Humanistic Communication in Science

-Interdisciplinary challenges in humanistic communication research

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Preface:

It is important, and the duty of the Humanities, to investigate and question new inventions, whether in theory or in practices. My thesis will therefore not only regard the usage, but also the moral and ethical implications of Neuromarketing.

When reading:

Deeply rooted within my person is a passion for learning and teaching. It is therefore essential that reading this paper, is a positive experience for the reader - one of interest and learning. Allowing the reader to engage and submerge in the practice on a higher level.

Acknowledgements

I want to thank:

Jörg Zeller	– for reminding me of the role of the Humanities
Holger Myrup	– for keeping my eye on the target so that I did not stray *too* much
My wife Louise	– for taking care of our home and child by herself, while I was writing
My mother	– for without her I would not even have made it this far.

Contents

1. Introduction

Since the beginning of my university studies, from English to communications, the function and limitation of theories has been a great interest of mine. Though theories always have their special purpose/area of usage, we (the students) were informed that theories are not limited to just one use, due to their adaptability. For me this was a conundrum - that theories while adaptable are limited. I acknowledge that the purpose of a given theory enables it to adapt easier than others, and it is therefore important to remember this when choosing a theory. Philosophy of Science and Humanities helped unravel this conundrum – researchers each have their view on, how theories should be constructed, which is based on their personal and professional understanding of Philosophy of Science and Humanities. This is, among other, rooted in how we as researchers and humans conceive and construct meaning. I have on several occasions, encountered the aforementioned personal or/and professional view on the usage of theory. An occasion where this was noticeable was in the almost visible shuttering of my examiner, at my eighths semester exam[1], when I mentioned the behaviourist stimulus-response theory. The reason for the examiners reaction is situated in the basis of the studies of Humanistic Informatics in Communications[2]. The foundation is humanistic, which for Humanistic Communication means that the communication research is aimed at [Other, Profile Hum. Inf.]:

- The analysis of the construction of meaning, in communication processes and in relation to communications products, moreover;
- The interpretation and explanation of the social usage of communication-products and the attached psychological processes

Stimulus-response theory is concerned with the direct response to stimuli, and therefore it is considered an oversimplified rendering of human understanding and hence not viable for Humanistic Communication, when discussing either. However, I argue that this oversimplification can be a viable tool, if applied correctly. In relation to experience economy, the consumers or readers[3] have a reaction to the immediate stimuli, when encountering a product or some information, for the first time[4]. Here recognising that several factors are left out of the equation, such as social interaction.

In regard to Humanistic Communication and experience economy, social interaction has a predominant role when discussing marketing research, for instance in campaign research. Campaigns are used in different formats in marketing and for different purposes.

I have a special interest in prevention- and healthcare campaigns. A reason for this interest is my family's involvement in the healthcare system, through their work I have grown up in close proximity to it,

[1] June, 2009
[2] This will hereafter be referred to as Humanistic Communication
[3] As Saussure, I write reader Instead of receiver; for reader connotes reflection and understanding
[4] experience economy coins this the *neuro-physical level*

and I have therefore been able to follow the healthcare system's development. Regarding campaign development, the anti smoking campaigns have caught my attention, partially because it is currently being prompted by the EU and governmental initiatives[5].

My main interest in healthcare campaign research is derived from its development, which is observable through the "smoke and rise"[6] campaign from the 90's, to the vivid images of inner bodily destruction caused by smoke in 2009. This development could be explained by an article from 2003, where it is stated that non-smokers have to be frightened from starting, while smokers have to be lured to quit smoking [Article, Gjerløff]. Though I still question, whether or not the 2009 campaigns rhetoric can be considered both ethical and aesthetical correct, for a campaign, which runs in primetime television. Its effect can also be debated; it is among other, difficult to measure the result of a campaign. Additionally, in 2009 the Danish National Board of Health was criticised, for a pole, which disregarded demographics and therefore criticised for falsifying its results [Article, Kjellerup]. Complicating these matters further, has smoking inside public buildings been made illegal, not that this change is negative, but it does forcefully effect the individuals options. This illustrates a communicative political development, from promoting the informed and self-reflective individual, to the individual, who is not denied her/his choice, but to some degree force-fed an opinion. Due to this I find it interesting how the campaign research team, came to its results. Meaning, what empirical research was the campaign based on? And was there a contextual influence, in the campaign development?

For Humanistic Communication creating a campaign is no easy task and demands thorough knowledge of, among other, the target group. This knowledge can be obtained through different means, such as interviews, focus-group interviews, and/or questionnaires. The efficiency and reliability of research theories, is subject to much debate. Humanistic Communication employs several approaches, while underlining the necessity of maintaining a critical perspective of the used theory(ies). During my studies I was also introduced to newer and progressive theories, such as neuromarketing. Neuromarketing seemed very interesting and I thought it deserved some consideration.

To the above I would like to add a notion by Hans-Georg Gadamer; it is important to accept that we cannot turn our backs to scientific development. Each area of scientific enquiry is separated from others methodically and it is therefore imperative that new interdisciplinary links are created [Gadamer, 2004 p. 106]. Therefore it is important to investigate scientific development not only from one's own field, but from several. Adding to the interest through the interdisciplinary linking, neuromarketing has had a great deal of focus in Denmark, especially with the release of Martin Lindstrøm's book *buy-ology* from 2008. Due to the heightened focus funding is easier acquired, adding a financial interest to the research. This in turn, creates more focus and a question. Is neuromarketing more than hype?

Neuromarketing is an application of neuroscience to marketing. This includes the usage of different brain measurement technologies, to measure the response a subject has, to specific marketing related stimuli. Hereby discovering reconcilable patterns in the subject's brain

[5] prevention is currently being promoted by the EU and by governmental initiatives, which include healthcare-houses, in the larger municipalities.
[6] Translated from Danish "ryg og rejs" by the author. A wordplay, which implies that smoking equals dying and rising to heaven.

activity, this in turn can be applied in marketing campaigns [Article, Dooley 1]. My 9th semester paper discussed neuromarketing's limitations, in relation to Humanistic Communications' Philosophy of Science and Humanities.

In my masters I wish to expand on this notion and draw on the knowledge from my previous papers. I start with my thesis' field of interest through the following research questions; this is thereafter, followed by the papers philosophical and methodical approach.

1.1 Research Questions

Is it possible to adapt a positivistic theory, such as neuromarketing, intending an application in Humanistic Communication relations, while at the same time sustaining humanistic norms, such as ethics? This with regard for the creation of meaning and understanding as found in Philosophy of Humanities – humans are more than objects which receive stimuli and react in a preset manner, humans are perceptive and sentient beings, which communicate.

To narrow this overall question down, and to illustrate the focus of the thesis, the question is parted into three questions:

1. Can a positivistic theory, rooted in nature science, be adapted to Humanistic Communication research?
2. Can such theory be considered respective of the humanistic norms?

These two questions are investigated and illustrate through existing neuromarketing adaption and experiments. This through the thesis is paralleled to question three:

3. Would such theory be viable in healthcare campaign research?

The third question includes consideration for the social, cultural and humane context of healthcare campaigns. Hence, as new research theories are introduced to communication, is it the job of Humanistic Communication to evaluate them. This aimed at becoming better at what we do, while remembering our humanistic foundation.

1.2 Approach

The approach of the thesis is critical, analytic, and discursive; following the humanistic tradition, including a pluralistic philosophical perspective incorporating: the natural sciences, sociology, and the humanities. To accomplish this I study the research questions from three overall areas. These areas can be observed through the illustration figure 1.

The circles explained through text:
The first circle "surrounds" the physicality of the neuromarketing process, including a locating of the human in the action. The process is observed through two cases, one explained by Martin Lindstrøm and the other by Samuel M. McClure et al. As a means of deducting the needed information is *Nexus Analysis* applied.
The neuromarketing adaptation is illustrated and discussed through Gerald Zaltman's *Metaphor-Elicitation Process* and *Consensus Maps*. Moreover, is *Experience Economy* included; for Humanistic Communication often applies experience economy as a method of approaching and understanding the subject and object in the interaction. To explore and illustrate the complexity of the human mind and experience, the cognitive-semiotic metaphor is introduced.

The second circle is concerned with the ethical implications of the healthcare campaign, which among other is governed by the state. This is in the discussion, paralleled to neuromarketing's process, method and view of the human subject and recipient.

The third circle investigates behaviourism, cognitivism, social-constructivism and hermeneutics. These philosophies of science and humanity, thereby allow an identification of the philosophical approach of the used theories and concepts. This in addition, facilitates an understanding of the notions of the humanities and natural science, thereby disclosing some of the difference of the paradigms and enabling a discussion on the difficulties of the interdisciplinary link.

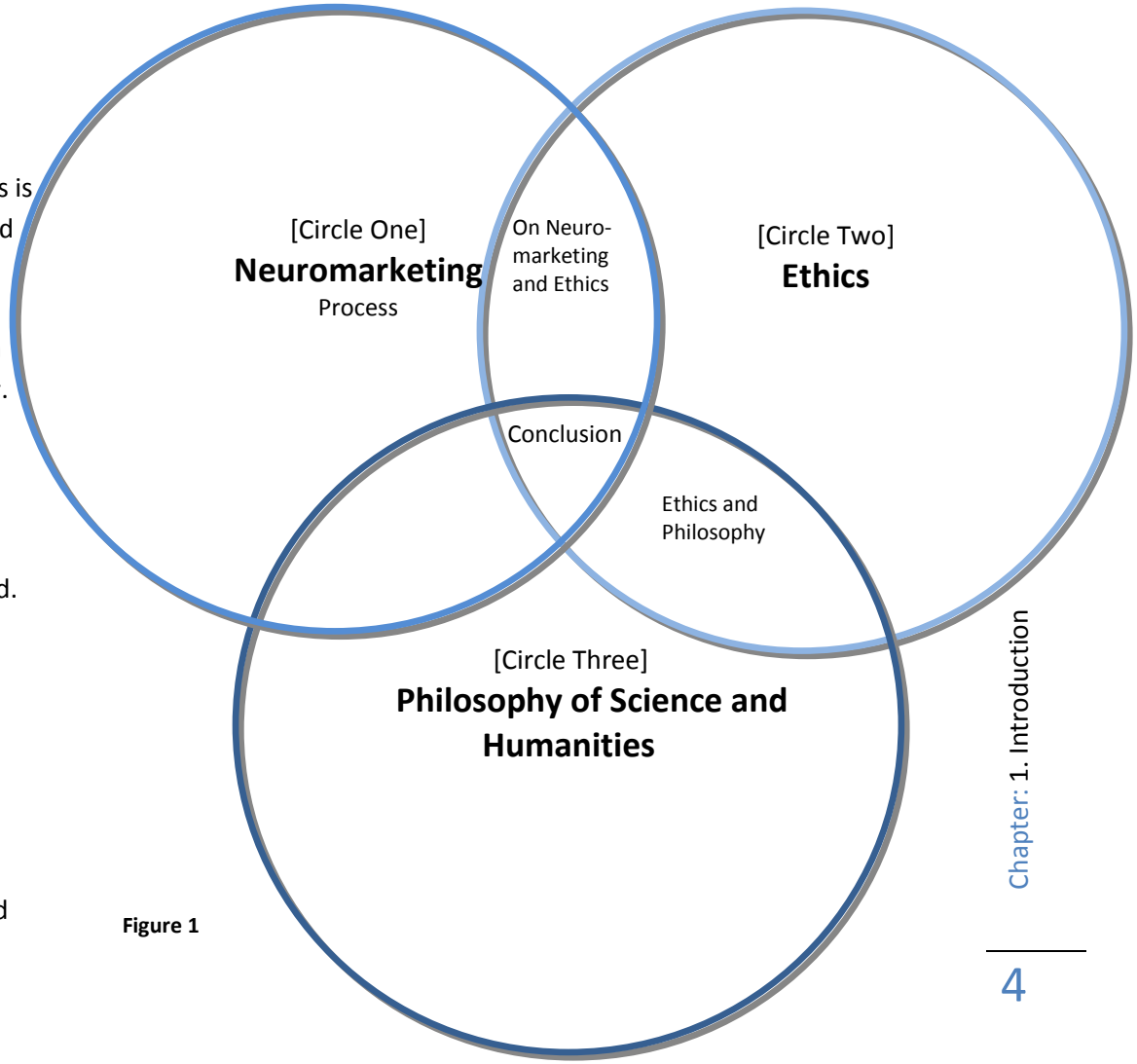
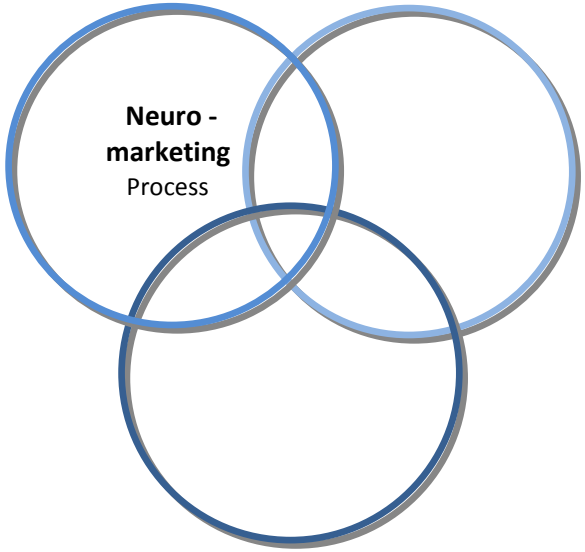


Figure 1

2 [First Circle]



In this circle, the neuromarketing process is explored, including a locating of the human in the action. The process is observed and discussed through the two cases, one by Lindstrøm and the other by McClure et al. nexus analysis be applied to deduct the needed information.
The question (section 1.1) concerning the neuromarketing adaptation is illustrated and discussed through Zaltman's adaption. In addition, experience economy is included. The reason for this is because experience economy is often used in Humanistic Communication as a method of approaching and understanding the subject and object in the interaction. To explore and illustrate the complexity of the human mind and experience, the cognitive-semiotic metaphor is introduced. This also enables a better discussion on Zaltman's adaption.

Additionally, in the discussion the focus group interview is briefly examined. Hence, this interview form is often used, in Humanistic Communication as a means of investigating the mind of the consumer. Another reason for its introduction is due to an animosity towards focus-group interviews, as exclaimed by Lindstrøm and Zaltman.

2.1 Neuromarketing Process Description

The following, through a phenomenological walkthrough, discloses different procedural details of the neuromarketing experiment, thereby creating an understanding of the neuromarketeer's view on neuromarketing and its application. Starting with Lindstrøm, then McClure et al. and ending Zaltman's neuromarketing adaption.

2.2 Neuromarketing by Lindstrøm

In *Buy · ology* page 19-29, Lindstrøm explains the neuromarketing procedure through a neuromarketing experiment, which was conducted in England and in USA, with volunteers from America, England, Germany, Japan and China. One of the locations was the Center for Neuro-Imaging Science in London.

The research subjects were devised of both partial and fulltime cigarette smokers – from two cigarettes social smokers, to two packs a day addicts. All the research subjects were true to one brand, such as Marlboro or Camel etc.

The building's interior was a medical science laboratory and therefore antiseptic and clean, with white halls and flannel gray doors. The room, where the experiment was conducted, consisted of two minor rooms; one looked like a cockpit control room, containing computers and researchers in white coats. A huge glass window parted the two rooms, so that the first could oversee the other, which only held an fMRI scanning device (functional Magnetic Resonance Imaging). The fMRI scanning system is to this date the most advanced brain scanning technique. It measures magnetic properties of haemoglobin (the components in our red blood cells which transport oxygen). fMRI measures, in other words, the oxygen enriched blood in the brain, down to a millimetre precision. To better the understanding; when the brain operates with a specific task it requires fuel, which consists primarily of oxygen and glucose. The part of the brain which is in use will glow red, when scanned. Because of this, it is possible for neuro-scientists to discover which parts of the brain are active, at any given time.

Traditionally, fMRI was used to locate brain tumours, joint injuries, heart strokes, and other medical phenomena, where x-ray and CT-scanning techniques were insufficient.

Neuro-psychiatry also discovered fMRI to be beneficial, when trying to shed light over some mental illnesses, which are hard to cure, such as psychosis and bipolar disorder (manic-depressive).

The experiment

The aim of the experiment was to disclose the effect of the health risk warnings found on cigarette packages. The presumption was that smokers choose to be blind and deaf, when confronted with the consequences of smoking. Moreover, this should enable a better understanding of the human mind when confronted with advertisements and campaigns – the true self – meaning the subconscious and how this controls our actions.

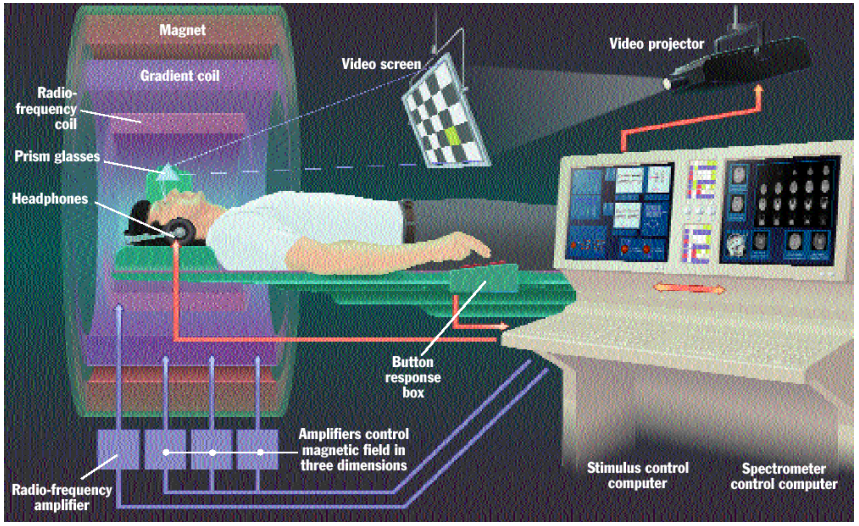
The experiment lasted 3 years starting in 2004, the costs were about 7 million dollars (allocate by 8 different multi-national companies). Besides involving over two thousand research subjects, it

also involved 200 scientists, 10 professors and doctors, and an ethics committee [Lindstrøm, 2008 p. 23].

Picture 1, borrowed from http://psychology.uwo.ca/fmri4newbies/

The fMRI scanner can be seen in Picture 1, when scanned the test subject leis on the back and is mechanically lifted and moved inside the machine, which makes a clicking, sound. Here after a safety-net is placed over the subject. The layout of the machine and the placement of the subject can be seen in illustration beneath (in Picture 2). Duo to the magnitude of the magnet all metal items, such as jewellery and other accessories, has to be removed before starting the experiment. A small mirror reflects the desired images, in this case the warning images and messages, form cigarette packages from various angles, while the subject is asked to evaluate his/her desire for smoking, with the push of a button, on the button response box.

Preparatory to the experiment, the subjects were asked to fill out a form inquiring about, resent family history and smoking- history and habits [ibid p. 23-29].



