NEUROMARKETING
—
A Brain New World

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Abstract
This thesis is based upon an interest in the field of neuromarketing and a desire to understand different views of the practice and how it is communicatively approached.

Therefore, the main focus of the thesis is to review, explore and compare Martin Lindstrøm’s and the neuroscientific field’s notions of neuromarketing. This is done through Lindstrom’s presentation of the practice in his book Buy-ology and through two academic articles from the field of neuroscience. The empirical data is analysed individually and then joined together in a comparative analysis, emphasising differences and similarities. The thesis furthermore abides by the scientific method of hermeneutics, supplemented with social constructionism, as this scientific standpoint allows us to concentrate on providing a thorough understanding of the field of neuromarketing and the different views that exist on the practice.

A brief introduction to marketing and the basics of the relevant aspects of neuroimaging is presented, in order to establish the context in which the practice exists. The tools are then put further into context by exemplifying its application through the current uses of neuromarketing, coupled with the most famous study ever conducted in regards to neuromarketing.

In order to compare the different views of the practice and understand the context in which they exist, Norman Fairclough’s Critical Discourse Analysis and Stephen Toulmin’s argumentation theory are applied. On this basis, the respective opinions of Lindstrøm and the scientific field are established, along with how they communicatively approach and present neuromarketing. The findings hereof show that Lindstrøm is overly enthusiastic about the many wonders and potentials of neuromarketing and his communicative approach greatly reflects this, as he relies heavily on vivid and entertaining narratives and positive emphasis. Buy-ology greatly advocates the use of neuromarketing as the new research tool for marketers and is ripe with colourful stories providing insight into the application of the practice and what Lindstrøm considers an already established use of the practice.
The analyses of the scientific articles show that the scholars too are positive about the application of neuroscience to marketing. However, this positive attitude is expressed in a rather comprehensive and guarded manner, emphasising the conventions of scientific writing and tradition that the scholars adhere to. They acknowledge the potential and beneficial outcome that neuroscience may yield in relation to marketing, however, they also emphasise that the practice is still in its infancy and that more research is required within the field before the full potential and application can be unveiled and understood.

The individual analyses on the views of neuromarketing create a foundation for the comparison of Lindstrøm and the scholars, hereby enabling the establishment of differences and similarities between the views. This comparison demonstrates that despite the common focal point, their communicative approaches to neuromarketing are polar opposites. The differences also include the research on which their respective reviews rest, in which Lindstrøm relies heavily on reverse inference, which the scholars find to be a problematic method in this relation.

The incentives behind the respective work of the scholars and Lindstrøm are found to be of great significance. Coupled with Lindstrøm’s wish to entertain is a focus on the branding of himself, hereby placing Lindstrøm as the focal point of Buy-o-logy instead of the practice of neuromarketing. The scholars set out with a purpose of gaining insight into the current uses and practice of neuromarketing, hereby making generation of knowledge paramount.

Lindstrøm is recognised as the marketer who ensured neuromarketing a breakthrough into mainstream media. This is found to be due to his use of scientific accommodation, which entails, among others, using popular discourses, simple word choices, vivid explanations, and a focus on the celebration of statements instead of validation, hereby making Buy-o-logy an entertaining read with a complete lack of scientific evidence. Thus, Lindstrøm’s approach to neuromarketing is not characterised by a desire to educate about the use of neuromarketing; rather, his approach exists in a commercial context in which the truthfulness of his statements is secondary to the entertainment value.
Conclusively, Lindstrøm and the scholars represent two types of neuromarketing: one within academic research and one within a commercial context or rather: one seeking to educate and one seeking to entertain. Both Lindstrøm and the scholars are positive about the application of neuromarketing, yet positive in very different ways.

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ABSTRACT .................................................................................................................. 3

1 INTRODUCTION ........................................................................................................ 9
  1.1 PURPOSE STATEMENT .......................................................................................... 10
  1.2 RESEARCH DESIGN ............................................................................................ 11
    1.2.1 Structure ........................................................................................................ 14
    1.2.2 Readers Manual ............................................................................................. 16
  1.3 DELIMITATIONS ................................................................................................... 16

2 THEORY OF SCIENTIFIC METHODS ........................................................................ 19
  2.1 HERMENEUTICS ................................................................................................ 19
  2.2 SOCIAL CONSTRUCTIONISM ............................................................................. 22
  2.3 POSITIVISM ........................................................................................................ 24
  2.4 QUALITATIVE RESEARCH ................................................................................... 26
    2.4.1 Sampling in Qualitative Research .................................................................. 28
  2.5 QUALITY OF THE ANALYSIS ............................................................................. 29

