complex) established behaviour patterns” (p. 163). Situated at the inanimate/mechanical level of Heidegger’s tripartite thesis, the *brain as buy button* implies that the consumer subject is worldless; s/he 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 characterization of having a *world*, as Heidegger (1995) claims, is the accessibility of beings.

Examples of the *brain as buy button* metaphor are found in the text/talk of Dr. Christophe Morin, SalesBrain’s (2014b) self-identified Chief of Pain. “Would you like to
know how to persuade anybody to do anything?” is how he introduces his presentation at the Risdall Marketing SalesBrain seminar: *Is there a buy button in the brain?* (Norgren, 2013). Despite Morin’s tendency to objectify and instrumentalize the consumer for advertising purposes, as we shall see, he (2012) has presented on 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) (emphasis added). Morin is also a board member of the Neuromarketing Science and Business Association (NMSBA) and actively involved in the development of a code of ethics to guide the self-regulated industry.

The buy button metaphor is one that emerges consistently in his work. Morin’s (2011) reduction of the consumer brain to a buy button is best illustrated in his essay, *Neuromarketing: The new science of consumer behaviour*. Although he does move to discussing the reptilian brain (*mind as animal-machine*) later in the text, his use of an image of a brain (Figure 1) on the first page of his essay serves as an excellent example of a graphical reduction of the consumer brain to a reflex-machine (or buy button), a mechanical part of neuromarketing as a system, responsive to external triggers or inputs that can switch on the consumer’s “buy” mode.

*Figure 1: Neuromarketing: The new science of consumer behavior*
In another graphical representation, Morin and his business partner Renvoisé (2011) use the following cover art for their book, again depicting the consumer *brain as buy button*. This time the brain does not have a buy button visible on its exterior; rather, the buy button is hidden from view. In this case, the brain is situated on a bulls-eye, suggesting the brain is a target for attack. The book claims that it will allow the reader to understand how the buy button works and how to trigger it to elicit desired buying responses.

![Cover art for Neuromarketing book](image)

**Figure 2: Neuromarketing: Understanding the Buy Buttons in Your Customer’s Brain**

The consumer brains depicted in the two 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 (Pickering, 2011). The most common
entailments of the *brain as buy button* metaphor can be understood in light of certain entailments of the *mind as 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*; the mind *manipulates symbolic representation*, the mind is an *information machine*, thinking is *computation*; memory is *looking up stored data*; and the function of the mind and brain is *information processing*.

The computer 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” (p. 162). Similar to human behaviour, most computer programs are not built in or “hard-wired.” This implies that behaviour and thought patterns can be changed, erased, or replaced. Morin (2011) explains the value of neuromarketing techniques in relation to probing the consumer brain and acquiring useful data for creating successful advertising messages. He 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. (pp. 131-133)

The excerpt above also shows that the neuromarketing relationship with the consumer is grounded on a lack of trust. While this assumption has existed in the advertising and marketing industry for decades (see Packard, 1957), the difference now is that neuromarketing as a technique of advertising has the capacity to access the consumer’s bio and neuro-responses to advertising stimuli in a way that traditional advertising methods could not, thereby probing the biological workings of the human being to extract objective “truths.” As Andrejevic (2012) observes, neuromarketers assert that people’s “bodies are, for marketing purposes, more truthful than the words they utter” (p. 199). On this view,
neuromarketing seeks to bypass the “vagaries of focus groups by going straight to consumers’ brains” (p. 198).

A lack of trust in the consumer’s self-knowledge, or capacity for accurate and honest self-representation, and a push toward placing trust in predictive technologies to gain access to consumers at a deeper level than ever before is illustrated by the comments of an [anonymous] industry executive who claims of neuromarketing technologies: “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” (in Fugate, 2007, p. 386). Lack of trust is also evidenced in the text of neuromarketing proponent and futurist Dick Pelletier who identifies the discovery of the buy button as the key to profit making, and neuromarketing as the magic pill that allows the neuromarketer to know the consumer better than the consumer can know herself. On his Positive Futurist blog Pelletier (2005-2014) writes: “Understanding customer ‘buy buttons’ will make businesses more profitable as they begin to limit inventories to products that customers actually want” (para. 10). These examples highlight how the language of neuromarketing reduces the consumer subject to a tool (or buy button) for advertising purposes, illustrating the aim of neuromarketing, as Renvoisé points out in his TED (2013) talk, as “really about finding that buy button” (17:40).

As I mentioned previously, in his analysis of the difference between a tool as equipment and the capacity of an organism, Heidegger (1995) 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” (p. 228). 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 “instinctual driveness” (p. 237) and Dasein acting according to world-forming possibilities.

Further, 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 (Heidegger, 2010). In the case of the brain as buy button metaphor, the consumer subject is perceived in both of these capacities. To obtain a clearer
picture of what the excerpt above by Morin (2011) suggests, it is helpful to consider the purpose/s of the agents in the text (including the consumer subject as a tool to be put to use).

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 profits. The purpose of the neuromarketer, then, is to ensure that these investments are productive investments so that the companies/corporations selling products can turn a profit.

Second, the purpose of the *technique* of neuromarketing (neuroimaging hardware and non-hardware such as questionnaires, surveys, interviews, and so forth) is to “probe the consumers’ brains,” a method that is positioned in general as able to extract objective (or non-subjective) data from the consumer’s subconscious, turning investments into money-making commodities. This resonates with the idea of the consciousness industry which relies on the production of audiences and the selling of their own [audience] consciousness to advertisers or to political candidates and political causes (Smythe, 1981).

Third, the purpose of the *consumer* can be likened to that of an object, a *ready-to-hand* (Heidegger, 2010) or *ready-to-use* (Bauman & Lyon, 2013) tool that can be prodded and probed for information. Martha Nussbaum (1995) 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” (p. 257). This aspect is indeed relevant when taking into account that the buy button is a reduction of a human being (Dasein) to a worldless stone, an inanimate/mechanical object with no capacity for accessing the manifestness of world, the entities within, and even itself.

The seven basic features of treating things as objects include: *instrumentality; denial of autonomy; inertness; fungibility; violability; ownership; denial of subjectivity*. To elaborate further:

1) *Instrumentality*: The objectifier treats the object as a tool for his or her own purposes;
2) *Denial of autonomy*: The objectifier treats the object as lacking in autonomy and self-determination;
3) **Inertness**: The objectifier treats the object as lacking in agency, and perhaps also in activity;

4) **Fungibility**: The objectifier treats the object as interchangeable (a) with objects of the same type, and/or (b) with objects of other types;

5) **Violability**: The objectifier treats the object as lacking in boundary-integrity, as something that it is permissible to break up, smash, break into;

6) **Ownership**: The objectifier treats the object as something that is owned by another, that can be bought or sold, etc;

7) **Denial of subjectivity**: The objectifier treats the object as something whose experiences and feelings (if any) need not be taken into account. (p. 257)

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 merely as an instrument” (p. 265). 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” (Bauman & Lyon, 2013) for market research purposes. The reduction of the consumer to brain as buy button fits with at least five of Nussbaum’s (1995) seven features of “treating as an object what is really not an object, what is, in fact, a human being” (p. 257):

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 advertising/market research—for profit;

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 - his/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. Here 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—neurological and biometric (physiological) responses to an advertising stimulus. In light of Andrejevic’s (2012) observation, neuromarketing invokes “the brain metonymically to refer to consumers of all kinds” (p. 202).

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 down the integrity of the personality. In this capacity, the neuromarketer engages in the consumer surveillance activity of “[d]ecomposing, 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’).” (Bauman & Lyon, p. 136)

I have already mentioned that the metaphor of the brain as buy button is connected to the metaphor of the mind as reflex-machine. Again, as Edwards (1996) claims, the mind as a reflex-machine metaphor “directs the experimenter’s focus toward how behaviour is learned (built up from simple components) rather than toward the structure of (complex) established behaviour patterns” (p. 163). This metaphor also connects to the mind as a computer. On this view, the brain is understood as a piece of hardware, a rapid and complex calculating machine, comprised of digital switches. The mind is likened to a software program that runs off the brain and manipulates the consumer’s capacity for symbolic representation. The mind here is an information machine and thinking becomes an act of computation. Memory, then, is a process of accessing stored data units, while the function of the brain and mind is information processing. Similar to human behaviour, most computer programs are not built in or “hard-wired,” which implies that consumer behaviour and thought patterns can be changed, erased, or replaced by an external party, namely, the neuromarketer. In this capacity, the agentic potential of the consumer as Dasein is reduced to the reflexive triggers of a machine.

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 (Dreyfus, 2014, 1992, 1972). 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/mind as reducible to the processes of a machine (and to a digital computer), one must ask the following questions that Dreyfus highlights as central to the two subfields of artificial intelligence (i.e. cognitive simulation and artificial intelligence): 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? While the buy button metaphor is an exaggeration, in the context of neuromarketing it also seems to be a research program. In other words, neuromarketers seek
to realize the metaphor in reality through their technological innovations. Tendentially, they aim to gain a level of control over the consumer in that the neuromarketing assemblage incorporates the consumer as a “part” rather than as an agent, rendering the consumer “worldless,” a mere mechanical thing.

To unlock the decision-making process of the buying brain, Morin (2011b) also maintains that we must “understand, biologically speaking, how these decisions are actually triggered” (0:20-0:24). Although my analysis of his text/talk began with graphical illustrations of the consumer brain as buy button that fit with Heidegger’s (1995) frame of the worldless inanimate object or machine, before moving to Morin’s (2011) excerpt that also highlights the consumer as a tool with pre-inscribed purposes and explicitly naming the consumer brain a buy button (it is inanimate/mechanical with no possibility for access to the world), we now move 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. In this capacity, we see the emergent animal appear in the text/talk of neuromarketing.

Illustrating the theme of animality, Morin (2011b) suggests that the key to understanding the buy button lies in the reptilian brain, the most primordial part of our brain. He draws on the work of Damasio (1994) to argue that the brain has always been dependent on its instinctive responses. Morin (2011a) asks: “What does this mean from a neuromarketing perspective? It means,” he answers, “that there are specific principles that should apply to advertising messages in order to optimize the processing of information at the level of our brain … the reptilian brain” (p. 134). For Morin, the reptilian brain is “pre-verbal, does not understand complex messages, and seeks pain avoidance over thrills. It is the part of the brain that makes us extremely selfish and drives our strong preference for mental shortcuts over long deliberations” (p. 134).

Whereas the conception of the consumer brain as buy button is crude and strictly mechanical (i.e. inanimate and worldless), I contend that the text/talk of neuromarketing also reveals a reduction of the consumer to what I call the metaphor of mind as animality, a more sophisticated yet fundamentally instrumental model of the consumer in that it recognizes 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 product or service being sold. This move to animality 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 encircle and captivate consumers [as Dasein] in themselves like Heidegger’s unreflective poor in world animals.

**Poor in world animals**

The animal is poor in world; that is, animal life is characterized by a certain world poverty. (Krell, 1992)

In § 47 of the *Fundamental Concepts of Metaphysics*, Heidegger (1995) conceives of the stone as ‘worldless’ which he identifies as a thing that does not have any access at all to entities in the world. He then addresses the *animality* of the animal which, while not completely lacking access to the world is, nevertheless, essentially 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. As Heidegger (1995) claims, the world can only daze or absorb animals. Unlike stones (and other inanimate objects), animals are not altogether *worldless* nor are they wholly *world-forming* (*weltbildend*). The animal is poor in world because it never reaches the level of understanding that Dasein can reach; it is unable to disclose the “undisconcealed as undisconcealed,” thus remaining in a mood of poverty (see Kuperus, 2007) where entities can never be made manifest to it in the form of conscious awareness.

A ready-made piece of equipment/tool is subject to an implicit or explicit prescription in terms of the different ways in which it can be used. This prescription is not given by the readiness of the equipment; instead it arises from the plan that has already determined the production of the equipment/tool and its particular equipmental character. On the other hand, a thing that is capable is not subject to such prescriptions but “drives itself towards its own capability for … Capacity is only found where there is drive” (p. 228).

The difference, then, is that the animal, unlike the stone, has instinctive drive and a capacity to access the world to some degree. But what sort of access does this animal have? The fundamental *driving forces* [*Antriebe*] that emerge from the animal’s instinctual capacity, as Heidegger asserts, give rise to vital movements such as nutrition and propulsion. As drives
they “always permeate and drive on the movement in advance” (p. 229). Further: “The regulation which always lies embedded in the capacity as such is thus a structure of instinctually organized anticipatory responses in each case which prescribes the sequence of movements that arises as soon as the capacity comes into play” (p. 229). Heidegger (1995) claims that “the living being (the animal) has a dynamic character … there are processes taking place within the living being. The vital process is itself a structure of unfolding processes, the most basic of which is recognized as the reflex action” (pp. 216-17). Reflex action is central to the neuromarketing construction of the consumer as an animal who can only behave toward the world based on instinctive and reflexive responses triggered by external stimulus, as we shall see in the next chapter.

Summary
This chapter has presented an overview of Heidegger’s first thesis that the stone is worldless and the way it applies to how the discourse structures of neuromarketing reduce the consumer subject to the metaphor of brain as buy button which is connected to the metaphor of the mind as reflex-machine. In Fundamental Concepts of Metaphysics, Heidegger begins his inquiry with a provisional explanation of the poor in world animal before moving to comparing the animal’s poverty in world to the worldlessness of the inanimate stone. This chapter also presented a preliminary outline of Heidegger’s second thesis that the animal is poor in world which serves as a conceptual building block for a more sustained explication and analysis of animality in the next chapter.

The heuristic frames of world and animality can illuminate how certain guiding metaphors play out in the text/talk of neuromarketing. Heidegger’s tripartite thesis can show how neuromarketing tends to construct the consumer on a continuum based on access to world, ranging from inanimate objects (and/or reflex-machines) that have no possibility for accessing the world at all, to the state of unreflective animality which is an entity considered poor in world with no access to manifestness of the entities it encounters in the world, through to Dasein as an agentic human being in that it not only has a world but is also world-forming. The comparison of different modes of being-in-the-world will highlight what animalization of thinking looks like in terms of disruptions to Dasein’s structures of understanding. Put simply, I will inquire into what occurs in the intersection of neuroscience and marketing when the
consumer becomes reduced to an instrumental and unreflective thing to be used for advertising ends.

In the next chapter, I will continue my inquiry into the construction of the consumer with a focus on the metaphor of mind as animality, its relations to the consumer subject, and, ultimately, the idea of augmenting animality. 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 mind and of whatever degree of freedom of action and experiences is necessary to produce freedom of intelligence” (Dewey, 1916, p. 17). On this view, reflective thought connects to inquiry, educative experience, and personal growth, all of which emerge as an ideal aesthetic experience of the world, offering Dasein access to the poetics of being-in. Here, thinking involves a metaphysical relationship between individual and world. For Dewey (1916), 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. If neuromarketing is seeking to disrupt and override these communicative freedoms, these capacities to form and enact our own values, how is it engaging in its imaginative work? These tensions lead to a central question underlying my project: How is neuromarketing shaping our subjectivities?
CHAPTER SIX
Augmented Animality: A Chimera of Human-Animal and Machine

Animality (essence: captivation)

- Inability to grasp the nature of an object as such;
- Inability to move beyond simply behaving within a world from animal instinct;
- Possibility of having one’s niche [encircling ring/subjective world] disrupted [disinhibited] and manipulated by an external stimulus.

Augment (verb):
Make (something) greater by adding to it; increase

Within a digital network of information and communications technology, political and economic power is created and accumulated through the exploitation of information and consumer labour (McChesney, 2004; Smythe, 1981). Politics is inscribed and enacted in hardware/non-hardware environments (Winner, 1986) as cultural horizons fog over with the spectre of hegemonic practice (Feenberg, 1992). The union of advertising and market research in contemporary society has evolved into a liquid spectacle, attempting to break through embodied brain/mind boundaries of meaning-making.

Neuromarketing aims at consciousness moulding; its methods are based on neurotheories interpreted from the larger context of psychology and neuroscience (cognitive science). Through use of cutting-edge bio- and neurotechnologies and technologies of augmented reality, neuromarketing as a technique aims to predict and manipulate consumer buying behaviour by decoding how consumer instinctive drives and affect can be triggered to enact buying responses conducive to unreflective and uncritical consumption. One might argue that neuromarketing offers the promise of a “near perfect stimulus-response-reward system” (Key, 1989, p. 114). In this kind of society, “already mellowed” consumers (Bauman & Lyon, 2013) resemble Heidegger’s poor in world animal. As such, consumers are captivated within themselves, within their targeted niches, and open to be attuned to a mood of consumption.

Captivation is the essence of animality. Like Walter’s cybernetic tortoise absorbed in itself by the reflection of its own light, a similar kind of self-captivation occurs in
neuromarketing in that the technique seeks to captivate the consumer subject (Dasein) with her own image, modulated by new technologies both static (e.g., fMRI) and mobile (e.g., EEG/Mynd). This techno-captivation, this instinctive seduction, is illustrated by Bauman’s observation on the consumer society where: “Liquid modern consumers, egged on by electronic devices, tend to be turned in on themselves as pleasure-seeking individuals” (p. 127). The idea of captivation as a turning in is made explicit when examined from the frame of Heidegger’s tripartite thesis on [bare] life (zőē), a guide for showing how neuromarketing discourse structures order the world, construct consumer ontologies, and animalize thinking:

1) The stone is worldless; that is without world;
2) The animal is poor in world; animal life is characterized by world poverty;
3) Human beings shape or constitute their world. (Krell, 1992)

Although a step up from constructions of the consumer as a buy button (a worldless stone: *mind as reflex-machine*), reductions to the state of animality deny the consumer the cognitive capacity to grasp the *as* structure of things in that the consumer can never identify s/he is being disinhibited by an external source and exploited as a resource from nature (standing reserve); therefore, remaining incapable of knowing that s/he is being manipulated and coerced by agents of neuromarketing for the benefit of those in political and economic power.

In such a capacity, world disclosing and enframing of consumer subjectivities through techno-scientific practices occurs on two fronts: 1) consumer niches (or subjective/phenomenal worlds) are disclosed through the interpretation of clinical data by a third party “expert” (e.g., a neuromarketer); 2) worlds in general are disclosed through advertising messages calibrated to trigger specific targeted niches (as socio-cognitive terrain) and larger demographic groups. What happens in the process of constructing and disclosing worlds moves from enframing the subject as a ready-to-use tool, to animalizing consumer thinking thereby dehumanizing targeted consumer groups in order to justify treating them as less than human for advertising purposes. The consumer subject constructed in this scenario evokes John Anderton’s justification of the cruel and instrumental treatment of the Precogs in the *Minority Report*: “It’s better if you don’t think of them as human.”

It is important to stress here that neuromarketing agents and organizations do not explicitly see and treat consumers as animals *per se*; rather, they perceive consumers more or less as emerging persons inasmuch as they are aware of our agency, of our power to
deconstruct their advertising illusion and to dispel the magic they have cast over us. Their onslaught, then, must be two-pronged for maximized advertising message success: 1) destroy consumer personhood, i.e. animalize consumers by augmenting animality in order to create the category of the non-human human to justify using consumers for instrumental ends, and 2) bypass consumer capacity for choice and critical/reflective thinking through decoding, captivating, disinhibiting, and attuning consumers into desirable buying responses via behaviourally calibrated advertising stimuli.

Haraway’s (1991) observations are relevant for why the kind of digital world the neuromarketing consumer subject inhabits ought to be studied, in that it is unclear in the discourse “who makes and who is made in the relation between human and machine” (p. 177). As Key (1989) notes of the media communication industry and its potential to shape and control consumers, individuals who are able to identify and understand the limitations of language and perception can become less vulnerable to manipulation: “They can achieve autonomy as individuals and they can truly realize their vast potential for growth, dignity, and achievement” (p. 114). Also relevant is McLuhan’s (1969) statements on the necessity to understand new technologies. He writes: “If we understand the revolutionary transformations caused by new media, we can anticipate and control them; but if we continue in our self-induced subliminal stance, we will be their slaves” (para. 26). My aim, then, is to understand who - or what - is made in the discursive world of neuromarketing as an issue of animality.

This chapter hones in on the theme of animality, specifically augmenting animality as a neuromarketing practice in relation to the socio-political grammar of the modern anthropological machine (Agamben, 2004). I am using the verb augment in the following senses: synonymously with Haraway’s (1991) notion of optimization - part of her Informatics of Domination. I have chosen the term given rapid development in augmented reality technologies that aim to increase or supplement – through gadgets and computer generated input – our experiences of a physical, real-world environment. Such technologies, as with any other new technologies, are being assimilated into advertising and market research practices in an attempt to immerse consumers in a multisensory advertising experience (e.g., Time Warner Neuromarketing MediaLab; wearable technologies, etc). Augmentation is also compatible with the idea of amplification of affect, (see my overview and definition in Chapter Four), an idea recurring in the text/talk of neuromarketing. In this light, neuromarketing augments consumer animality through a
psycho-social technique aimed at instrumental ends. To examine this process of consumer construction, I begin with an inquiry into the animalization of consumer thinking achieved through the discursive practices of neuromarketing as a text-world.