Picture 2, borrowed from http://psychology.uwo.ca/fmri4newbies/

The experiment concluded that the warning messages and pictures on the cigarette packages did not discourage the subjects from smoking. Lindstrøm here stresses that the experiment showed that the nucleus accumbens was stimulated, which is known to “light up” when the body desires something. In other words did the warnings not cause the subjects to shun from smoking, but they encouraged it. It is however interesting that when asked if the warning labels worked, had the majority of the smokers, in the preparatory form answered “yes”. This could be because the subjects answered in a way they presumed the researchers desired or because the subjects felt guilty knowing the effects of smoking on their health. This however, is found in our irrational thinking, deeply buried in our cultural upbringing and rooted

in our traditions, which influences our everyday choices. Here Lindstrøm points out that the smokers believe that they know why they do what they do, but looking at the brain changed this [ibid p. 25-29].

Lindstrøm observed that some of the test subjects looked both cautious and enthusiastic, when placed in the machine. When scanned for the first time the process is, by Lindstrøms accord, not pleasant or relaxing, the machine is very noisy and the experience can be claustrophobic "like being buried in a telephone booth" [ibid p. 24]. Adding to this, before entering the room with the fMRI scanner, the participants were asked to take of accessories, such as; wedding rings, wristbands, earrings etc. meaning, any metallic object, this due to the electro magnet in the fMRI scanner. Moreover, the least movement can render the experiment worthless. Therefore the subject has to lei completely still during the entire process [ibid p. 24].

Lindstrøm noted that prior to the experiments some participants aired their feelings and anxieties about the upcoming scanning to each other, with for instance: "Do you think it will hurt?", "George Orwell would love this.", and "do you think the machine can read my thoughts?" [ibid p. 19].

2.3 McClure et al.'s Cola® vs. Pepsi® (another experiment)

Another important and a main contribution to neuromarketing are seen in *Neural Correlates of Behavioral Preference for Culturally Familiar Drinks*[7]. This experiment consisted of 67 test subjects (38 male and 29 female; aged 19-50 years, mean ± SD: 28 ±7.6 years), each subject participated in one of three experiments, which were designed similarly [Article, McClure et al. p. 385]. The test subjects where parted into four groups, each group was given a taste test outside the fMRI scanner and while in the scanner. First, the subjects where asked which brand they preferred, Coca Cola, Pepsi or none, over the other. This was referred to as the *stated preference*; doing the tests the subjects exhibited a *behavioural preference*. During the tests some cups of cola were unmarked and others where it was written or told, which brand of cola it was. To establish the relation between the brand information and the subject's brain activity, the scanning experiments where completed parallel to the taste tests.

The scanning experiments where complicated, due to two elements: (1) whether responses in the reward-related brain areas are predictable in time and (2) studying the response to the soda delivery alone, which was done thought tubes. It was not possible to show brand information at the same time as the soda was delivered, because it would not be possible to disclose if the subjects reacted to the delivery system or to the brand information. This was circumvented by displaying the soda brand information before the soda was delivered. Hereafter through comparison elect when the

[7] A paper published by McClure et al, in *Neuron* - a prestigious science journal published by Cell Press

brain information was consistent, in other words pre-delivery in fixed time.

As in Lindstrøm's experiment, movement was an issue and because the subjects had to swallow the soda, the subjects' heads had to be fixed in place, by constraints. By testing with and without constraints, any contamination was ruled out [ibid. p. 380]. Complicating things further, because of carbonate build-ups in the tubing, they had to suffice with, decarbonated soda. However, through testing with carbonated and then with decarbonated soda, it was shown that the decarbonation of the soda had no effect on the results.

The behavioural preferences, which were measured in the taste trails, were potentially unreliable measurement of the subject's true preference due to the sample size (number of measurements). This was accounted for by, among other, recalling the test subjects, after several months and then retesting them, thereby discovering that the test results were much the same [ibid. p. 381].

Experiment results

It was discovered that in generating preferences, two different brain systems are involved[8], suggesting that the two systems might function independently to preferences based on sensory and cultural information [Article, McClure et al. p. 383]. Hereby, indicating that consumers could be more influenced by the memory of the brand, rather than by the taste. In other words, this illustrates that cultural influences have an important influence on the expressed behavioural preferences.

2.4 Neuromarketing adaptation by Zaltman

Gerald Zaltman is a former member of the Executive Committee of Harvard University's Mind, Brain, and Behavior Interfaculty Initiative. Currently he is the Joseph C. Wilson Professor of Business Administration Emeritus at the Harvard Business School and [Other, Profile Zaltman]

In *How Consumers Think –Essential Insight into the Mind of the Market*, Zaltman illustrates a method, which through the application of knowledge and research from neurology, cognitive psychology, marketing etc. should enable an insight into the subconscious of the consumer. This is achieved through Metaphor-Elicitation Process (MEP). Zaltman explains the procedure through an Olson Zaltman Associates[9] project with second-generation Hispanics, living in several regions of the US. The study was to investigate the participants' feelings and thoughts on being Hispanic in today's US. Researchers asked the participants to gather pictures, which expressed their feelings about the given topic, one week prior to the study. The study's aim was to investigate, through a series of one-on-one interviews, the relationship between the consequences and their effect on the participants buying behaviour. Further examined was the experience

[8] The vmPFC (Ventromedial prefrontal cortex) - known to signal basic appetitive aspects of reward [Article, Imagilys] and brand knowledge does created bias, which is seen in the employment of the hippocampus, DLPFC (Dorsolateral Prefrontal Cortex) and the midbrain. This was partially notable in the case with coca-cola. [neuron, 2004 p. 383]

[9] OZA, founded in 1997 by Professors Jerry Olson of Penn State University, and Gerald Zaltman of the Harvard Business School.

the participants felt, and how it differed from their parents and those their children might have.

The pictures the participants gathered were metaphors, which illustrated their thoughts, feelings, and behaviours [Zaltman, 2003 p.101]. Zaltman stresses the importance of asking the right questions and in the right manner – in MEP the interviewer does not *prompt*, but *probes* the consumer's thoughts and feelings. Through probing the interview facilitates the participant's aptitude to *open and look through more windows*, thereby enabling them to respond, in often unexpected ways. Prompting, on the other hand, forces the participant to focus on the interviewer's assumptions or hypotheses.

The example given by Zaltman is concerned with a picture of a man and a woman, each holding up a mask in-front of their face. The first probe is the *Image Description Probe*; "Can you describe this image for me? What do you see here?" Thereafter there is an *Introductory Probe*; "And how does this image relate to your thoughts and feelings about being Hispanic in America today?" In accordance with the participants answer, the interviewer continues; "Could you tell me more about the mask?" An inefficient probe could sound as such: "Does this mask hide them from others in America whom they are not like?" Thereby, resulting in the interviewer's reflections, influencing the participant's response [ibid p.101-103].

To further the probing, Zaltman suggests *mental hiccups*, which are unusual questions or challenges, which have the ability to shove participants off balance. Such a *hiccup* was applied in a ZMET (Zaltman Metaphor-Elicitation Technique) licensing seminar, for a diaper division, where mother's attitudes toward their babies' bowel movements were studied (which should affect mother's diaper buying decisions). In the *hiccup* exercise, the participants were asked to imagine a home movie or video, with three characters; a baby, the participant, and the babies' bowel movements. The participants were asked to assume that the bowel movements had thoughts and feelings and were able to express them. The exercise created some laughter and resulted in participants including the earlier, doing the interview, expressed ideas. Thereby, allowing new ideas to surface [ibid p.108-109].

Trust and understanding

It is important that the interviewer understands the amount of trust, which is required. The metaphor-elicitation interview can be a personal revealing and emotional experience for the participant and therefore it is for the interview to understand and respect the participant's experience to be able to navigate through the interview session.

For Zaltman the socioeconomic status of the participant is not relevant, for the result of the interview. Therefore, organisations that conduct MEP insist that no screening of the participants should be attempted. A screening could result in a selection of the participants, on the basis of their verbal and analytic skills or other elements, which could suggest a higher level of education.

Focus group recruiters often screen their participants, which could result in participants that could be valuable to be screened out of the interview. Screening processes, such as this, make it easier for the focus group interviewer to conduct an interview or provide an entertaining interview for the client [ibid p.109].

Interviewing the Mind

The previous showed how metaphors can be applied to elicit conscious and unconscious thoughts and feelings. Other methods such as *Response Latency Techniques* can also assist in discovering the conscious and unconscious. In a survey reaction and perception are highly dependent of what is familiar to the respondent. The context and behavioural response of the participant can be unknown to the participant self and therefore not provide accurate results. Monitoring the participant's *response latency* can help in allocating inaccuracies, meaning the pace in which the participants answer can suggest the absence or the existence of "noise".

Priming the participants can also assist in discovering the consumer's thoughts. This is done by showing the participant a picture of a product, on a computer, and then displaying words which the participant then can add as a word or non-word. The response latency of the participant depends on, whether or not the participant associates the word with the product.

Building on priming research, the *Implicit Association Test* measures the relative association the respondent can have to two concepts. For instance "flowers" and "insects", where flowers are pleasant and insects are irritating.

Implicit measures are superior to explicit measures (such as surveys) for two reasons; first, implicit measures can assist in uncovering attitudes the consumers are unaware of, but still influences their buying behaviour. Second, in surveys and focus groups participants may respond in a specific way in an attempt to please the interviewer or the group, or to be perceived as for instance healthy or knowledgeable [ibid p.111-115].

Neuro-Imaging

Trying to demonstrate the promise of neuromarketing Stephen Kosslyn[10] and Gerald Zaltman undertook a unique study, where participants where scanned for their response to three different retail settings, which were described on an audiotape. The results where compared to another study of the same retail setting using explicit methods. The conclusion of the two studies proved to be the same. The neuro-imaging study showed increased brain activity in areas associated with emotions, particularly negative and positive. Predicted activity in the visual cortices, suggested that the participants could visualise the scenarios. This and other studies suggests that brain imaging studies could be a cost-effective way of evaluating different concepts, where ethnographic studies, one-on-one interviews, and surveys could be beneficial when concerning the implementation of the concepts.

In a pilot test, researchers discovered that 95% of the brain was activated by an ad [ibid p.119-120]. Interesting in addition, the 95 % of all cognition occurs in the unconscious mind, which Zaltman calls the 95-5 split [ibid p. 50]. However, extensive work remains to identify the advantages of such studies, whether or not they add value to the development and assessment of advertising [ibid p.119-120].

[10] Professor of psychology at Harvard University, specialising in cognitive neuroscience

fMRI Disadvantages

To Zaltman the fMRI procedure has some disadvantages, for instance: Participants must lie still within a noisy, cramped device, which in addition is expensive and has several uncertainties; such as the metaphors have to activate the scanned areas of the brain successfully. This scanning might have had different results if one metaphor was stronger than another. This could however, lead to conclusions about ads, for instance if the ads efficiently elicits positive emotions and memory [ibid p.118]. Adding a word of caution Zaltman mentions that marketers could be tempted to conclude that one spot in the brain signals an effective ad or concept. However, it is not possible to "read" specific thoughts; it is only possible to recognise areas of the brain, which are associated with particular thoughts and feelings [ibid p.121].

Focus Group Folly

Besides screening participants, focus group interviews are often applied where they cannot work, for instance as a basis for decision making. Also in a two hour interview, with five to ten topics and eight participants, there is about one to two minutes for each participant on each topic. Most managers and researchers agree that focus groups are overused and misused, however they are still used. The reason for this is that focus groups are easy to conduct and afford. However, focus groups are not effective when developing or evaluating new products or brands, or testing ads. and cannot identify deeper thoughts or feelings. Focus groups could, however be used to provide feedback on product design and usability [ibid p.121].

Little scientific foundation exists that support the use of focus groups. Group therapy provides the closest relation to any scientific foundation even though the structure and technique are different. For group therapy to be successful it requires several interviews both one-on-one and in the group, and also requires a highly trained therapist [ibid p.121].

Understanding Thoughts

Comprehending and influencing the consumers' thinking and behaviour, requires managers and researchers to understand what thoughts are. In other words understanding the "why" behind the "what" is required to be able to help the consumer make the right decisions for themselves [ibid p.129-131]. Segmentation has caused market research to focus on consumer surface differences rather than similarities, which is the key to understanding consumer thinking and influencing their buying behaviour. Since, the human brain's structure and functioning is similar (at least at birth), we develop many commonalties [Zaltman, 2003 p. 147], such as universal or near-universal human qualities. Qualities such as aesthetics, crying, and death rituals[11], can all be considered on a deep level to have more communities then differences [ibid p. 137-138].

In regard to demographics, Zaltman argues that *companies should define consumer segments on in their reasoning or thinking process* [Zaltman, 2003 p. 152]. Hence, to Zaltman are demographics only indicators of the thinking process.

[11] A complete list, can be seen in the appendix printed from http://condor.depaul.edu/~mfiddler/hyphen/humunivers.htm

Consensus Maps

On the basis of neuro-imaging, Zaltman has devised a technique, which he dubbed Consensus Mapping. This technique does not require any machines, except maybe a video recorder and a laptop.

A consensus mapping interview consists of 12-15 individual metaphor election interviews, which each have a duration of two hours. On the basis of this a “mind map” is created, illustrated in Figure 2.

A consensus map is not "written in stone", however, it does allow managers to reengineer their place in the mind of the market [Zaltman, 2003 p. 147-155].

Figure 4 - 1
Metaphor Structure for Chevy Trucks

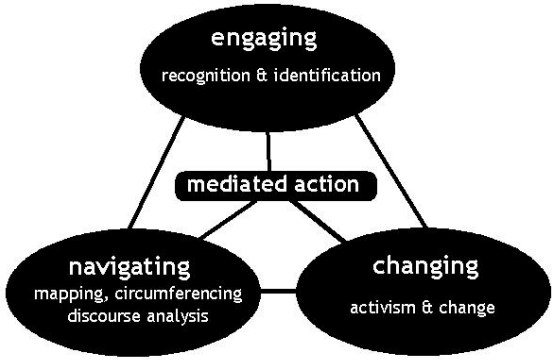
Figure 2, from *How Customers Think - The Subconscious Mind of the Consumer (And How To Reach It)* [Other, Interview Zaltman]

The following introduces nexus analysis, which is used as a gathering device, in relation to the phenomenological walkthrough of the neuromarketing experiments. This permits an extraction of key elements, with the aim of better understanding and discussing the neuromarketing process.

2.5 Nexus Analysis

Nexus Analyses is an action research strategy, which is based on ethnographic discourse analysis. The theory suggests methods of approaching people, place, discourses, and objects, which form the key elements of social action. [Scollon, 2004 p. i - xii].

The Nexus Analysis fieldguide consists of three elements - engagement, navigation, and change. These have no forced structure; it is for the users of the fieldguide to adjust the proposed tasks in accordance with their research projects. The fieldguide shares several familiarities with mediated discourse analysis, but does not exclude other activity or/and practice theories. The three activities of nexus analysis can be seen in Figure 3 [ibid 152-53]. The following therefore consists exclusively of elements, which are discussed in the analysis and which aid in locating the key elements of the neuromarketing process. Any theory, which application is not fitting in this relation, is regarded as redundant, and as such discarded. The chapter is structured after Figure 3 starting with *engaging* thereafter *navigating*. C*hanging* is excluded because the aim is to investigate the experiment and I myself am not physically present in the nexus.



activities of nexus analysis

Figure 3, is recreated from. *Nexus Analysis: Discourse and the Emerging Internet. P. 153*

- Engaging the Nexus of Practice

In order to disclose the social action, a recognition and identification of *the nexus of practice,* is required. An advantageous approach for creating a more concrete study is though examining people, places, and action. This can be done through three main factors: the historical bodies, the interaction order, and the discourses in place [ibid p. 170-174] as shown in Figure 4.

The Historical Bodies

All participants have a history, which can have an effect on the current. This could also be seen in everyday activity, such as; where they spend their time [ibid p. 157]. It is important to note that this has a direct relation to demographics.

The Interaction Order

Where are the participants located in the interaction? It is important to know how the participants organize themselves in the social interaction.

The Discourses in Place

A way of discovering the crucial scenes for one's study is through the cycles of discourse. Meaning, observing the discourses that are circulating, particularly though the studied action.

Focus Groups

As a means of verifying the crucial scenes, participants, and mediated actions, it can be beneficial to conduct focus groups. This with participants which are demographically like those of the study, but not known to them [ibid p. 157].

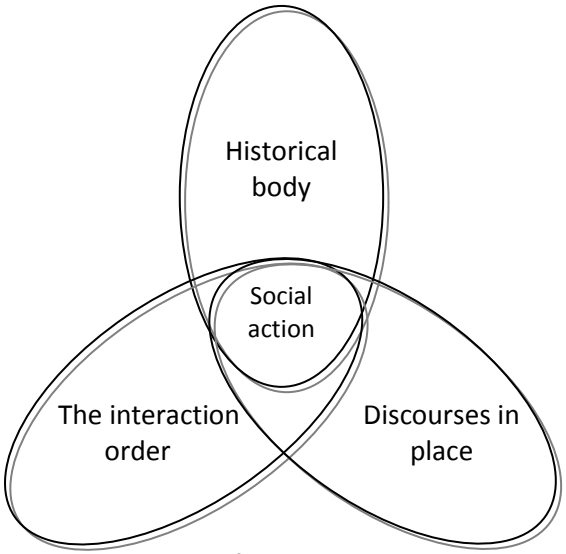


Figure 4, is recreated from. *Nexus Analysis: Discourse and the Emerging Internet. P. 154*

Verification of Results

A study should cover four types of data, in order to be well triangulated. This Scollon explains as such [ibid p. 158]:

- *Members' generalizations:* What the participants say they do?
- *Neutral (objective) observations:* What does a neutral observer see?
- *Individual experience:* What does the individual describe as his or her experience?
- *Interactions with members:* How do participants account for your analysis? This will mostly focus on the resolution of contradictions among the first three types of data

In other words; the research should examine the normative expectations of the participants and should be observed and seen if corresponding with *reality*. This thereafter, should be related to the individual's experiences of the nexus of practice; it is often characterized by the participants' exclamations about their diversity from the others. Finally, through an interview get one's observations rejected or confirmed; Scollon suggests focus groups as a beneficial way of obtaining such data.

When collecting data all four types should be attempted; including as many objective recordings as possible, such as video, audio, pictures, news articles, etc.

- Navigating the Nexus of Practice

Important for the analysis of the neuromarketing process is the semiotic aggregates, meaning what is located in the nexus of practice – foreground and background? The guiding question concerning this is:

> *What aspects of this place are central or foregrounded as crucial to the action on which you are focusing and what aspects are backgrounded?*

It is therefore, both the physical place of objects and the role they occupy which are interesting.

The Discourses in Place – overt discourse

The built structures, such as furniture and decorative objects, have role in constituting a *place*. This is also the case for the discourses. Overt discourses can be located in both foreground and background, for instance in:

- the interaction order
- Signs
- Noise or the opposite
- *Polyfocal* or *monofocal* action, meaning if the focus of the action on one or more discourses
- Several or few discourses, which can serve as a "cleaning" of unwanted discourses

Discourses – internalized as practice

Actions can become "submerged" through practice. Such as preparing a meal, might require a recipe, which after some use is not necessary. Not all actions are internalised in such an obvious external and explicit manner. Through the mapping of the cycles of discourse, which are inside a nexus of practice, is the transformation of the discourse into practice and objects observable, these in turn are transformed into new discourses. The guiding question here is:

> *What discourses are 'invisible' in this action because they have become submerged in practice?*

A method of discovering the invisible discourses is through mapping of the semiotic or discourse cycles (backwards or forwards)

and studying the circumferences surrounding the focus of study. Important are the actions where the transformation process is visible, which is why it is a good place to begin the study and the following questions:

- Are any discourses being foregrounded as an attempt of creating particular habits?
- Do any of the participants instruct or teach any of the other participants?
- Concerning the participants' discourses; are any of the actions, practises, objects or built structures being forgrounded?
- Are any of the objects, or structures being pointed out by any participant, as a means for conversation?
- Do the actions seem automated? Since submerged discourses are likely to be embedded in automatic action
- Do the actions seem new or unpractised? If yes, does it seem likely that these actions are expected in future cycles to become practiced?