3 EMPIRICAL FOUNDATION ....................................................................................... 30
  3.1 BUY-OLOGY ......................................................................................................... 30
  3.2 TWO SCIENTIFIC ARTICLES .............................................................................. 32
    3.2.1 Neuromarketing: The Hope and Hype of Neuroimaging in Business .......... 33
    3.2.2 Branding the Brain: A Critical Review and Outlook .................................... 33

4 THE FIELD OF NEUROMARKETING ....................................................................... 35
  4.1 THE MARKETING OF NEUROMARKETING ....................................................... 35
  4.2 THE BRAVE NEW WORLD OF NEUROMARKETING ......................................... 38
  4.3 THE NEURO OF NEUROMARKETING ............................................................... 39
    4.3.1 Functional Magnetic Resonance Imaging .................................................... 41
    4.3.2 Electroencephalography .............................................................................. 42
    4.3.3 Magnetoencephalography .......................................................................... 42
  4.4 CURRENT USES OF NEUROMARKETING ........................................................ 43
    4.4.1 Hyundai Motors ............................................................................................ 43
    4.4.2 Cheetos – The Orange Underground ........................................................... 44
    4.4.3 Media ............................................................................................................ 45
    4.4.4 Predicting Popularity .................................................................................... 45
    4.4.5 Neuromarketing Companies ....................................................................... 47
      4.4.5.1 Brighthouse ............................................................................................ 47
      4.4.5.2 NeuroFocus (Now Nielsen Consumer Neuroscience) ......................... 47
      4.4.5.3 Millward Brown ...................................................................................... 47
      4.4.5.4 Neurosense ............................................................................................ 48
      4.4.5.5 Neuro-Insight ........................................................................................ 48
  4.5 THE MOST FAMOUS NEUROMARKETING STUDY ........................................... 49
    4.5.1 Adding Neuroimaging to the Pepsi Challenge ............................................ 50

5 METHODOLOGY ...................................................................................................... 53
  5.1 CRITICAL DISCOURSE ANALYSIS ..................................................................... 53
    5.1.1 Defining Discourse ....................................................................................... 54
    5.1.2 Fairclough’s Critical Discourse Analysis .................................................... 54
    5.1.3 Defining ‘Power’ in Discourse ...................................................................... 56
    5.1.4 Text, Meanings and Interpretations ............................................................. 57
    5.1.5 A Three-dimensional Framework for Studying Discourse ......................... 58
    5.1.6 The Textual Dimension ............................................................................... 61
    5.1.7 The Discursive Dimension ......................................................................... 64
    5.1.8 The Social Dimension ............................................................................... 66
    5.1.9 Linking the Dimensions .............................................................................. 67
6 EMPIRICAL ANALYSIS

5.2 A CRITICAL NOTE ON CDA ................................................................. 67
5.3 TOULMIN’S ARGUMENTATION ............................................................. 68
  5.3.1 To ulmin’s Model of Argumentation .............................................. 70
    5.3.1.1 The Basic Model ................................................................. 70
    5.3.1.2 The Extended Model ........................................................... 71
  5.3.2 Elements of an Argument ............................................................. 72
    5.3.2.1 Fields of Arguments ........................................................... 72
  5.3.3 Division of Arguments ............................................................... 73
    5.3.3.1 Analytical and Substantial Arguments ..................................... 73
    5.3.3.2 Warrant-using and Warrant-establishing Arguments .................. 74
    5.3.3.3 Conclusive and Tentative Arguments ..................................... 74
    5.3.3.4 Formally Valid and Informally Valid Arguments ........................ 74
  5.3.4 Classification of Arguments .......................................................... 75
  5.3.5 Critique of Arguments ..................................................................... 76
5.4 The To ulmin Model on a Critical Note .................................................... 77

6 EMPIRICAL ANALYSIS

6.1 CHAPTERS ONE AND SIX OF BUY-OLOgy .............................................. 79
  6.1.1 Textual Dimension ....................................................................... 79
    6.1.1.1 Vocabulary ............................................................................ 79
    6.1.1.2 Grammar .............................................................................. 81
  6.1.2 Discursive Dimension ................................................................. 84
    6.1.2.1 Discursive Practice ............................................................... 85
    6.1.2.2 Intertextuality ............................................................... 87
  6.1.3 Social Dimension ........................................................................ 90
    6.1.3.1 Power ............................................................................... 93
  6.1.4 Argumentation ............................................................................. 94
  6.1.5 General Argumentation in Buy-ology ............................................ 97
    6.1.5.1 Division of Arguments .......................................................... 98
  6.1.6 The Missing Conclusion ............................................................... 99
  6.1.7 Lindstrøm’s Notion of Neuromarketing ......................................... 100