The animalization of the consumer
To explore the animalization of consumer thinking, I have analyzed textual artifacts as representations of the general world of neuromarketing according to Heidegger’s (2010) conception of world in sense three: neuromarketing as a place and mode of concrete practice, a Kuhnian “disciplinary matrix” that includes the beliefs, values, and techniques shared by individual and group members of the neuromarketing community, and as a socio-cognitive space where assumptions, values, ideologies, and opinions are produced and circulated. Building on this structural framework, I refer to world in two forms throughout my analysis: 1) a targeted consumer niche within which the consumer understands the self; and 2) the socially constructed world of neuromarketing (manufactured and sustained by the “they” or das man) which can also be understood as a cultural media environment (McLuhan, 1964). In this socially constructed world, the consumer exists both as an object and a subject: an object to be manipulated by the neuromarketer, and a subject who encounters other objects of consumption.

I use the idea of a consumer niche to show how the subjective or phenomenal world of the consumer is interconnected with a public “we world.” This public world is shaped by neuromarketing ideas and values as part of the machinery of advertising. Neuromarketing is also informed by the larger scientific paradigm of cognitive science, including guiding metaphors for the mind as explicated in Chapter Two. The technique of neuromarketing can be likened to a public pedagogy that conditions consumers to behave in a particular way through repeated exposure to a specific stimulus, manufacturing and developing particular values that support and perpetuate a consumer society. This kind of conditioning process is articulated by critics of neuromarketing who use language related to experiments on Pavlov’s dogs to explain what neuromarketing seeks to do with consumers. For instance, writing for Campaign, Alasdair Reid (2005) notes that civil liberties groups believe that neuromarketing is, or can lead to, an ultimate invasion of privacy. The more “vociferous” critics claim that if
advertisers acquire the knowledge to manipulate the brain, it will not be long before neuromarketers have us “salivating like Pavlov’s dogs” (para. 18).

Drawing on the anti-neuromarketing documentary, Spellcasters, and writing for the Advertising Age, Rance Crain (2013) positions neuromarketing as an “Orwellian action” that has the potential to “inhibit human beings’ conscious choosing, whether you’re selecting a product, a service, or a politician, and turn us into a human-like Pavlov’s dog” (para. 15). Given rapid developments in neurotechnologies in terms of government, military, corporate, and neuroscientific applications more generally, where the brains of both animals and human beings have been manipulated in various ways (e.g., Booth, 2014; Tucker, 2014b; Gorman, 2014; Alok, 2013), the danger of neuromarketing to condition consumers according to advertising ends is becoming more reality and less science-fiction fantasy.

Such depictions of consumers as animals to be conditioned through various techniques can be connected with the entailments of the mind as animal-machine metaphor discussed in Chapter Two. According to this metaphor, animals are understood as reflex machines. The logic that underpins this metaphor unfolds in the following way: If humans are also animals, a claim that Edwards (1996) suggests “entangles” both literal and metaphorical connotations, then humans are also reflex machines. The metaphor of mind as animal-machine holds 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. Simply put, human beings are able to be manipulated and controlled via external triggers. As Edwards notes: “The Pavlovian picture draws a parallel between the transference of a natural reflex (e.g., salivation at the smell of food) onto an arbitrary stimulus (e.g., the sound of a bell) and the mental process of associating words (e.g., “Dinnertime!”) with their meanings (p. 162).”

An iteration of neuromarketing from this perspective, then, might appear 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., subliminal message: metaphor, symbol, sound, smell, etc) and the mental process of associating words (e.g., “uncool connoisseurs”) with their meanings. By conditioning (or triggering) consumers into desirable buying responses, neuromarketing disrupts and overrides the consumer subject’s process of understanding and subverts our core democratic values of freedom of intelligence and self-determination.
Such a reduction is captured by the claims of neuroscience-based leadership and culture coach Christine Comaford (2013) who writes that “[e]motional and instinctual marketing messages reinforce the brand experience more powerfully than rational messages” (para. 7) … “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” (para. 6; emphasis added). For Comaford, neuromarketers can “‘train’ an attitude toward a brand by providing repetitive, positive cues about it.” If neuromarketers are able to offer new brand information for the consumer brain to process, they “can even change a consumer’s experience and buying behavior” (para. 6) just like Pavlov’s dogs who, through classical conditioning techniques, can learn to respond to particular forms of stimulus according to externally prescribed behaviours. It is in this capacity that neuromarketing becomes a public pedagogy of conditioning.

While it is important to reiterate that neuromarketers do not actively see the consumer as an animal, on close examination of the text/talk of the industry, it is evident that a conceptual reduction of the consumer to mind as animality is reinscribed through their discourse, assumptions, and operative practices and goals. The theme of animality is recurrent in the text/talk of neuromarketing.

Agamben (2004) refers to animality in the context of an “anthropological machine,” a socio-political grammar that creates the human with yet over the animal. This machine has the political effect of laying the foundations for creating the category of the non-human human to serve political and economic ends. For Agamben, human beings suspend their animality in a “state of exception, a zone of indeterminacy” (p. 37), and by making this conceptual move maintain a position of privilege in the hierarchy of bare life (zoē). Agamben claims that science breaks down the distinction between human beings and animals in dangerous ways with the reduction of humanity to pure biology. Through such acts, certain 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” (Oliver, 2007, p. 9). These moves have resulted in the animalization of human beings used as justification for slavery, for example (Agamben, 2004), which is in line with the idea that neuromarketing, through discourse and practice, results in a form of mind slavery.
Gender and women’s studies scholar Mel Chen (2012) also explores the idea of animality in *Animacies: Biopolitics, Racial Mattering, and Queer Affect*; however, she does so through “the grammar of animacy.” Chen claims that what linguists call the *animacy hierarchy*, the “conceptual organisation of worldly and abstract things with grammatical consequences” (p. 30), 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 “[a]nimacy is political, shaped by what or who counts as human, and what or who does not” (p. 30). Further to this: “[l]anguage users use animacy hierarchies to manipulate, affirm, and shift the ontologies that matter in the world” (p. 42). Animalization of human beings is used to justify the objectification, dehumanization, and instrumentalization of the human being. In her own words: “[w]hen humans are blended with objects along this cline, they are effectively ‘dehumanized’, and simultaneously de-subjectified and objectified” (p. 40). Extending on these works, approaching animalization of consumers through a Heideggerian frame of animality, can serve to disclose the discursive dimensions and practices of the neuromarketing world as grounded on a socio-political grammar that creates hierarchical distinctions amongst consumers who can then be justified as ready-to-use tools for advertising ends. I now turn to the metaphor of *mind as animality* as an emergent guiding metaphor in the text/talk of neuromarketing.

**Metaphor: Mind as animality**

Poor in world animals

Guard your reptilian brain. Corporations and politicians are trying to tap into it to use the latest brain research and sales techniques to influence your buying and voting patterns … The idea is this: you have three brains, the new brain that thinks, the middle brain that feels, and the old brain that decides. The old brain (also called the “reptilian brain” because it dates back 450 million years and is like reptiles’ brains today) is focused on survival. It is the gatekeeper that controls what gets to the other two brains. (Brutoco & Austin, 2010, paras. 1-2)

The frame of animality (and its essence *captivation*) serves as a useful structural illustration of how the animalization of thinking is at play in neuromarketing discourse structures, augmenting consumer animality through psycho-social techniques and constructing the
consumer as a “lower thing,” that is, to a non-human human for instrumental ends. The metaphor of mind as animality is present in neuromarketing as a discursive world and in the form of mind as animal-machine in the larger scientific paradigm (of cognitive science) as I explained in Chapter Two. Synonymous with the idea of animality, the term “reptile” and derivations such as “chameleon” (Neuromarketing Canada, 2012) and “critter” (Comaford, 2012) are recurrent terminology in the data.

For instance, Comaford (2012) identifies three parts of the human brain. For the sake of simplicity, however, 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 “easy access to all of our resources and can respond from choice.” This part of our brain, she argues, allows us to “have a number of advanced behaviors, including social behavior, tool making, language, and higher-level consciousness” (para. 11). Comaford merges the limbic system with the survival mechanism in the reptilian brain to create a “powerful combo pack” – the critter brain.

The critter brain only cares about survival, and a primary dimension of “staying alive is belonging, or being like the other critters in the environment” (para. 10). While Comaford argues that innovation and growth requires that the smart state drives management decisions, in another work she (2013) implies that it is the critter state that must be targeted for marketers to “reinforce positive brands and attitudes” (para. 9). Comaford’s text/talk, as with neuromarketing 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 human brain/mind.

As mentioned previously the metaphor of mind as animality emerges from the text as an aspect of the mind as animal-machine metaphor that guides the cognitive sciences. Neuromarketing proponents are in agreement that advertising messages ought to be pitched at a level of consumer understanding that exists beneath the consumer’s critical awareness in order to successfully trigger desired consumer responses. Such a “zone of indeterminacy” as Agamben (2004) might call it can be described as a state of consumer animality. Here, the consumer is reduced conceptually to a non-human animal (e.g., reptile) while simultaneously being augmented through technological amplification of the consumer’s inner animality.

While many neuromarketing proponents such as Comaford demonstrate an informed understanding of the way the human brain functions, some proponents such as the President
of SalesBrain, Patrick Renvoisé, interpret Damasio’s research to depict consumers as fundamentally lacking critical agency inasmuch as everyday human responses to the world can be manipulated externally by triggering instinctive and affective drives. I will return to SalesBrain throughout this chapter 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 advocating the use of technology and knowledge coming from the field of cognitive neuroscience” (Morin, 2011a, p. 132). Second, despite the company grounding its research on the work of Damasio, SalesBrain serves as an exemplar of a crude form of neuromarketing in its explicit reductions of the consumer to both a worldless inanimate thing and a poor in world animal. (As noted in Chapter Two, Damasio’s work resonates with the general category of scientists working on embodied cognition. He depicts the human being as a complex dynamic system of brain/mind/self and society). Such interpretations not only reduce the consumer to the metaphor of mind as animality, they are also attached to the construction of the consumer as reducible to a buy button, a reflex-machine that can be accessed and controlled through external inputs.

In a TED talk on the buy button in the consumer brain, Renvoisé (2013) exclaims: “What I’m here to tell you is that we are reptiles!” (5:20). 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’” (0:32). He also asserts that “neuromarketing is really about finding that buy button” (17:40). According to his biography on the SalesBrain (2014b) website, “[p]ushed by a strong desire to seek the truth about Sales & Marketing, Patrick discovered the buy button inside the brain” (para. 2). To access this buy button, Renvoisé spent two years researching and developing a scientifically grounded “MAP.” Various representatives of neuroscience and neuromarketing do not share Renvoisé’s optimism that such a button exists, let alone that it has been discovered. Examples of counter views include those of neuroscientist Crocket (2012) who, in her TED talk Beware Neuro-bunk, is emphatic: “We haven’t found a ‘buy button’ inside the brain … We can’t tell if someone is lying or in love just by looking at their brain scans” (9:49).

Counter views also come from active proponents within the neuromarketing community. For instance, Lindstrom (2010) claims in his book Buyology that “[t]hough [neuromarketing] may never be able to tell us exactly where the ‘buy button’ resides in our brains … it will certainly help predict certain directions and trends that will alter the face, and
the fate, of commerce across the world” (p. 204). Writing for the Neuro Retail Revolution blog, the managing director of Decode Marketing, Phil Barden (2013), explains: “we have to be aware that there is no ‘shopping’ module in the brain, nor is there a ‘buy button’ or a brand module” (para. 4).

The trademarked NeuroMAP™ formulated by SalesBrain (2014e) has allegedly helped more than 6,000 companies at a global level “get their message truly understood by the brain of their customers” (para. 9). The map comprises five regions, each of which offers SalesBrain clients “valuable insight into the science of neuromarketing and shows how you can find the path to the ‘buy buttons’ in your customer’s brain” (SalesBrain, 2014e, para. 2). The question that arises when reading this text byte is this: 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 mind as animality in that it constructs consumer thinking to the poor in world status of Heidegger’s animal, (i.e. a reptile), as a pathway to advertising coercion. Drawing on Damasio (2000, 1994), Renvoisé (2013) asserts that we don’t have a single self, we have three selves. The primary motivator of our behaviour is the reptilian brain (“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 (“new brain”) and the emotional self (“middle brain”).

Appealing to the scientific realm to legitimize his work, Renvoisé explains that neuroscience research shows that “[e]motional cocktails” create chemical reactions that directly impact the manner in which information is memorized and processed by the reptilian brain and can trigger the response to buy. Renvoisé is adamant that the reptilian brain is what marketing and advertising would have to target for advertising messages to succeed. The best mode of attack would be by engaging the reptilian brain, which is “unconscious [and] … completely uncontrollable” (6:17-6:28). On characteristics of the reptile as the “true decision-maker,” the SalesBrain website (2014e) presents the reptilian brain as the part of the consumer that “forgets most everything in the middle,” a short attention span that holds “huge implications on how to construct and deliver powerful messages” (para. 5).

The core of what Renvoisé claims is simple. In order to sell more and develop consumer loyalty (through tweaking levels of trust, for example) it is necessary to use tactics of persuasion that bypass consumers’ capacity for conscious reflection, without allowing
them the opportunity to recognize that their targeted niches (i.e. their subjective/phenomenal worlds) were being hacked into with behaviourally and biometrically calibrated stimuli in the first place. Articulating a common assumption in the industry that the consumer does not know herself, Renvoisé (2013) positions neuromarketing technique as a “lie detector,” penetrating the consumer subconscious to extract objective truth in the form of “physiological indicators.” As Brutoco and Austin (2010) observe of neuromarketing, by measuring activity in various parts of the brain when responding to advertising stimuli, “advertisers and political consultants can create advertising campaigns that tap into the pre-conscious brain. The idea is to assess central nervous system response to certain ads, the better to skirt the viewers’ rational thought” (para. 4).

The overall aim of neuromarketing is demonstrated by Renvoisé’s (2013) comments on his expertise as an applied neuromarketer: “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, and can you guess what response we’re trying to get from consumers? YES! We want them to say ‘yes’ or ‘buy’” (3:11). If the aim of neuromarketing, then, is to find the buy button, sell to consumers goods and services that “maybe [they] don’t even need,” and have them say “YES!”, the industry assertion that neuromarketing is simply an advertising tool that will benefit consumers, society, and the health of the environment by only producing goods that customers “really want” (but don’t know they really want) becomes a farce.

Renvoisé’s commentary illustrates the reduction of the consumer subject to the mind as animal-machine metaphor along with associated entailments, including mental processes as tacit physical behaviours; mental processes as controlled by the environment; learning as a process of differential reinforcement; and thoughts as tacit conditioned verbal responses (Edwards, 1996). 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 also in terms of the overall mechanization of the mind hypothesis that filters into the world of neuromarketing from the larger narrative of cognitive science. The mind as animal-machine metaphor compares humans to behaviourist experiments. In this sense, the consumer becomes an instrumental object that can be conditioned and manipulated by an external stimulus to enact desirable buying responses.

By constructing consumer self in accordance with “objective” bio- and neurological data, the way the world (i.e. reality) is disclosed to consumers is twofold. First,
neuromarketing brain focus group researchers position themselves as the experts on revealing subjective consumer worlds to the consumer as “objective” or “non-subjective” interpretations of clinical data. The neuromarketer as privileged knower of objective truth illustrates what Ellul (1964) 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, “[i]t 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” (p. 21).

Such constructions are made more powerful as pathways to consumer consciousness shaping when considered in light of the development and implementation of advertising strategies that use multi-media apparatuses to augment consumer “real-world” experiences in a way that immerses them in the multisensory potentials of the digital. As I mentioned previously, what occurs in the neuromarketing context is a reduction of the consumer to a “lower thing” (Agamben, 2004, p. 29) ready to be triggered behaviourally according to “instinctual driveness,” a capacity that, drawing from Heidegger (1995), “characterizes all such animal performance” (p. 237). Alongside such a reduction also comes an amplification of animality through modern technologies of augmented reality and bio- and neuro-technological apparatuses.

Second, neuromarketing reveals a world that positions consumers as energy resources (i.e. as exploitable subconscious terrain), both present-at-hand entities to study and ready-to-hand tools to use from nature. Heidegger (1977) would use the term “standing reserve” to indicate the instrumentality that results from enframing Dasein. Through the mechanization and industrialization of everyday life, reality (or world) becomes technologically enframed, denying the consumer access to “a more original revealing” of the world and a more poetic “truth.” In this sense, reality is constructed and revealed by a third party interpretation of the consumer according to a set of biological data, which is not only consistent with the tendency of the modern anthropological machine to reduce human beings to pure biology but is also in line with the work of consumer surveillance strategies such as dataveillance.

In the context of surveillance, consumers become biological terrain to be monitored, mined, and exploited as bodies of data that, as Selwyn (2014a) claims of dataveillance,
supports a range of data profiling activities. Such “data processing arising from dataveillance allows for the identification, classification, and representation of social entities (be they people, places or events) in the form of automated data profiles” (p. 10). However, in light of Andrejevic’s (2012) argument, this mode of revealing the world is false: “Although the language of neuromarketing seems to recapitulate a logic of depth by mobilising the promise to excavate below the surface of discourse into the recesses of the reptilian brain, this formulation turns out to be self-misreading on the part of neuromarketers” (p. 207). It is important to note that Heidegger (1995) understands the withholding of world as a fundamental moment of animal captivation.

At this point we begin to see the theme of encirclement [i.e. the animal’s phenomenal or subjective world, or as Feenberg (2010) would call it, the niche] emerge from the text/talk of neuromarketing. The animal’s encircling ring (or niche) can be understood as a targeted perceptual space that constrains consumer identity depending on consumer behavioural responses and likes. The idea of encirclement or encircling ring is comparable to Pariser’s (2011) explication of the online filter bubble where the processes of personalization “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” (p. 211). When considered against the backdrop of neuromarketing, the concept of a filter bubble can be extended to both online and offline worlds of neuromarketing as a disciplinary matrix that constructs and discloses behaviourally targeted consumer environments calculated according to brain imaging and biometric response data.

Encirclement 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. Heidegger (1995) states that while an animal’s capability for is not a comportment toward beings, these beings don’t appear in a mechanical relationship with the animal either. This is because in the animal’s capability for it opens itself up to “whatever is other in approaching it.” He writes:

Capability for … and thus behaviour itself is open for such occasions, for stimuli, for that which initiates, i.e., disinhibits the capability for … in such and such a
way in each case. That which the animal’s behaviour relates to is such that this behaviour is open to it. This other is taken up into this openness of the animal in a manner that we shall describe as disinhibition (Enthemmung). (p. 254)

Heidegger considers captivation 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/phenomenal world. In an animal’s captivation, the possibility of understanding beings as being, or things as things, is withheld. The animal interacts with its world on instinct without critical and reflective consciousness. The totality of the animal’s self-absorbed capability is “an interrelated driveness of the instinctual drives.” It is enencirclement. The kind of environment that confines or encircles the animal is capable of affecting behaviour and the phenomenal world or self-world of the animal.

When applied to the context of neuromarketing, the encircling ring or niche explains the relationship between our subjective/phenomenal worlds as consumers and the public “we world” (Heidegger, 2010) of neuromarketing. Niche can be viewed as a consumer’s behaviourally targeted subjectively targeted subjective environment existing in and influenced by the larger social world of neuromarketing. Feenberg (2010) 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” (p. 4). The relationship between consumer niche and the larger world of neuromarketing (sense three of world: a disciplinary matrix) is similar to those relationships between the parts of a machine to the whole machine. This is a useful frame for analyzing consumer [inter]subjectivities within the larger social world of neuromarketing as part of an assemblage of “devices, neuromarketing texts, the proposals and portfolios of marketing and advertising agencies, popular media reports and comments and so on” (Schneider & Woolgar, 2012, p. 17).

Following McLuhan (1964) and his conception of the components of meaning-making in a media environment, the larger social world becomes a cultural environment within which media objects, events, values, and assumptions can shape consumer (audience) consciousness which can be understood as a consumer’s niche. As Angus (2000) notes, “the specific prevailing configuration of this cultural environment is defined by a continuous translation between a plurality of media” (p. 43). 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 readily identified. When niche is conceived 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 freedom of intelligence to create and recreate the self.

Such manipulated absorption results in the boxing in 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 (2011), “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” (p. 19). I now turn to the theme of encircling ring as a targeted consumer niche. This individual phenomenal 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.