Cultural tools (mediational means) - Objects and Concepts

An object such as an insulin inhaler or injector starts as an external object, which in time becomes internalised or 'submerged' in action as a concept of "medicating". This is also the case for a musician, which instrument becomes a concept of "the music".

-Objects

The guiding question for objects as a cultural tool is:

> *What is the history of objects as a mediational means for this action?*

The following questions will aid to this understanding:

- Is it perchance an opportune object or is it to any degree, created for a specific action as a mediational means? For instance: the adjustable spanner has the specific purpose of tightening bolts, however a pipe wrench can also be applied to the same task, if the other is unavailable
- How is the mediational means (object) for this action altered, in or through the action?
- What is the reason for this object's presence in the action? How did it come to be present?
- What is the degree of repair or abrasion?
- By which social actors and to what degree is the mediational means internalised? This is connected with the "age" of the historical body
- Is a resemiotisation the reason for this object? This is related to *transformation* (*transformation* is examined later in this chapter). An instance of this could be a memo or letter, which has its basis and content on a pre-meeting between managers. This before the official meeting, between staff and administration

-Concepts

While the questions under this subject, are much alike the questions concerning objects, these are often connected with a longer *timescale* and therefore a longer internalisation.

Therefore the guiding question for concepts is:

What is the history of concepts as a mediational means for this action?

The following questions will aid to this understanding:

- What discourse tools are used (conceptual/psychological)? This in regard to language, semiotic codes, number systems, knowledge (as in pre-conceptual knowledge), and behavioural social codes
- How are these tools shared among the participants?
- Have the mediational means been fully internalised and for what duration?
- Is the degree of internalisation shared among the participants equally?
- Where, when and/or with whom did the internalisation of the mediational means occur?
- To what degree effects resemiotisation the result of the conceptual or psychological mediational means? A history of interactions and tests can be altered through the usage of words or phrases, such as; '*non-compliant*' and '*learning disabled*'
- The mediational means is transformed by the action, but how? This is related to *transformation*, which is examined later in this chapter

Mapping

Through the previous, the crucial mediated action of interest has been located, which has helped defining the focus. By this is meant that through observation, objects and concepts of interest have been located, namely; people, place, discourses and mediational means. The following engages in elements, which enable an examination of the semiotic cycles of the previous.

- Anticipations and emanations

We as humans spend much time on either anticipating actions or reflecting on past actions. Even actions taken, can be a result of anticipating actions or past actions.

The following questions will help in locating actions on the arc of a cycle over a longer timescale:

- To what degree is the action taken based on previous or future actions? What are these actions?
- How does the action exist (anticipated) in the historical body of the participants?
  - Do participants dress in a certain manner as to accomplish this action?
  - Was the action anticipated earlier? As seen for instance, when ordering a plane ticket for a vacation or booking a room for a meting

- Is the action discussed as anticipation or emanation? Or both?

- Design is a dominant form of anticipation, while cleaning and waste disposals are the forms of emanation, which are derived from former actions and events. How is this 'built in' the used mediational means? Meaning how does anticipation or emanation exist in the actions, both in a physical form and in the form of discourse

Points and intervals

Not all actions are major or dominant and are therefore, not as important as others. However, some occasions of lesser activity or partial inaction could still be important to observe and note. Therefore, when striving for a fuller understanding of the current actions, at times it is prudent to look at the intervals.

The guiding question will assist the understanding of the previous, concerning points and intervals:

> *What are the key points in the cycle of this person, discourse, etc. where there is a change or a transformation (resemiotization)? A subsidiary question is: What is happening in the intervals between these points as anticipations (or reflections upon) these changes?*

Further aiding questions:

- What is the frequency of this action in the life cycle of this; Person(s), mediational means, or discourses? (rare or often)
- Is this action strongly connected with a series of action? How are the immediate and following intervals? A hotel might have so few guests that the actions taken by the clerk are few and therefore might lose focus or even fall asleep. Where on the other hand, a clerk in a crowded hotel lobby will have to work harder and frequently check for the actions of the guests
- Regarding the usage of mediational means, are the objects used often or rarely?
- Do a lot of actions occur in this place? This has to do with what actions are expected. For instance: A crowded train station or a work place in Spain around noon

Timescale

Timescales vary, from life expectancy of a human being and technology, the same goes for some semiotic cycles of discourse, object and actions. What is new and unexpected today, might tomorrow lose its power to fascinate and sense of ingenuity, wherefore it no longer seems original or even fade away.

Though this should not be mistaken as just a simple form of measurement, because the life expectancy of a person with a terminal illness, could be very short indeed and she would discover that she was far on her timescale.

Originating from discourse analysis: how do the participants construct the timescales in the current action? This leading to the guiding question:

> *What are the material-physical timescales on which these cycles operate and how are those constructed discursively by the participants?*

Additional questions, which could aid in disclosing this:

- Regarding the studied action, what is the expected typical timescale for the central; participants, discourses, places, and mediational means?
- Who creates these timescales and how are these created discursively?
- To what degree is these constructions agreed upon?
- At what point in the cycle does this action occur?
- What links and relationships are there between the different timescales? The duration of a scientific experiment might be several hours, but in the entire life span of the project, it might be very short

Transformations and resemiotisations

Transformations often occur with actions that change another action, object or discourse. The semiotic cycle is transformed from one mode to another. For instance from text, to speech and back again, which in turn could be transformed into an object. It is important not to become too focused or "stuck" on any physical object, concept, discourse or participants and their actions.

The guiding question for transformations and resemiotisations is:

> *Is the action under examination a point at which resemiotization or semiotic transformation occurs?*

The questions in this instance are as such:

- Which of the key participants lead up to this action and what anticipations could have led to this?
- What are the emanations from this action?
- How is this relevant to the different participants' historical bodies? Moreover, do these differences form the foundation for the transformation or resemiotisations?

Circumferences

Each action is a part of a larger timescale, from larger activies to activity systems and from life history to eras. The function of circumference is to gather enough information surrounding the studied action, thereby allowing a fuller understanding of that action.

The guiding question for circumferences is:

> *What are the narrowest and widest timescales on which this action depends?*

The following questions will help in how to follow the circumferences:

- Are the circumferences limiting the action? In a doctor's appointment, the doctor is not able to follow and observe the patients for a longer time period. The doctor will have to relate on questioning the patient to get the sought after information
- Is there an agreement between the participants, concerning the timescale or circumference?
- Who resolves the conflicts and how?

2.6 Nexus Analysis - Applied

As a student of among other literature, I am indeed able to analyse the different scientist's understanding and attitude to the procedures through their literary renditions. I do recognise that no second hand rendition is as good as personal experience. This does however, supply information directly from the researchers and must therefore be considered valid. Moreover, since this is not the main focus of the paper and its main function is that of being discussed and reflected upon, I find that it does met the level of detail required for this paper.

The amassed information from both Lindstrøm and Cola vs. Pepsi walk though, is analysed together in the following, since they both cover different angles of the neuromarketing fMRI procedure and are written with different interests. Lindstrøm's rendering has more focus on the location and the surroundings, where as the McClure et al. rendering focuses more on the technical data and its challenges.

Zaltman's theory is not applied in the overall nexus analysis, but it is used to fill out some of the blanks, which are left by the two cases, due to the lack of information.

The interviews where the participants were questioned about their behavioural preferences and were tested through taste tests are interesting in relation to neuro-marketing experimentation. This underlines that the interviews are a prominent part of the experiment itself, because they are used as a means of verification and investigation. However, this is not investigated further in the following, because it is the neuro scanning and the process, which is the centre of this chapter's attention.

- Engaging the nexus of practice

The historical bodies

The two experiments only have little interest in the demographic background of their test subjects. The main interest of the experiments lied in the direct relations the participants had to the object of investigation. Elements disclosed prior to the experiments were age and behavioural preferences, such as brand and relations to the subject. In the Lindstrøm experiment the subjects were asked to fill out a form, which also inquired about resent family history, however no reason or usage of this was mentioned.

The lack of a more thorough demographic interest could also be located in the size of the participant pool, which in the Lindstrøm case was over two thousand. It could, however, also be related to Zaltman's understanding of demographics. Namely, that we all develop many commonalties, as seen in the universal or near-universal human qualities.

Even though the participants in the experiment are the subject of analysis, the scientists conducting the experiment are just as interesting, because through their evaluation they affect the analysis process and are therefore just as involved in the discourses in place, as the participants themselves. Moreover, the researchers were from different fields of study and therefore must have had different interests. As noted in the Lindstrøm experiment there was also an ethics committee.

The interaction order
The interaction order in a neuromarketing experiment is connected to the discourse, which is located in an imperative question structure. This is among other, because to validate an experiment such as this; it is imperative that the experiment and the results can be reproduced.

The discourses in place
This is a study of a textual rendering of a scene, the crucial scenes have so to speak already been chosen. Moreover, the scenes in this case are very specific, because it is the experiments process which is described and therefore in focus.

It is however, still important to note the different discourses, which could be circulating in the place of action. Meaning, it is just as important to observe the discourses which are a part of the experiment and the culture found in a research laboratory.

Focus groups
The function of the focus group interview is to verifying the crucial scenes, participants, and mediated actions.

I have, as mentioned, not been able to part take in any neuro experiment and the scenes analysed are textual renderings. Meaning, the scenes have been preselected, not only by the author of this thesis, but also by the authors of the chosen neuro experiments. A focus group interview could have given insight into the mind of the participants and maybe revealed aspects of the process which are unobtainable through the gathered information. A focus group interview however, would take up time and could be the cause of a divergence of attention in the thesis.

In regard to the focus groups, is it interesting to note the distinct difference in opinion between neuromarketing enthusiasts Lindstrøm and Zaltman, and Scollon and Scollon. This is investigated further in the discussion.

Verification of results
I am, unfortunately, not be possible to investigate the participants own relations to the presented actions and scenes, due to lack of interest from CFIN's (Center of Functionally Integrative Neuroscience) department of neuroscience, which also excludes any neutral observations. It is however, possible to discuss the focuses of the textual renderings of the experiments. In addition, it is also possible to engage other researcher's opinions on the experiment process, application, and usage. This is examined further in the discussion.

- Navigating the nexus of practice

Foregrounded in the physical space are the scientists in their lab coats, surrounded by technical equipment, as well as, the fMRI machine and its functions and the participant which are alone in the adjacent room. Neither foregrunded, nor backgrounded are the spacious renderings of Lindstrøm when engaging the building's interior, when referring to the notion of the medical science laboratory and adding qualities, such as antiseptic and clean, and in addition, the white halls and flannel gray doors. This to me illustrates a physical and mental impact, which the surroundings had (at least on the author).

Several elements have been backgrounded or left out by the authors, as seen in McClure's rendering, where no time is spend on the

fMRI machine, but on the complications of the additions, such as tubing and carbonation. This shows that the target reader is another then Lindstrøm's text, but also illustrates that McClure has an interest in verification of the experiment approach. This could also be rooted in some uncertainty due to the lengths they have to go to in order to circumvent the challenges.

Objects left out are for instance fire extinguishers and garbage bins. This however, does not exclude their existence or their purpose, but merely means they have no primary function in the selected scenes.

The discourses in place – overt discourse

As mentioned earlier, is the interaction order preset in these cases, because of the question-answer structure present in such an experiment. However, prior to the experiments, as seen in the Lindstrøm case, the participants talked to each other about the upcoming scanning, vented their feelings and anxieties. This shows that some overt discourses are present in the participants, which concern the experiment itself. Also, Lindstrøm mentions that the experience is not pleasant or relaxing due to the very noisy the machine and because the experience can be claustrophobic.

The surrounding hospital is a sign in itself of professionalism and healthcare. The setting creates a demand of authority from the scientists and exerts a certain protocol (the meaning of authority is examined further in the second circle section 3.2).

The participant's heads in the Coca Cola vs. Pepsi experiment where fixed in place. This could also be the cause of some overt discourse, meaning that the participant most likely commented upon getting fixed in place by constraints.

The participants drank non-carbonated cola, due to tubing complications, which was excluded from having any effect, because they displayed the brand information pre-delivery. Even though these precautions were made, it could have caused some the participants to think about the decarbonation after the first delivery. Manly because carbonation does cause difference in taste [Article, Palmer], however, the main interest of the experiment was behavioural preferences vs. true preferences.

The reason for the avoidance of the subjects is that the complications are for their experiments unwanted background discourses, which is "cleaned" away by their refuting.

Discourses – internalized as practice

There can hardly be talked about creating habits, but an aim of the procedure is to "teach" the test subjects to ignore the machinery and any ill feelings or excitement towards the procedure. Moreover, the scientists are indirectly thought by the test subjects, because through the examination of the test subject's reactions, the scientists learn more about the study and the procedure itself.

In regards to what is foregrounded, is it difficult to say much with certainty. Hypothetically however, in a research situation it would only benefit the results that the discourses surrounding the procedure are backgrounded and the tested product, whether cola brands or cigarette packaging, are foregrounded.

I am not able to note much about the autoimmunisation of the procedure. However, a hypothetical situation could be located in the adapting of the questions asked in a cultural relation. This would have been especially important in the investigation of the cigarettes warning messages, where people from different cultures where involved.

In the investigation of the behavioural preferences the test subjects had to relate to a brand name pre-delivery of the decarbonated cola, in fixed time. This would require an exact understanding of the reception of the human participants, which among other differed in sex, age, and behavioural preference.

There is sadly no mentioning of any adjustment or adaption in the procedures while they were practised, only that there where made changes. In the case of McClure et al. it was related in a manner that created an understanding that the changes made, where preliminary to the experiments.

Cultural tools (mediational means) – Objects and Concepts
Looking at the fMRI scanner, a doctor could with time view it as an object of medicine, much like a stethoscope. For the marketeer an fMRI scanner could be viewed as an (or maybe the) object of market research.

As mentioned above, the hospital itself is a sign or object of professionalism and healthcare. This setting creates both a demand of authority from the scientists and exerts a certain protocol or concept. That the participants are aware of this situated interrogative question structure could be helpful when questioning.

As a case of opportune discourse related to an object could the strapping down of the participant's heads create a discourse, concerning, among other, comfort. This could occur within the test subject her/himself or even between participants (test subject to scientist or scientist to scientist). Thereby, altering the function of the straps, from a purely functional object to an object of conversation and maybe even adding to the frustration of the procedure itself.

Beside the previous, the subjects are given and/or shown different market products and asked to relate to it, all of which are culturally bound. In addition, the test subjects, in the cola experiment where asked to answer questions, not through language but by pressing buttons on a remote. As mentioned in *Discourses – internalized as practice*, the protocol for the undertaking could be changed through the test subject's reactions, or even by the scientist's reactions to other scientist's reactions to the subject's. However, since this is a science experiment, it has to be able to be reconstructed, with much the same results, in order to be proven viable. Therefore, once a series of tests is started it should not be changed. In Addition, Lindstrøm mentioned that the participants talked about the fMRI scanner before the experiment. This could have cause some of the test subjects to react differently or changed their anticipation.

- Mapping

Anticipations and emanations
Based on Zaltman's notions the individual's understanding is already created, meaning that they culturally and socially are pre-programmed. Therefore, as a representative of her/his culture they are able to answer the questions.

Looking at the exclamations the test subjects had pre examination, it can be noted that they anticipated different things from mind reading to pain. If the noise of the machine or the straps that fixed the subjects head in place did not hurt, the emanations of their experience would have changed their feelings and anxieties. But also the reflection over the tested might have transformed their understanding. For instance, as the test subjects discovered that the warning messages on the cigarette packaging had been resemiotisatised – that, which started as a means of warning, now encouraged their addiction.

As previously discovered in *Cultural tools*, the environment and scientists themselves create certain anticipation – with special emphasis on the questioning structure. In regard to emanations are the straps a result of experience. One would also assume that the scientists learn how to calm and prepare the participants in a manner that is desirable, thereby minimising the possibility of anxious test subjects.

Points and intervals

As mentioned earlier, there is no particular interest in studying the demographics of the participants. However, when concerned with points and intervals the understanding of the individual is of great interest. In the life cycle of any of the participants, this experiment might be a solitary event. This is the case for both scientists and test subjects, most of which have a special interest in science and the new.

The difference between the scientists and the test subjects is that the scientists work with the experiment for a longer period, as seen in the Lindstrøm experiment, which lasted three years. This does, however, not mean that all scientists have the same amount of time invested in the projects. Moreover, this does not include the research and preparation before the experiment and the studying and evaluation of the results.

Even though the fMRI machine is commonly used in modern medicine, it is not a usual tool in "normal" investigative science in marketing, especially not when considering the scale of the Lindstrøm experiment. When considering the amount of actions, in and during the experiment, the actions of the test subject is limited to answering questions, even though they are the object of investigation, it is their brains activities (responses) which are examined. The scientists take several actions, while the experiment is ongoing observing the test subject. This is seen in the *Coca Cola vs. Pepsi* experiment where they have to observe the brain in fixed time and are focused on particular parts of the brain. Moreover, scientists from different areas of expertise view the results with different interests and might also do so during the experiments.

Timescale

The timescale for the experiment could, as seen in the Lindstrøm experiment, last three years. This included ethic boards and different scientists, as mentioned in the previous; some are a part of the experiment longer than others. Moreover, the preparation of the study could demand much time, and the study of the results could (and most likely will) continue for several years. In some cases it could be the scientist's breakthrough or even lives work.

For the test subjects, the experiment would properly be a short lived experience, which would submerge when re-visited, through mediation such as TV-shows, posters, or news articles. Much like some trends, new technology often fades and has a short appearance. This could also be the cause of some participant's interest, because they are part of something new and undiscovered. Moreover, the interest could also be located in the funding of new technologies, especially marketing research. In his book, Lindstrøm spends much time mentioning different companies, which invest in neuromarketing technology. In Addition, papers such as this thesis could lead to a prolonged existence of such technologies as neuromarketing.

Transformations and resemiorisations

Any experiment is a result of different forms of preparations such as debate, negotiation and data. This is among other duo to the different interests which surround such a project. An objective, however, is to let no such interest interfere with the experiment in such a manner that is effects the results. This is also why any science experiment has to be able to withstand a re-construction, by other scientists around the world.

I think it is important to understand that everything connected with the experiment can affect it, for instance; the flyers and/or brochures used to attract the attention of the participants to the neuro experiment. They act as an object of mediational means, and the result of a resemiotasation, which could affect the participants understanding of the undertaking, meaning transforming their perceptions. This understanding would properly be challenged and re-transformed when encountering other participants and reality.

Circumferences

The experiments, in regard to circumference, include scientists from different fields and the test-subjects. These usually have at least one thing in common, the subject under observation. As seen in the previous, the timescales vary which as a result limit the investigation of the test-subjects. Wherefore, the scientists have to analyse the results, which requires a valuation of the procedure.