6.2 TWO SCIENTIFIC ARTICLES ON NEUROMARKETING .......................... 101
  6.2.1 Textual Dimension ............................................................... 101
    6.2.1.1 Vocabulary ............................................................................ 102
    6.2.1.2 Grammar .............................................................................. 103
  6.2.2 Discursive Dimension ................................................................. 104
    6.2.2.1 Intertextuality ............................................................... 108
  6.2.3 Social Dimension ........................................................................ 109
    6.2.3.1 Power ............................................................................... 110
  6.2.4 Argumentation ............................................................................. 111
  6.2.5 General Argumentation in the Articles .......................................... 114
    6.2.5.1 Division of Arguments .......................................................... 115
  6.2.6 The Scholars’ Notion of Neuromarketing ....................................... 116

6.3 COMPARISON OF BUY-OLOgy CHAPTERS AND SCIENTIFIC ARTICLES ........................................ 119
  6.3.1 Textual Dimension ............................................................... 119
    6.3.1.1 Grammar .............................................................................. 120
  6.3.2 Discursive Dimension ................................................................. 122
    6.3.2.1 Intertextuality ............................................................... 123
  6.3.3 Social Dimension ........................................................................ 125
    6.3.3.1 Power ............................................................................... 126
  6.3.4 The Use of Argumentation ........................................................... 127
    6.3.4.1 Reverse Inference – Attacking an Argument .......................... 127
  6.3.5 What Does Neuromarketing Have to Offer ..................................... 129

6.4 Lindstrøm’s Neuroscientific Accommodation ......................................... 132
  6.4.1 Accommodation of Scientific Observations ...................................... 133
  6.4.2 Lindstrøm’s Entertaining Science ................................................... 135
# Introduction

During the past decade, methods and insights from the field of neuroscience have received great interest and attention in the field of marketing and consumer research and a hybrid has emerged from the two: neuromarketing. Put in a very simplistic way, neuromarketing can be defined as any marketing or market research activity, which uses methods, techniques or insights from the field of neuroscience (Genco et al. 2013, p. 8).

As neuroscientific research methods have gained ground in the world of marketing, loud criticisms and somewhat apocalyptic predictions have been soaring in the popular press (Senior 2008, p. 263). It is thought that a great contributor of this debate was the notion of a ‘buy button’ in the brain, coined as the attempt to “locate a mythical region of the human brain that when activated would drive subsequent consumer behavior, perhaps without consumers being consciously aware of this” (Op.cit., p. 264). Despite its controversiality, the field of neuromarketing is gaining attention amongst advertising and marketing professionals.

One of the standard-bearers of ‘the many wonders’ of neuromarketing and also one of the most prominent contributors within the field is Martin Lindstrøm. However, despite Lindstrøm’s high profiled position as contributor to the field of neuromarketing, he is also one of the most heavily criticised, especially by the academic field of neuroscience.

In an article from *Harvard Review of Psychiatry*, three scholars from the field of neuroscience raised their concern regarding the vivid descriptions of neuroscientific methods and concepts: “It is worrisome that neuromarketing companies appear to be providing links to media rather than to scientific literature, as media coverage could be used in the absence of peer-reviewed evidence to prematurely legitimize the use of these technologies” (Fischer et al. 2010, p. 234).

In 2011, the critique of Lindstrøm took new heights as no less than 46 Ph.D.s responded to a neuromarketing Op-Ed in the New York Times by Lindstrøm, stating in an open
letter to the editor that: “We find it surprising that The Times would publish claims (...) that lack scientific validity” (Poldrack, et.al. 2011).

Lindstrøm’s book Buy-ology was one of the first books about neuromarketing we read. Part of the reason why we began reading Buy-ology was due to the massive amount of exposure the book had received. Lindstrøm is one of the most, if not the most, prominent neuromarketers worldwide. Typing his name in the ‘international’ version ‘Martin Lindstrom’ in Google's search engine entails approx. 695,000 hits (appendix 3).

Even though we were reading the book through our supposedly critical, academic lenses, we were quite impressed by Lindstrøm’s vivid descriptions of the power of neuromarketing and its extensive use and possibilities. After reading Buy-ology, we began researching other notions of neuromarketing and its current uses in relation to marketing efforts. Through this we discovered that several marketers and neuroscientists take a quite critical stance towards Lindstrøm and his work and that much of this criticism points to Lindstrøm’s research methods and empirical data (Poldrack, et.al. 2011). We scrutinized Buy-ology for more information about the studies conducted, however, we were unable to uncover any scientific groundings or results. In spite of this, Lindstrøm still manages to receive a significant amount of exposure and media attention, as well as collaborations with prominent marketers, scientists and well-known companies.