**Encircling rings: Targeted consumer niche as subjective world**

Heidegger’s philosophy on inanimate and animate life was largely influenced by Jacob Johann von Uexküll (1864-1944), a pioneer in the discipline of biosemiotics 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. In *Theoretical Biology*, Uexküll (1920) sought to expand the implications of Immanuel Kant’s work by examining the part played by the body (especially our sense-organs and central nervous system) through the study of the relations of other subjects (i.e. animals) to objects (pp. 12-13). Philosopher Brett Buchanan (2008) points out that Uexküll’s thesis claimed that “the reality we know and experience is ultimately what we subjectively perceive in the world. Here, there is no objective reality in the form of objects, things, or the world. Nothing exists beyond individually subjective experiences that create the world as meaningful” (p. 13). Reality is created through the experiences of each subject which holds true for non-human animals as much as it does for human beings.

Rather than understanding animals as “physico-chemical” machines, Uexküll (1920) maintained that animals must be interpreted “by virtue of the environments they inhabit, and,
insofar as it is possible, from the perspective of their behaviour within such environments” (p. 8). Similar to the symbiotic relations that exist between Dasein and social world, Uexküll studied the animal and its environment as a system he called Umwelt, which means “surrounding world” or “environment.” Uexküll argued that the animal and Umwelt are not two distinct beings, but “a unitary structure that must be considered holistically” (p. 22) This resonates with Feenberg’s (2010) use of niche as a path to illustrating and understanding technological systems as parts of a whole. Uexküll moves away from interpreting organisms in the frame of natural selection, seeking to “understand them with respect to the designs that they represented in relation to meaningful signs (to language)” (Buchanan, 2008, p. 8). Agamben (2004) claims that where classical science posited a single world comprised of living species ordered in a hierarchy from the most basic organisms to higher forms, Uexküll proposed an “infinite variety of perceptual worlds that, though they are uncommunicating and reciprocally exclusive, are all equally perfect and linked together as if in a gigantic musical score” (p. 40).

Heidegger’s (1995) notion of encircling ring (disinhibiting ring) is informed by Uexküll’s (1934) 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” (p. 11). This self-world is a subjective space shaped and constrained or expanded according to each animal’s modes of sense perception. Environmental factors such as triggers are capable of affecting the behaviour of organisms within their “phenomenal world” or “self-world” (p. 5). The possibility of disinhibition by an external entity is a structural moment of animality. That the animal will never become aware of what is disinhibiting it is also a structural moment of animality, an essential moment of captivation.

Although Heidegger thought Uexküll’s research was important for biology, he did not consider Uexküll radical enough in his interpretation of the organism. While Uexküll offered insights into the world of animals, and he illustrated a difference between animal and human worlds, he did not suitably describe the “essential manner of this relation underpinning the relation to world” (Buchanan, 2008, p. 35). Heidegger considered Uexküll’s weakness to be the omission of an account of Dasein’s relation to the world, “one characterized by being able to “apprehend something as something, something as being” (p. 53). In other words, what does it mean for Dasein to have a world? For Heidegger (1995), our capacity to grasp the as
structure is one of the fundamental moments of understanding that sets human beings apart from behaving (or being) in the world as animals.\textsuperscript{cvii}

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” (\textit{Sich-Einringen}) is not a form of encapsulation but an encirclement drawn around the animal in such a way so as to open up a “sphere”\textsuperscript{cviii} in which the things that disinhibit its behaviour can do so in various ways. The ring determines what can affect or trigger behaviour. Buchanan (2008) interprets the self-encircling ring as a primordial feature of the essence of animality in that it “belongs to the innermost organization of the animal and its fundamental morphological structure” (p. 94). The self-world is a subjective space shaped by each animal’s mode of sensory perception and influenced by external triggers. This leads us to the theme of \textit{captivation} as the essence of animality.

\textbf{Captivation as the essence of [consumer] animality}

Captivation (\textit{Benommenheit}) as the essence of animality can serve as a conceptual frame for showing how neuromarketing aims at entrapping consumers within their own targeted niches, bypassing their capacity for critical reflection, and triggering them into desired responses via manipulating instinctive drives and attuning affect. Captivation offers an illustration of how consumers, as Bauman might put it, are kept “turned in on themselves as pleasure-seeking individuals” (Bauman & Lyon, p. 127). Reduced to the state of animality, the consumer is deprived of the cognitive capacity to grasp the \textit{as} structure of things in that s/he can never identify or understand s/he is being disinhibited from an external source, and remains incapable of knowing that s/he is being manipulated and coerced by agents of neuromarketing. To offer one example of how the theme of captivation manifests itself in the text/talk of neuromarketing, I return to SalesBrain’s NeuroMap. The website (2014e) states:

\begin{quote}
With SalesBrain’s NeuroMap™ model, you can scientifically \textit{CAPTURE}, scientifically \textit{CONVINCE} and scientifically \textit{CLOSE} more customers. Our unique process will help you focus your message on the top customers’ \textit{PAINS}, choose unique \textit{CLAIMS}, prove your \textit{GAIN} and deliver to the \textit{Reptilian BRAIN}. (para. 1)
\end{quote}

The excerpt above illustrates how neuromarketing reduces the consumer to the metaphor of \textit{mind as animality}, a “reptilian brain” that can be manipulated according to instinct and affect,
in this case pain. The aim of SalesBrain is to capture the consumer who, like Heidegger’s animal, is captivated within her encircling ring, her own distinct perceptual universe delimited by instinctive drives.

On this view, consumers - in their animality - are bounded by a niche that holds meaning relevant to their species-specific capacity and only allows them the possibility to interact with the external environment based on their pre-coded nature that can be decoded by following the neuromarketer’s “scientifically” grounded NeuroMap, and triggered into buying behaviour according to external manipulations. Here the consumer as animal is absorbed in herself, illustrating Heidegger’s (1995) assertion that animal “behaviour is precisely an intrinsic retention and intrinsic absorption, although no reflection is involved” (p. 238). This idea of no reflection being involved in the state of animality is central for identifying how the program of neuromarketing aims to target consumers at a level below the threshold of critical and reflective conscious awareness, thereby denying the consumer the agency of the world-forming Dasein to escape the confines of captivation.

For Heidegger (1995), captivation is the essence of the animal as an organism and the animal’s absorption in itself is captivation. Heidegger maintains that animal behaviour is underpinned by instinctual drives in opposition to human comportment as action. Comportment does not simply refer to acts of consciousness but to the “everydayness” of human activity in general. On this view, animals only behave whereas humans exist in the world:

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. (p. 247)

Captivation refers to the “condition of possibility for the fact that, in accordance with its essence, the animal *behaves within an environment but never within a world*” (p. 239). It is evident here that Heidegger is privileging the human mode of being and understanding over the way the animal behaves in the world. So how does the animal relate to its environment as behaviour distinguished from human comportment? Heidegger uses an example of a bee to
illustrate how it is “instinctual driveness” 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 withhold 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 unrelate to anything else but rather is taken (hingenommen), taken and captivated (benommen) by things. (p. 247)

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 recognition or reflection that it can “be captivated by what the sun occasions in its behaviour” (p. 247) but because of its instinctual drive. “Instinctual activity,” writes Heidegger, “is not a recognitive self-directing toward objectively present things, but a behaving” (p. 243). In having the as structure withheld from it, the animal is taken by things. On this view, the animal’s instinctual drive is captivated. Heidegger’s formulation excludes the animal from the manifestness of beings:

[T]his captivation should not be interpreted simply as a kind of rigid fixation on the part of the animal as if it were somehow spellbound. Rather this captivation makes possible and prescribes an appropriate leeway for its behaviour—i.e., a purely instinctual redirecting of the animal’s driven activity in accordance with certain instincts in each case. (pp. 247-248)

Being taken or being captivated, as I mentioned previously, can be likened to Bauman’s explanation of ‘a turning in’ that occurs with the consumer in the context of consumer surveillance and new technologies (Bauman & Lyon, 2013), where the consumer is absorbed within herself. Such techno-captivation is a “seduction,” illustrated by Bauman’s observation that “[l]iquid modern consumers, egged on by electronic devices, tend to be turned in on
themselves as pleasure-seeking individuals” (p. 127). Captivation can be situated on a continuum illustrating the cognitive capacities of Dasein as compared to the animal. As I indicated in Chapter Four, captivation can be mapped onto Dasein’s most primitive form of understanding the world as a mode of “mindless” or “unreflective” coping (Dreyfus, 1995) where Dasein has not yet reached the cognitive capacity to understand the nature of things in terms of decontextualizing (or deworlding) entities and their properties, for example. The captivated animal in its driven behaviour does not and cannot relate itself to itself (e.g., by knowing itself) or to that which is present-at-hand as such, or being present-at-hand in its being present-at-hand, as “being.” When superimposed onto the context of neuromarketing, captivation is illustrated by Zaltman’s patent for the Zaltman Metaphor Elicitation Technique (ZMET).

**Evoking consumer instincts and affect**

ZMET is a method of questioning aimed at evoking conscious and unconscious thoughts in the consumer subject through a set of introspective questions. For ZMET to work as it is intended, it is supposed to be accompanied by neuroimaging tools; hence the patent “Neuroimaging as a Marketing Tool” (Google, 2000). A central assumption of this patent is that through technology the neuromarketer can come to know the consumer better than the consumer could ever know herself – a recurring theme in the text/talk of neuromarketing. Zaltman and Zaltman (2008) 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). His solution? Patent US 6315569 B1: [Zaltman] Metaphor Elicitation Technique. The abstract for the patent offers some insight into the motives 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. (Google, 2001)
There are certain aspects to Zaltman’s 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 consumer likes, dislikes, preferences, etc. The end aim of this technique, however, is to readjust consumer attitudes towards a level of conscious awareness those thoughts and feelings that are ordinarily not evident or are not evident in a clear or precise way” (Google, 2001). 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 physiological data as captured by a range of bio- and neurotechnologies. The combination of ZMET and neuroimaging as a marketing tool offers an excellent example of how Ellul (1964) conceives the psycho-social machinery of advertising as a technique able to manipulate individuals and populations. Ellul writes:

… the union of two very different categories of technique which 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. (pp. 363-64)

The implicit goal of Zaltman’s technique is to captivate consumers with a behaviourally targeted [subliminal] advertising stimulus intended to keep us absorbed within ourselves, in our targeted consumer niches, while we simultaneously grasp at an external illusion of an idealized self that is not of our own making, an illusion deployed into our targeted niches by advertising strategies informed by neuromarketing methods. This form of self-capture (like Walter’s tortoises being captivated by the reflection of their own light as we saw in Chapter Two) resonates with Heidegger’s (1995) understanding of behaviour where “[b]ehaviour is precisely an intrinsic retention and intrinsic absorption, although no reflection is involved” (p. 238). Because of the animal’s absorption, it becomes poor in world, captivated within its
own distinct perceptual universe and lacking the ability to interpret and articulate the implicit meanings of its own existence and the existence of other beings—what Heidegger refers to as the *as structure*.

Captivation in this sense is the result of a subliminal attack on the consumer self, aimed at increasing profits for companies with varying ethical responses to important social, political, and environmental questions. One example of a political concern revolves around the nature of the instrumental relationship between consumer and neuromarketer as one built on oppressive structures. For instance, in order to remain competitive advertising must continue to expand alongside capitalism, machinery that history suggests was founded on and perpetuates master/slave relations. The master/slave relations relevant to neuromarketing can be understood in light of Smythe’s (1981) conception of the relation between advertising and labour as mind slavery. As capital produces workers, mass media businesses produce audiences and deliver them to advertisers (Mosco, 2009). Such a process of socio-political, cultural, and economic interconnectivity comprises media companies, advertising agencies, businesses, audiences, government, etc—an assemblage with neuromarketing as the agent of predictive intelligence able to offer scientifically grounded strategies to maximize advertising effectiveness. Smythe would call this assemblage an example of the consciousness industry turning on the production of audiences and the selling of their own consciousness to advertisers or to political candidates and political causes.

The advertising message informed by the data extracted in the neuromarketing process involves the deployment of predictive and increasingly multisensory advertising messages into the “mindless” coping (Dreyfus, 1995) structures of consumer consciousness. This tactic is aimed at sneaking through the “nanosecond lapse before thinking is translated into words” (Lindstrom, 2010, p. 22) before the consumer can register that s/he is being targeted subliminally in accordance with her/his own biometric measurements and symbolic associations for making meaning in the world. In this capacity not only is the consumer captivated within herself or turned in on herself, she must also be triggered into a desirable buying response, and conditioned like one of Pavlov’s dogs.

This triggering process (i.e. disinhibition) is expressed by authors of the *Neuromarketing for Dummies* online cheat sheet, Genco et al. (2013), who highlight that while traditional advertising/market research 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. “Brain science shows the many ways we can be subtly influenced as we go about our online activities,” they explain. “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” (para. 7).

Disinhibition: Triggering consumers to buy

An active neuromarketing proponent, Phil Barden (2013), explains the role of marketers as one that aims 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” (para. 1). To “capitalize on an indirect, nonconscious path” of consumer decision-making (Genco et al., 2013) requires that consumers are triggered into desirable buying responses which, according to Barden (2013), means that [neuro]marketers must “increase reward and at the same time decrease pain” (para. 6).

Although neuromarketing proponents deny that neuromarketing practice is unethical (e.g., Lucaci, 2013; Lindstrom, 2010), Maurice Ptito, a neuroscientist at Université de Montreal, claims that evidence of his neurological study on the impact of the Canadian government’s anti-smoking campaign suggests that “if I find the right advertising to stimulate the reward systems of the brain, I could push you to consume anything” (Staples, 2006, para. 11). These attempts at triggering consumers into particular buying modes serve as examples of how Heidegger’s animal, captivated within its encircling ring (or niche), can be disinhibited by an external stimulus. Such animal captivation is determined by the possible kinds of disinhibitions within its 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. To elaborate on the idea of disinhibition, Heidegger (1995) writes:

This open being taken intrinsically involves the withholding of any possibility of apprehending beings. This self-encircling entails an open absorption in it—not in the so-called ‘interior’ of the animal, but in the ring of the interrelated driveness of instinctual drives as they open themselves up. (p. 255)

In other words, the animal’s instinctual activity can only be affected by things that bring its instinctual relatedness into play or by things that have the power to disinhibit its behaviour.
As Buchanan (2008) puts it, “[e]ncirclement is a manner of being by which the animal is able to relate to those beings that disinhibit [enthemmt] its behaviour, ‘affects,’ or initiates the capability in some way” (p. 94). The thing that disinhibits and releases the inhibitedness of the animal’s instinctual drive, allows the animal’s instinctual activity to react and respond to the disinhibition, and allows the animal to move within a particular range of instinctual drives, “must always in accordance with its essence withdraw itself” (Heidegger, 1995, pp. 255-56).

**Stealth neuromarketing: Fundamental disruptions and trigger tactics**

Heidegger (1995) explains that the self-withdrawal of the thing that disinhibits the animal “corresponds to the [animal’s] essential inability to attend to that which is involved in behaviour, that is, the inability to attend to that which disinhibits as something objectively present at hand” (p. 256). The animal can never grasp what it is that disinhibits it as such. Heidegger claims that it is because the animal’s specific way of being is behaviour, and because the thing that disinhibits corresponds to this behaviour, that the animal is able to be affected by an external stimulus. The ability to be stimulated, or to be aroused (irritability),” writes Heidegger, “has been identified as the distinctive character of ‘living substance’.” Furthermore, disinhibition brings a fundamental disruption into the essence of the animal. When applied to neuromarketing, disinhibition can be likened to the trigger tactics that neuromarketing aims at with advertising messages calibrated according to consumer neuro- and biometric responses to an external stimulus. The self-withdrawal of the thing that disinhibits the animal can be translated as the explicit aims of neuromarketing to sneak through the nanosecond lapse before the consumer moves from instinctive “subconscious” thought to critical and reflective attentiveness to the world around it. This process transpires, as Penenberg (2011) writes:

[a]t 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. (p. 123)
To offer another example of how the theme of disinhibition manifests itself through the text/talk of neuromarketing, I turn to the Neurosciencemarketing.com blog entry spotlighting *Brainy Marketing* at SXSW 2013. The text begins with this: “We’ve put together the top thought leaders in brain and behavior-based selling for an exciting panel at South by Southwest Interactive 2013.” The name of the panel? “Forget Spock’s Logic, Sell to Kirk’s Emotions!” Panel members are positioned as neuromarketing experts and include Brian Clark (Copyblogger), AK Pradeep (Nielsen NeuroFocus), Martin Lindstrom (Buyology, Inc.), and Roger Dooley (Dooley Direct). The blurb for the panel is as follows:

**Brainy marketing: Neuro-optimized websites**

Need to get more leads or sell more product? Do you want to create a stickier website that encourages visitors to stay and consume more content? Boost affiliate revenue? The vast majority of your visitor’s behavior is driven by emotion and unconscious processes – if you are only talking about features, benefits, and prices, you won’t maximize your success. This panel of thought leaders from diverse disciplines will show you how to appeal directly to your visitor’s brain. You’ll learn how to apply the latest findings from neuroscience, neuromarketing, and behavior research to redesign your site, write persuasive copy, and trigger the visitor behavior you want. (Dooley, 2013b, para. 2)

The following text bytes, extracted from the original excerpt, highlight the themes of captivation and disinhibition, and include the capacity of advertising to trigger consumer responses: “Visitor’s behavior is driven by emotion and unconscious processes,” “appeal directly to your visitor’s brain” [by building] “a stickier website [digital world]” that “encourages visitors to stay and consume more” and “trigger the visitor behavior you want.” The implicit understanding here is that through techniques of neuromarketing appealing directly to the consumer’s reptilian brain, the consumer will be unable to register that s/he is being triggered into a desirable response. Here the consumer is perceived as lacking the ability to interpret and articulate the implicit meanings of the as *structure* of the entities and things s/he encounters in the world, in this case, the neuromarketing website as part of a digital social world. To explain using an example offered by Heidegger (1995), consider the lizard sunning itself on a ledge to keep warm. Although 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, 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?

Such interactions between the consumer in her targeted niche and the public we-world of neuromarketing presented as a website (i.e. the cultural environment within which media objects, events, values, and assumptions can shape consumer [audience] consciousness) is limited to that of instinctive reflexivity. Being captivated, the possibility of grasping something as something is withheld from the consumer. Because of this inability to understand, interpret, and grasp the as structure, the consumer can be compared to Heidegger’s animal who is unable to disclose the “undisconcealed as undisconcealed,” thus becoming poor in world. This example resonates with McLuhan’s (1964) famous claim that “the medium is the message,” meaning that the form of a medium embeds in itself the message, creating a symbiotic relationship between the consumer in her targeted niche, and the message, inasmuch as the medium influences how the message is perceived by the consumer, and the message, in light of animality, will never be understood as such.

Another example of consumer disinhibition is found in the text/talk of neuromarketing proponent Roger Dooley who writes on audio branding (and neuromarketing). On his blog, Dooley (2007) 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?” (para. 1). Dooley notes that marketers recognize the power that “mood setting” music has on [subliminally] influencing consumer buying responses. It is “possible, though, to go beyond the obvious,” he writes (para. 2). Dooley 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. (para. 3)

Dooley concludes that “seemingly insignificant factors – even those of which the customer isn’t consciously aware – can have a profound impact on customer behavior” (para. 5). This form of multisensory consumer disinhibition becomes all the more powerful when thinking about how neuromarketing holds the potential to trigger consumer senses through
technologies of augmented reality, such as bio-sensing wearable technology that allows readers to feel books (Heibeck et al., 2013), or digital scent technology (DOS, 2014) where scents can be transferred through the Internet which could be used ultimately for “augmented satiety” (Meyer, 2013). Such advances in media technologies, that can be incorporated into an evolved form of subliminal advertising, give new meaning to Agamben’s (2004) 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” (p. 62). In the case of neuromarketing, consumers are turned in to themselves, in their targeted consumer niches, and simultaneously drawn outside themselves by the multisensory advertising spectacle of a digital network.