The interest in demographics is not dominant in these studies. This suggests that the different scientists could be more interested in the overall results, rather than the individual or the individual test-subject for that matter, where there could have been some divergence due to, for instance anxiety or excitement. This could be circumvented by an error margin and an evaluation of the process.

The previous illustrated that within the entire experimental process is a constant negotiation and re-negotiation, which exists between the experiment and the scientists, and the participants and reality, and their understanding/conception of each other. This creates an interesting complication when considering the rejection or disinterest in, among other, demographics and social reflection; this is revisited in the discussion.

The following section introduces experience economy; starting with the overall understanding and a more in-depth description of experience economies approach to human experiences. This is use in the discussion to disclose the relations between experience economy and neuromarketing.

2.7 Experience Economy

One of the governing approaches of Humanistic Communication is experience economy, which is currently in-vogue. Even mobile library have experience economy as a priority, and claim among other that experiences are a human right [Other, Quote Buhl]. This concept is often used in Humanistic Communication as a how-to-guide to explain consumer reception and behaviour.

The underlining notion of experience economy is observable through the sentence and metaphor: “Work is theatre and every business a stage” [Pine & Gilmore, 1999].

The Danish equivalent for the English noun, *experience* is *oplevelse*, however the Danish word does not have as board a definition. In order to avoid any confusion and with the attempt of enhancing the understanding of experience economy, the following explains the meaning of the word *experience*. Experience has 3 different connotations [Article, Jantzen & Vetner p.2]:

1. An accumulation of knowledge and qualifications which are a result of direct participation in past actions or events,
2. The content in the direct participation in or observation of an event,
3. An event, as it is observed (or experienced) in the moment

In regard to experience economy the connotations of experience can be explained as such:

- The emotional and sensory impressions which the subject acquires in direct participation in the world of objects (connotation 3),
- The evaluation though stories, which the subject creates, out of the emotional and sensory impressions (connotation 2), and
- The habits and routines, which the subject creates in conjunction with his or her different experiences; meaning, a almost bodily embedded knowledge about where, when, and how there is something interesting to experience (connotation 1)

Experiences move our body and, as a result, our mind. Wherefore, experiences change the condition and behaviour of our organism. In other words; experiences have the aptitude to change our conceptions which can lead to a more nuanced and distinct understanding of the self. This in turn, thought with no certainty, can create new habits.

The psychological structure of experience is both evaluative and motivational. Experiences consequently generate new expiations of future experiences. Wherefore, new experiences are purposely searched for through prior knowledge; whilst, new experiences move us, thereby creating new knowledge [Other, Seminar Mærkk pp. 53-56].

Experiences consequently, exist on 3 levels, which are:

3. habitual
2. evaluative
1. neuro-physical

The relationship between the levels is characterised by their rising complexity. Firstly, this is due to the levels 2 and 3 in which meaning, cognitive processes, and social practices are created on top of the bodily basis of the level 1. Secondly, the complexity is further enhanced due to the levels 2 and 3 retrospective effect the physiologic level.

As seen, are habits the result of experiences, which develop specific preferences and search patterns in relation to the objects, which motivate the subject to search for specific emotional and sensory impressions. Important is the notion that experiences, when repeated, loose impact. At the same time the subject might even relate, the current experience, to prior experience and debate it in relation to other opinions (from e.g. partners, friends, and relatives) [Article, Jantzen & Vetner p. 2-3].

The following provides a more detailed description of the three levels of experience economy; to better understand experience economy and to provide a better basis for an application for the discussion.

The *neuro-physical level*, focuses on the operational application of knowledge, concerning products, technologies, and situations. This in relation to the organism's neuro-physical basis, thereby, enhancing the pleasure sensation of the subject. These changes, in the subject's state, can be measured scientifically, for instance through controlled experiments, such as neuroscience. Animals and humans have this level in common; however, the following level is specific for humans [ibid p. 3].

The *evaluative level* is where the changes, in the subject's state, are explained, processed, communicated, and valued; through language, a meaning is sought: what has happened, and how has this, affected and/or benefitted the subject? The process of the communication is a form of reflection on the experience. This among other includes the way it is expressed, which related to the next level; on how habits are created [ibid pp. 3-4].

The *habitual level* consists of behavioural automatisms and routines in relation to the world of objects and people. This is created through social interaction; the habits are largely created and reinforced by the social environment. This means that large groups of individuals have equal cognitive patterns; more or less equal preferences, and sorting of products [ibid pp. 4-5].

So what *is* Experience Economy?

In an article Jon Sundbo[12] lists various discourses concerning the implications of experience economy, such as art and culture, and business economy. Interesting in relation to this thesis are the research complications, which Sundbo notes are tied together with the discussion and the study of; the society of experiences and experience economy [Article, Sundbo]:

- A portion of the research is interested in the design of experiences. The question is if this is an attempt at making a practical application of the research. Just as the growth of the industry gave birth to the engineer
- Is the society of experiences a "happy" society?
- Is a new science of experience arising?

I would like to answer these notions in three parts:

1. Experience economy for me is not a theory as much as a method or guideline, much like nexus analysis, which is used in this thesis. This is however, also one of its strengths, since this allows the application of different paradigms analytic theories. This to me is one of the most valiant quests of the interdisciplinary method and/or theory, to allow all sides of the interdisciplinary action to take part.

2. Experiences in the sense of experience economy are just "the cream on the material" [Article, Sundbo]. To say that it should cause society to become happy is a stretch, but it does offer a platform or container (as seen in Section 2.8) for the communicated.

3. So to me experience economy is not a new science, but an interdisciplinary method of viewing human experience. For it only touches the surfaces of human reflection. This is briefly re-examined in the discussion in Section 4.6.

The inconsistency in the definition of experience economy could partially be due to its age, being a new "megatrend" many scholars wish to part take in the journey of uncovering its secrets. Moreover, the different definitions are inspired by various sources. The definition of experience economy chosen for this thesis is known as the Nordic version [Article, Bille p. 15], which has its roots in three definitions: First, Gilmore and Pine's book *The Experience Economy*, 1999; second, the Creative Industry focus in the United Kingdome Department for Culture Media and Sport, 1998 and 2001; third, Richard Florida's book *The Rise of the Creative Class* [ibid p. 2].

The following section introduces the cognitive-semiotic metaphor, in order to expand the understanding of metaphors and the complexity of the human mind.

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2.8 Cognitive-Semiotic Metaphors

The study of the human mind is not new and has often been a noisy and passionate debate. Usually the debates have been left unsolved. This might have been due to the true nature, which has been unrecognised. The parties in the debates have often talked past each other, rather than with each other [Sternberg, 1990, p. 3]. Agreeing and coming to terms with a subject, is in other words, a complex undertaking. The human minds complexity is intricate and not something easily agreed upon. To introduce the concept of metaphors I have chosen *Metaphors We Live By*, by George Lakoff and Mark Johnson[13].

Metaphors do not only help us construct a more vibrant and interesting understanding of thoughts, but through their structure, they facilitate our understanding and perception. These concepts do however, not only govern our intellect. They, structure what we perceive and how we relate to the world and other people [Lakoff & Johnson, 1980, p. 3]. In other words is the essence of the metaphor to understand and experience one thing in terms of another. This is not just a matter of language, but of human thought, which is largely metaphorical [ibid pp. 4-5, 139-145].

We as humans are physical beings; we experience and are connected to the world through our skin. We are containers, and we try to construct the world though defining containers, such as land and woods. One of the foremost basic human instincts is that of territory. This allows us to quantify the world in terms of substance and amount [ibid pp. 29-30].

Experience is culturally bound, this through the culture present in the very experience itself. Even though, culture is a part of our experiences, there are "more" physical experiences such as sitting down and standing. Our emotions are less sharply outlined when considering our bodily experiences. Though there are *systematic correlates* between our emotions and our senses, such as the emotion happiness can be physically portrayed though erect posture [ibid pp. 57-58].

The traditional understanding of metaphors as being purely linguistic; counter acts the notion that metaphors have the ability to create reality. It can with reason be argued that language is not enough to change reality. Though change in our conceptual structure does affect what is real to us, and therefore how we react to it [ibid pp. 145-146].

The conceptual structure is however, not a matter of mere intellect; it is rooted in all our natural dimensions of experience. These dimensions include aspects of our sensory experience, such as colour, shape, texture, and sound. It does in addition, not only include the "mundane", it includes aesthetic experiences as well. Works of art provide new experiential gestalts, which in turn creates new ways for us to structure our experiences. Gathering from this, art is a matter of *imaginative rationality*. Therefore, is aesthetic experience not limited to the world of art, but can occur in our everyday lives, creating new

[13] Geroge Lakoff, Professor of Linguistics at the University of California at Berkeley, since 1972 [Other, Profile Lakoff]
Mark Johnson, Knight Professor of Liberal Arts and Sciences at the Department of Philosophy, University of Oregon [Other, Profile Johnson]

non-conventional ways of structuring our modes of perception and thought [ibid pp. 235-236].

The above does not mean that the created modes or concepts are merely imaginative structures with no truth to it. For we base our lives on what we believe to be true, both social and physical. Truth allows us to function in the world, in other words, it has survival value. To accomplish this we use different concepts, such as objects, substance, purpose, and cause. This for example, can be observed through a forest clearing. We understand ourselves as being **out** or **in** the clearing; the forest clearing is a *container*. This is not a property of the forest or the clearing it is a property we project onto it, which is relative to the way we function in relation to it [ibid pp. 160-161]. So we as humans create a meaning for the clearing and maybe even a function, which is not something nature has created for us. Meaning does not exist independent of people; it is always to someone [ibid p. 184].

We often see metaphors used in politics, with concepts such as freedom, equality, and economic independence. Nevertheless, one's life could encompass all, whilst leading a meaningless life. These metaphorical concepts are different ways of *indirectly* approaching a meaningful existence. Though as Lakoff and Johnson claim: *no political ideology addresses the main issue head-on*. They argue that matters of personal and cultural meaningfulness are deemed secondary and therefore, dehumanising.

Through metaphors reality can be changed, which is also the case for political and economic metaphors, there is however, an important distinction, which is; these constraint our lives. In other words, a political and economic metaphor can have the ability to hide aspects of reality, which as a result could lead to "human degradation". This can be observed though the illustrative metaphor: *Labor is a resource*. Contemporary economic theories, regardless of political persuasion, treat labour as a commodity and natural resource. In addition, terms such as supply and cost, are used in the same manner. There is, in other words, no distinction between different forms of labour. In labour statistics labour is not meaningful, it simply is. Wherefore, cheap labour becomes a positive trait (concept) and trade, much like cheap oil [ibid pp. 236-237]. This could be related to the westerner outsourcing of production to China, with little concern for CSR (Corporate Social Responsibility).

The following discussion investigates neuromarketing in relation to the amassed information from the first circle. This is accomplished via an illustration of the complexity of the experiment, meaning the challenges of the procedure itself and through the location of the participants in the process/actions. Thereby, creating an understanding of, not only the process, but of the subject. This includes an investigation of neuromarketing in relation to experience economy, and a brief examination of the focus-group interview. The reason for this examination is due to the animosity exclaimed by Martin Lindstrøm and George Zaltman, towards the focus group interview. This in addition, enables a clarification of neuromarketing's perceptive of human interaction.

2.9 Discussion

As seen in 2.5, it is beneficial for the understanding and verification of the examined, to among other, investigate whether or not the results corresponds with *reality*. This is accomplished by applying different media, which concerns itself with neuromarketing and its process, such as articles and other literature.

The discussion starts with the human in the equation, followed by an investigation and discussion of the effects of the neuromarketing process and the reliability of its results. The focus groups interview is thereafter examined in regard to the animosity exclaimed by Lindstrøm and Zaltman. This then leads to an investigation of the gaps of neuromarketing; meaning its challenges and limitations.

The last part of the discussion engages the neuromarketing adaption by Zaltman, and neuromarketing as an application to research, and finally, experience economy in regard to neuromarketing.

Locating the Person

Locating the participants in the neuromarketing experiment is not difficult. This however does not mean it is less interesting. For I think it is within the locating of the individual in the process, which helps us understand neuromarketing's view on the subject.

As a means of locating the individual in the process and for illustrative purposes, the following question is created: What happens to the participants when scanned?

The scientists do not seem to have any interest in the social and cultural demographical relations, the subjects might have. In my research I have not been able to find much about neuromarketing's relations to demographics. This to me is an indication of the lack of interest in the subject as a human being. I was, however, able to find the article *Empathy in the new NEURO-PARADIGM* written by James Edine from *B.TO.ONE* (an advertising company from Montreal), which uses neuromarketing. In the article, the concept demographics was reduced to two factors [Article, Edine]: "Where do they live" and "Their social status", I argue that this reduction underlines the pervious disinterest.

Interesting are the proclamations found in another article by Edine where he states that:

> *[T]raditional marketing is still using old-age demographic equations to target audiences […]* [Article, Edine B.TO.ONE, pp. 2]

This again illustrates the disinterest in demographics; however the following paragraph creates a conundrum.

> *While traditional marketing still considers people targets, Neuromarketing has humanized and erased the term 'target' and reshaped the process to connect with people on an emotional level to win their hearts and minds* [Article, Edine B.TO.ONE, pp. 2-3].

Demographic understanding is a means of segmentation; the aim is however, not to dehumanise, but to better understand the subject.

The following illustrates that the neuromarketing process is by no means humanising, but rather the opposite.

The notion that the neuromarketing process should be able to connect with people on an emotional level, seems misguiding. Hence, as seen in 2.8, emotions are more than sensory impressions. However, I do acknowledge that there are *systematic correlates* between our emotions and our senses. Nevertheless, humans do understand one thing in terms of another and in metaphorical terms, this is often done as a form of mental gestalt, be it smell, sound, visual, and/or even emotional. The fMRI machine visually renders a physical representation of our brains reaction to stimuli; it therefore can "read" some sensory feelings, as seen in the two cases are the cravings from the nicotine addiction and the cola preferences read, it is however not able to read our thoughts. This reduction of the subject, to a mere receiver and sender, is interesting when considering *The Chinese Room Experiment,* by John Searle. Searle concluded that syntax is insufficient for semantics [Article, Searle]. In other words, it is not enough to read the syntax of the human brain to understand the semantics of the mind. As seen is the subject not interesting as a human being. The intrusive action of fixing the test-subject's head in place, as seen in the Cola vs. Pepsi experiment, to me adds to this objectification of the subject. In other words, the subject is changed or transformed to an object of investigation.

Experience - Effects of the Neuromarketing Experiment

As mentioned in 2.8, we are not able to comprehend what we have not experienced through our own senses. This in relation to neuromarketing experimentation could create a conundrum, for if the participant cannot identify the object, they are confronted with, the meaning of the object might be misinterpreted or even false.

The above can also be related to the "halo effect", where the test subject answers as she or he believes the authoritative interviewer would prefer [Schrøder et al. 2003 pp. 249-250]. Furthermore, only 25% of human beings are able to make and maintain an independent and autonomous choice/decision, if challenged by others [Asch in Sjølund, 1965 pp. 62-66] So the answers could be affected by the scientist's inquiry, if the questions are guiding or if the participant feels that the answers are being judged or questioned. A further challenge to the experiments reliability is observable through the Stanley Milgram experiment on obedience to authority from 1963 [Article, Blass]. The notion of action contra attitude witnessed in the Milgram experiment, is also apparent in the neuromarketing experiment. It can therefore be argued that the halo effect is strengthened by the authority of hospital environment and the scientist in white coast. So when questioned or confronted about the object, the test-subject's experience of the object could change to fit that of the interviewer.

Reliability and Representativity

The verification of the results is difficult, since it is hard to know with any certainty that all segments of interest are covered. The large participation basis, as seen in the Lindstrøm case, could have been a means of accomplishing the needed coverage. It can however, only be contemplate if that was achieved. Moreover, no ex-smokers or non-smokers were involved in the experiment. Their involvement could however, have yielded a more representative account of the effect of the warning messages and/or images on people in general and not

only on smokers. In other words, it was the addiction of the test-subjects, which was used as a means of identification.

The Brain, Social Reflection and Culture

The human brain is complex and herein lays one of the more predominant challenges of neuromarketing [Other, Lecture Rose]. Because the brain is not as a computer *pre-loaded with standard firmware and software* [Article, Dooley]. The brain consists of a multitude of mini organs, massively interconnected. There are for instance about 30 different 'modules' in the visual cortex, each responsible for analyzing one feature of the environment – colour, shape, motion, etc [Other, Lecture Rose]. It is noteworthy that the brain structure of humans in general is similar; the interconnections however, are developed through life. Moreover, the creation of the interconnections is yet to be understood by neurosciences [ibid]. So neuroscientists are able to locate the different areas of the brain, but when investigating the neurological connections of the brain, they fall short. This is known to neuroscientists as "the binding problem". It does, however, not require more data but new theories [ibid]. Rose mentions in relation to the creation of new theories that the molecular and system neuroscientists will talk past each other because they cannot "go between them". This is due to the scientists' emphasis on reduction and it is this emphasis on things rather than processes that is one of the main problems [ibid]. It is the binding together over space and time and the integration of space and time. Rose foretells, when this is solved it will help understand what consciousness is and what neuroscientists mean by consciousness. This can be reduced to awareness (the differences between being asleep and awake). But consciousness is a much richer concept and it will not help understand the difference between Freudian unconscious and consciousness [ibid].

As seen in 2.8, our mind is based on our social and cultural contemporary and historical background. Therefore, when denying the subject the needed time to reflect that subject is reduced to a stimuli-response mechanism, in other words a syntactical object. In addition, the social connection to the world is forgotten. In other words:

> *We are dealing not just with a brain that is embodied, but a brain and body, which are imbedded in the social context in which we actually live* [Other, Lecture Rose].

So to understand the human mind we have to understand more than the brain, within the human. Because, it is "more than the physiology of the body" [ibid]. We have to understand the unique personal histories of the individual, within a social and cultural context. Moreover, it requires new theories to be developed, thereby, better understanding the different areas of the brain and how they are connected.

Gathered thus far, form the two cases and the above – Neuromarketing can be applied in sensory testing of existing products. This however, requires that the test-subject is able to identify herself relation to the object of investigation, even when removed from "reality" and placed in the fMRI scanner.

The reason for the distinction between the experiment and reality is that even though, the experiment, much like the forest clearing, has a purpose to us, it is still foreign and difficult to place within our lives.

In other words, the sensory and emotional impressions, of the clinical sterility, found in this alien environment, are even when identified foreign to most people. Moreover, to most people are the facilities and the process only seen through remediation, such as movies and TV-series. This, for me places it outside our reality.

Focus Groups

Focus group interviews, to Lindstrøm, contain too many uncertainties, from personal issues with the object at hand or maybe even the interviewer. Lindstrøm stresses that trying to relate these macro-feelings to words, or write them down, is not possible in a room filled with people. Therefore, Lindstrøm concludes that the "true" reactions and feelings are more likely to be located in the brain. Lindstrøm cites George Loewenstien, a behavioural-economist from Carnegie Mellon University, who confirms that the largest part of the brain is dominated by automated processes rather than cognition – it is emotional not cognitive.

I cannot exclude that screening processes can be misused, with a specific unprofessional aim, such as entertaining or manufacturing specific conclusions. It is, however, in the interviewer's own interest that the results are not affected by any personal affection.