1.1 Purpose Statement

Based on the above observations, the purpose of this report is as follows:

With a point of departure in a theoretical discussion of the concept of neuromarketing, we wish to discuss and analyse Lindstrøm’s and the field of neuroscience’s communicative approach to the practice. Through this, we wish to examine their attitudes toward the use of neuroscience in marketing and if and how their attitudes differ.

To examine this, this thesis will, through use of Critical Discourse Analysis (henceforth
CDA) and Toulmin’s notion of argumentation, investigate two chapters of Lindstrøm’s book Buy-ology and two scientific articles, to establish their differences and similarities in their communicative approach to neuromarketing and their respective opinions hereof. Therefore, four research questions have been formed that will be answered through our analysis and thus constitute the framework of our thesis:

1. What is Lindstrøm’s notion of neuromarketing?

2. What is the academic field of neuroscience’s notion of neuromarketing?

3. How and why do these notions differ?

4. How has Lindstrøm achieved to gain status as a famous neuromarketer?

The purpose of this thesis is therefore to discuss neuromarketing from a theoretical perspective and arrive at a better understanding of the practice. Furthermore, we specifically aim to understand how it is communicatively approached in the setting of Buy-ology and neuroscientific academia and why it is approached the way it is. This will enable us to examine the relative similarities and differences between the two fields and hereby establish noteworthy agreements and disagreements on the practice of neuromarketing.

1.2 Research Design

This thesis opens with a clarification of our incentives on choosing Lindstrøm and the academic field of neuroscience as main contributors to our empirical foundation. After having established this, a clarification on the marketing and neuroscientific part of neuromarketing will be carried out, hereunder the manner in which neuroscientific experiments related to the field of neuromarketing are conducted, which types of insights they yield and how these methods are applied to marketing. Hereby, the context
in which neuromarketing exists is established, ensuring a thorough background for the context of our thesis.

The methodological discussion opens with an examination of Fairclough’s notion of CDA and of Toulmin’s model of argumentation, which lays the foundation and context for our analysis, and thus for discussing the concept of neuromarketing. This thesis draws on CDA to create a holistic understanding of the communication in Lindstrøm’s Buy-ology alongside selected neuroscientific articles. More specifically, we will analyse Lindstrøm’s notion of neuromarketing together with the notion of neuroscientific scholars. In particular, we will explore which textual structures and discourses Lindstrøm and the scholars draw on, that is, how they communicatively and discursively construct neuromarketing and how this fits into a broader social perspective. We seek to understand how neuromarketing is communicatively approached, as we hereby are able to gain a better understanding of the concept. This understanding will enable us to investigate the relative differences or similarities belonging to our empirical data and to their attitudes towards neuromarketing. Toulmin’s model of argumentation will be applied, as this supplements Fairclough’s CDA very well. Fairclough focuses on how language and discourses are constructed to fit the purpose of the communicator, whereas Toulmin focuses on the logical construction of argumentations to support a specific claim. Furthermore, by incorporating Toulmin’s notion of argumentation, we are able to investigate the content behind the claims put forward, in relation to the application of neuroscience to marketing. Thus, by incorporating both theories, attention is on argumentation on word-level, content and how it is communicated.

Lindstrøm’s Buy-ology will be the point of departure for our analysis and in particular chapters one and six, which have been chosen for analysis. Applying Fairclough’s CDA and Toulmin’s model of argumentation will allow us to analyse Lindstrøm’s presentation of neuromarketing from an objective point of view, hereby allowing for a thorough investigation of Lindstrøm’s overall notion of neuromarketing and his communicative approach and attitude towards it. After this, an investigation of the empirical data from the scholars will be carried out in order to establish their notion of neuromarketing and their communicative approach and attitude.
Individual analyses of the Buy-ology chapters and the articles will be carried out. However, these will be placed in the appendix, as they are to be regarded as the groundwork of being able to establish the general notions of neuromarketing. When the individual part analyses are collected as a whole, they constitute the sum of Lindstrøm’s and the scholar’s approach to neuromarketing and thus, the real value of the analyses are not seen until they are collected as a unit. Therefore, the joining of the analyses make it possible to establish and arrive at a collective analysis, which represents the overall attitude of and approach to neuromarketing, from the perspectives of Lindstrøm and the scholars. Thus, the parts constitute the sum on which we are able to conduct a thorough analysis. The joining of the individual analyses furthermore serves the purpose of being able to establish the social dimension in which the empirical data exists, as the social dimension cannot be fully explored through analysis of only one chapter or article. Thus, this thesis will present the collective analyses of the comparison of the Buy-ology chapters and the comparison of the scientific articles. Subsequently, a comparison Buy-ology and the articles will be conducted. The purpose of this is to examine the communicative and structural differences and similarities, which will lead to a comparison of their respective notions of neuromarketing. Lastly, we will take a close look at Lindstrøm’s communicative presentation of neuromarketing and examine the reasons for his prominence in mainstream media, and how and why Lindstrøm and his notion of neuromarketing have managed to achieve a vast amount of media coverage.