To offer an exemplar of disinhibition and exploitation of consumer consciousness, I return to SalesBrain once more. SalesBrain (2014e) presents itself as the only neuromarketing agency in the world with “a proven and simple 4-step process that helps you navigate and influence your customers’ brains” (para. 1). In order to understand how to create and deliver powerful messages to consumers, SalesBrain advises that the neuromarketer and customer relationship should be set up as a doctor patient relationship. For SalesBrain (2014c), “you cannot create an effective message without first unveiling your customers’ pains” (para. 1). In this context, the neuromarketer as doctor must learn how to answer the following questions in order to trigger (i.e. disinhibit) the consumer into a desirable buying response through an evocation of their pain:

1) Source of the pain: Identifying the source of the pain is like taking a pulse at the right vein of a patient. It is the best way to assess the nature of the pain, therefore a first step toward making sure your product or service is designed to bring effective relief!
2) Intensity of the pain: Learn to diagnose whether the pain addressed by your solution is of high or low intensity early in your selling process. Or better, learn to detect and focus on the high intensity pains!
3) Worst consequences: Knowing the source of the pain helps qualify the tension driving the intent to buy, knowing the intensity helps measure the meaning of the tension, identifying the consequences validates whether or not your customer has powerful and compelling reasons to cure the pain. (para. 4)

For advertising message success, SalesBrain (2014a) maintains that “[y]ou need to unveil the unspoken reasons why your customers buy: avoid PAIN. Neuroscience tells us that PAINS or
threats activate the oldest, most primitive area of our brains. How do you capture PAINS from the reptilian brain?” (para. 1). One of their (2014d) “message boosters” centres around triggering affect: “Customers often forget how painful their problems really are. Re-enact their PAIN and make it personal. Strong emotions create a cocktail of hormones in the brain that act as a memory maker and as a decision trigger” (para 4). Disinhibiting the consumer [animal] by triggering pain is a crucial component of the selling process. As the website (2014e) states:

The most primitive part of the human brain is referred to as the “R complex” or the “Reptilian Brain”. Although it controls most life sustaining functions such as breathing, digestion, heart rate, etc., it is remarkably simple in terms of what types of stimuli trigger its attention. Learn about the 6 stimuli that trigger the Reptilian brain, and how you can use these as a special language to influence your customers’ buying decisions. (para. 1)

Here we see that the aim is to “capture” a consumer through exploitation of their pain—cruel and instrumental treatment of human beings for the sake of advertising profit. In this sense, without consideration for the well-being of the consumer, neuromarketing seeks to decode consumer reflexive responses through interpretation of clinical data; design and develop advertising stimuli according to behaviourally and biometrically calibrated strategies; amplify or augment consumer background feelings (e.g., pain); and trigger the targeted consumer niche to reset at a mood of consumption. Referring to the aim of decoding consumers, Lindstrom (2010) sees neuromarketing as: “a tool, like a hammer... It is simply an instrument used to help us decode what we as consumers are already thinking about when confronted with a product or brand” (p. 4). The tool, in this instance, is SalesBrain’s 4-step guide to captivating the reptilian brain.

The SalesBrain example illustrates how neuromarketing seeks to attune consumers, through the evocation of pain, in a manner that forces them into a mode of survival that seeks pain avoidance through rewards, a mood conducive to consumption. In this capacity, the consumer becomes a trigger responsive relation to external forces (e.g., advertising messages) reduced to the metaphor of mind as animality. As mentioned previously, the state of consumer animality can be equated to Dasein’s most primitive way of being-in-the-world: practical understanding at the level of everyday/mindless coping.
This act of captivation, disinhibition, and attunement is enacted, ideally, in the “nanosecond lapse” before the consumer, as a reptilian brain (mind as animality), moves out of mindless and unreflective coping with the world as a cultural media environment (McLuhan, 1964) to a state of conscious awareness, comprising reflective and critical thinking or, more specifically, to the consumer as Dasein, a world-forming entity with the capacity for understanding the as structure of the objects/entities it encounters in the world, and with the agency to resist such acts of manipulation and control.

Neuromarketing seeks to encircle consumers within themselves and trap them in a targeted niche of personalized, unreflective, and uncritical consumption. In such a world, the digital ecosystem is veiled by a spectacle. This illusion feeds a narcissistic advertising assemblage, seeking to mine and exploit the consumer subconscious before regurgitating this data back at us in desirable forms (e.g., goods and services), keeping us happily consuming representations of ourselves into extinction. Here, consumers are driven subliminally by advertising messages calibrated to igniting individual pleasures and pains, triggering consumers to make buying decisions that benefit corporate needs over consumer needs. This shaping, attuning, and manipulating of consumer subjectivities through the multimodal spectacle of advertising conditions individuals into a way of life conducive to perpetuating consumption — how to behave, what to wear, eat, and what do to stand apart from the “uncool connoisseurs” while simultaneously belonging to the “cool fools” crowd (see Mahoney, 2005). All this is achieved through the animalization of consumer thinking and the reduction of the consumer to the state of animality, a discursive process that resonates with the socio-political entailments of the modern anthropological machine.

Neuromarketing and the modern anthropological machine

Such consumer animalization is in line with the socio-political grammar of Agamben’s (2004) anthropological machine which radicalizes Foucault’s notion of biopolitics (i.e. the analysis and governing of individuals on the level of populations). 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 humanizing 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 animalizes the
human rather than humanizing 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” (p. 29). As sociologist Adrian Mackenzie (2008) points out: “This framing provides ways of situating animalization in relation to thinking (as well as in relation to responsibility, ethics, politics, and futurity)” (p. 146).

For Agamben (1998), the separation of “bare life” from political existence has framed the history of Western politics since ancient Greece. In *Homo Sacer*, he claims that the animalization of the human is conducted by a sovereign power. In *The Open: Man and Animal*, he (2004) 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 18th 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 categorizing various groups. Further, 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. Such a line is evidenced in the reduction of the consumer to the metaphor of *mind as animality* in the discursive world of neuromarketing.

A significant entailment of reducing the consumer to the metaphor of *mind as animality* (i.e. constructing the consumer as a black-box-like reptilian brain) is the dehumanization of consumer subjectivities through the animalization of thinking. Such dehumanization can lead to mental representations of particular groups as animals. Animalization of thinking has, in the past, been used to justify moving non-human animals and not-yet-human humans from the protective boundaries of the moral community to instrumentalize them for mistreatment or profit. Psychologists Costello and Hodson (2014) claim that a powerful way of degrading other human beings is to deprive them of the qualities societies and cultures believe separate humans from “lower” animals, a process they also
describe as dehumanization. The authors argue that when individuals or entire groups are identified with non-human animal kinds, (i.e. when they are dehumanized), they are placed beyond the boundary of the moral community which leaves them open to targeted discrimination (see also Goff et al., 2008; Opotow, 1990; Bar-Tal, 1989).

One form of dehumanization, as Chen (2012) claims, comprises the “removal of qualities especially cherished as human; at other times, dehumanising involves the more active making of an object” (p. 43). The second form of dehumanization is transmogrification or transformation which refers to a change in the human being resulting in a grotesque or fantastic form. In this context, “[t]he 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” (p. 44). These effects are in keeping with the imaginative work of the modern anthropological machine as a discursive system.

Because the anthropological machine is always re-inscribing the animal-human difference in the human, the “figures of humanity cannot stabilize” (p. 145). Mackenzie (2008) observes that 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” (p. 149). The language of animality is similar in nature to Chen’s (2012) claims of animacy which, she argues, is a political construct “shaped by what or who counts as human, and what or who does not” (p. 30). What linguists call the animacy hierarchy is a political grammar that conceptually arranges human life, disabled life, animal life, plant life, and forms of inanimate objects in order of priority and value. Chen observes that “[a]nimacy hierarchies have broad ramifications for issues of ecology and environment, since objects, animals, substances and spaces are assigned constrained zones of possibility and agency by extant grammars of animacy” (p. 13).

In the context of neuromarketing, the state of exception is one that can be understood as augmented animality, a zone where the consumer exists as a not-yet-human human, whose animality is amplified by sophisticated technologies of self augmentation (e.g., bio- and neurotechnologies, augmented reality technologies, various multimedia applications, and so forth). In keeping with the mind as animal-machine and mind as reflex-machine metaphors and entailments vis-à-vis our connectivity to the wires and machines of neuromarketing, the consumer becomes a “hybrid of machine and organism” (Haraway, 1991, p. 149). On this
view, the intimate connections between human and machine renders neuromarketing techniques especially potent as a method of augmenting affect and instincts.

It is important to stress once again that neuromarketing agents do not explicitly see and treat consumers as animals *per se*. Instead, they consider consumers more or less as *emerging persons*; they are aware of our agency, of our power to deconstruct their advertising illusion. Their onslaught includes destroying consumer personhood and bypassing the consumer capacity for choice and critical/reflective thinking through decoding, captivating, disinhibiting, and attuning consumers into desirable buying responses via behaviourally calibrated advertising stimuli.

The animalization, objectification, and instrumentalization of consumer consciousness extend beyond the constructs of language. In their deliberate efforts to trigger and condition consumers into buying responses, neuromarketing agents actively seek to disrupt our process of understanding, which results in the subversion of our core democratic values of freedom of intelligence and self-determination. Their goal is to smash through and exploit that inner space where we still have the capacity for freedom of intelligence, violating the sovereignty of our bodies to serve those in positions of economic and political power. Following Marcuse (1964), 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 modern technologies (such as the psycho-social technique of neuromarketing), this private space has been invaded, it has been “whittled down.” In such a one-dimensional consumer existence “mass production and mass distribution” have staked their claim on the “entire individual” (p. 10).

By actively seeking to disrupt and override consumer processes of critical and reflective understanding, and manipulate affect and instincts to reset at moods of consumption, neuromarketing as a psycho-social technique works in opposition to the ideals of a robust democracy. Chen (2013) correctly observes, “above and beyond the possibility of dehumanisation, objectification is often also understood to deprive people of their proper humanist freedoms and rights” (p. 45). As defined by Dewey (1916), democracy is a way of life that comprises “conjoint communicative experiences” (p. 87). Foundational to this way of life is freedom of intelligent judgment: “the basic freedom of mind and of whatever degree of freedom of action and experiences is necessary to produce freedom of intelligence” (p. 17). For Dewey (1988), “[e]verything 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” (p. 227). As he also points out, “legal guarantees of the civil liberties of free belief, free expression, [and] free assembly are of little avail if in daily life freedom of communication, the give and take of ideas, facts, experiences, is choked by mutual suspicions, by abuse, by fear, and hatred. These things destroy the essential condition of the democratic way of living more effectually than open coercion” (p. 228). Neuromarketing constitutes an affront to consumers in that it seeks to disrupt and override our freedom of intelligence to create and recreate our selves. In this sense, it violates our freedom to choose.

Summary

At the crossroads of neuroscience and marketing lurks a chimera—a hybrid construction of hardware & non-hardware existing in a state of exception. Through wiring technology into organism, a mechanics of stone (worldless) and world-forming potential (rich-in-world) gives birth to a thing enchained, an augmented animal ready-to-use and constrained primordially by its poor in world triggers with no escaping its captivation in-itself. Using Heideggerian structures of animality, what follows are the motives of neuromarketing:

1) to smash into and capture (captivate) the consumer (Dasein/person as world-forming) through codebreaking;
2) to trigger (disinhibit) the consumer’s instinctive responses to advertising stimuli (see Nussbaum on integrity and objectification, 1995);
3) to attune and condition (manipulate affect through pain and evocation of deep metaphors/symbols as structures for sense-making, for example);
4) to animalize thinking.

The most ambitious aim of neuromarketing is to “unlock the buying secrets” buried in the subconscious mind of the consumer. As I have shown in my analysis, this aim is grounded on a depiction of the consumer as reducible to the metaphor of mind as animality: a thing for scientific study and a tool to use for instrumental ends. The consumer mind as animality is to be pried open like a black box and interpreted by an objective knower (i.e. the neuromarketer) who offers an interpretation presented as truth. As an augmented animal, the world-forming potential of the consumer is erased and replaced with the consumer mind as an animal-machine, a poor in world thing with no capacity to recognize and understand that it has been captivated, multisensorially, by the digital spectacle of neuromarketing/advertising psycho-
social techniques. The consumer, after succumbing to neuromarketing brain focus group magic, reads like the story of a ready-to-use tool existing for the benefit of advertising ends.

Neuromarketing technique is in line with aspects of the socio-political grammar of the anthropological machine. It reduces consumers to instinct driven animals to be triggered to consume products they don’t really know they want, thereby using consumer brains/minds/bodies for marketing and advertising purposes, comparable to the kind of mind slavery Smythe (1981) explores in the context of the consciousness industry. A pressing ethical challenge raised here, then, is the issue of autonomy. The technique of neuromarketing, as Murphy et al. (2008) would claim, is “a ‘soft’ attack on autonomy” (p. 297).

This chapter has shown how neuromarketing departs from strategies of traditional market research practices that, while appealing to affect using behavioural psychology, did not possess the technological capacity to probe deeply into the consumer brain/mind and body. As technologies have developed, a mix of neurotechnologies and online digital tools for creating immersive messages emerged. Bio- and neurotechnologies traditionally used for health purposes were suddenly giving advertisers unregulated access to consumer clinical data disaggregated according to psychological & physiological responses to advertising stimuli. These new technologies are handing advertising the informational power required to disrupt internal processes of meaning-making and trigger preferred buying responses in the consumer.

Also highlighted in this chapter is how neuromarketing presents itself as a form of communicative surveillance (and dataveillance) in that consumers have become biological terrain to be monitored, mined, and exploited as bodies of data. The information obtained from brain focus groups is not only used to calibrate advertising stimuli according to bio- and neurological responses, but can also be used for a range of data profiling activities, such as identification, classification, and representation of social entities in the form of automated data profiles. When examined closely, the process of neuromarketing emerges as a technique of dehumanization and objectification, depriving consumers of basic humanist freedoms and rights, that is, of a democratic way of life that hinges on freedom of intelligent judgment.

Overall, neuromarketing is an example of the inadequacies of the mechanization of the mind hypothesis—the idea that the brain rules in all things human. The assumption made in their “scientific study” of the brain is that the brain works by cause and effect and is subject to
the sort of technical controls that are effective in relation to environmental triggers. These reductionist ideas assume that simple cause and effect relations can explain everything we need to know about human mental processes and embodied cognition, the ways through which we make meaning in and from the world. The majority of neuromarketing proponents, exemplified by the text/talk of SalesBrain, assume that the consumer is situated in an understandable world (or targeted niche) without offering an adequate explanation of the structures of the consumer’s understanding and/or world.

A path to critiquing the industry has been to follow Heidegger’s schema in *Fundamental Concepts of Metaphysics*. His tripartite division of “no world” (the inanimate and mechanical realm), “poor in world” (the animal realm), and “rich in world” (the human realm), while simplistic and at times inaccurate, is useful heuristically as a framework for analysis, allowing us to develop the argument that neuromarketing amounts to a reduction of the consumer (in her targeted niche) to a set of relational triggers to external controls in the environment as a social world (i.e. in the cultural media environment). Heidegger’s descriptions of animality and world help us make some sense of the relations between consumer and advertising vis-à-vis neuromarketing. The next chapter ends my project with conclusions regarding how neuromarketing, as a public pedagogy of communicative surveillance, constructs the consumer subject. I will consider the debates around ethics and privacy, and their implications. Using a philosophical frame, I will also highlight how the technique of neuromarketing violates consumer freedoms through the animalization of thinking (*mind as animality*). I will close the chapter with my suggestions for further research.
CHAPTER SEVEN
Neuromarketing as a Public Pedagogy:
Conclusions and Implications

We have taken everything from the other side. Yet the other side has given us nothing except to sway us in its direction through a thousand twists, except lure us, seduce us, and imprison us by ten thousand devices, by a hundred thousand tricks. To take also means on several levels being taken. It is not enough to try and disengage ourselves by accumulating proclamations and denials … we must focus on that zone of hidden fluctuation where the people can be found … it is here that their souls are crystallized and their perception and respiration transfigured.

-- Frantz Fanon cxiii

The future is now
In societies dominated by modern conditions of production, as Debord (1967) observed, life is presented as an accumulation of spectacles: “Everything that was directly lived has moved away into a representation” (p. 1). Debord was troubled by the power that governments and the media held over the population in day-to-day life. Part of this hold was - and still is - managed through advertising and mass production, creating a feedback loop of cultures of consumption. In a network society, this force of consciousness moulding gains persuasive power by virtue of neuro-techniques and augmented reality technologies (e.g., wearable technologies) and their potential to manipulate/trigger consumer responses to advertising messages. Building on Debord’s idea of the “society of the spectacle,” Kahn and Kellner (2007) argue that in a digital environment, media culture circulates “sophisticated spectacles” to capture audiences and increase power and profit. In this capacity, the emancipatory promise of the digital network becomes a myth that renders invisible the inequalities of “a globally networked economy driven by corporate forces of science, technology and a new Internet technocultural complex” (p. 431). Here, the push of our network society is doing away with traditional modes of social organization, culture, and politics, and collapsing these structures into new digital forms to create a highly manipulated domain of “technocapitalism.”
By virtue of its role as a tool for advertising, neuromarketing also becomes foundational to capitalism which no longer remains simply a mode of production but also becomes a producer of consumer worlds. Through the manufacture and revealing of worlds, advertising and neuromarketing agents hold the technological magic to manipulate consumer values and decision-making processes. This is achieved by mobilizing affect and instincts, often creating the consumer prior to creating the product as Palmás (2011) and Lazzarato (2004) would argue. The aim here is to establish certain values as pillars for norms and codes that govern consumer and social worlds, values that Key (1973) would claim are imbued into the consumer through advertising stimuli directed at unconscious perception, seeking to “manipulate, manage, or control human behaviour, but of which humans are consciously unaware” (p. 3). As I highlighted in Chapter One, a critical and disturbing implication of such manipulation is that the mass media have the capacity to change the value norms of the individuals under attack, or change the “position (anchor point) from which an individual evaluates the world” (p. 29).

Neuromarketing is an extension of traditional market research, incorporating new technologies that have the potential to monitor consumer responses to advertising stimuli at a level of intrusion that was not possible in the past. These measurements are then interpreted and used to inform advertising messages that use subliminal tactics, seeking to engage the consumer multisensorially, and trigger affect and instincts at a level beneath the threshold of conscious awareness—a subliminal hit on the consumer. As Wilson et al. (2008) conclude, 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” (p. 403; emphasis added).

Using bio- and neurotechnologies, neuromarketing seeks to “better understand consumer reactions and create messages that result in the desired consumer response” (emailWire, 2009, para. 3). As Hipperson (2012) points out, “[c]onsumers 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” (2012, para. 2). Voorhees et al. (2012) claim that “[a]t its core, neuromarketing involves an effort to influence consumer decision-making at an unconscious level” (p. 8). Andrejevic (2012) emphasizes that
neuromarketers seek 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 fMRI scans provide ‘direct’ access to consumers’ brains, they can also provide insight regarding how best to directly influence these brains, and thus their owners” (p. 201).

In the intersection of targeted consumer niches and the larger social world of neuromarketing (or cultural media environment), bio- and neurotechnologies, as well as other technologies of self-augmentation, are at the heart of blurring boundaries between human and machine. In this environment, the consumer becomes a plug-n-play augmented animal, techno-ready to be attuned to advertisements that captivate her in her targeted niche, seeking to disinhibit her into a desired buying mode. A danger of the technique of neuromarketing is its intangibility, the capacity to deploy a disinhibiting stimulus that seeks a path through the consumer’s critical defenses and into her most primordial inner space, the reptile that lurks deep inside.

Similar to the self-withdrawal of the thing that disinhibits Heidegger’s (1995) animal, the aim of neuromarketing is to sneak through the nanosecond lapse before the consumer can move from instinct-driven existence to critical and reflective attentiveness to the world around her, unable to detect what is disinhibiting her as such. To highlight the danger of this technique of coercion, I draw on Haraway (1991) who writes that “[o]ur best machines are made of sunshine; they are all light and clean because they are nothing but signals, electromagnetic waves, a section of a spectrum … eminently portable, mobile … hard to see politically as materially,” effects that are “about consciousness” (p. 153).

The magic trick of neuromarketing is the triggering of a feedback loop of instinctive action, manipulating consumer mind as animality to enact buying responses conducive to maximizing profits. This danger, however, is an illusory construction, a false consciousness created by neuromarketing agents and grounded on general psychological laws to reveal a fabricated “objective truth.” Key’s (1989) observations are relevant here. Where “[t]ruths are manufactured to order, audience-perceived realities are manipulated to appear as objective realities” (p. 7). Neuromarketers as media technicians must hide these illusions and fantasies from consumers who are never “permitted backstage” in case these illusions are destroyed. After all, “media illusions are worth a great deal of money” (p. 7). It is an unveiling of these illusions that my dissertation has sought to undertake.
Debates about neuromarketing ethics and privacy

There are ongoing debates about the ethics of neuromarketing, a field that has thus far had licence to self-regulate its market research practice. Donald Kennedy, editor-in-chief of *Science*, expresses concern that brain imaging will be used in ways that infringe on personal privacy to a “totally unacceptable degree” (*The Lancet Neurology*, 2004, p. 71). He argues that legislation may be required to regulate the commercial use of such technology, as currently there is no legislation that governs the neuromarketing industry.\textsuperscript{cxiv}

In September 2010, the Advertising Research Foundation, a global industry collective, announced their NeuroStandards Collaboration Project to review research from associated companies with aims to establish industry standards for neuromarketing (Singer, 2010). The ongoing project is sponsored by various corporations holding interests in the development of neuromarketing methods which would give advertisers the opportunity to discover “new, even better ways to improve marketing messages” (Stipp & Woodard, 2011, p. 5).