Focus-groups interviews are accused of being unable to provide accurate and specific feedback. Zaltman called this the *focus group fully*, in which he mentions that focus-groups are misused and overused. Expanding on this Zaltman argues that focus-groups are not effective, when among other, evaluating new product ideas and testing ads [Zaltman, 2003 p. 138]. In this his argumentation is three pages long, his attack on focus-groups does not seem very well founded, which is for instance seen, when focus-groups are placed in contrast to group-therapy, which has a very different purpose. It is as if Zaltman ignores, or does not know, the terms under which, a focus-group interview should be conducted. Here I refer to Philip Kotler, who says:

> *Focus groups involve bringing together six to twelve consumers, usually (but not always) relatively homogeneous, to discuss a specific set of issues under guidance of a leader trained to stimulate and focus the discussion [Kotler et. al., 1997 p. 129].*

Here some implications can be observed, for instance, the amount of participants varies a lot and the task of the interviewer is not simple. Moreover, the focus group environment is, at least in regard to social and cultural research, beneficial for market research.

> *[S]ince advertisement are often viewed in group settings, pretests with focus groups can often shed light on how a message is perceived … the synergism can generate more reactions then one-on-one sessions [Kotler et. al., 1997 p. 337].*

Kotler, contrary to Zaltman, believes that focus groups interviews have several advantages. Uncertainties exist in all research, and some are subject to more than others. The focus group interview is for instance, as neuromarketing, subject to the halo-effect and the authority witnessed in the Milgram experiment. However, as

mentioned, it is important that the interviewer of the focus group interview is trained for this specific task.

There are some ethnographical studies, such as nexus analysis, which accept focus group interviews as being a representation of 'real life' discussion and reflection [Other, Meeting Raudaskoski]. Moreover, focus group interviews are used as verification of action, persons, and result, in nexus analyses.

Focus group interviews and nexus analyses are both interested in the study of key social interactions among participants. The method might be different, but both approach the human being as a social being. Meaning it is not only the persons own actions, which are interesting, but the social interaction between participants in the nexus.

Gaps in Neuromarketing

It is only prudent to note that we as analysts of discourse, conversation, etc. just as the neuromarketing scientists have to fill out the gaps in the different forms of analysis. Whether it is trying to understand what a person meant with a certain statement or through body language, all is a matter of reception and evaluation.

A genuine concern could however, be located in the level of noise and anxiety, which effect Lindstrøm uses several pages to explain.

In the Cola vs. Pepsi experiment McClure does explain that there are some complications, but they are circumvented through for instance observing a specific part of the brain at an exact time (or fixed time) before delivery.

Some of the challenges and problems with using fMRI in statistics are described by Jody Culham[14] based on a book by Darrell Huff[15]. The following briefly investigates some of the more important notions [Article, Culham].

-Group averaged data

Group averaged data is a way of locating tendencies through a general pattern, which might have been overlooked from the data of a single subject. Group averaged data can however be misleading, if there is a high inconsistency, there might not be enough data to show overlaps for an area. In addition, due to this, scientists tend to blur or smooth out the data to increase the likelihood of alignment. This however, can create false data, due to the risk of several small foci smearing together.

-The Talairach coordinate

Much like group averaged data is the Talairach coordinate a locating of foci in an area of interest. If the area of focus has two activations in close proximity to each other, they might or might not belong to the same area. This is determined by the software's criteria or by the scientists and the agreed threshold.

[14] Judy Culham associate professor in the Psychology department at the University of Western Ontario in London, Ontario

[15] *How to Lie with fMRI Statistics* from 1954, published by W. W. Norton & Company

-The "Representative subject"

Data from a single subject can be misleading, for the single subjects' data could not be representative. However, having data from several subjects can create an overwhelming amount of data. Moreover, can some subjects' data be "ugly", meaning that the data's discrepancies are too large to ignore. Commonly this is averted by using a "representative subject", which can be considered reliable. There is however not always any "representative subject".

-Interactions for the wrong reasons

A noteworthy technique for "reading" more sophisticated questions in the subjects mind, is by focusing on more than the main effects; namely, by looking at the interactions within the brain and the "factorial designs". The difficulty of investigating interactions is remembering and understanding everything.
Interaction effects can be especially challenging and the interaction has to be double checked, to insure that the occurrence was for the right reason.

-Uncorrected (and overcorrected) data

In the attempt of securing the validity of the data, scientists may create false data. This is done through overcorrection and disregarding some activation. As mentioned earlier, thresholds are used as a means of determining the area of study. Even though, the results are often true, due to this the question about how many true areas are dismissed, still resides, and therefore, can it be said with certainty that the studied area is the only critical brain region?

-Motion artefacts

Culham mentions that motion correction algorithms are "garbage in, garbage out". But if the data is suspected of error due to motion, then the correction algorithm can help in examining this, and identify if this is connected with the research method or tasks.

-How to find what you're looking for

- (because the stats told you to look there)

Locating an area through statistical tests and then locating the fixed time is not uncommon. It is however, undesirable when used as a means of justification of any difference. The fixed time should be used as a guide to show what is looked for.

This is as mentioned a common method. It is in addition, favourable to have an independent measure or additional tests from other subjects, as a means of comparison and confirmation of the located area.

This helps illustrate the challenges I noted in the previous - The studied is focused on one area at a time, which is then examined in relation to other subject's results. This is greatly influenced by the threshold set by the scientists. Moreover, is the process of reproduction not an easy task and is only present in McClure's experiment. It is however the same scientists who conduct the experiment and therefore is the threat of bias still present. This helped illustrate the complexity of this type of experiment; from locating the area of interest to having several test subjects, etc.

Neuromarketing adaptation by Zaltman

The following investigates the complications of Zaltman's adaption of neuromarketing and discuss its relation to humanistic research.

Before the interview the participants are asked to acquire a picture, which expresses their relation to the given subject. In other words, it requires that the participants are able to find a picture which expresses the feelings he/she might have, this I think is a hard task, even for the experienced communication researcher.

The *mental hiccups* seem like an interesting addition to the interview, it does however have the negative effect of not allowing the interviewed to reflect further by breaking up the though pattern, and it might also influence the participants reflections. This is also the case for Priming, in addition assumes Zaltman that all words are read and understood equally fast by all participants and it is only the associative process that is cause to pause. However, in accordance with Anthony Greenwald[16] might the Implicit Association Test not work as desired if the stimuli are unfamiliar, to the participant or if the examples are hard to classify into the intended category [Article, Greenwald].

When discussing his method, Zaltman himself uses words such as "might", "presume" and "could" to explain the process, thereby illustrating uncertainties [Zaltman, 2003 p. 118].

[16] Professor, University of Washington, Department of Psychology; Adjunct Professor of Marketing and International Business since 2005

Understanding Thoughts

In regard to demographics, Zaltman argues that *companies should define consumer segments on their reasoning or thinking process* [Zaltman, 2003 p. 152]. Hence, to Zaltman demographics are only indicators of the thinking process. This is of cause true; however, I argue that the consensus maps do not illustrate the thought process, but like the result of a questionnaire; it is answers to question, which are shown. Consensus maps on the other hand, if conducted correctly, could give a more thorough image of the answers. It is however, no easy form of interviewing, the interviewer has to constantly guide, while keeping track of the mindset of the participant. This is also one of its weaknesses that it is one-on-one. For the possibility of bias is much greater than the focus group interview, where the interview is partially self-guided through the participant's reflections. Moreover, in regard to the focus group interview, where the reflection is that which is interesting, the one-on-one interview would only reflect the momentary conception the participant would have to the subject at that given time. This would, as discussed, additionally be influenced by the participant's social environment and maybe even changed.

As previously seen are the social and cultural contexts and the historical background important, at least when choosing the participants [Kotler et. al., 1997 p. 131]. Because to understand the mind, is as discovered, not easy. I think that thinking in terms of the mind of the market is an interesting notion and might be favourable for many companies, meaning not only constructing the commercials and packaging but to rethink the product itself in regard to the market. Reconstructing products is not new, especially when looking at the development of Coca Cola's bottles and taste. For me this demands an

understanding of culture. It has to be understood that culture not simply *is*, it is constantly evolving and is understood differently in different social settings.

To Zaltman the fMRI process has some disadvantages, such as noise, cramped space, the subject must lie still, and it is very expensive. Zaltman's method however, also has some of the same problems in regard to statistics, for instance are consensus maps very similar to group averaged data and it also has the same risk of being influenced by a threshold of accepted divergence. Moreover, the interviewer's degree of involvement is very high, thereby also affecting the possibility of bias.

When regarding Zaltman's research, it seems very costly and difficult, considering metaphors are culturally and socially founded. It would require several different studies, not only from culture to culture perspective, but time changes conventions and therefore, the studies have to be repeated. In other words, if the cultural and social aspect is left out, the research results would be contemporary and the usage would be limited to the claimed, universal metaphors.

Neuromarketing application

Neuromarketing research could be utilised in optimising the effectiveness of communication in, for instance, advertising and trademarks [Article, Imagilys]. However, as seen in the previous, the results come with a great cost in the forms of time and economy. Moreover, the results are also limited since the response is restricted to one subject at a time, thereby it is not able to reproduce the social interaction and thus the level of reflection. The information gathered is additionally limited to some sensory perceptions and feelings.

Hence, the Neuromarketing process is not able to read the mind. The neuromaketeers even seem to have forgotten the plasticity of the human mind. Hence, in gathering information from an individual that information is influenced by the process and therefore changed. This information is also a representation of that individual's brain at that time and therefore, even if successful, can only be a representation of her or his current social and cultural context. There is no one person who can be considered a human standard. This is important to remember, especially when considering the sample size of the two cases and Zaltman's Consensus Maps:

- McClure's sample size was 67,
- Lindstrøm's sample size 2000, and
- Zaltman's sample size was 12-15

None seemed to have any special interest in demographics; Zaltman even refuted its importance. The quest still remains what sample size is necessary for their research. I do however argue that 12-15 people, who are chosen without considering demographics, are not enough to unearth much data.

In addition to neuromarketing, the amount of gaps the researchers themselves have to fill, in the form of corrections and measures of precaution, which are needed to circumvent any corruption of the data and false results This has to be taken into consideration, before considering neuromarketing in the analysis of one's communication.

Neuromarketing and Experience Economy

Neuromarketing and experience economy share the same interest in how humans through stimuli are influenced. Moreover, is the notion that 95% of human decision making is located in the subconscious, which is also supported by *Experience Economy*, as seen in an article by Christian Jantzen and Per Østergaard[17].

The body, in experince economy, has more influence on our buying behaviour then we belive "in our nice, civiliced, hypercomplex sociaity [Article, Jantzen & Østergaard].

Interesting in regard to the three levels of experience economy as suggested in section 2.7 (can be observed below); Jantzen and Østergaard, in the article, have a lot more emphasis on, the importance of the neuro-physical and evaluative level. In addition, the evaluative level suggests that our choices and reactions are a lot more automated then reflexive. This of cause underlines the 95-5 split.

3. habitual
2. evaluative
1. neuro-physical

Just as experience economy, neuromarketing is interested in bodily stimuli and reaction. Both attempt to explain the individual differences in consumer behaviour and preferences, which are not connected to social and cultural contexts [Article, Jantzen & Østergaard]. There are specific elements linked to any product that generates a desire to interact with it. These specific elements create a "snap shot", which releases a "gut feeling" of something good. The point being that the cognitive choice is the result of a prior subconscious and entirely automated, bodily reaction between the consumer and the product [Article, Jantzen & Østergaard].

When considering 2.8 we recognise that experiences are always culturally bound and that even though, emotions are not as structured. The way we as humans and our bodies understand the world is through prior experiences, which are culturally bound through the culture present in the very experience itself.

Experience economy just as neuromarketing attempts to create feelings and experiences. Experience economy much like Zaltman seems to dwell in the 95-5 split. It is however, just as important for Experience economists to remember that it is through reflection and not manipulations, habits are created. This becomes even more apparent when considering healthcare campaigns. For it is the task of healthcare campaigns to influence habits and not subconsciously cause the reader to buy one product other the other.

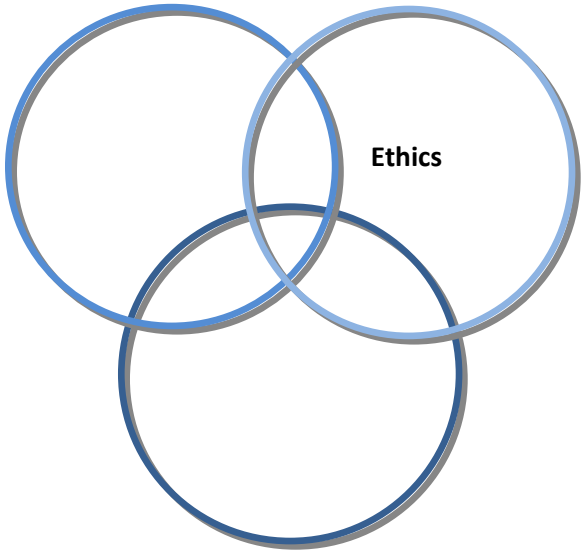
When the reader of the campaign reflects over the message or the product, as observed, through a social setting, and if the relayed conflicts or does not allow the group, to which the reader belongs, to reflect the read is then re-evaluated or simply dismissed.

The following circle investigates the ethical complications surrounding neuromarketing. To accomplish this, it is necessary to create an understanding of the context. This is done through a reflection on

[17] Christian Jantzen lector and leader of the department of Communication and Psychology at Aalborg University and Per Østergaard lector at the department of Marketing and Management also at Aalborg University.

ethics in relation to; healthcare and healthcare campaigns, and the role of the government. The role of the government is an important aspect to engage, because the government has a huge impact on healthcare campaign research and content. The second circle also investigates the word economy, to illustrate the implications and challenges of governing a country through economical factors. Finally in the discussion, the ethical notions from the second circle are paralleled to the neuromarketing process and its usage.

3 [Second Circle]



This circle investigates the ethical complications surrounding neuromarketing. This is done through a reflection on ethics in relation to; healthcare and healthcare campaigns, and the role of the government. Moreover, the word economy is investigated. In this circle's discussion, the ethical notions are paralleled to the neuromarketing process and its usage.

3.1 Ethics

This circle does not engage the totality of ethics, but the small portion that has its roots in healthcare, authority, anxiety and the role of the government. This is related to healthcare campaigns and finally, ends in a discussion concerning the ethical implications; on the theories and concepts used and the usage of neuromarketing in healthcare campaign research.

Differing from the structure of the previous circle, the exploration of theories, concepts, etc. found in this circle; include my reflections of the subjects. This in turn, is related to the previous circle, in this circle/chapter's discussion.

3.2 Ethical Implications in Healthcare Campaigns

The question whether or not neuroscience through a marketing application, has the ability to successfully manipulate the readers subconscious mind, is wildly discussed. Neuroethics is a new field of philosophical and moral enquiry concerned with what neuroscience can tell us about free will, self-control, self-deception, and the foundations of morality. The questions surrounding this are difficult to answer and deserve some consideration, especially due to the resent growth in the "science of mind", meaning neuroscience [Levy, 2007 Preface xi-x]. Neurosciences claim to be able to link "mind" and "body", more precisely to link feelings and thoughts with the public and objective world, which is constituted by hard physical data [ibid x]. The notion of mind alteration or manipulation is not new in marketing [Article, Sutherland].

However, as claimed by the postmodern condition; the author and the grand narrative are dead. Hence, such as literature and history, science and theories of the past are rewritten into a new context - contemporary society, culture, and technology. This allows us to revisit old discussions concerning the challenges of ethics and the demand for morality [Levy, 2007 Preface xii-xiii]. To achieve this I apply Gadamer's notions from *The Enigma of Health* in relation to healthcare campaigns. This allows for a discussion of the ethical implications surrounding healthcare campaigns, which among other; will concern the demand for authority and respect.

The life of the individual has become automated through regulation, for instance the person is separated from the illness, as if the illness is a living entity [Gadamer, 1996 pp. 111-112]. This is dehumanising and illustrates a problem in healthcare, for it is the disruption of health which demands treatment, not health itself. More importantly, illness often differentiates from each individual [ibid 111]. Important for treatment is the dialog and discussion, which serve to humanise the relationship between the patient and the doctor [ibid 111]. This is also important for the health campaign to enable and facilitate the dialog, allowing the individual to reflect and create meaning for that individual. Though adding to this and referring to Plato, it is impossible to heal the body without knowledge of the "whole". This illustrates a requirement for the understanding of the historical body of the individual, which is located within a social and cultural context. Therefore, medicine can at the same time be considered a universal science, especially if including our social world [ibid 115]. Meaning, medicine has to perceive treatment as a whole, encompassing our social world. In a society with constant changes and stress being a "rule" rather than the exception. It would be prudent to look at what causes the illness and not only to cure it, whether it is with the help of drugs or other treatment. Thereby meaning, it would be beneficial to examine the different challenges holistically[18], rather than just mending the individual case [Other, Lecture Rose]. Moreover, to treat stress it would be more beneficial to look, at for instance the work environment or social world, surrounding the individual, rather than looking at the individual her/himself. In other words, the contemporary condition of life is governed by regulation and ever increasing bureaucratisation. This as a result gives birth to expressions such as "quality of life", which in turn underlines that which has been lost, and reflects an understanding that we have to "lead" our lives [Gadamer, 1996 p. 104]. This aids in illustrating the level of tension, which is created by the scientific world-view and extends beyond health and sickness. This Gadamer calls the *Enigmatic Character of Health*. As mentioned in Section 1; it is not possible to turn our backs to scientific development, especially when considering the previous and the concept of "wholeness" which only has a meaning through its opposite; specialisation. In addition, each area of scientific enquiry is separated from other methodically and it is therefore, imperative that new interdisciplinary links are created [ibid 106].

Even with the addition of new methods and theories, caution is required when considering standardisation of health values, since it as a result will create new cases of ill individuals, which do not "fit" the empirical data of the previous findings. This, Gadamer calls inappropriate and elaborates that measuring on the basis of the previous, is not natural to humans. Health is an inner human *accord and harmony*, within the individual's self, which cannot be changed by

[18] Which Gadamer calls Ganzheit, the German word for totality or wholeness [Gadamer *2004,* p. 105-106]

external forms. It therefore still bears meaning to inquire as to the persons thoughts on the subject of her or his wellbeing [ibid 107-109]. This standardisation can also be observed in Denmark, with for instance BMI (Body Mass Index), which has been used as a tool for measuring. This method of measuring is inappropriate for instance, because BMI does not have any scientific basis for its formula [Article, Pavlidis]. Moreover, the individual human being does not fit any prototypical human construction or formula, because humans are not mere constructs – an average human does not exist. In addition to this, in 2008 Alabama State planed to force its 37,527 state employees to *possibly humiliating at-work weigh-ins and fat tests* [Article, Winter]. Starting 2010, the employees that do not fit the BMI standard will have the choice of either losing weight or paying more for their health insurance [Article, Winter]. However as discovered, health cannot be located in standards; it is unique and part of a natural balance. Therefore, it is not possible for the practice of medicine, to be reduced to a technical formula.

3.3 Authority and Anxiety – and the Role of the Government

As mentioned, this circle does not engage the totality of ethics. The role of authority and anxiety is, however, important to Gadamer, because they are significant in how we are to understand healthcare. Through Gadamer's philosophical understanding I create a link to the role of the government and its instruments in healthcare campaigns.

Authority is a precursor for health campaigns, because if the authority is absent the audience will not trust, believe, or engage the information. The following describes the words authoritarian and authoritative, being much alike, although not to be mistaken for one another.