Thus, what we as researchers are able to bring to the table of neuromarketing is a thorough investigation of the different perceptions and attitudes surrounding its use. We will shed light on the practice from a communicative perspective and hereby arrive at an establishment of how it is approached from different fields. This thesis therefore aims to contribute to a better understanding of the concept of neuromarketing and the way it is communicatively approached.
1.2.1 Structure
This thesis consists of 10 chapters: Introduction, Theory of Scientific Methods, Empirical Foundation, Field of Neuromarketing, Methodology, Empirical Analysis, Discussion, Conclusion, Reflections and List of Responsibilities.

The section below, delimitations, completes Chapter 1 and hereby the introductory sections. Chapter 2 describes which position of scientific methods we have been inspired by and the scientific framework on which our thesis unfolds, hereby serving as a prerequisite for understanding the foundation of our thesis. Chapter 3 introduces the empirical data, which will be investigated within our thesis, the basis on which it has been chosen along with an introduction of Lindstrøm and the scholars authoring the articles. Within Chapter 4, we will introduce the field of neuromarketing and the context in which the practice exists. This is done through a theoretical discussion of the relevant aspects of marketing and an introduction to the neuroscientific methods that are applied. After having established the backbone of the practice, we will move on to an assessment of the current uses of the practice and the chapter hereby lays the foundation of our empirical analysis and creates a context for Fairclough’s social dimension. Chapter 5 accounts for the methodological tools, concepts and framework that will be applied to our empirical data. Fairclough’s three-dimensional model of CDA and Toulmin’s model of argumentation is presented, hereby establishing the foundation on which we will build our analysis. Hereafter, we move onto Chapter 6, which consists of the analyses of our empirical data. Firstly, we will investigate Lindstrøm’s notion of neuromarketing, followed by an investigation of the scholars approach to neuromarketing. These will lay the context for a further investigation of relative differences and similarities between the two, along with an examination of the social context in which they exist and their respective incentives for their communicative approach to neuromarketing. The chapter is concluded with an examination of Lindstrøm as a prominent neuromarketer within mainstream media and if and how his communicative approach to neuromarketing has played a part in his prominence. Chapter 6 lays the foundation for a discussion in Chapter 7, in which the findings of the analyses will be put into context and the communicative, attitudinal and incentive differences and similarities will be discussed. Chapter 8 concludes the findings of our empirical analysis and is the overall conclusion to our purpose statement. Lastly,
Chapter 9 concludes the thesis with a reflection on our findings. Chapter 10 contains a list of responsibilities. Taken as a whole, this thesis constitutes a close partnership and collaboration between the authors. We have contributed on equal terms to the research, production, structuring and proofreading surrounding each section and thus, no section is assigned exclusive ownership of one author. However, in complying with thesis regulations and formalities, we have constructed a list of responsibilities, allocating the responsibility of each section to one of the authors.

![Figure 1: Thesis Structure (Own Creation)](image-url)
1.2.2 Readers Manual

Throughout the thesis the following abbreviations will be used:
In relation to the methodology, Fairclough’s Critical Discourse Analysis will be termed CDA.

The empirical data will be abbreviated as follows:
**A1**: Article: Neuromarketing: The Hope and Hype of Neuroimaging in Business
**A2**: Article: Branding the Brain: A critical review and outlook
**B1**: Chapter one in Buy-ology: A Rush of Blood to the Head
**B6**: Chapter six in Buy-ology: I say a little Prayer for You

The authors of the academic articles are referred to as scholars, when mentioned as an entity.
Martin Lindstrøm, the author of Buy-ology is referred to as Lindstrøm.

Throughout the thesis, the complete Buy-ology study is referred to as the Buy-ology study, whereas the individual experiments, which were conducted as part of the study, will be referred to as experiments.

1.3 Delimitations

As the subject area of our thesis covers more aspects than the scope allows us to elaborate on, an exhaustive description of all aspects is outside the remit of this thesis. Thus, a few delimitations have been necessary.