Upon review of the white paper, *Uncovering Emotion: Using Neuromarketing to Increase Ad Effectiveness*, which reports on the first phase of the NeuroStandards project conducted in 2010 and early 2011, there is no mention of consumer privacy rights. Instead of focusing on standards of transparency and responsibility relevant to substantive consumer rights, the project focuses on creating more effective advertising strategies through improvement of methods that can lead to a better understanding of consumer emotions and the subconscious. As the authors Stipp and Woodard (2011) state, “[t]he ability to evoke an emotional response from an ad is one of the most prized arrows in the creative department’s quiver” (p. 5). Participation in the NeuroStandards project is voluntary. Another 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 organizations (NMSBA, 2014). The Code accepts the principles of the ICC/ESOMAR International Code on Market and Social Research (2008).

In the Canadian context, La Commission De L’éthique De La Science Et De La Technologie (Commission on the Ethics of Science and Technology) released a report in 2007 on the relation between neuromarketing and youth entitled *Neuromarketing et Publicité: Les Préoccupations Ethiques Soulevées Par Les Jeunes* (*Neuromarketing and Advertising: Ethical Concerns Raised By Youth*). The citizen consultation was guided by the following
questions: Will it be possible one day to manipulate knowledge more efficiently so that a consumer buys one product over another? Will it be possible to encourage people to make choices they would not have made if they had not seen a particular advertisement? Could neuromarketing be used to create messages that influence a citizen to choose unconsciously in voting for a political party or candidate? Is this technique an obstacle to freedom of choice, autonomy, and democracy? (Gouvernement du Québec, 2007).

Although individuals critiquing neuromarketing tend to be in agreement that current brain imaging technologies will not pose a serious threat to privacy until scanning methods are able to obtain more accurate and useful information about individual subjects, they observe correctly that there are social and ethical implications, and enormous practical consequences on the horizon, once neuromarketing methods have evolved far enough to overcome these technological limitations. Jeff Chester, the executive director of the Center for Digital Democracy, claims that the government has not historically constrained advertising aimed at adult populations because adults have the intellectual capacity to distinguish between truth and untruth. He contends that if advertising is “now purposely designed to bypass those rational defenses, then the traditional legal defenses protecting advertising speech in the marketplace have to be questioned” (in Singer, 2010). As my dissertation has evidenced, however, neuromarketing is already having an unconscious impact on individuals.

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 will lead to consumer deception and the wearing away of privacy rights (e.g., intrusions into individual thought processes and data protection issues), including ethical implications related to privacy, self, agency, and free will (e.g., Ratzek, 2011; Ariely & Berns, 2010; Fisher et al., 2010; Thompson, 2005; The Economist, 2004; Singer, 2004; Lovel, 2003). Concerned scholars, including ethicists and neuroscientists, argue that current brain imaging technology can already, in certain cases, invade the privacy of an individual’s mind. For instance, a neuroscientist from Western University, Ruth Lanius, maintains that, in theory, the data obtained through brain imaging technologies could be used to manipulate consumer behaviour. “Of course you can influence the brain,” she claims. Noting that it is interesting how the brain can be manipulated “at an implicit level, to get you more interested in something,” she is emphatic that the technique “definitely has ethical
implications that need to be reviewed and discussed … and that people need to be made aware of” (Crowe, 2013, paras. 22-23).

While “thought-stealing technology” is still out of reach, Jack Gallant, a neuroscientist at the University of California, Berkeley, expresses serious concerns about the implications such technology 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” (in Miller, 2014).

Confidence in developing technologies capable of achieving such feats is echoed in the military arena where, as Tucker (2014a) points out, a new brain hacking technique gives three-dimensional visualization that encompasses the whole brain, allowing researchers to: 1) see in greater detail how parts of the brain interact on a cellular level, and 2) obtain a more comprehensive understanding of those interactions across the entire brain. As I mentioned previously, according to Justin Sanchez, program manager for Neuro Function, Activity, Structure, and Technology (NeuroFAST), the group funding the research: “What we’re saying here today is that we can develop new technology that changes how we observe and interact with the circuits of the brain” (para. 4). NeuroFAST is a program at the Defense Advanced Research Projects Agency (DARPA). Given such technological developments, if neuromarketing possessed the tools to decode, hack into, and manipulate the consumer brain/mind complex, would it? The answer from my research seems to be yes.

Writing for the Advertising Age, Crain (2013) positions neuromarketing as an “Orwellian action” that has the potential to “inhibit human beings’ conscious choosing” (para. 15). Ruskin, of Commercial Alert, maintains that neuromarketing studies are a threat to society in that they are “probing the human psyche for the purpose of influencing it” (Blakeslee, 2004, p. 34). Ruskin asks a relevant question: “What if they then could trigger this neural activity by various means, so as to modify our behaviour to serve their own ends?”

The methods and findings of neuroscience applied to market research, according to Wilson et al. (2008), hold the potential for marketing practices to “threaten consumers’ abilities to follow preferences and dictates according to free will” (p. 401). They reason: “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” (p. 401).
Furthermore, neuroimaging allows researchers to “delineate which stimuli trigger excitement, trust, pleasure, i.e. the emotions that lead people to buy. To the extent these stimuli are unrelated to product characteristics, the result is an attempt to manipulate the consumer’s purchase decision” (p. 402).

Brain scans conducted during neuromarketing assessments may also reveal incidental clinical findings, such as brain tumours (Illes, 2007), or information concerning personality traits, emotions, memories, and sexual preferences (Eaton & Illes, 2007) that individuals may want to keep confidential. As a caveat about the general challenges information managers face when keeping data sets anonymous, legal scholar Paul Ohm (2010) writes: “No matter what the data administrator does to anonymize the data, an adversary with the right outside information can use the data’s residual utility to reveal other information” (p. 1752). Eaton and Illes (2007) claim that cognitive neurotechnologies, “technologies that enable the monitoring and/or modulation of the function of the brain” (p. 393), share many of the ethical and social issues associated with the commercial development of other medical diagnostics and therapeutics. These issues include brain privacy and confidentiality, as well as conflicts of interest – i.e. corporations motivated by self-interest, responsible conduct of research, product safety, integrity of published data, and fair advertising balance between benefits and risks. By virtue of the use of neurotechnologies in neuromarketing for non-medical purposes, these ethical and social issues extend to neuromarketing.

In the context of consumer surveillance, neuromarketing techniques hold the potential to target marketing to specific consumer types, and information gleaned from brain mapping might be used to exploit neurological traits identified in certain demographics (Ariely & Berns, 2010), thereby engaging in a process of social sorting. Social sorting refers to 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” (Lyon, 2003, p. 20). In light of dataveillance, neuromarketing has the capacity to monitor, mine, and process data to support a range of profiling activities. Identification, classification, and representation of individuals as automated data profiles can constrain consumer identities to targeted niches based on “objective” acts of technological prediction.

Also relevant is Gandy’s (2012) observation on the process of “statistical discrimination” where a computerized analysis of data is used as intelligence to inform
organizational decision-making. In the case of neuromarketing, the decision-making is fixed on probing the consumer’s “subconscious” for behavioural data that can then be used to develop and implement the right advertising message for that consumer - individual and/or demographic. On this view, the overall effect of neuromarketing as [communicative] consumer surveillance is that it promises rewards and benefits to certain individuals and/or demographics and excludes those who do not conform to codes and expectation. Such “rational discrimination” carried out in corporate environments results in negative outcomes for some individuals and groups. As noted in Chapter Three, “[t]he 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” (p. 176).

Neuromarketing is also an example of what Bauman would call “adiaphorization” in surveillance, 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 access cards) are, as Lyon would say, “sucked into databases to be processed, analysed, concatenated with other data, then spat out again as a ‘data double’ … The piecemeal data double tends to be trusted more than the person, who prefers to tell their own tale” (Bauman & Lyon, 2013, p. 8). Like dataveillance, neuromarketing technique sorts individuals into groups according to behavioural and physiological responses, amongst other categories and classifications. Bauman and Lyon’s comments on the status of the consumer highlights the role of the consumer in such a surveillance 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” (p. 33). As Bauman observes, “[w]hen another human is treated along the lines of a commodity good selected according to colour, size, and number of add-ups, adiaphorization is in full swing and at its most devastating” (p. 137). Through advances in bio- and neurotechnologies, the consumer in this context becomes reified as an instrumental thing to be stirred up into desired responses beneficial for driving consumption.
Neuromarketing as a threat to freedom and conceptions of democracy

In this dissertation I have conceived of neuromarketing as a public pedagogy. The term “public pedagogy” can be understood in two senses: as a form of critical-democratic educative practice and in an ironic capacity. First, it refers to sites of informal education extending beyond formal school settings (Giroux, 2011, 2004; Sandlin et al., 2011; Ellsworth, 2005). For instance, in her seminal work *Places of Learning: Media, Architecture, Pedagogy*, Elizabeth Ellsworth (2005) conceptualizes the notions of pedagogy and learning to comprise the various “anomalous” spaces where learning might occur. The term public pedagogy has been used in educational analyses to refer to a subgenre of critical pedagogy focusing on “various forms, processes, and sites of education and learning occurring beyond formal schooling … distinct from hidden and explicit curricula operating within and through school sites” (Sandlin et al., 2011, pp. 338-339).

Sandlin et al. (2011) identify five categories of public pedagogy where pedagogical analysis explores the various ways individuals might learn in settings beyond traditional educational contexts: 1) citizenship within and beyond schools; 2) popular culture and everyday life; 3) informal institutions and public spaces; 4) dominant cultural discourses; and 5) public intellectualism and social activism (p. 340). A growing body of literature examines public pedagogy as an act that incorporates possibilities of digital resistance to dominant hegemonies (e.g., Freishtat & Sandlin, 2010; Kellner & Kim, 2010).

Such a conception of public pedagogy works toward the ideals of critical democratic education. For instance, Freire (1988, 1972) considers critical democratic education to be a liberatory process. He maintains that a critical democratic way of life is necessary to guide any successful educational practice intended to enable human flourishing and freedom. Freire’s conception of education comprises a humanism that relies on a cultural and historicist conception of freedom, insisting that human beings “should not be the mere animals that oppressors and oppressive systems try to turn them into” (Glass, 2001, p. 17). Freire (1972) claims that a critical democratic education, and democratic society more generally, demands cultural freedom, including the ability to choose values that might go against social norms. Similar to Dewey’s (1916) views on democracy as “primarily a mode of associated living,” Freire (1972) understands democracy and critical democratic education as events that demand the full participation of all of its members in public life.
The way I am using the notion of public pedagogy in this dissertation, however, is in opposition to the critical democratic ideal. As I indicated in my Introduction, I use the concept of pedagogy ironically as a rhetorical strategy in line with Haraway’s (1991) thinking where “irony is about contradictions that do not resolve into larger wholes … about the tension of holding incompatible things together because both or all are necessary and true” (p. 149). While the mode of public pedagogy neuromarketing represents also exists in an informal space for learning (i.e. in a cultural media environment), its goals are driven by market discourse as educational theorist Henry Giroux (2004) might claim. In this context, public pedagogy signifies “a powerful ensemble of ideological and institutional forces whose aim is to produce competitive, self-interested individuals vying for their own material and ideological gain” (p. 134). On these new sites of public pedagogy, Giroux (20011) writes:

Such sites operate within a wide variety of social institutions and formats, including sports and entertainment media, cable television networks, churches, and channels of elite and popular culture such as advertising. Profound transformations have taken place in the public space, producing new sites of pedagogy marked by a distinctive confluence of new digital and media technologies, growing concentrations of corporate power, and unparalleled meaning-producing capacities. (p. 135)

This method of teaching and learning absorbs the “democratic impulses and practices” of our civil society into “narrow economic relations.” On this view, public pedagogy becomes “an all-encompassing cultural horizon for producing market identities, values, and practices” (p. 134).

Understood in this light, neuromarketing as a public pedagogy does not aim at what educational philosophers such as Freire and Dewey would consider the goals of a critical democratic education, goals that presuppose and maintain the fundamental freedoms of individuals as critical and reflective participants in the social realm, in civil society. Instead, neuromarketing as a public pedagogy works as a technique of conditioning, seeking to reduce consumers to a mode of animality, into an unreflective and uncritical way of being-in-the-world, a consumerist existence stripped of agency and instrumental to the needs of the advertising industry as foundational to the machinery of late capitalism. Following Giroux’s (2011) conception, such a pedagogy “with its narrow and imposed schemes of classification
and limited modes of classification, uses the educational force of the culture to negate the basic conditions for critical agency” (p. 134).

If we consider Habermas’ (1984) covenant of undistorted communication, we can begin to grasp how neuromarketing as public pedagogy aims at coercion, how it chips away at our freedoms by conditioning us to behave in a particular way in the world, manipulating us into enacting dominant values in the form of uncritical and unreflective consumption as a way of life. For Habermas (1984), in an ideal speech situation within a democratic society, participants would find freedom through “undistorted communication,” which means communication without compulsion (without coercion, without using advertising force, for example). When technology as text is created deliberately to persuade rather than inform, as is the case with neuromarketing, the Habermasian covenant of trust in the communicative process is compromised.

By disrupting communication, by targeting our reptilian brain - the “true decision-maker” (Salesbrain, 2014e) - and in seeking to bypass critical reflection and awareness, neuromarketing (as communicative surveillance) works in stealthy 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” (Dewey, 1916, p. 17). As I mentioned previously, Dewey uses the term “intelligence” to signify critical and reflective thought. Here, 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 (1958) refers to as “transactional realism.” In this capacity, 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.

To elaborate on the idea of disruption of our freedom to choose, we can also draw on Sartre (1956) 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. 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”
(Detmer, 2005, p. 81). 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, etc. In this capacity, I am consciously free because I can always choose between yes or no in my mind. I am, as it were, ontologically free.

While the specific facticities 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. “Even though we may be deprived of a wide range of unspecified possibilities” as philosopher Gail Linsenbard (1999) reminds us, “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” (p. 148). 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” (p. 155).

Freedom is a primary social value. To be free to choose is an aspect of what makes human beings human. As Linsenbard (1999) 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” (p. 154). So what is neuromarketing doing to our freedom to remake ourselves, our freedom of intelligence, our freedom to choose? This tension has led to central questions guiding my project: How is neuromarketing shaping our subjectivities? How is neuromarketing disrupting our processes of meaning-making? If neuromarketing is scrambling our thinking, can we be free at all?

**Mind slavery: The consumer as an augmented animal**

When we read neuromarketing technique as text from a critical perspective, the dominant narrative that emerges is one that places the consumer as a resource to tap and exploit as the “newest business frontier: the human brain” (Pradeep, 2010). Within neuromarketing as a text-world, consumers are revealed as energy resources (i.e. exploitable terrain), both present-at-hand entities to study and ready-to-hand tools to use from nature. Heidegger (1977) would use the term standing reserve to illustrate the instrumentality that results from enframing Dasein
[the consumer] in this manner. In the mechanization and industrialization of everyday life, world (reality) becomes technologically enframed and denies the consumer access to “a more original revealing” of the world, or a more poetic knowing of the world and self. Technological enframing in neuromarketing reveals the consumer as a thing to be used and exploited. Because of the human machine interface in neuromarketing practice, the consumer also becomes technological, a quantified self that can be triggered by an external stimulus and attuned to a mood of consumption for business profits.

As I explained in Chapter Six, the neuromarketing aim to attune the consumer is illustrated by Zaltman’s Google (2001) patent for the Zaltman Metaphor Elicitation Technique (ZMET). For ZMET to work, it is supposed to be accompanied by neuroimaging tools; hence the patent Neuroimaging as a Marketing Tool (Google, 2000). A key assumption of these patents is that through technology, the neuromarketer can come to know the consumer better than the consumer could ever know herself, illustrating a common theme in the text/talk of neuromarketing where the brain focus group leader knows the subject better than the subject knows herself. The philosophical question that arises here is this: Is it possible for a third-party to know the inner workings of my mind better than I know it myself?

ZMET relies on decoding how consumer subconscious processes can be stirred to action through persuasive rhetorical devices such as metaphors, symbols, and storytelling, to name a few. Although the introspective questioning phase of the technique relies on reflective thinking on the part of the consumer (e.g., explaining why flowers makes x think of y; why the smell of chocolate makes x do y), the advertising message informed by the data emerging from this psycho-social practice aims at the “unreflective” reptilian brain. The goal here is consumer self-capture, resonating with Heidegger’s (1995) understanding of captivation as the essence of animality, where the consumer can only ever uncritically behave toward the world.

On this view, behaviour is “an intrinsic retention and intrinsic absorption, although no reflection is involved” (p. 238). The animal’s absorption in itself is captivation. Because of the animal’s absorption in itself and its way of life driven by primordial instincts, it always remains captivated within its own distinct perceptual universe, lacking the ability to interpret and articulate the implicit meanings of its own existence and the existence of other entities. This theme of captivation is in line with Bauman’s conception of liquid modern consumers,
who “egged on by electronic devices, tend to be turned in on themselves as pleasure-seeking individuals” (Bauman & Lyon, 2013, p. 127).

Furthermore, the animal’s instinctual activity can be affected by things that bring its instinctual relatedness into play or by things that have the power to disinhibit or disrupt its behaviour (such as an advertising stimulus in the context of neuromarketing). The self-withdrawal of the thing that disinhibits “corresponds to the essential inability to attend to it which is involved in behaviour, that is, the inability to attend to that which disinhibits as something objectively present at hand” (Heidegger, 1995 p. 256). In other words, the animal can never grasp what it is that disinhibits it as such. Applied to neuromarketing, the possibility of grasping something as something is not possible for the consumer—identifying and understanding the subliminal tactics deployed in the consumer’s targeted niche is withheld from the consumer. Because of this inability to understand, interpret, and grasp the as structure, the consumer becomes comparable to Heidegger’s animal that he claims is unable to disclose the “undisconcealed as undisconcealed,” thus becoming poor in world.

Heidegger (1995) claims that it is because the animal’s specific way of being is behaviour and because the thing that disinhibits corresponds to this behaviour that the animal is able to be affected by stimuli: “[T]he ability to be stimulated, or to be aroused (irritability), has been identified as the distinctive character of ‘living substance’.” Disinhibition brings a fundamental disruption into the essence of the animal. Reified to quantifiable thingness through the animalization of thinking, neuromarketing understands the consumer as having the capacity to be manipulated, to have her subjective/phenomenal world, her niche, disinhibited by an external source that she, trapped in a fundamental moment of animality, will never be able to identify let alone understand as the manipulator of her subliminal strings.

On this conception, consumers in their animality are bounded by an encircling ring that holds meaning relevant to their species-specific capacity and allows them only the possibility to interact with the external environment based on their nature (“instinctual driveness”). This idea maps onto Pariser’s (2011) depiction of the filter bubble: a sphere of personalization filters that amplify our desire for familiar things and continuously indoctrinate us with our own ideas. In this sense, our socio-cognitive terrain, the space where we ought to be free to make and remake our selves, comes under attack and constrained to a particular way of life, a life of manufactured consumption.
With the ever-increasing development in brain-human interfaces, and brain-mapping technology more generally, what occurs in neuromarketing and advertising in a larger context can be understood as a form of mind slavery (Smythe, 1981) made all the more potent given its intimate connectivity to the consumer. The capacity for new technologies to attune consumers to particular moods, for instance, is illustrated further by research conducted on emotional contagion where a Facebook study found that “longer-lasting moods (e.g., depression, happiness) can be transferred through [social] networks as well” (Kramer et al., 2014, para. 1). As I claimed in Chapter Six, these advances in bio, neuro, and augmented reality technologies give new meaning to Agamben’s (2004) 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” (p. 62). In the case of neuromarketing, the consumer becomes an augmented animal, simultaneously turned in to herself and captivated within the subjective niche of her phenomenal world, and drawn outside of herself by the advertising spectacle she is connected to as part of the holistic of a digital ecosystem.

Neuromarketing sees our emerging personhood as a threat, and thus seeks ways to animalize us in the Heideggerian (1995) sense of the term, rendering us unaware of the degree to which neuromarketers are undermining our own agency within the communicative surveillance setting. By smashing through that “nanosecond lapse before thinking is translated into words” (Lindstrom, 2010, p. 22), their ultimate trick is to activate the metaphorical buy button by appealing to the reptilian brain, the part of us that can be understood in light of Heidegger’s characterization of the basic form of coping in the world as unreflective, and easily taken by an external stimulus that connects to and triggers our most primitive instincts. Reduced to animality, consumers remain unable to determine whether or not they are being manipulated by external entities at all.