Authoritarian originates from the 1920s-30s via the German word *autoritär* as a critic of the Weimar Constitution[19], by neo-conservative thinkers and with Hitler's regime the word got its ominous tone and its connection to totalitarianism [Gadamer, 1996 pp. 117-118].

Authoritative e.g. authoritative appearance or exercising authoritative influence, as in education, which adds a positive accent on the concept of authority. Even though, the word has not changed, its meaning has been touched by the modern Enlightenment, as can be seen through Immanuel Kant's sentiment; "have the courage to use your own understanding". This was a retort to the authority of the church and the political powers [Gadamer, 1996 p. 118].

To illustrate the concept of authority the following draws upon the word authoritative. If a person is called authoritative that person does not need to invoke any form of authority. The word authoritative encompasses a general validity. If the goal with one's own actions is the gain of authority, then ones main interest is power and therefore

[19] *The defeat of Imperial Germany […] in 1918 offered the opportunity for the complete recasting of German government through the election of a parliament constituted on the basis of democracy and elected under universal suffrage by the German people. Thus a new German National Assembly met in the town of Weimar in February 1919 […] acquired its first democratic constitution […] It was a federal constitution for the German confederacy […] comprising some 62 million Germans (1925 census).*
The democratic intent is clearly evident, though it must be said that rights and duties inscribed on paper do not always hold out against the intrusions of economic crises and ideological rifts. And such was the case in Weimar Germany as political extremism and economic collapse helped pave the way for the destruction of the 1919 constitution under the hammer blows of Nazism in 1933 [Article, O'Brien].

on the verge of the authoritarian. Therefore, if a person needs to invoke authority that person has none [Gadamer, 1996 pp. 118-119].

In a doctor/patient relationship there is an expectation of, or even desire for, authority. Moreover, the expectation is the belief in the doctor's superior knowledge and the ability to cure a patient, with this knowledge. Therefore, there exists a relation between superiority and inferiority in authority, as seen in the child's relation to the father and the teacher, which superior knowledge, ability, and insight surpasses the child [Gadamer, 1996 pp. 119-121]. This can best be illustrated with the words of Gadamer:

> *[…] even in a state of perfect enlightenment we cannot ground everything we hold to be true through strict proof or conclusive deduction. Rather, we must permanently rely on something, and ultimately on someone, in whom we have trust. Our entire communicative life rests on this [Gadamer, 1996 p. 121].*

Much like the expectation of authority, from the patient and doctor relationship, it is also a necessity for the conveyers/senders of healthcare campaigns to have a position of authority amongst the readers. One reason for this, as seen in experience economy, has to do with the will to acquire experiences and information, which has to be present in the reader.

Another illustration of the importance of authority, can for instance be observed in the Danish environmental discourse, where the government acquired an expert (Bjørn Lomborg) who undermined the importance of an immediate and large-scale action [Article, Ritzau], which counteracted the validity of the office and authenticity of the communiqué– therefore causing a diminution of authority. In other words; authority is, in a society with critical-freedom, fragile and it is therefore vital that the communiqué reflects the truth. The truth being that of a consensus created by a general acceptance of this truth, as seen in semiotics [Fiske, 2000 p. 56], which in this case should be through the established sciences and researchers.

Anxiety

Gadamer asserts that we live in a state of anxiety; this forces us to produce things and live in a state of concern. The loss of religion has created a life where there is no hope in our future. Because religion through time created a framework, in which, we as humans made ourselves at home. This allowed people a protection from the reality of existence, which is now denied. We can, in other words, no longer grasp it; it has become nameless and disillusioned. The loss of religion has therefore created a vacuum, which can be seen in the futile attempts through science to organise social and political order [Gadamer, 1996 p. 159-160].

Gadamar's definitive exclamations at the loss of the religion can of cause be critiqued for being extreme and not representing the individual in a correct manner. Thereby, depriving the individual of her or his choice of what to believe in, whether the social life or other. Though I read Gadamar's notions as a means of simplification, not that it necessarily was meant as such, but for me Gadamer's, at times, very colorful renditions, paint an illustrative mental picture of his understanding.

The subject of anxiety is a long and complex discourse and not to be tempered with in this thesis, for it is not the focus of this thesis; however, it is interesting and necessary to glance at "in passant". This is because; it is an important human aspect, which should be included, thereby, endeavouring at a more holistic understanding and approach, to the research questions.
Even though it cannot be paralleled, this could be connected to the healthcare system, which partially confronts the individual. Thereby causing angst, but also allowing the individual to reside and rely on the superior knowledge to aid us in caring for ourselves.

In the course of the philosophical concepts of authority and anxiety, and on the basis of ethical notions, the following investigates the role of the government and its instruments. Moreover, this is related to healthcare campaigns. Hence, I believe from a humanist perspective that there are ethical implications to be explored. In other words, the following introduces and reflects on the pervious ethical and philosophical notions; this in relation to some societal reflections. To facilitate the exploration, the Danish democracy is briefly introduced; this assists in clarifying the government's role in society.

The Danish Democracy

It has been claimed that the heart of democracy is political equality among citizens. This creates a democracy, which constantly works towards this equality, and it is therefore unobtainable. No one knows how to create such democracy or how its institutions should be organised [Knudsen, 2001 pp 9].
The Danish democracy was once called "folkestyret", which translates into "democracy". The word folkestyret however, connotes a higher level of citizen participation in the governing of society. This has changed, because the participation is lower than ever and the connection between politicians and the people is through the "fast media" [Knudsen, 2001 pp 9-10].

There is no common understanding concerning the meaning of democracy. But all western contemporary democracies agree on the following [Knudsen, 2001 pp 13-14]:

- constitutional right, encompassing
  - the liberty to create and partake in organisations and unions, including political parties
  - freedom of speech
  - access to uncensored alternative information sources
- a functioning and responsible representative system, where
  - most adult have the right to vote (one person one vote). More or less the same people are eligible to be elected and have the right to compete for the votes. The elections have to be free and fair
  - institutions ensure that the policy also includes a dependence on election and other expression of preferences

The Danish democracy is considered one of the oldest in the world; it was however not before 1915 that the foundation for the democracy was in place. Democracy is never fully reached for there will always be a tension field between democracy and bureaucracy [Knudsen, 2001 pp 14-15].

Danish Prevention Metaphor Rhetoric

The Danish word for prevention is *forebyggelse*; *for(e)* means *before*, as a physical object barricading another from something and *byggelse* means *build*, as in the action of building a house. The prevention of something is in the sense of the word not a negative act. However, the metaphor connotes a warning that something has to be built, in order to keep something dangerous out. This connotation is also what is seen in some of the healthcare campaigns. Thereby meaning, instead of underlining the care of health, or even better, living a good life, it situates a warning of illness, if no fortifications are built. It could be stipulated if this is created on the notion of the anxiety Gadamer proclaimed exists in all of us. Even if this is not the case, the only solution for a healthy life, which is illustrated through this metaphor and the rhetoric, found in the word *forebyggelse* and the campaigns, is to fortify oneself against the outer or become ill, injured, or even die.

It is, as mentioned, not an evil deed to prevent illness or fatal accounts, though using such rhetoric does create angst and at time stigmatisation [Article, Olesen & Jensen]. This is also enforced when goals, such as eating the "right" amount of vegetables, or reaching the minimum required minutes of exercise each day, which is encouraged by some healthcare campaigns, are not met.

This metaphor and the rhetoric does help illustrate another point I would like to make; with what intention are the campaigns created; to create the best possible grounds for the good life? Or is it an interest of the state, to keep people working and paying taxes? The later does of cause also enrich people's lives; however, it is on the wrong basis. As mentioned before, the intention of our political institution is to constitute a representative governing force, which is the representative of the people, acting in the best interest of the country and its citizens. This was seen with the creation of the Danish welfare state, in the 1890s. The development of the welfare system is marked by several important reforms, such as; 1933, where 55 social political laws were reduced to four, and with it the state assumed some of the financial expenses, from the municipalities. Moreover, an equalisation of expenses throughout the municipalities meant that all municipalities, even without social expenses, contributed to the social expenses. Thereby, creating an unprecedented national solidarity, this is still a vital part of the Danish welfare state [Article, Ploug et al.].

With the Danish welfare state came higher taxes. These taxes where used to create a "safety net" under every Danish citizen, if sick or in financial crises, each citizen was and is able to get aid. This also allowed for better care of the elderly and day-care and school for one's children [Article, Ploug et al.]. This safety net is among other a larger part of why the Danish people are some of the happiest in the world [Article, CNN]. In the recent years cutbacks and (for political reasons) lower taxes, have lowered the overall standards. In addition, the worldwide financial crises has now forced the governing political party to enforce strict rules on how the municipalities are to manage their finances and are currently contemplating a zero growth policy, also a lowering of income maintenance from four years to two [Article, Beder & Brix]. These cutbacks could also affect the healthcare prevention initiatives, which could dampen new thinking and creativity initiatives, and maybe rely on the "old" scare tactics to keep the troops in line, which has no documentation for its little, if any, positive effect [Article, Canada]. In addition, this could mean that future campaigns primarily would consist of initiatives targeting as large an audience as possible, rather than small; which are more precise and therefore has a better

effect. This is however, more costly because more initiatives are required to cover all segments.

This could also be used by the government as a means of verification for using the direct and easy understandable approach of the nature sciences, which is also seen in the selectively chosen expert statements, such as Lomborg, in relation to the environment, in financial economic relations, and not in the Platonic balance or the original understanding of the word economy. The contemporary development of politics could interestingly be investigated through a parallel with the much longer development of the word economy.

Economy – and the role of the government

An understanding of the disconcert observed in the previous, concerning how the financial economy is governed, can be enhanced through the origin of the word *economy*. The word economy has its origin from the 16th century and meant "household management". It stems from Greek oikonomíā from the word oikonómos, which meant "steward of a household" then via French or Latin. The noun was a combination of oikos 'house' and némein 'manage'. The original understanding of the word was passed into English and was widened in the 17th century to the management of a nation's resources (political economy). The theoretical study of the creation and consumption of wealth stems from the 19th century [Other, Etymology Economy].

With the understanding of the original meaning, which is the steward of the household or nation's household, it is possible to see that the original understanding had a more holistic understanding, wanting for a balance beyond simple financial economy, where as the present has a more direct and simple (causality) understanding. To add to the previous understanding of the ethics in healthcare campaigns, the original understanding of economy is more fitting, since it encourages a holistic view and the balance found in a good household. Hence, it encourages a management which promotes reflection and common sense, rather than "more is more". The problem with the later is that economisation of concepts, as seen in Knowledge Capital, which is the financial assessment of the competences and knowledge found in any organisation [Article, Chatzkel p. 20]. Humans are now a resource on par with machines and are evaluated on their demographic profile; including skills and knowledge [Johnson et al., 2008 p. 94]. I argue that this quantitative evaluation of the individual therefore includes an economisation of feelings. This I think is highly undesirable, for even though knowledge can be considered static, feelings cannot.

Economy is, in other words, used as an instrument for controlling or persuading. This however, creates problems, among other, because its usage is not examined holistically.

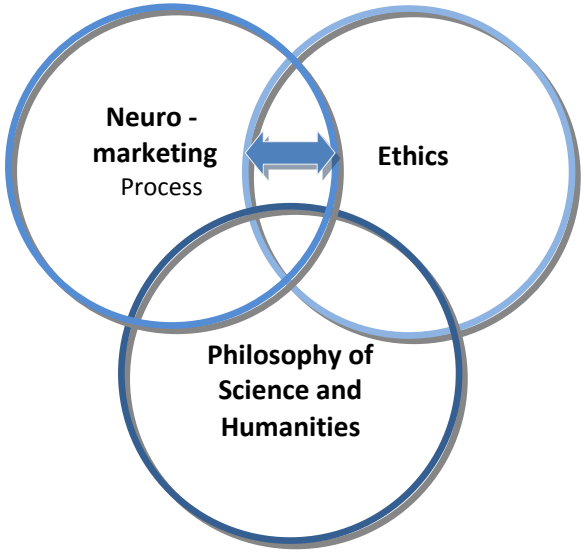
The previous coincides with the strong demand for not misusing others as a means, but to see them as ends in themselves, which is inspired by Kant's opposition to the utilitarianism of the enlightenment. But to achieve this, respect for the other is required. Though respect is not easily acquired, for it involves the acceptance of superiority or significance for the other, which involves the acceptance of the others freedom and at times requires self-sacrifice. The word *freedom* is to be understood, not as a dogmatic freedom, but as a freedom capable of critical reflection regarding others authority and

vice versa [Gadamer, 1996 pp. 122-123]. As previously mentioned, authority is fragile and easily shattered, which is also the case for "respect for the other". Wherefore, the maintenance is a complicated task and as complex as the comprehension. This could also advocate for the usage of the simple understanding of economy, mentioned above. The simple understanding is however, not recommended as it does not enclose the holistic understanding, which is discussed in this circle.

In conclusion and to sum up what variables the ethical campaign should contain, with regard to this circle, it is the task of a doctor to provide advice and help the patient until recovery is made [Gadamer, 1996 pp. 109-110]. This it is also the case of healthcare campaigns, it is not the task of the campaigns to "make people ill", but to supply sufficient information and understanding. This enables the reader to reflect and make up her/his own mind, thus allowing the individual to accept or dismiss the information. It is however, the campaign developers and researchers challenge to fashion the campaigns in a manner that will permit and respect the reader's comprehension or even enlightened. This should be viewed holistically, which means the different challenges should be approached as mentioned previously, not only on an individual basis, but as a whole. Moreover, the goal should not be that of producing, but creating and fertilising the grounds for the individual's opportunity for a good life, which should be a balance, as seen in health and nature.

The following, on the notions gathered from this circle, supports and supplements the discussion on neuromarketing and healthcare campaigns from the first circle Section 2.9.

3.4 Discussion/Reflection - Ethical deductions



As seen is the neuromarketing technology dawning, which is why it is important to discuss its ethical implications; thereby, knowing how to tackle the challenges when met. I think it would be beneficial for illustrative purposes to create a simple visual illustration (Figure 5) to help illuminate the different approaches to the human individual as previously observed in the theories' and concepts' which I have used.

Figure 5

As discovered in the previous circle (circle one), neuromarketing is interested in disclosing feelings and emotions of the subject with an attempt of identifying and understanding the mind, this was however, with the current technology not possible. Zaltman's theory is primarily interested in the feelings and the relation the subject has to the object, Zaltman accepts the creation of meaning, but has no interest in social reflection or the social or cultural context in which the subject works. Wherefore, the validity of the results was questioned. Experience Economy as a research method, also targets feelings and emotions of the reader, Experience Economy does accept the importance of reflection, but is primarily focused on the subjects immediate responses. When applied to marketing Experience Economy as seen target the individual's feelings and emotions either through pleasing or displeasing (pathos). It is important in relation to this to acknowledge that; Ethics works within the good, aesthetics works with what is

pleasing and gratifying to oneself [Kirkegaard, 1961 (ed. notes) p. 219]. Aesthetics, in other words, conflicts with the common ethical ideology [Blicher, 1998, p. 371]. Therefore, when working with aesthetics, it is especially important to remember and consider the ethical implications, both within the object of desire, but also the surrounding world it affects. This also influences the authenticity of the product/brand [Gilmore & Pine 2007].

The role of the government in healthcare campaigns can to some degree also be paralleled to John Dewey's definition of the verb "to civilize":

> *The verb "to civilize" is defined as 'to instruct in the arts of life and thus to raise in the scale of civilization.' Instruction in the arts of life is something other than conveying information about them. It is a matter of communication and participation in values of life by means of the imagination, and works of art are the most intimate and energetic means of aiding individuals to share in the arts of living." [Dewey, 2005 p. 350]*

It is, in other words, for the healthcare campaign to supply sufficient information, thereby, facilitating the reflection of the reader. This will allow the reader to weigh the pros and cons in regard to the readers own life and in regard to her or his social context, allowing the reader to create her or his meaning, thus enabling the reader "to share in the arts of living". It is important that the health- care campaign does not deny the individual the ability to reflect. Meaning, a healthcare campaign should not intimidating or by any other means manipulating the reader into doing things against her or his own will. The anxiety, Gadamer mentioned, might not be as dogmatic as he claims, there is however, no reason for adding to it, especially when considering our stressful reality and the notion that there is no documentation for any positive effect of scare campaigns.

Dewey stresses, it is something other than information, it is; "communication and participation in values of life by means of the imagination". To reach a goal such as this will require innovative and focused initiatives. Wherefore, the need for creativity contrarily to standardisation is required. The understanding of the recipient consequently also effects the execution. It is therefore important to remember the significance of demographic knowledge; hence, humans are different, just as the reason for their actions are different. In other words, neuromarketing as it is today would be insufficient, due to the objectification of the subject.

Moreover, should the "art" be "intimate and energetic", emphasising that it should communicate to and enable the reader. This should be attempted, on the readers own terms and in a language and fashion that lures the reader to partake. It should in addition, exclude any manipulation that would forcibly attempt to control the reader's action. Since it, as mentioned, would damage the authority, validity, and respect of the campaign, which consequently could affect the reader's regard for the healthcare system.

For healthcare campaigns to be successful it requires an understanding that surpasses any economic cost-benefit evaluation. It has to look at illnesses holistically, which includes looking beyond the illness and looking at the cause. The "why" behind the action, this is essential for the smoking and stress alike. This I only glace at, for it is rooted in much deeper discussion concerning "the good life" [Gadamer, 2004, p. 318]; what is good for one individual might not be

the same for the other. Just as drinking a beer or smoking a cigarette after work, might lessen the stress of one person's reality, and not for the other. The answer if, one is to be found, is in "nous" (common sense) and "sympathetic understanding" [ibid 319]. Meaning, that the capacity for moral judgment and the ability to set oneself in another's place [ibid 320] is a crucial aptitude of any campaign.

As mentioned is the neuromarketing research still to some degree limited, it is however, important to be aware of its potential implications, *Commercial Alert*, which is an American non-profit organization, warns about the usage of neuromarketing in an article by Gary Ruskin[20] called *Commercial Alert Asks Senate Commerce Committee to Investigate Neuromarketing*. In the article Ruskin highlights three reasons for not using neuromarketing:

> *[…] (1) increased incidence of marketing-related diseases; (2) more effective political propaganda; and, (3) more effective promotion of degraded values [Article, Ruskin].*

1. The marketing-related diseases include obesity, type 2 diabetes, alcoholism, and eating disorders, and smoking-related illnesses. In other words, could the use of neuromarketing increase sales of tobacco, alcohol, and junk/fast food. This could as a result damage the general public health [Article, Ruskin].

2. The political propaganda is, for instance, due to the usage of propaganda in service of totalitarianism, as seen in Germany during the Second World War. The usage of neuromarketing could be potentially misused. According to Ruskin, who referees to the *New York Times*, has political consultants already teamed up with neuroscientists at FKF Research to conduct neuromarketing experiments to determine the effectiveness of political advertising [Article, Ruskin].

3. The degraded values and products include materialism, addiction, violence, gambling, pornography, anti-social behaviour, etc. Therefore, could an increase in the effectiveness in the marketing could have a devastating impact [Article, Ruskin].