We acknowledge that consumers and their attitudes towards neuromarketing are an inevitable and important aspect of the practice. However, due to the focus and scope of our thesis, we have chosen to place our sole focus on the scientific field of neuromarketing and Lindstrøm’s notion of the practise, as they are some of the most prominent participants in the debate concerning neuromarketing.
Due to the extensive nature of Lindstrøm’s Buy-ology, we have chosen to focus on two chapters, as this allows us to thoroughly elaborate on important aspects within the respective chapters and carry out a detailed analysis. The chapters have been chosen on their ability to represent Lindstrøm’s general view and opinion towards neuromarketing and hereby only choosing two chapters are not to be considered a compromise but rather, an optimization allowing for an exhaustive analysis. In regards to Lindstrøm it is important to strongly emphasise that he is not a representative for the whole field of marketing or marketers as a collective but rather, he is a prominent figure with a prominent opinion about neuromarketing. Many marketers do not agree with Lindstrøm’s view of neuromarketing and the possibilities he claims to see within the field.

Since the scientific field of neuroscience is both broad and productive in regards to research related to neuromarketing, a vast amount of articles, books and online information is available. Thus, adhering with our purpose of conducting an in-depth analysis of our empirical data, we have chosen to solely focus on two scientific articles, which have been chosen based on their ability to critically reflect upon the practice. Hereby, their notion of neuromarketing can be regarded as representative for the scientific field of neuroscience, but not necessarily as exhaustive.

An important point to keep in mind is the fact that we are, indeed, not neuroscientists and hence adhere to a corporate communication background, not to a medical one. We therefore neither can nor will go into minutely detail of the brain processes and functions surrounding the use of neuromarketing but rather explain the practice within the framework of marketing and introduce the most important aspects necessary to understand the scientific backbone of neuromarketing.

The analysis of our empirical data is conducted based on Fairclough’s CDA which is supplemented with Toulmin’s model of argumentation. However, in regards to the extensive nature of Fairclough’s CDA, is has not been possible to go into minutely detail with all of his concepts and aspects and we have therefore limited our analysis to
include the most relevant ones. Again, this is not considered a compromise in relation to
the quality of the analysis quite contrary, by focusing on the most relevant aspects in
our analysis we will also yield the most relevant and important information. E.g. no
quantitative analyses have been conducted to prove the findings of dominating
discourses. Rather, these have been based on evaluation of the frequency with which
they are articulated.

As we are comparing different fields and opinions to each other, it could be argued that
an analysis of genre would have been obvious to include. The scientific articles concur
with a specific genre, however, given the multifaceted nature of Lindstrøm’s work it has
not been possible to categorise him within a specific genre and hence, no frame of
reference exists in terms of conducting a genre analysis.

Lastly, we find it important to emphasise that we aspire to reach an understanding of the
different views on neuromarketing and through this how the scientific field and
Lindstrøm communicatively approach the practise. Hereby, adhering with our
epistemological standpoint of hermeneutics, our analysis is of an explorative character
and will therefore not go into a minutely description of our findings but rather, reflect
upon them and hereby arrive at an understanding of them.
2 Theory of Scientific Methods

In the following section, we will describe which position of scientific methods we have been inspired by and the scientific framework on which our thesis unfolds, as this framework will provide a clarification of our scientific considerations and epistemological stance. It will specify the fundamental assumptions we hold about the world in our search for knowledge and hence, serve as a prerequisite for understanding the foundation of our thesis.

Based on our choice of theory and empirical foundation our anchoring stance is within the interpretive worldview. Our approach to knowledge is characterised by an ambition to understand the subject area of neuromarketing, the arguments, views and opinions surrounding its use and how it is described in the particular setting of Buy-ology and from a neuroscientific perspective. As scientists, we set out with a goal of understanding the concept of neuromarketing and examine the assumptions associated with the practice. Our overriding scientific standpoint will therefore be within the hermeneutic tradition, which will be supplemented with social constructionism¹. As we are working within the subject areas of marketing and communication, areas which are highly subjective and dependant on the actors involved, an interpretive stance is highly suitable, as this will allow us to explore the points of views of those involved in it, and ensure a thorough investigation of our empirical data. As such, interpretation is the activity that constitutes our attempt to gain knowledge and establish an understanding of neuromarketing and in particular the manner in which it is communicatively approached (Sherratt 2006, pp. 17-18).

2.1 Hermeneutics

The overriding scientific frame of our thesis will be the hermeneutic position. The word hermeneutics is derived from the Greek word Hermeneutikos, which means to interpret. It stems from Greek education and holds the same meaning today. Thus, when referring

¹ There is only a subtle difference between social constructionism and constructivism and given the points of agreement between the two, they are often brought together in a synthesis (Burr 2003, p. 20). As we adhere to Vivien Burr’s notion of the field, we will use the term social constructionism.
to hermeneutics one is usually referring to a disciplined approach to interpretation (Op.cit., p. 17). Hermeneutics is characterised by subjective interpretation. However, the practice names no particular method of interpretation or coherent body of theory, which could be explained in a systematic form (Weinsheimer 1991, p. 1). Rather, hermeneutics is described as the art of understanding, reached through a referential process where we understand by comparing the unknown to the known (Palmer 1969, p. 87). On the ontological level, hermeneutics claims that the social world consists of meaning and that meaning is created as a constant and dynamic process. Knowledge is a subjective matter, always related to the eyes of the beholder and based on understanding and interpretation (Op.cit., pp. 118-119). Accordingly, we, as scientists positioned within the interpretive worldview, do not consider the world to consist of measurable facts independent of those involved in it, but rather to function on an ontological level where meaning is derived from a constant and dynamic process of interpretation (Thurén 2009, pp. 106-109).