With digital tools to spin consumer niches and social worlds, neuromarketing as a form of public pedagogy manufactures a particular kind of intersubjectivity. These marketing worldweavers seek to awaken our deepest desires, bypassing hermeneutic stages of critical reflection and interpretation, and deploying a custom-designed stimulus into the subconscious dimensions of our subjective worlds to trigger us to “buy!” Neuromarketing uses brain-imaging and other biometric measurements to decode the consumer’s subconscious and reveal what the consumer really wants. The aim is to then deliver personalized advertising messages
that embed meaningful symbols, metaphors, and somatic triggers to elicit a buying response. Here, consumers are constructed and interpreted as brain images and particular brain types, and reduced further to kinds of instinctive/affective responses to specially-crafted external stimuli.

**Reductionism**

The world of neuromarketing discloses a data image of the consumer, a reduction to *mind as animality*, a *thing* that is always already captivated by its own instincts and open to being triggered by an external stimulus. The key difference between traditional forms of marketing and neuromarketing lies in what digital neuromarketing technologies can do in terms of manipulating the consumer mind, including bypassing consumer reflection and constructing the consumer as an *animal* via the *animalization of thinking* (see Mackenzie, 2008).

Staying with Heidegger’s (1995) tripartite metaphysical thesis, in light of new technologies, consumer construction can be viewed as both a reduction *and* an augmentation to animality with a fundamental and inescapable essence of *captivation*. As I have argued, the theme of animality is recurrent in the text/talk of neuromarketing, depicting the consumer subject 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* (Edwards, 1996). 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 mechanization of the mind hypothesis that filters into the world of neuromarketing from the larger narrative of cognitive science.

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. 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 the *mind as reflex-machine* places the neuromarketer’s focus on how consumer behaviour is “learned (built up from simple
components) rather than toward the structure of (complex) established behaviour patterns” (Edwards, 1996, p. 163). Situated at the inanimate/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 not like the poor in world animal and not like Dasein’s world-forming potential. Worldlessness refers to not having access to beings; a characterization of having a world is the accessibility of beings.

The mind as animal-machine metaphor transforms into the new mind as animality metaphor and compares human beings to behaviourist experiments. Individuals writing on neuromarketing have drawn attention to its potential for training consumers into behaving like Pavlov’s dogs (Crain, 2013; Reid, 2005). The Pavlovian example, as Edwards (1996) 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 (p. 162).” As I noted in Chapter Three, 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, smell, etc) and the mental process of associating words (e.g., “uncool connoisseurs”) with their meanings. As a public pedagogy and a technique of communicative surveillance, neuromarketing seeks to condition us into enacting desirable buying responses, violating our freedom to choose.

**Directions for further research**

The overall aim of my project has been to inquire into and illuminate the construction and function of the consumer in the intersection of market research and neuroscience. The question that has driven my thesis is whether and how neuro-marketing effectively reduces human beings’ world-forming potential to reflexive animal relations, to triggers in their niche within which they are conditioned by advertising messages to make desired consumer responses. Neuromarketing makes at least two significant moves in its construction of the consumer: 1) it reduces the subject [consumer] to brain as buy button—a machine where actions can be changed, erased, or replaced; and 2) it reduces the subject to mind as animality, constructing the subject as a set of reflexive trigger relations to the environment acting in response to instinctive habits. By seeking to trigger consumers into desirable responses,
neuromarketing intends to disrupt and override the consumer’s process of understanding, and coerce the consumer into behaviours that are instrumental to the values of a world that turns on consumption.

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 even 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 (Fisher et al., 2011). With increasing partnerships between private interests and public research institutions, public awareness and participation in the development of legislation that regulates such activities is an urgent matter. It is of great importance, then, for policy makers and critical scholars to monitor neuromarketing as an emergent branch of consumer surveillance that holds serious socio-political and environmental implications.

Given the scope of my project, I explored a small facet of the neuromarketing program, namely, the general construction of the consumer and the ethical implications that arise from the reduction of the consumer to mind as animality. In terms of consumer surveillance and the idea of DIY surveillance, yet along the theme of neuromarketing as a public pedagogy, areas for future study include the following:

1) A close analysis of neuromarketing from a political economy of communication stance can show how values are constructed in the neuromarketing industry and used to support dominant ideological frameworks. As sociologists Murdock and Golding (1973) claim, an important task of a political economic theory is to explicate how ideology is produced by analyzing the “general and systematic constraints” of the mass media and their production of culture as a commodity (p. 223). To uncover the power relations in late capitalism and the foundational role that advertising and market research play in the perpetuation of these power relations “demands an analysis of the means by which these relations are legitimated” (p. 232). McChesney (2000) highlights two primary dimensions in the political economy of communication that are relevant for an analysis of neuromarketing, including a focus on class and social relations:

First, it addresses the nature of the relationship between media and communication systems on the one hand and the broader social structure of
society. In other words, it examines how media and communication systems and content reinforce, challenge, or influence existing class and social relations. It does this with a particular interest in how economic factors influence politics and social relations. Second, the political economy of communication looks specifically at how ownership, support mechanisms (e.g. advertising), and government policies influence media behavior and content. This line of inquiry emphasizes structural factors and the labor process in the production, distribution and consumption of communication. (p. 109)

Here, new technologies (such as neuromarketing technique) can act as instruments of production for their system of political economy, while also acting as meaning makers. Questions that arise in the context of such an approach to neuromarketing include: What are the implications of neuromarketing for social, economic, and political power, and how do these implications come to bear on participatory democracy? How is technological innovation in advertising being structured? By whom and for whom are these advances being negotiated? What are the socio-political and economic consequences of such negotiations? Following Leslie Regan Shade’s (2011) work on digital media policy issues from a feminist stance may shine light on the gendered dimensions of neuromarketing and its relation to social justice. What kinds of questions, Shade might wonder, would a “curious feminist” ask about digital policy issues and their role in media reform regarding neuromarketing practice? Specifically, how can we make media policy issues feminist issues? What are effective tactics and messaging? (p. 125).

2) Close examinations of how neuromarketing as consumer surveillance classifies and targets individuals according to race, ethnicity, gender, and class, and how this relates to issues of social justice are also important research areas to pursue. Gandy’s (2012) observations on the process of statistical discrimination and Lyon’s (2002) inquiries into the practice of social sorting, for instance, raise questions of sociological interest regarding the impact that neuromarketing as consumer surveillance (and dataveillance) has on how certain individuals and demographic groups are included or excluded from participation in the “social.”

Questions for analysis might include: How and why are particular populations profiled, categorized, and constrained into particular targeted consumer niches? How might individuals and groups subjected to surveillance subvert, adopt, comply, resist, and/or counter neuromarketing consumer surveillance methods? How are racial and gendered stereotypes
maintained and perpetuated through the process of neuromarketing as a revealer and shaper of consumer worlds? In light of Andrejevic’s (2013) inquiry into the impact of big data on brains and bodies, one might ask: What are the effects of shifting focus from comprehension to correlation in a data-saturated world (as evidenced in neuromarketing)? How does the influx of “objective” neuromarketing data affect how consumers understand the role of information in social, political, and economic life?

3) Also of value is to understand how neuromarketing as an act of consumer surveillance relates to ethical frameworks that protect consumer rights through fair regulation of a currently self-regulated industry—this addresses the question of privacy more explicitly. While the neuromarketing industry has established its own associations for developing a code of ethics, it is troubling that the very individuals who are on the advisory board guiding this process are also the same individuals who are actively seeking to disrupt and override our freedom to choose (e.g., Christophe Morin; Gemma Calvert). In order to develop and implement regulatory policies for market research practices that work toward social justice, 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 external groups ought to be actively involved in the regulation of the neuromarketing industry. In the words of Wilson et al. (2008), given the industry’s self-regulation, what is required is a “cross-disciplinary group of scholars and practitioners to come together to develop standards, assessment mechanisms, and sanctions” (p. 406). For instance, neuroethicists Murphy et al. (2008) have offered a preliminary version of a code of ethics that they have recommended to the neuromarketing industry. The overarching aim for such a code is to “promote research and development, entrepreneurship, and profitable enterprise alongside beneficent and non-harmful use of neuroimaging technology at all stages of development, deployment, and dissemination” (p. 298). 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.

Furthermore, to gain a comprehensive understanding of the rapidly growing industry in light of legal frameworks for consumer privacy rights, it is necessary to undertake critical analysis on the relations between privacy, freedom, and neuromarketing. Questions one might explore in this capacity include: What is the relationship between privacy and personhood?
How is “personhood” conceived in the privacy literature and how does this come to bear on how personhood is conceived in neuromarketing? What aspects of the person does the right to privacy protect in the context of neuromarketing practice?

**Capacity for resistance: Jamming the machine**

Neuromarketing views consumers in a particular way, constructs consumers as particular things, (i.e. as augmented animals), to the point where the ontological freedom Sartre celebrates becomes violated. Such a breach of self occurs the moment the inward space where we have freedom to choose, including the freedom to choose our own values, becomes open to disinhibition and external manipulation, resulting in a form of mind slavery. As I argued in Chapter Six, this construction of human beings as not-yet-human fits with the idea of the anthropological machine (Agamben, 2004), a socio-political grammar that sets the human above the animal for instrumental ends. On Oliver’s (2007) interpretation, the anthropological machine lays the ground to create the category of the non-human human where “humanity is divided into more and less human types, which in turn becomes justification for slavery” (pp. 1-2), evoking once more John Anderton’s justification of the cruel and instrumental treatment of the Precogs in the *Minority Report*: “It’s better if you don’t think of them as human.”

The ideal of an autonomous individual being-in a democratic social world is freedom from chains, from imprisonment, from enslavement by others, but I would argue that the chains of enslavement have evolved from iron to an intangible un/form that imposes constraints on our basic freedom to choose. In this sense, neuromarketing as an advertising technique subverts core democratic values of freedom and 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 mindless consumption imbued in us through subliminal hacks.

Freire (1972) understood technology as holding the potential to operate as an instrument for liberation, but also as an instrument for oppression. To Freire, it was through the process of becoming media literate that we could understand the structures of technology and use them for our own emancipation. This is in line with the views of other critical scholars such as Selwyn (2014b), Boler (2008), McChesney (2004), Shade (2002), Feenberg (1999), Key (1989), and McLuhan (1969) who have urged us to question the transformative
power of new technologies. A central aim of my project, then, has been to understand who - or what - is made in the discursive world of neuromarketing, and to question how neuromarketing as a techno-cultural media environment, and as a public pedagogy, manipulates our notions of world and self. If we are educated to understand the “revolutionary transformations” of new technologies and new media environments, we can resist and counter external aims to “sway us in its direction through a thousand twists … lure us, seduce us, and imprison us by ten thousand devices, by a hundred thousand tricks” as Fanon (1963) might put it (p. 163).

Despite the potential for neuromarketers to manipulate and control individuals, their project of consumer [and world] construction is flawed. Although we are indeed vulnerable to be conditioned to behave according to external stimuli, unlike Heidegger’s (1995) mindless animal, we also hold the capacity to become aware of the influence advertising and its neuromarketing technique have on us. We hold the capacity to resist. And it is here where we can look to the potential of public pedagogies conceived as critical interventions into dominant and hegemonic values and assumptions. As augmented animals living a chimerical existence, both human-animal and machine, we can transcend our captivation. In a general sense, then, it could be said that to the extent we become aware of, deconstruct, and counter the potential impact that external advertising entities may have in controlling our behaviour, and to the extent that we can correspondingly self-direct through rational justificatory processes, we can be described as ever-emerging consumer subjects with the capacity for critical agency, the capacity for resistance, and the capacity to escape the magical bonds of our consumption driven captivation.
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 APPENDIX I

A hybrid approach

Critical hermeneutics and thematic textual analysis

Textual artifacts provide historical insights and give an account of actions and/or behaviours that affect the creation of larger social narratives (Denzin & Lincoln, 2011). The focus of my project is to conduct a critical hermeneutics using a thematic textual analysis process to reveal the discursive world of neuromarketing as a space of contention for power over consumer subjectivities. Thematic textual analysis is a qualitative analytic research method used for identifying, analyzing, and reporting themes that emerge from a specific set of data important to the description of the phenomenon under inquiry (Guest et al., 2012; Daly et al., 1997). The process comprises pattern recognition within the data where emerging themes become categories for interpretation. The identification of themes occurs through a “careful reading and re-reading of the data” (Rice & Ezzy, 1999, p. 258).

Textual analysis “minimally organizes and describes your data set in (rich) detail … and interprets various aspects of the research topic” (Braun & Clarke, 2006, p. 79). On this view, a theme can capture “something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set” (p. 82). This mode of analysis complements the practice of phenomenological research in that it allows for a deductive thematic analysis (derived from a Heideggerian philosophical framework), while also allowing themes to emerge from the data through inductive coding (Fereday et al., 2006). Coding is conducted in six phases to create meaningful patterns: 1) familiarizing oneself with the data (and transcription of verbal data); 2) generating initial codes; 3) searching for themes once data have been initially coded and collated; 4) reviewing themes; 5) defining and naming themes; and 6) producing the report (Braun & Clarke, 2006). My qualitative research strategies include memoing, selecting, summarizing and coding, theme construction, and comparison (Denzin & Lincoln, 2011; Mason 2002). I examine a range of multimodal texts, mindful of the process of collocation which refers to a holistic method of “combining, juxtaposing, and examining narrative data” (Mello, 2002, p. 241). Collocating text/talk is essential for establishing validity, and for creating holistic, connected research texts.
It is reasonable to claim that thematic textual analysis can be situated under the umbrella of critical discourse analysis (CDA), a “multidisciplinary holistic” comprising a range of theoretical approaches to a macro and micro analysis of text and talk. McKenna (2004) claims that critical discourse methods “are characterized by their consideration of the relationship between language and society in order to understand the relations between discourse, power, dominance, [and] social inequality” (p. 10). CDA emphasizes the connections between language and social reality, and analyzes specific instances where relations between power, inequality, and dominance are instantiated through text/talk.

As with critical theory more generally (see Abercrombie et al., 1994), CDA seeks to uncover hidden assumptions in how language is used, and attempts to challenge claims to authority. The primary modes of analysis include: description of the formal properties of the text; interpretation of the relationship between text and interaction, where the text is understood as product of and resource for the interpretive process (including an analysis of socio-cognitive process); and explanation of the dialectical relations between social events and structures (Fairclough, 1989). A central assertion in CDA is that through discourse power relations are maintained and perpetuated in society (see Foucault, 1978).

Analysis of the discursive reproductions of domination has two dimensions: production and reception. Discourse structures are the means of symbolic reproductions of dominance (van Dijk, 1993). Thus, understanding and explaining power and dominance in the contemporary techno-cultural horizon of neuromarketing involves the reconstruction of the social cognition processes of their production as a method of “managing the mind.” For my inquiry, I have chosen to focus on the first dimension of the discursive reproduction of domination: the production of consumer subjectivities, specifically through multimodal text/talk.

CDA examines complex social phenomena and thus also crosses disciplines and methodical approaches (Wodak & Meyers, 2008). This sentiment is echoed by Fairclough (2003) who argues that an interdisciplinary approach to CDA would allow researchers to develop more comprehensive understandings of the politics of discourse. He maintains that by examining abstract and concrete ideas together a philosophical approach to textual analysis, for example, 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.
Implicitness is a ubiquitous property of texts, and the task of CDA is to uncover the implicit content in discourse that has the power to construct reality (Fairclough, 1995; Wodak, 1989). Souto-Manning (2012) understands discourse as “an inherent and inseparable part of the social world, of the broader social context” (p. 1) which shapes and is shaped by society. Within this system, she explains, 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” (Chouliaraki & Fairclough, 1999, p. 86). 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” (Ricoeur, 1986, p. 248). In this sense, the socio-cognitive dimensions of the world at large (i.e. the public “we world” or cultural media environment) are permeated by narratives that shape our individual subjective/phenomenal worlds and influence our understandings of self and others (Ricoeur, 1991).

Such a view is in keeping with Heidegger’s (2010) conception that human beings (Dasein) and world are connected in a dynamic relationship of meaning-making. A Heideggerian philosophical framework, then, can serve as a heuristic device for uncovering recurring themes operating in the text-world of neuromarketing, and disclosing how neuromarketing - as a public pedagogy - constructs consumer ontologies as instrumental to the needs of the advertising industry. A Heideggerian frame also offers an illustration of the objectification and dehumanization that occurs within these discursive moves, specifically the reduction of the consumer to the metaphors of brain as buy button and mind as animality, and associated entailments.

A hybrid approach, merging critical hermeneutics and thematic textual analysis, offers a path to interrogating the connection between texts and the construction of consumer subjectivities as a form of communicative surveillance. This approach is in line with Habermas’ claim that language is “a medium of domination and social force. It serves to legitimize relations of organized power. Insofar as the legitimizations of power relations … are not articulate … language is also ideological” (in Wodak & Meyer, 2009, p. 10).
Data and data sources
My data set includes a corpus of 120 examples of multimodal text/talk collected online and offline, predominantly from the North American context, with some European representation. These diverse forms of textual artifacts include the following: peer-reviewed and non peer-reviewed journal articles, newspaper articles, magazine articles, interviews, opinion pieces, press releases, newsletters, books, conference proceedings, Facebook content, Twitter feed content, YouTube uploads, TED talks, podcasts, documentaries, university websites, company website content, industry standards, archival sources, focus group questions, government reports, white papers, codes of ethics, and online quizzes. According to the principles of collocation, I analyze these texts individually and as part of the holistic world of neuromarketing.

Limitations of research project
In so far as we understand and interpret the world as a transaction between reader and world as text (Ricoeur, 1999, 1991; Rosenblatt, 1982, 1978), 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 (Grint & Woolgar, 1997). That said, I acknowledge my research is limited in a number of ways. What follows is undoubtedly a partial list:

1) I focus on a specific number of multimodal texts as part of a larger discursive world of objects and entities. Modern technologies develop at a rapid pace, so the first limitation of this study is that it is restricted to a particular timeline of neuromarketing (i.e. March 2010 to June 2014).

2) 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.

3) My study is constrained to examining a limited number of narrative structures and a thematic textual 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.
4) My review of the literature and collection of data focuses on North American content, but also includes some data from Europe. I acknowledge there is further literature from other continents that would be valuable to explore.

5) My analysis examines the “expression of thoughts and meanings,” rather than “instrumental behaviour,” as outlined by Fischer (2003) in his methodological framework for interpretative analysis (p. 141). On this view, cognitive perception as a mode of interpretation places value on the researcher’s intuition or cognitive capacity as guides to manipulate, explore, and organize data so that meaning creation is not only creative but also analytical (Mello, 2002). 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.