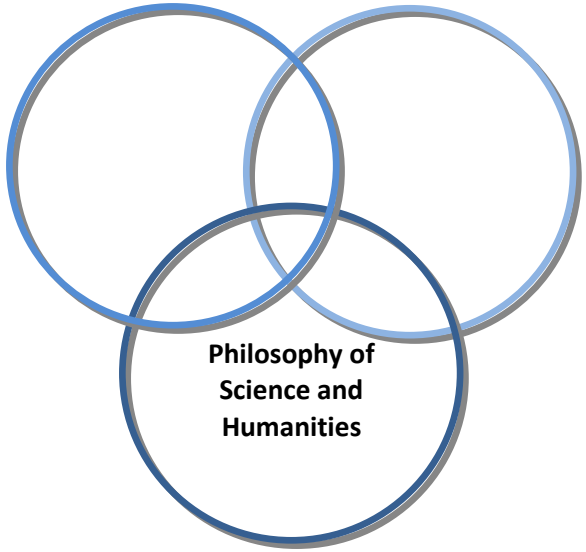
These three points all encompass worst case scenarios, but they do illustrate some of the horrific implications of a technology, such as neuromarketing. This underlines the necessity for regulation, if neuromarketing succeeds in undermining the human consciousness.

It is not necessary to abolish neuromarketing all together, when considering the implications of this and the previous circle. It does however demand that we as humanists' competently follow and facilitate the usage of the technology and the application of the theory.

The previous investigated different theories and concepts, and explored them in relation to ethical and societal notions. The following circle investigates the philosophy of science and humanities, which in the discussion is related to the first two circles. Thereby, allowing a more full understanding of the previous and giving a more holistic understanding of the theories' and concepts' approaches to the creation of meaning, experience, and reflection.

[20] Ruskin has an undergraduate degree in religion from Carleton College, and a graduate degree in public policy from Harvard University's Kennedy School of Government. He is executive director and co-founder of Commercial Alert

4 [Third Circle]



4.1 Philosophy of the Humanities and Science Theory

The following circle explores the historical context of social-constructivism, from a humanistic perspective and its relation to natural science. It thereafter, includes an exploration of behaviourism, cognitivism, and cognitive neuroscience, which will aid in the understanding of neuroscience. This circle additionally explores the creation and re-creation of meaning/experience, as seen through hermeneutics; thereby, furthering the understanding of the contrast between natural and humanistic sciences. This is, in the discussion/reflection, paralleled to the previous circles. As a result, this furthers the understanding of the previously investigated theories and concepts, and the difficulties of interdisciplinary linking.

4.2 Social-Constructivism

Social-constructivism (socio-constructivism) is the name of several humanistic philosophies, which in recent years have had an impact. These represent a clash with the governing conventions of science and philosophy through most of the 19th century. The predominant discussions were on the status of natural science. At times, these discussions almost turned into conflict and were therefore dubbed, *the Science Wars* [Collin, et al. 2008 p. 248].

The following explores social-constructivism in regard to the humanities and natural science. Moreover, it includes an overall definition of the contrasts between the humanities and natural sciences and how they constructed themselves, from a linguistic perspective.

It is possible to divide constructivism into two parts, epistemological and ontological. Epistemology, also known as theory of knowledge, is interested in how knowledge is created through social practices. Social-constructivists explain this as such: Knowledge is a reflection of the society, in which it exists, rather than the reality of which it stands. Ontology is interested in how some aspects of reality are social constructs, such as sex and racial differences [Collin, et al. 2008 p. 251]. Both are equally interesting in regards to this thesis. This is noticeable when combining the two: social constructed knowledge or conviction operates in that reality, from which it originates. This means that belief and knowledge has the ability to create its own object. This is seen in the empowerment of gender roles through different channels [ibid p. 251]. More precisely this means that the reality, in which we live, is created through cognitive processes that

are formed by social constructs. Often this empowerment is seen in linguistic (semantic) constructs, which again constitute reality. It is this semantic structure, which gains its strength through this semiotic process [ibid p. 252].

Social-Constructivism and Natural Science

The previous mentioned clash with the governing conventions was founded in sociology of science as a counter action to two main factors. The first, a dominating neo-positivistic science theory, which claimed that scientific research is controlled by cross-cultural norms of rationality and has no historical relevance; the second, as a counter, against a predominant sociology of science, with emphasis on Robert Merton. Merton claimed that sociology only has the ability to explain erroneous science, namely when it is subjacent to ideological societal influences. On the other hand, when the science works as intended, the theory is a mere reflection of its object. This does of cause not belong in the social science domain. This resulted in a provocative stance from social science, which claimed that knowledge and theories by natural sciences, are not representations of that reality, which is its object, but rather a representation of societal circumstances, surrounding the research. More provoking was the statement that the sizes (such as quakes and atoms) referred to in scientific theories, were themselves constructions. In other words, they are products of the research processes, which have them as object; moreover, they are reflections of social circumstances. Ergo, the physical reality is a reflection of the social reality. Stances, such as these, were made by academics of sociology of science and philosophy, such as David Bloor and Barry Barnes from the Edinburg school, Bruno Latour and Michel Callon from France, Karin Knorr-Cetina from Germany, and by Steve Fuller from USA [Collin, et al. 2008 p. 252]. These persons all represent different interpretations of social-constructivism, whether it is ontological or epistemological.
However, they all agree that nothing is autonomous (self-directed) or nature given, but is created by the collective. The debate surrounding epistemological constructivism in relation to the natural sciences is far from over [Collin, et al. 2008 pp. 249 - 252].

The following explores the contrast between natural science and humanistic constructivism, in order to further the understanding of the two paradigms and to elucidate their conflicts.

Natural Science & Humanistic Constructivism- the Contrast

Within natural sciences, such as chemistry and physics, theories have been developed or constructed, which with a final and often limited vocabulary, is able to explain the total of all phenomena, within the domain of the given theories. Theories such as these can be characterised as “closed”: they utilise a final vocabulary to explain every phenomena. The objective of many physicists is one all-encompassing, simple theory, a real “Theory of Everything” [Collin, et al. 2008 p. 256]. In the same respect that physiologists do not have any need or compulsion to referrer to a “soul” in order to explain the physical and chemical processes in the human body and brain.

The human ingenuity, which unfolds within science, technology, philosophy, and art, will continually create new phenomena, which demand new categorisations in order to describe them. Looking at the term; *computation*, it was derived, from the change that the computer had on calculus. This gave rise to different models in the

understanding of the human brain, in comparison with the computer. Moreover, and not minimising the importance of the research, this allowed for a theory that human thought not exclusively works via computation. In addition, most humanistic disciplines are *ideographical*. This means they try to come to terms with a specific phenomenon – not with any particular type of phenomena. This adds another factor, where the object is not determined by any particular theory; namely in the delimitation of the phenomena, which they work with, in connection to other phenomena's context. [Collin, et al. 2008 pp. 257-258]

Reflections on Social-Constructivism

As social-constructivism constitutes a dominant and reoccurring notion, in this thesis I agree with its claims and constructions, and it is therefore hard to critique. To withhold the academic level, a reflection is however required.

From the gathered knowledge above, two different views of social-constructivism are evident[21]:

- *The critical perspective;* this is both the most utilised and the least pretentious. Here it is emphasised that a critical perspective is maintained, on that which seems nature given or taken for granted. This is for instance seen in, grieving; grieving is not only a nature given bodily reaction, it is also culturally influenced [Article, Barlebo p. 8]
- *The total social-constructivism* has a more radical approach to physical reality; namely that reality itself is a social construct. In other words; not only does the social construct the social, it is not possible to think anything outside the social [Article, Barlebo p. 9]

By social-constructivism it is in my understanding that nature (or in other words physical reality) is not a result of a social interaction, it is however the social construct which gives it meaning, for the social individual. Hence, it is important to withhold a critical perspective; no understanding is nature given, it is the result of an interaction and a consensus. Left is the scientific and philosophical notion and demand for continues openness, in regard to critique and reflection. Science and philosophy is tied in that openness, which never can be satisfied [Article, Barlebo p. 12].

The previous has illustrated the social-constructivist stand point, moreover, clarified this thesis view on, the construction of meaning. This led to a clarification of the two major academic approaches in this thesis, in the attempt to further the understanding of the neuroscientists approach.

[21] This is also investigated, in *John Searle and the Construction of Social Reality*, differentiating between brute facts and institutional facts. A book based on Searle's critique of social-constructivism

4.3 Behaviourism

Behaviourism today connotes words such as mechanical, misanthropic, or even antiquated and is at times used invectively. The following investigates the original central intentions of behaviourism[22] and how it evolved and helped develop cognitivism [Karpatschof, 2007 p. 214].

Initially behaviourism was a research related thematisation of how the human psyche is inextricably linked with human actions, and the consequences of these. Often the reason for how humans react and relate is shrouded in a veil of mystic, thereby failing to notice the conditions of these actions, which is to be found in our self-image and knowledge. Adding to this, the significance of cultural and societal thematising, which is a consequence of behaviourism, is often overlooked. In 1913 behaviourism was devised as a scientific part of psychology, by the American psychologist John B. Watson[23]. Watson crowned the notion that the human organism responds to stimuli, and that emotional and inner mental conception are just a by-product of human action. Behaviourism from a philosophical perspective is grounded, among other, in associationism, as it was formulated by John Locke and David Hume [ibid p. 216]. Watson underlines that the human action is essentially acquired and not inherited from birth.

Frederic Skinner claimed[24] that the modern human, in the light of poverty, pollution, and atomic holocaust, is unable to evaluate or assess the long-term consequences of their actions. Moreover, for the human species to survive, we as humans need to realise the consequences of our actions. To this Skinner adds that science, and particularly behaviourism, is the salvation, and that humans through upbringing will be able to assess the long-term effects of their actions. This however, presupposes an insight in what is understood by central human values, such as freedom and dignity. Skinner argues against the claim that the human behaviour is being controlled by inner-structures or cognitive scheme and that it belongs to pre-science thinking. It does not take into consideration that it is human actions and their consequences, which shape the human psyche [ibid p. 214-215].

Critical Perspective on Behaviourism

In the 1950's and 60's the scientific critique of behaviourism was enhanced. This is especially noteworthy through the critique on Skinner's notions by the linguist Noam Chomsky. The critiqued was based on Skinner's incomplete framework for understanding children's linguistic acquisition. This was seen through the experience that children reach approximately the same level of skill, no matter the surrounding stimuli [Karpatschof, 2007 p. 226]. Chomsky main argument was that of linguistic syntax and how linguistic utterances are not only a reproduction of taught behaviour, but a result of generative processes. These create rule bound sentences, which are often new [ibid p. 257]. Thereby, the importance of the surroundings stimuli is less than behaviourism and especially Skinner's claims. This means, other unobservable elements play an important role in linguistic acquisition. Chomsky's critique is evident in cognitive psychology, where the individual's ability to observe and process stimuli is imperative, which with no certainty, is predictable from the stimuli [ibid p. 226]. From a more critical perspective on behaviourism,

[22] I do acknowledge that both radical and formal behaviourism exist, however they do not add any immediate information that would have any content changing consequence.
[23] 9 In his book *Psychology as the Behaviorist Views It*, from 1913.
[24] In his book *Beyond Freedom and Dignity*, from 1971

it can be claimed that behaviourism interprets human beings as having a passive and mechanical link to the surrounding world. As a result of this, the creation, evolution, and the change of the "man-made" world becomes a riddle to behaviourism [ibid p. 234]. When comparing this to social-constructivism (4.2), it becomes even more evident, because behaviourism observes the individual through his/her reactions to the world – not as an active and cognitive individual, which is influenced and influences the surrounding world (society).

4.4 Cognitivism

Cognitive psychology works with how humans mentally, as well as, physically conceptualise the world they live in, via senses and memory, concepts of understanding, and thinking. The world is more than the material and events; it includes the social, cultural, and the concept of norms, habits, ideas, and scientific theories and philosophies [Karpatschof, 2007 p. 251]. In other words, cognitive psychology investigates human intellect from senses and perception to memory, thinking, and language.

The term "cognitive psychology", was crowned by Ulric Neissers[25] in 1967, and refers to the information processing approach – to human cognition. Another common interpretation of the term is linked to the part of psychology, which is occupied with systematic experimental or empirical studies of inner mental processes, in human thinking, and knowledge [ibid p. 251].

Modern cognitive psychology had its breakthrough in 1950, and is often referred to as the *cognitive revolution*. When referring to the breakthrough as a *revolution*, it is among other due to Chomsky's rebuttal to Skinner's notions on behaviourism and due to the wealth of information, which entered psychology from Human Centred informatics and theory, cybernetics, and data science [ibid p. 257]. Important is the creative potential of the cognitive revolution, which was not found in the criticism of behaviourism, but in the inspiration from Human Centred Informatics [ibid p. 257].

Cognition as Information Processing

A central assumption in cognitivism is that human cognition can advantageously be observed as information processing, and therefore analysed with mathematical, informatics, and engineering techniques. These techniques are used when constructing, analysing, and programming artificial information processing units, such as computers. This computer metaphor has proven very beneficial in regards to all modern cognitive psychology studies. It has among other, legitimised the study of mental representations, such as thoughts and mental images. Currently the computer metaphor is being misconceived; it is a model which aids in the understanding of human thought and knowledge, and not a claim about humans being biologic computers [Karpatschof, 2007 p. 259]. A popular method of studying human feelings, actions, and mind, through is neuroscience, which is an object of this papers investigation.

[25] In his book Cognitive Psychology from 1967

Cognitive Neuroscience

Neuroscience, as mentioned earlier, examines the brain and its autonomy, development, metabolism, and blood supply, individual neurons, functional groups of neurons, and more – In other words; the biological factors. Cognitive neuroscience attempts to combine the biologic knowledge concerning the brain with the cognitive psychology studies concerning the cognitive mental calculations which are realised through the biological process in the brain-tissue [Karpatschof, 2007 p. 267].

The empirical aspect of cognitive neuroscience, as previously discovered, particularly focuses on direct measurements of individual brain-cells activity and on newer technology aiming on indirect measuring of large groups (millions) of brain-cells activity.

It is important to add that the neuropsychological and cognitive studies of semantic knowledge typically employ pictures or one word as stimuli. Therefore, the study is rather limited in its approach to knowledge. Herein dwells an essential problem for the approaches, which have employed the study of the brain and its processes, such as neuromarketing. Cognitive processes are, as discovered, complex and typically include several areas in the brain, and therefore, result with a product, which cannot necessarily be explained by simple terms [ibid p. 442]. Therefore, a lot of the classic neuropsychology and the modern neuroscience base its research on simplified operationalisations.

After more than a century of researching how humans interpret and produce words is our understanding of these processes well developed, although nowhere near complete. More limited is the understanding of the relationship between words and thought, especially since they cannot be measured [ibid p. 442][26].

Critical Perspective on Cognitivism

The study of human thoughts is, however, only legitimised in natural sciences, since they acquire scientific logical means of obtaining empirical data; using a closed vocabulary and simple theory. In regard to social-constructivism it requires more to understand human thought then logically observing the human brain. Moreover the language, which is thoughts way of expression, is more known than the thought itself [Karpatschof, 2007 p. 442]. In his critique Descombs argues that the human mind is foremost a social mind and then a natural mind [Descombes, 2001 p.60]. In the introduction, Descombs critique is explained as including a more general critique of philosophies, which view thoughts, as a sole product of the brain and not the person.

Like behaviourism, cognitivism still focuses on stimuli-organism-response, with no regard for social interaction [Article, Vygotsky]. This causes a conflict in the different philosophies, found in this chapter.

The following investigates how humans interpret linguistic and non-linguistic expressions, namely hermeneutics.

[26] Neurosciences was originally created for not marketing but for medical investigatory purposes, it is still used for that today [Other, CFIN]

4.5 Hermeneutics

Hermeneutics originates and developed from two paths: Theological and philological. Dilthey showed[27] that the theological hermeneutics originated from the defence of a specific understanding of Scripture and the philological hermeneutics originated as a tool for the humanistic revival of classical literature. These both enclose a rediscovery of something belonging to history, which meaning had become distorted and remote [Gadamer, 2004 p. 175-176].

The modern hermeneutics was prominently defined by Martin Heidegger (1889-1976), Hans Lipps (1889-1941), and Hans-Georg Gadamer. These criticised historicism through their creation of the existential hermeneutics [Collin, et al. 2008 p. 149]. The following investigates the existential hermeneutics as described in Gadamer's *Truth and Method* (original title *Wahrheit und Methode*, 1960[28]).

Traditionally hermeneutics was interpreted as an art or technique. It can be questioned whether such art or technique of understanding could be fashioned as a tool for the humanistic sciences. However, the effect of the humanistic sciences on hermeneutics can be investigated through the circular structure of understanding devised by Heidegger, also known as the hermeneutic circle. The reader of a text is constantly projecting with the aim of understanding the text. In other words, once some initial meaning surfaces from the text, the reader projects a meaning of it. The initial meaning exists only due to a preconception of the texts meaning.

For instance, the reader of a text understands that text on the basis of a "fore-conception" (precognition), which is constantly revised when new meaning is disclosed [Gadamer, 2004 p. 268-269]. This rough contraction of Heidegger's notion illustrated that the "constant process of new projection constitutes the movement of understanding and interpretation" [ibid 269]. It is however vital that the text is not met with arbitrary fore-meaning. It is therefore, a positive trade to examine the legitimacy of one's fore-meaning, this in terms of the validity and origin. In addition, every text demands that the reader does not only evaluate the language, but also its usage. It is therefore, the task of the reader to examine the text and understand it in terms of its time and/or reader. This includes that we remain open to new meaning [ibid 270].

To "secure" the understanding of a scientific text we have to remove our fore-having, fore-sight, and fore-conception. It is in other words, the "tyranny of hidden prejudices that makes us deaf to what speaks to us in tradition". It is not a matter of excluding the traditions contemporary to the text, but to reject that which could hinder our understanding of the subject matter. Herein lies the hermeneutic problem, how can we study that which we are part of, for instance: in language is our semantically usage a part of the unconscious [ibid 270-272]. It is however, through the acceptance that "all understanding inevitably involves some prejudges gives the hermeneutical problem its real thrust" [ibid 272].

"[T]he experience of the thing has as little to do with merely establishing simple presence-at-hand […] that which is calculated or measured, but what exists, what man recognizes as extent and significant" [ibid 452].In other words is the

[27] In *Die Entstehung der Hermeneutik – Gesammelte Schriften*, V, 317-38
[28] First published in English in 1975

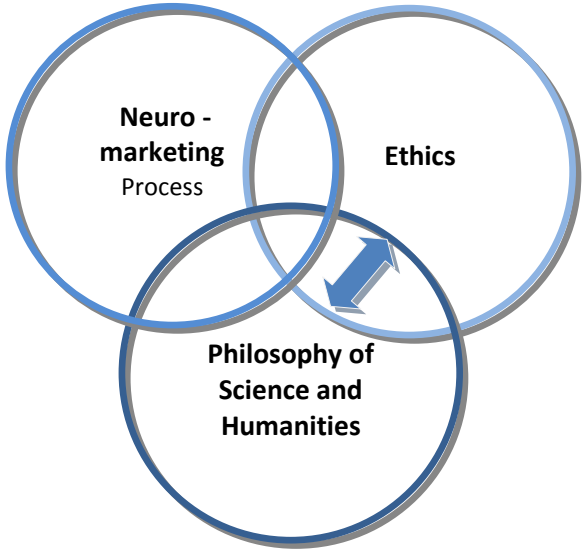
"objectifying procedures of natural science […] an abstraction"
[ibid 471].