Within the hermeneutical position we lean towards newer hermeneutics, which is referred to as philosophical hermeneutics. German philosopher Hans-Georg Gadamer detailed the notion of philosophical hermeneutics in his magnum opus “Wahrheit und Methode” in 1960 (Palmer 1969, p. 162) and at the heart of Gadamer’s philosophical hermeneutics, we find the notion of pre-understanding as a prerequisite for reaching an understanding. Gadamer rejects the assumption that texts have an original meaning, which it is the interpreter’s task to recapture (Forster 2007, p. 61). Gadamer criticised traditional hermeneutics for not including the interpreter and argues that interpretation presupposes a historically determined pre-understanding, where we as interpreters bring pre-understandings and pre-conceptions with us into the interpretation process, hereby affecting the outcome (Palmer 1969, p. 163-166). In our thesis, pre-understandings are observable in our choice of theoretical structure and our approach to our empirical data. These pre-understandings, however, are also a prerequisite for being able to interpret and thus delve deeper into the understanding of our subject area of neuromarketing. Reaching an understanding is therefore not the process of reconstructing the author’s intention or an objective meaning thereof, but rather a meeting between realms of

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2 We adhere to Palmer’s translation and interpretation of Gadamer’s thoughts on hermeneutics.
understanding, where we explore our own pre-understanding as much as the text itself (Inwood 1998). Thus, we understand by a constant reference to our own experience, always from within our own horizon and we can therefore, never be certain that our interpretation is correct nor superior to previous interpretations (Palmer 1969, p. 121).

On the methodological level, hermeneutics operates with the hermeneutical circle, which holds that understanding is a referential process where we seek to understand something by comparing it to something we already know (Op.cit., p. 87). Thus, out of the meaning of individual parts an understanding of the whole is generated and vice versa; the individual parts can only be fully comprehended in reference to a whole (Op.cit., p. 118). This indicates a clear interaction between the whole and parts, and emphasises the need for both, as the interpretation hereby becomes a circular and reciprocal process, where each part provides meaning to another part (Op.cit., p. 87). It is hence the incorporation of the whole and the individual parts, which crafts the terms by which we are able to interpret and reach an understanding. This referential and reciprocal process is precisely where hermeneutics becomes of particular use for the framework of our thesis, as we are working with several parts in order to reach an understanding of a whole: neuromarketing. As we attempt to reach this understanding, the analytical process will be that of an on-going reciprocal action, where numerous parts of knowledge and opinions will be related to each other, hereby constituting the important interplay, in which we aim to reach an understanding of both parts and whole. According to Gadamer, the hermeneutic circle and the circularity of understanding are not only a methodical basic rule but also a basic feature of human existence itself (Op.cit., p. 163). We will always compare something we do not know to something we know and vice versa in order to acquire an understanding. This analytical method is evident throughout this thesis in our approach to answering our research questions: With a starting point in analyses of individual parts (Lindstrom’s Buy-ology and the two articles from the field of neuroscience) we create an understanding of the whole: neuromarketing. It is hence through various part-analyses that we set out to reach an overall conclusion to our problem statement, while the individual part-analyses cannot be entirely understood until they are brought together as a whole.
2.2 Social Constructionism

In order to obtain the most thorough and in-depth understanding of neuromarketing, the hermeneutic position will be complemented with social constructionism, as this will enable us to better evaluate the concept of neuromarketing and the arguments surrounding its use. Several hermeneutic traits are evident within the social constructionist approach, which underpin the complementary use of the two. Common for the two positions are, among other things, that they in general focus on the process by which meanings are created, that knowledge should be based on interpretation and that both positions challenge the assumption that conventional knowledge is based upon measurable facts (Burr 2003, p. 3, Palmer 1969, p. 86).

This thesis’ approach to social constructionism is characterised by the assumption that reality is shaped by our perception of it. Social constructionists view knowledge as constructed through social interaction and thus, our knowledge and insights of the world are not a direct reflection of reality but always an interpretation of it (Andrews 2012, p. 39).