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iii Surveillance scholar David Phillips (2005) defines surveillance as “a particular technique for the production and organization of social knowledge, social power and social relations. In its idealized form, the surveillance process individualizes each member of the population, then tracks and records each individual’s salient activities. These observations are then collected and subjected to statistical analysis. The knowledge thus produced is then applied back to the individuals within the population, as they are categorized and responded to in the light of that knowledge” (p. 844).


vi 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 aspects of his conceptual framework for existence are useful as frames for understanding the discursive world of neuromarketing. Other scholars have grappled with this moral dilemma. Emmanuel Levinas, for example, was strongly influenced by Heidegger; however, he became one of Heidegger’s most vocal critics, condemning Heidegger’s involvement with National Socialism and stating “[o]ne can forgive many Germans, but there are some Germans it is difficult to forgive. It is difficult to forgive Heidegger” (p. 25). Despite his views, Levinas nevertheless engaged with Heidegger’s work for philosophical analysis. See Levinas, E. (1990). Nine Talmudic Readings (A. Aronowicz, Trans.). Bloomington, IN: Indiana University Press.

vii A point to note is that the development of behavioural economics was largely guided by the seminal work of psychologists Amos Tversky and Daniel Kahneman. As Laibson and Zeckhauser (1998) observe, 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. These arguments were established by two main corpuses: Tversky and Kahneman’s essays on heuristics and biases (e.g., Judgment under uncertainty: Heuristics and biases, 1982), where they proposed that three heuristic principles underpin a diverse range of intuitive judgments: availability, representativeness, and anchoring and adjustment; and their essays on prospect theory (e.g., Prospect theory: An analysis of decision under risk, 1979, which Kahneman (2011) claims is one of the foundations of behavioural economics). 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 research presented a theory of information processing to account for how individuals come to make decisions and estimates, and continues to inform the research and methods of both behavioural psychology and behavioural economics which, in turn, influence neuromarketing methodology. For further reading on the research Kahneman conducted on cognitive biases, prospect theory, and happiness (including the work he did in collaboration with Tversky), see Kahneman, D. (2011). Thinking Fast and Slow. New York, NY: Farrar, Straus and Giroux. The central thesis of his text is that there is a division between two primary modes of human thinking. In “System 1” human thinking processes are instinctive, emotional, and rapid; whereas in “System 2” human thinking processes are more reasoned, deliberate, and slower.

viii There is a trend for countries/continents to invest in brain-mapping programs. For instance, the European Human Brain Project (HBP) aims to “build a completely new information computing technology infrastructure for neuroscience and for brain-related research in medicine and computing, catalysing a global collaborative effort to understand the human brain and its diseases and ultimately to emulate its computational capabilities” (HPB, 2013). Similar aims are found in North America such as the BRAIN Initiative, short for Brain Research through Advancing Innovative Neurotechnologies (Collins & Prabhakar, 2013). The initiative aims to “reconstruct the activity of every single neuron as they fire simultaneously in different brain circuits, or perhaps even whole brains” positioned as potentially helping “neuroscientists understand the origins of cognition, perception, and other enigmatic brain activities, which may lead to new, more effective treatments for conditions like autism or mood disorders and could help veterans suffering from brain injuries” (Young Rojahn, 2013; see also Dittrich, 2013). In a military setting, DARPA recently awarded two contracts to Massachusetts General Hospital and the University of California, San Francisco, to “create electrical brain implants capable of treating seven psychiatric conditions, including addiction, depression, and borderline personality disorder.” Informed by “substantial evidence” that thoughts and actions can be altered with well-placed electrical impulses to the brain, the $70 million project aims to develop microelectronic systems that can fit into the body (Regalado, 2014). The development of neurotechnologies and associated diagnostic methods has paved the way for neuromapping to enter fields outside health related areas, such as neuromarketing.


x Lyon (1994) claims that the Habermasian approach to critical theory is to be commended in that it focuses on language and communication, and offers a clear starting point with attention to interaction, which holds relevance to surveillance as a form of communication. Such an approach also “highlights questions of self or personhood and of social participation” (p. 222). However, challenges arise, including a lack of clarity on what “undistorted communication” would be about; what the content of the free choices individuals make would be; whether or not it is even possible to arrive at undistorted communication when electronic media already frames our discursive actions. Lyon argues that while the Habermasian approach pushes surveillance in the right
direction, these difficulties would have to be resolved before “communicative action” could become the foundation for a “non-dystopian” theory of surveillance (p. 211). Heideggerian ontological structures of understanding and meaning-making may serve to illustrate how consumer surveillance techniques might distort communication; thereby violating the act of communication without compulsion.

xi John Codd (2005) explains that Dewey uses the concept of intelligence to connect democracy to education. Codd writes: “A democratic community is one in which the people are educated to engage in reflective thought and to contribute to collective action” (p. 26).

xii Max Horkheimer and Theodor Adorno (1947) claim that advertising “pervades what has now become the ‘culture industry’, subsidising the ‘ideological media’ and turning culture into an ‘assembly line’ whose standardised products it furnishes with artificial differences” (p. 380).

xiii For critical analyses of advertising and its connections to behavioural psychology, see also Butsch (2007); Cross (2000); Laird (1998); and Jhally (1990).

xiv Vincent Mosco (2009) defines political economy of communication as: “the study of the social relations, particularly the power relations, that mutually constitute the production, distribution, and consumption of resources” (p. 24). The discipline presupposes that technologies play a central role in political and economic formations. Here, technologies can act as instruments of production for their system of political economy while also acting as meaning makers. Political economy of communication extends this lens to analyzing the communication business, focusing on the social relations “organized around power or the ability to control other people, processes, and things, even in the face of resistance … and [shifting] forms of control along the circuit of production, distribution, and consumption” (p. 24). While a political economy of communication approach to neuromarketing would offer valuable insights into the socio-politics of neuromarketing, such a work is beyond the scope and limits of my research project.

xv The consciousness industry comprises the information sector, goods and services industries, and the audience as its principal commodity. Audience commodity theory makes three primary assertions: 1) audiences are a commodity produced by the mass media, and these audiences are traded and sold on the market for profit-making; 2) audiences are not passive, they engage in labour work—the three kinds of work that audiences engage with include marketing consumer goods and services to themselves, learning to vote for certain political candidates or issues, and learning and reaffirming beliefs in their political economic systems; 3) advertisers buy “audience power,” an extension of labour power. For a Canadian perspective on audience making, see Murray, C. (2010). Audience-making: Issues in Canadian audience studies. In Leslie Regan Shade (Ed.), Mediascapes: New Patterns in Canadian Communication (3rd ed.), 83-103. Toronto, ON: Nelson Canada.

xvi In the literature on privacy, a challenge in defining the concept of privacy itself persists, including a workable definition of a form of privacy that can be applied in legal justifications for the right to [inviolate] self-construction (i.e. personhood). Although individuals and groups might claim that their privacy has been intruded upon, articulating what privacy actually means, combined with what exactly it is about the person that is being protected, seems to have proven a linguistically challenging task (see Nissenbaum, 2010; Solove, 2008; Rossler, 2005).


xviii Drawing on the work of Heidegger in the Fundamental Concepts of Metaphysics, Feenberg (2010) uses the term “niche” to explain paradoxes of technology, illustrating relationships like those between parts of a machine to the whole machine – the paradox of the parts and the whole: “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” (p. 4). Niche refers to the subjective/phenomenal environment that surrounds entities such as animals and human beings in their interactions with their larger environment, offering a useful frame to illustrate the relationship between consumer subject (niche as “subjective” or “phenomenal” world) and the larger social world of neuromarketing. Niche varies in complexity according to the animal/human it encircles. This primordial ring is not a spatial structure; rather it is a relational structure of the being of the animal with other entities, and can be understood as comprising a system of triggers that drive (instinctive) behaviours. For Heidegger, human beings (Dasein) have a subjective/phenomenal world that is more expansive than the world of the animal—the animal is poor in world in that it does not have access to the meaning of being and can only ever behave in its environment according to the instinctive drives always already inscribed in its encircling ring (or niche). That said animals are not simply subject to pure causality since they do have some agency in terms of selecting their niche, but they do not control their own relationship to their niche on the basis of moving beyond the limits of their capacity for meaning-making (i.e. a more complex relationship between signs and signifiers).
human animality to signify the way in which biological-determinist ideology has shaped human subjectivities. Chen (2012) explores the idea of animality through “the grammar of animacy.” Agamben (2004) refers to animality in the context of an “anthropological machine,” a socio-political grammar that creates the human with yet over the animal. This machine has the political effect of laying the foundations for creating the category of the non-human human to serve political and economic ends. Agamben claims that science breaks down the distinction between human beings and animals in dangerous ways with the reduction of humanity to pure biology. These moves have resulted in the animalization of human beings used as justification for slavery, for example, which is in line with the idea that neuromarketing, through discourse and practice, results in a form of mind slavery. Chen (2012) explores the idea of animalization through “the grammar of animacy.” She claims that what linguists call the animacy hierarchy, the “conceptual organisation of worldly and abstract things with grammatical consequences” (p. 30), arranges forms of animate and inanimate entities in order of value and priority. Animality is a useful frame to foreground the discursive dimension of neuromarketing as a socio-political grammar. For popular science and cultural studies that connect thinking and animality at a practical everyday level, see Gladwell, M. (2005). Blink: The Power of Thinking Without Thinking. New York, NY: Little, Brown and Company; Johnson, S. (2004). Mind Wide Open: Why You Are What You Think. Hammondsworth, UK: Penguin.


xxiii Ellul (1964) claims that by World War I the two forms of persuasion, advertising and political, had become more closely aligned in method.


xxvi Commercial Alert, an anti-advertising civic group, criticized the BrightHouse Institute for conflicts of interest involving Emory University, as the business division of BrightHouse was established by Emory faculty. Commercial Alert asked Emory University, the federal Office for Human Research Protections, and the U.S. Senate to investigate the research being conducted by BrightHouse (Grey et al., 2003). The Lancet Neurology (2004) claims that many of Commercial Alert’s concerns are unreasonable, “even plain ridiculous.” These concerns include questions around whether the BrightHouse institute has any political clients, and claims that if neuromarketing research is sold to violent dictators, or other political propagandists, there might be “devastating effects on entire countries” (p. 71). The Lancet Neurology does, however, concede that Commercial Alert raises the important question of 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 (Fisher et al., 2010). Emory University has now become involved in an initiative to map the brain with an aim to build “a scientific understanding of the mind to reduce suffering and promote well-being.” This union falls under the name The Mind & Life Institute. The institute began as an intellectual experiment between His Holiness the 14th Dalai Lama, entrepreneur R. Adam Engle, and neuroscientist Francisco J. Varela. The website states: “Over the
last several years, largely through the work of the Emory-Tibet Science Initiative, Science for Monks, and Science Meets Dharma, science instruction has been given to a small group of monastic scholars. Very recently, the decision was made to require science education for Geshe degrees at Tibetan monastic universities, and to facilitate all monastic students being introduced to modern science and the profound philosophical and ethical issues raised by science and technology.” Retrieved January 2, 2013 from http://bit.ly/1tOuaSP.


For a list of these universities and the programs they offer see the NMSBA website: http://www.nmsba.com/education (Retrieved June 10, 2014).

In 1969 Herbert Krugman was the first person to use EEG to measure brainwaves while his subjects watched television. His experiment showed that the left hemisphere (the side of the brain that processes information logically and analytically) tuned out while the right hemisphere (the side of the brain that processes information emotionally and holistically) remained alert and fully functioning. Writing for the Globe and Mail, Nelson (1983) claims that this discovery revolutionized television advertising. Since then, neuroscience and cognitive psychology have generated an abundance of research that informs marketing/advertising conceptions of how consumers develop, store, recall, and use information (see Gordon, 2002).

Major sponsors of Neurofocus include General Motors, Clorox, American Express, Campbell Soup, and MTV Networks (Singer, 2010). Further to this, in a Covington White Paper Voorhees et al. (2011) compiled a selection of manufacturers and marketers who appear to be using neuromarketing. This list includes the following: A&E Television, Blue Cross/Blue Shield, California Olive Ranch, Campbell’s Soup, CBS, Citi, Daimler, Disney, Frito-Lay, Google, L’Oreal, McDonald’s, Microsoft, Nestle, Procter & Gamble, Scottrade, Starcom MediaVest, Viacom, and The Weather Channel.


The “nanosecond lapse” has been addressed extensively by philosopher and cultural studies scholar Brian Massumi in Parables for the Virtual: Movement, Affect, Sensation, specifically in the section on the autonomy of affect. Massumi (2002) highlights two brain experiments to explore what happens during this lapse. In one experiment, the brain waves of research subjects were monitored on an electroencephalograph (EEG) machine. Participants were asked to flex a finger at a moment they would choose. They were then asked 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. Massumi writes that 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” (p. 29).

Zaltman and Zaltman (2008) claim that the way we understand the world can be reduced to seven universal [deep] metaphors: balance, transformation, journey, container, connection, resource, and control.


Idealism refers to the notion that the mind is the sole reality; that matter is the sole reality is known as materialism; that reality contains both mental and material things is known as dualism.

The view that mental states are comprised of an immaterial substance that interacts with the body is called Cartesian dualism.
Although researchers working in cognitive science reject Descartes’ assessment of the potential of artificial intelligence, they concur that the capacity to use language and problem-solving are two significant indicators of intelligence. In fact, one of the most widely accepted and widely criticized tests for artificial intelligence is the Turing test, the kind of test that Descartes suggested. According to the Turing test, if a computer’s capacity to use language is indistinguishable from that of an average human being, then the machine must be able to think.


Phylogenetics is the study of evolutionary relationships among various groups of organisms (e.g., species, populations).


Other researchers were not so positive. For instance, Joseph Weizenbaum, professor emeritus of computer science at MIT, became sceptical of AI after he developed a program that made certain users feel like they were speaking with an empathetic psychologist. He went on to argue that AI devalues human life.

The new form of the problem can be described in terms of a game which we call the “imitation game.” It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either “X is A and Y is B” or “X is B and Y is A.” The interrogator is allowed to put questions to A and B thus:

C: Will you please tell me the length of his or her hair? Now suppose X is actually A, then A must answer. It is A’s object in the game to try to cause C to make the wrong identification. His answer might therefore be

“My hair is shingled, and the longest strands are about nine inches long.”

In order that tones of voice may not help the interrogator the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms. Alternatively, the questions and answers can be repeated by an intermediary. The object of the game for the third player (B) is to help the interrogator. The best strategy for her is probably to give truthful answers. She can add such things as “I am the woman, don’t listen to him!” to her answers, but it will avail nothing as the man can make similar remarks.

We now ask the question, “What will happen when a machine takes the part of A in this game?” Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, “Can machines think?” (in Dreyfus, 1992, p. 73).

GOFAI research was based on the notion of using symbolic representations to replicate intelligence. This view was gradually replaced by more complex models of the brain/mind.

Dreyfus (2007) explains there are three versions of “supposedly” Heideggerian AI that might be “articulating a new paradigm” for the field: Rodney Brooks’ behaviorist approach; Phil Agre’s pragmatist model; and Walter Freeman’s neurodynamic model. In spite of their shortcomings, these three approaches accept Heidegger’s critique of Cartesian internalist representations and that cognition is embedded and embodied. In this sense, a Heideggerian perspective is better suited to understanding cognitive science (specifically AI) in that it offers a framework for making sense of intelligence as embodied-embedded thinking (p. 1139). For a treatment of Heideggerian AI, including its benefits and challenges, see Dreyfus, H. (2007). Why Heideggerian AI failed and how fixing it would require making it more Heideggerian. *Philosophical Psychology, 20*(2), 247-268.


In 1947 American mathematician Norbert Weiner and his colleagues coined the term “cybernetics” to explain the kind of science they were exploring at the Macy conferences between 1946-1953. Pickering (2010) traces the term back to the Classical Greek word *kybernetes* which means “steersman.” In this sense, cybernetics was the “science of steersmanship” (p. 3). Wiener’s (1948) book *Cybernetics: Or Control and Communication in the Animal and the Machine* put the term cybernetics into wider circulation.
Walter wanted to demonstrate more complex forms of behaviour. For instance, the machine carried a light that would turn on when the tortoise was in search mode and turn off when it found a light source. The intended consequence of this was to give the tortoise a sensitivity of its own kind; however, there was an unintended consequence in that when the tortoise was in search mode and turn off when it found a light source. The intended consequence of this was to give the tortoise a sensitivity of its own kind; however, there was an unintended consequence in that when its batteries ran low, the tortoise would move toward the light. There was a photocell mounted onto the front fork. When the cell detected light, the rotation of the front fork would be cut off, so the tortoise would move toward the light. When its batteries ran low, the tortoise would find an illuminated hutch and recharge. The tortoise also demonstrated more complex forms of behaviour. For instance, the machine carried a light that would turn on when the tortoise was in search mode and turn off when it found a light source. The intended consequence of this was to give the tortoise a sensitivity of its own kind; however, there was an unintended consequence in that the tortoise passing a mirror became attracted to the reflection of its own light. Similarly, two tortoises encountering each other would “lock onto and then lose interest in one another, executing a mating dance” where the machines could not escape each other (p. 43), a kind of self-captivation. The tortoise served as a model of the adaptive brain, but it was a primitive brain. Pickering explains that although the tortoise lived in real time and reacted to environmental cues as experienced, the tortoise never learned from its experiences. Walter wanted to overcome this limitation, so he built in a second layer of adaptability, a more complex model with added memory circuits.

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. Walter’s tortoises (Elsie and Elmer) were small electromechanical robots he designated members of a new inorganic species: Machina speculatrix. They had one front wheel and two back wheels. A battery-operated electric motor drove the front wheel which caused the machine to move forward. Another motor caused the front forks to rotate on their axis. If the tortoise hit an obstacle, a contact switch on its body allowed it to go back and forth which usually moved it into the open. The tortoise was also capable of phototaxis (locomotion occurring when an organism moves away or toward light). There was a photocell mounted onto the front fork. When the cell detected light, the rotation of the front fork would be cut off, so the tortoise would move toward the light. When its batteries ran low, the tortoise would find an illuminated hutch and recharge. The tortoise also demonstrated more complex forms of behaviour. For instance, the machine carried a light that would turn on when the tortoise was in search mode and turn off when it found a light source. The intended consequence of this was to give the tortoise a sensitivity of its own kind; however, there was an unintended consequence in that the tortoise passing a mirror became attracted to the reflection of its own light. Similarly, two tortoises encountering each other would “lock onto and then lose interest in one another, executing a mating dance” where the machines could not escape each other (p. 43), a kind of self-captivation. The tortoise served as a model of the adaptive brain, but it was a primitive brain. Pickering explains that although the tortoise lived in real time and reacted to environmental cues as experienced, the tortoise never learned from its experiences. Walter wanted to overcome this limitation, so he built in a second layer of adaptability, a more complex model with added memory circuits.

A Black Box is something that does something, that one does something to, and that does something back—a partner in ... a dance of agency. Knowledge of its workings on the other hand, is not intrinsic to the conception of a Black Box—it is something that may (or may not) grow out of our performative experience of the box. (p. 20)

1 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.
2 Walter’s tortoises (Elsie and Elmer) were small electromechanical robots he designated members of a new inorganic species: Machina speculatrix. They had one front wheel and two back wheels. A battery-operated electric motor drove the front wheel which caused the machine to move forward. Another motor caused the front forks to rotate on their axis. If the tortoise hit an obstacle, a contact switch on its body allowed it to go back and forth which usually moved it into the open. The tortoise was also capable of phototaxis (locomotion occurring when an organism moves away or toward light). There was a photocell mounted onto the front fork. When the cell detected light, the rotation of the front fork would be cut off, so the tortoise would move toward the light. When its batteries ran low, the tortoise would find an illuminated hutch and recharge. The tortoise also demonstrated more complex forms of behaviour. For instance, the machine carried a light that would turn on when the tortoise was in search mode and turn off when it found a light source. The intended consequence of this was to give the tortoise a sensitivity of its own kind; however, there was an unintended consequence in that the tortoise passing a mirror became attracted to the reflection of its own light. Similarly, two tortoises encountering each other would “lock onto and then lose interest in one another, executing a mating dance” where the machines could not escape each other (p. 43), a kind of self-captivation. The tortoise served as a model of the adaptive brain, but it was a primitive brain. Pickering explains that although the tortoise lived in real time and reacted to environmental cues as experienced, the tortoise never learned from its experiences. Walter wanted to overcome this limitation, so he built in a second layer of adaptability, a more complex model with added memory circuits.

A dynamic systems perspective is a mathematical approach to explaining the behaviour of complex dynamic systems often through the application of differential equations or difference equations. For further information on dynamic approaches to cognition, see Wilson, R. A. & Keil, F. C. (Eds.). (1999). The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: The MIT Press.

The sub-fields of cognitive science (e.g., artificial intelligence, philosophy of mind, developmental psychology, linguistics, and so forth) have offered explanations of embodied cognition in diverse ways. Despite variances in framing the process, all of these fields maintain that a primary condition for cognition is embodiment, where the idea of embodiment is understood broadly as the unique manner in which an organism’s sensorimotor capacities allow it to interact with its environmental niche.


Edwards writes: “The Pavlovian picture 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 (p. 162). For Tolman, the world was like a maze navigated by his rats where cognition involved mapping the maze. Skinner also places emphasis on “operant”
behavior—semi random, novel exploratory operations on or in the environment rather than built-in reflexes. Skinner’s rats and pigeons learned to press bars or peck at different colours and shapes (operant behaviour). For Skinner, human mental processes are essentially operant behaviours (such as babies babbling) shaped into structured responses (such as adult language) by the differential rewards offered by the environment, including other people; the experience of thought is epiphenomenal” (p. 162).

John Flowerdew’s (1997) examination of metaphor as a narrative device for the creation of myth illustrates the force that metaphor holds in discourse of a socio-political nature. Flowerdew’s analysis is an insightful study on postcolonial actions. His project is based on a corpus of multimodal texts he uses to examine the discourse of Chris Patten (the last British Hong Kong governor) in the five years prior to the British handing sovereignty over Hong Kong to China in 1997. Kenneth Burke (1969) proposed four rhetorical instruments or “four master tropes” individuals might use when constructing persuasive texts: metaphor, metonymy, synecdoche, and irony. Burke was concerned not only with “purely figurative usage, but with their role in the discovery of and description of the truth. He claimed that “perspective” could be used as a substitute for metaphor and “reduction” for metonymy (p. 503). See also Perinbanayagam (2011).

Referring to Heidegger’s thinking, Derrida (2008) also concludes that in order to reply to the question “What is man?” [sic] one must reply to the question “What is world?” as the two are inextricably connected.

Heidegger’s analysis deviates from the philosophies of Sartre and Husserl who follow Descartes in their use of the individual’s conscious (l) world as a point of departure for analyzing how a subject might allocate meaning to other consciousnesses and to the shared intersubjective world. For example, Sartre (1947) claims that the starting point for his existentialist interest is subjectivity and the related idea of consciousness. Influenced by Descartes’ principle cogito ergo sum (I think therefore I am), Sartre writes: “Subjectivity of the individual is indeed our point of departure, and this for strictly philosophic reasons” (p. 42). See also, for example, Sartre, J. P. (2004). Transcendence of the Ego. (A. Brown, Trans.). Oxford: Routledge; Sartre, J. P. (1956). Being and Nothingness: An Essay on Phenomenological Ontology. (H. Barnes, Trans.). London: Methuen.