So to understand that, which has meaning requires more, then an abstraction of that meaning. It therefore, cannot be reduced to an observation of the physical and its reaction. The understanding of that, which has meaning, requires interpretation. Thereby, countering the reductionist notion of nature science.

Critical Perspective on Hermeneutics

Hermeneutics is in itself an oxymoron, as mentioned above, is the hermeneutical problem; investigating that which we are part of. Habermas, in *Vitenskap som ideologi* (Oslo 1969), demanded that the hermeneutical sciences become critical to cultural traditions, which are related and, to some degree, governed by society.

4.6 Discussion



The following discussion, through exploration and exemplification, comes to terms with the theories and concepts from the previous circles' discussion. Thereby, expanding on the knowledge, gathered from the previous circles. This in turn, widens the understanding of the different concepts and theories approach to the human mind. In other words, this is some of the *how* and *why* behind the theories and concepts.

The simple vocabulary could help to explain why concepts such as neuromarketing are so appealing; since it is easier to understand and appreciate a direct explanation through; cause and effect (causality), than for instance; the more complex discussion concerning society and culture. To expand on this notion the illustration from 3.4 (Figure 5) is revisited, and as an addition to the illustration has the theories from this circle and the concepts and theories from 3.4 been added to the illustration (Figure 5)

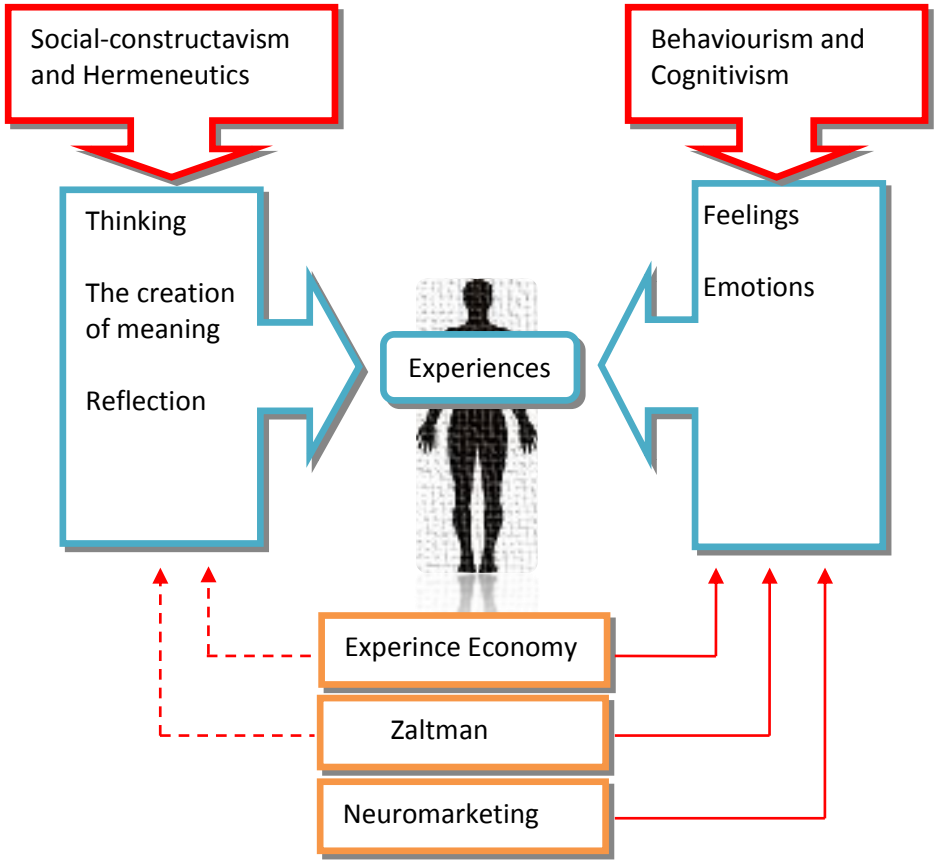


Figure 6

The philosophical theory, from this circle, has been added in relation to their approach to human experience and in regard to the explored theories and concepts. I start the exploration by explaining the relations illustrated, using the three levels of Experience Economy.

The *neuro-physical level* relates directly to neuroscience, where through scientific experiments a subject's response to stimuli is measured. The *evaluative level* relates to the social and semiotic-cognitive metaphor 2.8, where the experience is reflected upon though social interaction. The *habitual level* relates to the conventions of consumption, similar to the conventions of semiotic-cognitive metaphors, which are created through social interaction and consensus. Wherefore, the *neuro-physical* level belongs to the biological domain, the *evaluative* level belongs to the cognitive and communicative domain, and the *habitual* level belongs to the cognitive and social domain.

Interesting is the biological-science relation of neuroscience and the requirement for cognitive psychology to attempt an explanation of the neuron impulses, as seen in this circle Section 4.4 (under *Cognitive Neuroscience*). Though, a requirement for social interaction persists; because without considering the social and communicative elements, no change of conventions can be attempted. However, as observed, to experience economy the human reflection is portrayed as of little consequence for purchase. I however, emphasise the necessity for reflection, especially in relation to health care campaigns where the goal is the creation or change of habits through positive influences. I do, in other words, advocate for the importance of communication and interaction between the author and reader, and the reader and her/his social environment. This in addition, must include regard for the hermeneutical process – present in and unique to all readers.

It is as, for the critique of Experience Economy and the critique of hermeneutics, important for all science and research to remember to be self-critical and critical of the powers which attempt to persuade it to set-aside ethical observations. Zaltman in an interview claims that it is the consumers and managers of the knowledge, who are responsible for its usage [Other, Interview Zaltman]. I do however, claim that it is not the lone responsibility of the users of such scientific results, that they are not misused, but also of the scientists involved in its discovery. This also belongs to the ethical. Thereby illustrating, that it is not only in the execution of theories that reflection can produce vital information; it is also in the critical reflectiveness found in the hermeneutic problem.

As discovered, a communicative challenge persists in the interaction between the different sciences. I argue this is, among other, due to the different approaches to the world. The natural sciences attempt to understand the world through a final vocabulary (reduction); contrarily the humanities attempt this with an open and constant changing vocabulary. The most obvious and reductionist difference is that one seeks meaning through the physical world and the other through the reflection on sensory and psychological experience. Wherefore, the interaction and communication between the two is difficult and challenging. I do however, not wish to add to the heated discussion between sciences, and as Gadamer, I do not "deny the necessity of methodical work within the human sciences" [Gadamer, 2004 xxvi]. As mentioned, the interdisciplinary actions are

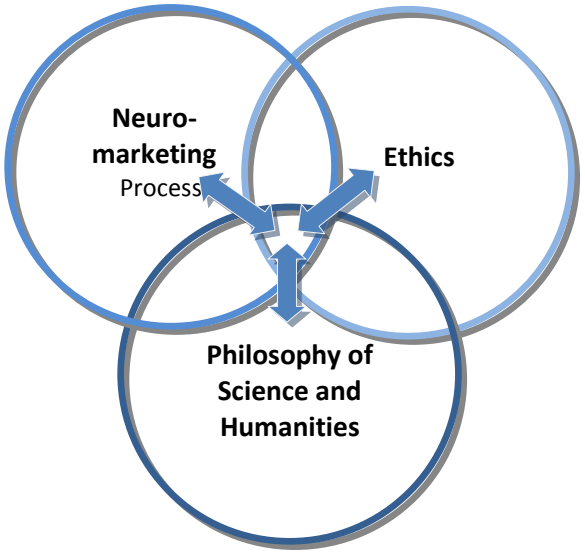
important for scientific development, which as discovered is also apparent in the ethical implications.

The healthcare campaign would benefit from the interdisciplinary explanation of the human in the interaction. Moreover, it would be desirable for research to include both quantitative and qualitative methods, which could, among other, be used as a means of verification. This in addition, would enable the examination of the legitimacy of one's prejudices.

The objectification of the subject discussed in 2.9, is can be considered both unethical and dehumanizing and therefore undesirable in humanistic research. In addition, it is not able to supply current and detailed information for other then verification of effect.

Both the process and the usage of neuromarketing research is, in other words, subject to the same challenges: The process dehumanises the individual and thereby negatively affects the result and if misused the effect would be dehumanising. As claimed by Skinner, is it important that we are aware of our actions and their consequences. Therefore, if the research process is changed, to regard humans as individuals, with a cultural and social background, it might supply more correct data and could be desirable in Humanistic Communication research.

5 Conclusion



In my thesis I set out to investigate if it was possible to adapt a positivistic theory, such as neuromarketing, intending an application in Humanistic Communication, while at the same time sustaining humanistic norms, such as ethics.

To illustrate the focus of the thesis' research, the question was parted into three questions:

1. Can a positivistic theory, rooted in nature science, be adapted to Humanistic Communication research?
2. Can such theory be considered respective of the humanistic norms?

These two questions were investigated and illustrate through existing neuromarketing adaption and experiments. This through the thesis was paralleled to question three:

3. Would such theory be viable in healthcare campaign research?

The fourth question included consideration for the social, cultural and humane context of healthcare campaigns.

I engaged the research questions by first investigating the neuromarketing process, which included a locating of the human in the action. This was done through a nexus analysis deduction of two neuromarketing process descriptions by Martin Lindstrøm and the other by McClure et al. Additionally, the question concerning adaption was investigated through Gerald Zaltman's *Metaphor-Elicitation Process* and *consensus maps*, and *Experience Economy*. As a means of illustrating the complexity of the human mind and experience, was the cognitive-semiotic metaphor introduced.

Through this, I was able to conclude that neuromarketing research could be used to optimise the effectiveness of communication. The results however, come with a great cost, in the forms of time and economy. The results in addition, turned out to be limited due to the focus of the neuromarketing investigation. The neuromarketing process was not able to reproduce the social interaction, thereby leaving out the social reflection, which directly affect our physical brains interconnections and our experience of and in the world. In other words, how we as humans create meaning. The information gathered through the neuromarketing process was limited to sensory perceptions and feelings, which means that the neuromarketing process in itself is limited and not by any means able to read the human mind. Moreover, the plasticity of the human mind seemed almost forgotten or unknown to the neuromaketeer. Meaning, the information from the subject's brain would be representative of the subject at the time of the experiment and that the neuromarketing research process itself could have a negative effect on the result. By research process is the clinical hospital and coat warring scientists included. Here was, among other, referred to the "halo-effect" and the Stanley Milgram experiment, illustrating the effect of authority on the subject. These and other gaps in the neuromarketing process complicated matters further, and created doubt about the validity of the results. These gaps included technical challenges located in the used technology and the human subject.

In relation to the neuromarketing research, I argue that even if successful, the information could only be a representation of the subject's own social and cultural understanding of the time of the experiment. This was complicated further by the lack of demographic interest and the objectification of the individual through the process and usage of neuromarketing, which is in contradiction to Humanistic Communication research.

In addition, the interdisciplinary linking and communication proved challenging, not only from natural science to humanities, but from one natural science to the other. This was among other investigated in the third circle.

The third circle illustrated the different philosophical approaches of the theories and concepts investigated in the thesis. I concluded that some of the challenges in the interdisciplinary linking are located in the different approaches to the world – natural sciences having a closed and final vocabulary, contrarily the humanities, which have an open and constant changing vocabulary. It is, however, important that the potential positive outcome of viewing holistically is remembered. This required me to investigate the ethical implications of using neuromarketing in healthcare campaigns, which included an exploration of the healthcare campaign's context. For this I introduced Gadamer, who has written a renowned book (*The Enigma of Health*) on the subject of health and ethics. In this I concluded that the healthcare campaign would benefit from the interdisciplinary explanation of the human in the interaction. It is, however, important to remember that it is through reflection and not manipulations, habits are created. This becomes even more apparent when considering healthcare campaigns. For it is the task of healthcare campaigns to influence habits and not subconsciously and intrusively affect the reader to buy one product over the other.

It is in other words, important for all science and research to remember to critically evaluate its ethical implications. Such as the critical reflectiveness found in the hermeneutic problem. It is therefore, not necessary to abolish neuromarketing all together when considering the implications. It does, however, demand that we as humanists' competently follow and facilitate the usage of the technology and the application of the theory.

In conclusion and to sum up, it is possible to adapt a natural science theory to humanistic research, while remaining respective of humanistic science. However, this requires a more holistic approach, including a consideration for the social, cultural, and humanistic context of the research. Wherefore, neuromarketing theory and adaptation could be a viable asset in healthcare campaign research.

Reflection

The following reflection consists of several fragmented thoughts on further studies and areas I though challenging.

In an attempt of widening the critical discussion on nature science, sociology, and humanistic science, Jürgen Habermas' ideology and hermeneutics could have been beneficial. Because, Habermas is critical to, among other, Gadamer's hermeneutics.

One of the strengths of my thesis was to approach the research questions from various perspectives; this however meant that I had no time or space to dwell on subjects within the subjects. I would, therefore, think it interesting to revisit the different approaches and go into further detail. I found the philosophical exploration especially interesting. Wherefore I also read the greater part of Kirkegaard's *concept of angst*, here I, among other, contemplated the connection between Aristotle's happiness and Kirkegaard's angst.

In addition, it could have been interesting to have discussed Bourdieu's *Habitus* and/or Henrik Dahl's *Minerva* model, and Foucault's *social discourse*, in relation to the mentioned social and cultural contexts. I was glad that I, in my thesis, was able to study however briefly notions from psychology, sociology, and philosophy.

Zaltman's approach at what can be described as an attempt on an interdisciplinary study strategy, can in the eyes of Scollon and myself be considered flared. However, it does have many interesting observations of, among other, human thinking. Wherefore, an investigation and exploration of application in focus group interviews, in combination with nexus analysis, could be very interesting, but it would of cause require several studies – I would gladly volunteer.

Process evaluation

As can be seen through the thesis, I have used time on mentioning historic events and/or developments as a means to explain and illustrate the current. This is because we are in truth made of history. More than that, history has shown us that history has a way of repeating itself. New theories are created, new ways of objectifying and justifying. These require that new discussions are created, with the aim of investigating them and locating their advantages and disadvantages, both as a research theory and as a method of viewing human individuals.

In the beginning of my pre-writing phase I decided that I wanted to include semiotics, but as I got close to the writing phase I decided against it. For it did not seem as if it would add much, I would not be able to deduct from my chosen theories and concepts.

The nexus analysis section might not be the largest or the most important, but I have used more than three weeks on it, adding and subtracting. Just locating the right methodology was not easy task and resulted in two meetings with Pirkko Raudaskoski and one with my supervisor. It would however, have been interesting and a great advantage if I could have studied the nexus 'up close and personal'. I do not believe that my results would have been different, but I do believe that through my physical and emotional presence I could have described the process more directly and maybe intuitively, have identified the people in the action.

The search for neuromarketing experiments descriptions was not easy either. Most neuromarketing experiments are either secretive or/and results oriented and none of them seem to be interested in the human within the machine, other than for the brain.

The experience economy introduced in my thesis is based on the Nordic interpretation; this included a meeting with Jantzen concerning my thoughts and inquires concerning experience economy.

Ethics has always been a one of my interests, but it was not before this thesis that I chose to add it in my writing as directly as I have. But in the case of healthcare and new and very intrusive research methods, it was to me almost obligatory. I feel that it was *The Enigma of Health*, which gave me the needed breakthrough in my research – with it building a (interdisciplinary) bridge between my fascination with technological and theatrical development, and the philosophy of communication research. It was however, complicating to reduce and focus of my ethical investigation.

Philosophy of science and humanities was not as hard to write. Since I prior to my thesis have had an interest in this particular field of philosophy and have had a course discussing the relations of philosophy of science and humanities, within our field of interest.

Short Contact Process Description -in bullet point form:

The following briefly introduces some of the more important contact description, which had an impact on the course of the thesis.

- Duo to my interest in semiotics I was, at my synopsis exam, advised to seek out Christian Andersen, who is a research assistant and has written several papers on semiotics, however after contacting him (28-feb-10) I discovered that my thesis's main focus would be another, wherefore I discontinued the communication
- Neuromarketing first hand: at 20-mar-01 I called the information office in the department of communication at Aarhus University, where I was told to contact CFIN, Aarhus. There I was told via email (23-mar-01) to contact Daniel Campbell-Meicklejohn, which I did (23-mar-01). Campbell did sadly not have any interest in me visiting their research facilities. This I think was a loss, because it could have given me an insight I can/could not get from articles, picture, or movies. Campbell's disinterest could, among other, reside in a busy time-schedule or lack of interest in my thesis or in neuromarketing
- Nexus analyses of the neuro research in the neuromarketing process. With the aim of better understanding and getting the most prominent information I (20-apr-10) contacted Pirkko Raudaskoski, who is a professor at AAU and among many publications and fields of study does research in nexus analysis. Pirkko advised me to look at some of Aaron Victor Cicourel's research articles and through them find inspiration
- I had some questions concerning experience economy and was lucky (11-may-10) to get a small 30min interview with Christian Jantzen

Abstract

The purpose of this thesis is to investigate the challenges of neuromarketing application in Humanistic Communication and healthcare campaign research. This is based on a personal interest in the development of healthcare campaigns and the adaption of theories. Gadamer's notion on interdisciplinary linking, builds a (interdisciplinary) bridge between my fascination with technological and theatrical development, and the philosophy of communication research.

I engage the research questions by first investigating the neuromarketing process - this through a nexus analysis deduction of two neuromarketing process descriptions one by Martin Lindstrøm and the other by McClure et al. Additionally, the question concerning adaption is investigated through Gerald Zaltman's *Metaphor-Elicitation Process* and *consensus maps*, and *Experience Economy*. As a means of illustrating the complexity of the human mind and experience, the cognitive-semiotic metaphor is introduced.

My investigation showed that the information gathered through neuromarketing is limited to sensory perceptions and feelings, which means that the neuromarketing process in itself is limited and not by any means able to read the human mind. The human minds plasticity seemed almost forgotten or unknown to the neuromaketeer – the information from the subject's brain would be a representation of the subject's social and cultural context, contemporary only to the experiment. Complicating matters further the neuromarketing research process itself could have a negative effect on the result. Here is among other, referred to the "halo-effect" and the Stanley Milgram experiment, illustrating the effect of authority on the subject.

The discovered gaps in the neuromarketing process create new complications and doubt concerning the validity of the neuromarketing research results. These gaps are located in technical challenges concerning the used technology and the human subject.

In relation to the neuromarketing research, I argue that even if successful, the gathered information could only be a representation of the subject's own social and cultural understanding of the time of the experiment. This is complicated further by the lack of demographic interest and the objectification of the individual through the process and usage of neuromarketing.

The interdisciplinary linking and communication proved challenging, not only from natural science to humanities, but from one natural science to the other. This is, among other, investigated through different philosophical approaches of the theories and concepts. I conclude that some of the challenges in the interdisciplinary linking are located in the different world approaches. To engage this I investigate the ethical implications of using neuromarketing in healthcare campaigns, which includes an exploration of the health-care campaign's context.

In conclusion and to sum up, it is possible to adapt a natural science theory to humanistic research, while remaining respective of humanistic science. However, this requires a critical analytic and reflective approach which is regarded holistically. This difficult task must include a consideration for the social, cultural, and humanistic context of the research. Wherefore, neuromarketing theory and adaptation could be a viable asset in healthcare campaign research. The results however, come with a great cost, in the forms of time and economy.

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