Heidegger’s analytic of Dasein is a form of non-reductive externalism. It is externalist because it maintains that our intentional relations to the world are “constituted by our orientation in the public domain, not by our private possession of internal mental states” (Carman, 2003, p. 122). It is non-reductive because it accepts normative structure as an “ontologically primitive” dimension of worlds that can’t be analyzed “in terms of brute natural facts nor construed as mere functions of explicit subjective attitudes, whether individual or collective” (p. 122).

1) Ontical-Categorial Sense: World in this sense can be used to refer to a universe—a totality of objects of a particular kind. For example, “the physical universe as the set of all physical objects, or a universe of discourse, such as mathematics, as the realm of all objects studied by mathematicians” (Dreyfus, 1995, p. 89). This ontic-categorial sense of world has dominated the tradition of metaphysics. World here includes everything present-at-hand, objects and entities that may or may not have thematic ties to each other. Heidegger refers to the first sense of world as “nature” and “the real” (das Reale). The ontic sense amounts to the totality of entities that can be occurrent within a world. Heidegger’s sense of world here is of a grandiose, all-inclusive capacity. No essential determinations hold these objects together or relate them to each other except for the circumstance that they belong to the whole collection of beings/entities existing in this totalizing whole. The crucial thing about world in this first sense is that the meaningful domains of the totality are not yet delineated. The only thing that qualifies beings for inclusion here is the brute fact that they are present in some way, but we cannot specify which way exactly because we are referring to a whole universe of objects. Heidegger’s early lectures are important to note here, including Ontology—The Hermeneutics of Facticity (1999) and History of the Concept of Time: Prolegomena (1992), where he makes “totality” an explicit theme. Although he does not state this, different worlds seep into one another. Nothing is absolutely closed off within the seal of an all inclusive totality. Everything is subject to perpetual negotiations and flows across irreducible differences and cannot be subsumed in a totality.

2) Ontological-Categorial Sense: As Carman (2003) explains, this sense of world refers to “the domains in which, or the schemes or frameworks according to which, entities of various kinds can be said to be” (p. 129). He points outs Heidegger’s reference to the ancient Greek concept of kosmos, interpreted to mean “the general order or intelligible condition of all things as they hang together in a coherent whole” (p. 130). Dreyfus (1995) claims that this sense of world refers to a “set of particulars specified in terms of the essential characteristics of the entities that make up the set” (p. 89)—for example, what it is that defines the physical world, or the characteristics that physical objects hold in common. The same argument applies to the world of abstract entities. The second sense carves out a range of domains from the ontologically indifferent “totality” of the first sense of
world. The closer we investigate various segments of the totality, the more we find commonalities among beings in a range of distinct contexts.

lxxiv 4) Ontological-Existential Sense: The fourth sense of the world, like the third sense, has to do with the structures of human practice but it is ontological not simply ontic (Carman, 2003). This sense comprises the worldliness of the world. Dreyfus (1995) claims that this is the way of being “common to our most general system of equipment and practices and to any of its sub-regions” (p. 91). Just as sense two picks out, from the all-inclusive sense one, specific domains for beings present-at-hand, so sense three picks out, from the all-inclusive sense four, specific domains for beings like Dasein, who are not present-at-hand, but rather exist as factual projections that have some particular understanding of their own being, as well as that of other types of beings (such as animals).

lxxv Study participants included 2081 volunteers from America, England, Germany, Japan, and the Republic of China. The project comprised multiple experiments involving two hundred researchers, ten professors and doctors, and an ethics committee.

lxxvi For a critique of the use of modern technology as a pathway to consumer surveillance, see the work of Karl Palmås (2011) on “panspectric” techniques of surveillance, increasingly used by businesses and market research to predict consumer consumption choices and to track changing consumer desires.

lxxvii Pradeep is credited as the inventor of the method: “Analysis of the mirror neuron system for evaluation of stimulus” (along with Robert T. Knight & Ramachandran Gurumoorthy. Original Assignee: The Nielsen Company (US), LLC. Publication #: US 8655437 B2. The abstract of the tool states:

The human mirror neuron system includes neurons that fire both when an individual performs an action and when the individual observes the action being performed by another. Neuro-response data involving the mirror neuron system is collected as a subject is exposed to stimulus material. The stimulus material may include individuals performing actions such as making a purchase, accepting an offer, participating in an activity, etc. Neuro-response data involving the mirror neuron system of the subject is analyzed to determine the propensity of the subject to act. (Google, 2014, para. 1)

lxxviii Nielsen Holdings N.V purchased Pradeep’s company Neurofocus in 2013.


lxx For a range of critiques that examine the digital/virtual community as a “space” where individuals have the freedom to explore various aspects of their identities, or even entirely alternative identities see, for example, Boler (2007); Roberts and Parks (1999); McRae (1996); and Turkle (1995).

lxx Heidegger (2010) makes a distinction between language (Sprache) and discourse in that discourse is irreducible to language.

lxxi In Division I of Being and Time, Heidegger proposes that the structure of Dasein’s being also comprises the following elements: existence, facticity, and falling. These three elements constitute the “care-structure.” For further elaboration see William Blattner’s (2005) essay titled ‘Temporality’, In H. L. Dreyfus and M. A. Wrathall (Eds.), A Companion to Heidegger, 311-324. Malden, MA: Blackwell.

lxxii For a range of critiques that examine the digital/virtual community as a “space” where individuals have the freedom to explore various aspects of their identities, or even entirely alternative identities see, for example, Boler (2007); Roberts and Parks (1999); McRae (1996); and Turkle (1995).

lxxiii Dreyfus (1995) explains that Heidegger uses the term “primordial” in two senses. (a) Primordial evidence: On Heidegger’s use, primordial evidence arises from our most direct kinds of encounters with entities. For instance, hammering gives us the most primordial understanding we can have of what it is to be a hammer. This is what Heidegger means when he claims that we must turn to “the things themselves,” not to our everyday conceptions or the philosophical tradition; (b) Primordial interpretation: one interpretation is more primordial than another if it is more complete (i.e. more detailed, more unified, and more interconnected).

lxxiv Following John Haugeland, Blattner (2011) extends his definition of “equipment” to “paraphernalia” because the term is able to better describe the complete range of entities that fall under the category. He classifies anything defined by its “involvement in human tasks and practices” as equipment or paraphernalia.

lxxv First used by Franz Brentano and then Husserl, Dreyfus (1995) explains that “intentionality” refers to the “fact that mental states such as perceiving, believing, desiring, fearing, and intending in its ordinary sense are always about something, that is, directed at some object under some description, whether that extramental object exists or not. The mental property that makes this directedness possible is called the representational or intentional content of the mental state … the traditional account of both these ways of relating to the world presupposes but overlooks a more fundamental sort of intentionality” (p. 48). Also, Searle makes a distinction
between prior intentions and intentions in action, two forms of intentions that cause actions. Prior intention is formed prior to the action. Intention in action “is simply concurrent with the action” (p. 55).
lxxxvii The underlying structure of understanding is simpler than it might appear. Part of the challenge is that translators and commentators render Heidegger’s terms in different ways. There are two basic ways in which things are “given” to us: 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. Zuhandenheit is translated in the following ways: handiness (Stambaugh/Schmidt), availability (Dreyfus), being-handy (Dahlstrom). There is a similar variety of translations for Vorhandenheit: objective presence (Stambaugh/Schmidt), occurrence (Dreyfus), and/or onhandness (Dahlstrom). There are refinements and complications to this structure, but this is where one must start.
lxxxviii Blattner (2005) offers a helpful explanation of projecting: “Existence is that aspect of Dasein’s being that it always is what it understands itself to be. Dasein understands itself by projecting itself forward into some way of life, or as Heidegger puts it, possibility of being. For example, I may understand myself as a musician by projecting myself forward into a musician’s way of life. Such projection, moreover, is not a cognitive or intellectual achievement, nor even an imaginative one, but rather a concrete form of conduct. Heidegger characterizes it as ‘pressing ahead’ into the activity of being what one understands oneself to be. So, to project myself forward into a musician’s way of life is not to fantasize about being one, nor even to plan being one, no matter how concretely, but rather actually to set about doing what musicians do” (p. 312).
lxxxix Dasein understands itself, other entities, and the world in the sense of the possibilities it projects as possibilities without “pregiven content.”
lx xl Assertion: Heidegger (2010) claims that asserting is an “intentional comportment of Dasein” and “a derivative mode of interpretation” (§33). Carman (2003) explains that an assertion “shows how things are, which is revealed (though not necessarily determined) by how we understand them” (p. 211). In their accounts of language, philosophers, linguists, and speech-act theorists have often privileged assertions and propositions. The reason for this is that these units of discourse express complete judgments or thoughts, and it was taken as obvious that “the essential function of language lies in the articulation and expression of thought” (p. 216). Certain theorists “often take it for granted that speech itself is meaningful only in virtue of its propositional content” (p. 216). In his non-traditional account of discourse and interpretation, Heidegger does not privilege assertions and their propositional content. Rather, he gives priority to pre-thematic skills and attitudes of everyday practical understanding. Dreyfus (1995) maintains that, in its ordinary usage, assertion refers to calling attention to things or a linguistic expression of interpretation. Theoretical assertions, however, attach “an isolated predicate to an isolated subject” (p. 210). The move from “interpretative ‘assertion’ to theoretical assertion corresponds to the move from practical deliberation to theoretical reflection” (from the unavailable to the occurrent) (p. 232).
lx xix Dreyfus breaks down coping into three sub-categories: manipulation or “current coping as pressing into possibilities,” coping with the local background, and coping with the world. In his critique of Dreyfus’s terminology, Carman (2003) explains that, “coping” is the term Dreyfus uses to designate the more primordial mode of understanding. “But since ‘coping’ is presumably also Dreyfus’s term for Heidegger’s concept of understanding, his account in effect collapses discourse with the merely instrumental discerning or differentiating capacities of practical skill as such” (p. 232).
lxx 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 interpretation of “self” (Dreyfus, 1995).
lxxiii Carman (2003) claims that authenticity and inauthenticity (as Heidegger conceives them) are “possible modes of existence only for entities that are, like us, capable of expressing and entertaining explicit competing interpretations of themselves” (p. 209). With this assertion, Carman constrains poor in world animals to a psychic capacity that is incapable of interpreting itself explicitly, authentic or otherwise.
lxxiv The language in the textual artifacts seems to want to fix 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. As Carman (2003) notes, fore-having refers to the background understanding we have prior to explicitation (interpreting something as something).
lxxv There are three modes of breakdown: malfunction (conspicuousness); temporary (obstinacy); and total breakdown (obtrusiveness) (Dreyfus, 1995).
lxxvi Heidegger (2010) uses the term dworlding to illustrate the process of decontextualizing objects.
because rational design is enabled by a certain type of knowledge and because what is episteme.

Heidegger expands to encompass techné disclosed is a truth. Technology in this sense enframes the world; it discloses the world a particular way in accordance with particular [ideological] assumptions. Heidegger identifies techné rejects the initial meaning of a poetic revealing.

Techné poiesis, also the word for "truth." Heidegger sees technology as a kind of techné poiesis, and also as a kind of revealing of truth, as making. He identifies techné as poiesis and connects it to episteme (knowledge/science) because rational design is enabled by a certain type of knowledge and because what is disclosed is a truth. Technology in this sense enframes the world; it discloses the world a particular way in accordance with particular [ideological] assumptions. Heidegger expands techné to encompass poiesis and episteme.

Dreyfus (1995) claims that by focusing on the idea of mood, Heidegger should have distinguished three types of "affectedness": a world type (cultural sensibility); a situation (mood); and the specific directedness that makes mood possible (affect). For a comprehensive inquiry into how affect can be understood as a site of social control and for political resistance, see Bolter, M. (1999). Feeling Power. New York, NY: Routledge.

What Sikka doesn’t ask explicitly is this: If history is fundamental to Dasein, and negroes have no historical consciousness yet they are men, what kind of “men” are they exactly?}

Haraway (1991) claims that three main boundary breakdowns in society allow for the cyborg myth (political-fictional/political-scientific analysis). In United States scientific culture (late 20th century): 1) the breakdown of boundaries between human and animal; 2) animal-human and machine; 3) and physical and non-physical. There are two types of cyborgs that play out in different ontological capacities: literal and metaphorical configurations of human bodies and new technologies. The material cyborg is borne of the military-industrial-entertainment complex. This cyborg is one of science fiction; for example, the human-machine warrior of Elysium, or the medicalized bodies categorized and normalized by new digital technologies into quantified selves. The metaphorical cyborg ("a creature of fiction") is a rhetorical device that challenges binaries and assumptions. This cyborg disrupts politics. It is progressive and oppositional.

Addressing these limitations, Haraway’s (1991) metaphor of the cyborg offers a more inclusive frame adapted to analyzing diverse consumer ontologies in a network society. It allows the consumer subject to be seen from multiple perspectives, rather than from just the one essential frame. However, as an analytic device, the cyborg is lacking in terms of maximizing its capacity as a path to revealing the way [consumer] subjects navigate the socio-cognitive terrain of neuromarketing worlds. Although the cyborg in general is a suitable contemporary metaphor to show what occurs to the consumer in the intersection of neuroscience and marketing (organic and machine), Dasein’s structures of understanding the world, the concept of world, and the idea of animality offer the cyborg construct a sharper set of conceptual tools for identifying and understanding what it means for a consumer subject to be in the crossroads of online/offline neuromarketing worlds. At the same time, the cyborg offers Dasein fluid entry into 21st century liquid modernity. In the techno-scientific world of neuromarketing, consumers can be read as cybernetic organisms or cyborgs, “creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted” (p. 149). This is one way of augmenting the philosophy of

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Heidegger with Haraway’s forward thinking. Although analyzing the relations between consumer and world from the lens of the cyborg metaphor would be a fruitful undertaking for revealing the power at play in the social and political dimensions of neuromarketing, such an analysis is beyond the scope and limits of my project.


cxvii While his metaphysics creates a hierarchical divide between human and non-human animal, Heidegger (1995) accepts that many animals have access to a kind of richness of world that Dasein lacks. For instance, the way in which a squirrel leaps from branch to branch without hesitation, or the precision and speed with which an eagle swoops down on its prey, attest to a mode of *being-in-the-world* that is more than merely lacking in mind (i.e. “mindless” or “unreflective”). In this sense, the animal seems to have something more than Dasein inasmuch as metaphysical understanding was granted to Dasein at the expense of a good deal of its instinctive attunement to the natural environment. It seems as though Dasein gains access to the richness of the world by forgetting how to be wild in the world.

cxviii Heidegger identifies two challenges to uncovering the essence of such things: “What are we to determine the essence of life in general as? How are living beings as such— the animality of the animal and the plant-character of the plant— originally accessible? Or is there no possibility of any original access here at all?” (p. 179).

cxix Philosopher Matthew Calarco (2008) claims that the critical problem with Heidegger’s metaphysics of life is twofold. First, Heidegger accepts uncritically two tenets of ontotheological anthropocentrism: that human beings and animals can be cleanly and clearly distinguished in their essence, and second, that such a distinction needs to be drawn.

c The issue of access is taken up by philosopher David Farrell Krell in his seminal work, *Daimon Life: Heidegger and Life Philosophy*. Krell (1992) writes: “Heidegger spends some time examining Scheler’s ‘fundamental error’—identification of ‘man’ as a ‘specifically spiritual’ synthesis of all the lower links in the chain of being— mineral, vegetable, and animal … He rejects all talk of ‘lower’ and ‘higher’ animals … Yet he does not pause to wonder whether his own highest aspiration, his search for the essence of animal life and all life in each amoeba and every ape, is the kind of high-altitude thinking that spawns all other hierarchies … He defines the poverty of the animal world in terms of depravation without for a moment wondering whether all talk of deprivation does not reinstate all the hierarchies he would have wanted to dismantle” (p. 115). Furthermore, the critical point in Heidegger’s thinking of animal life is the as structure:

> I would stress far more than he [Derrida] does the fact that Heidegger uses the very same word to describe the world-relation of animals and the appropriate comportment toward being that characterizes Dasein: if the lizard sunning itself on a rock is benumbed (benommen), so is Dasein, not only when it succumbs to the world’s distractions and goes sunbathing but also precisely when it confronts the uncanniness of its existence in anxiety … Dasein, rapt to the ownmost possibility of its existence, is an animal. (p. 275)


c The world of the animal as comprising a system of signs and signification echoes Heidegger’s claim that our own world as human beings is made up of signs and significations. This similarity is also observed by Buchanan (2008) who writes, “Such meaning is attributable to how organisms enter into relationships with other things and thus come to see the environment as laced not just with signs, but with significance itself” (p. 9).

civ Another fundamental difference is while human beings die, Heidegger argues that animals simply perish in that they do not have the capacity to understand the metaphysical nature of death. For the animal there is no orientation to the modalities of finitude proper to being in the way that Dasein would make sense of the process. This view has been challenged by philosophers such as Derrida (2008) and Calarco (2008).

cv Buchanan (2008) claims that the connotation of the encircling ring as a sphere [*Umkreis*] suggests that each animal is in some way encircled by “an invisible field radiating around the animal from its centre.” Although the spherical metaphor is helpful initially, he argues that it implies that everything within this spatial arrangement is
accessible to the animal, which is false—this is not a spatial structure. Rather, it is “a relational structure of the
being of the animal” (p. 94).

In July 1995, a patent was published for Zaltman’s Metaphor Elicitation “Method” (patent: US5436830)
which eventually evolved into a “Technique.” The 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.” Retrieved June 12, 2013 from
http://bit.ly/1uDDKuk

digital scent technology is a nascent engineering discipline concerned with olfactory representation. It is a
technology to sense, transmit, and receive scent-enabled digital media (e.g., web pages, video games, movies,
and music). This sensing part of the technology works by using olfactometers and electronic noses.

According to Heidegger (2010), a tool, such as a hammer, 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. 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.

Agamben notes that Linnaeus’s comment that “man is the animal that must recognize itself as human to be
human,” is a good example of how the anthropological machine plays itself out. “Homo sapiens,” writes
Agamben, “is neither a clearly defined species nor a substance; it is, rather, a machine or device for producing
the recognition of the human” (p. 26). According to van Camp (2009), the sapien in homo sapien does not signify
that it is the rationality of man that places him over the animal, but rather it is his status as a creature with
no defining traits other than the fact that he knows he is human.

Fanon, F. (1963). The Wretched of the Earth, p. 163.

In the North American context, Ariely and Berns (2010) note that traditional marketing methods are not
typically considered experimentation and have not fallen under the institutional review board (IRB) purview.
Although MRI scans, for example, are approved by the U.S. Food and Drug Administration (FDA) for clinical
use, as there is no diagnosis being made in a marketing context, it is possible for market research to bypass FDA
and IRB requirements.

For a perspective on the military use of Facebook to track moods see Tucker, P. (2014b, July 3). The US
military is already using Facebook to track your mood, Defense One. Retrieved July 20, 2014 from
http://bit.ly/1uX8Tss

Dr. Christophe Morin is a co-founder and self-identified “Chief of Pain” of SalesBrain; Dr. Gemma Calvert
is the founder and managing director of Neurosense and has led neuromarketing studies organized by Martin
Lindstrom, an active neuromarketing proponent and author of Buyology.

My interest in neuromarketing was piqued several years ago during a course I took on Marxist theory. I was
interested in how advertising and marketing were built into the foundations of capitalism, and how technological
developments were providing corporations with improved tools to manipulate consumer consciousness. It was
only after I reviewed the behavioural psychology and neuroscientific research informing neuromarketing that I
began to see the implications that use of these new technologies held for certain freedoms, specifically freedom
of intelligence as foundational to a democratic way of life. What stood out the most was how neuromarketing
sought to use bio- and neurotechnologies to manipulate consumers through affect and instincts at a level that
exists beneath the threshold of conscious awareness. My main concern, when I began this project, was the
invasion of privacy of self, but as I read more on privacy I encountered a roadblock. Much of the critique of
privacy theory falls under two overarching arguments: that the theories and conceptions of privacy are either too
broad or they are too narrow. Added to this, although individuals and groups might claim that their privacy has
been intruded upon, articulating what privacy actually means, combined with what exactly it is about the person
that is being protected, has been linguistically challenging. To be able to make the case for privacy of self in the
neuromarketing context, it seemed to be necessary to first pin down what intrusion of self means (i.e. what is it
about the person that neuromarketing is disrupting?). The aim of this project, then, is to shine a light on the
method and ethics of neuromarketing while attending to conceptions of the self and the consumer as a meaning-
maker.