Social constructionism is an umbrella term for a range of theories about culture and society (Jørgensen, Phillips 2002, pp. 4-5) and according to Vivien Burr (2003, p. 2) no one definition of social constructionism exists, since no isolated feature or description would be able to embrace all approaches and aspects of the practice. Rather, Burr argues that all approaches to social constructionism rest on one or more of the following premises, which build on Gergen’s work from 1985 *The Social Constructionist Movement in Modern Psychology*:

- *A critical stance towards taken-for-granted knowledge*: This premise bids us to be critical of our experience of the world and challenges the idea of objective, unbiased conventional knowledge (Gergen 1985, p. 266). It insists we take a critical stance towards our assumptions about how the world appears to be, as the categories, in which we understand the world, are not a direct reflection of reality but always an interpretation (Ibid.).
• **Historical and cultural specificity:** The constructionist position argues that forces of nature do not automatically drive the process of understanding (Op.cit., p. 267). Rather, our understanding, the concepts and categories we use, are derived from our historic and cultural background (Burr 2003, p. 4).

• **Knowledge is sustained by social processes:** This premise holds that it is through daily, social interactions between people that knowledge is constructed and created. Meaning that social actions of all kinds, and in particular language, are of great interest to social constructionists (Ibid.).

• **Knowledge and social action go together:** The above-mentioned negotiated constructions can take a wide variety of shapes, leading to several possible social constructions of the world. These constructions and descriptions maintain some patterns of social life while they exclude others, as they have implications for what is tolerable (Op.cit., p. 5).

Bearing the above in mind, social constructionism is predominantly concerned with explaining the processes by which people come to depict and account for the world in which they live (Gergen 1985, p. 266). Thus, this thesis’ approach to social constructionism will be characterised by the assumption that reality is shaped by our recognition of it, and that the actions of people are based on the meanings they hold. Burr and Gergen’ notions of social constructionism, are of particular importance to the framework of our thesis, as they are thought to underpin the general philosophical assumptions of discourse analysis (Jørgensen, Phillips 2002, p. 5), as discourse analysis will be a dominant analytical tool in our investigation of our empirical data. Discourse analysis is often linked to social constructionism, as they both place great emphasis on the active role of language in the social construction of the world, hereby making discourse analysis one of the most widely used approaches within social constructionism (Op.cit., p. 4). Furthermore, the process of a discourse analysis is generally regarded as a hermeneutic process, as there is a continuous interplay between analysis and data collection and hence, hermeneutics can be regarded as the method of producing and grasping meaning relations (Wodak, Meyer 2001, p. 16).
In conclusion, this thesis has its epistemological standpoint within the interpretive worldview of hermeneutics and social constructionism, meaning that our overall intend is to understand neuromarketing. The subjective interpretation of hermeneutics and social constructionism opposes the positivist principle, which holds that the purpose of science is to achieve ultimate truths and general laws based on observation and experiment (Daymon, Holloway 2002, p. 273). However, as our subject area is neuromarketing, an area, which draws greatly on the world of neuroscience and its scientists, it is important to supplement our interpretive worldview with that of the positivistic worldview, as we are operating within two contrasting science traditions. Bearing both the interpretive and positivist position in mind will enable us to better explore and grasp the viewpoints and arguments from all empirical evidence.

2.3 Positivism

Positivism is a direction within the philosophy of science, which aims to find general laws and regularities. It differs from the interpretive perspective in philosophical assumptions, beliefs about the nature of reality, and of what constitutes knowledge (Hudson, Ozanne 1988, p. 508). Positivism claims that only two sources of knowledge exist: what we can derive from logic thinking and what we can observe with our senses (Daymon, Holloway 2002, p. 273). Positivists claim that a single, objective reality exists, which is independent of what individuals may perceive and thus, that the social world exists independently of individuals’ perceptions of it (Hudson, Ozanne 1988, p. 509).

Advocacy for a positivistic social science began with Auguste Comte’s series of texts *Cours de Philosophie Positive* (Course of Positive Philosophy) written between 1830-1842 (Turner 2001, p. 11827). Key positivist ideas were that metaphysical speculations are pseudoscientific, that science is the highest form of knowledge and that there is one scientific method common to all the sciences (Kincaid 1998). The aim of positivism is to create as valid knowledge as possible, and only knowledge derived from logic thinking and observations can be considered valid knowledge (Thurén 2009, p. 24). Positivist epistemology therefore holds that only knowledge derived from the above sources are to be considered valid. Intersubjective testability is a necessity for positivist
research to be considered valid, as this entails a description of the research methods, enabling other researchers to test the methods and the results generated herefrom (Feigl 1981, p. 369). Intersubjective testability is also termed reproducibility (Day 1998, p. ix). Positivism is often closely related to quantitative research, as the aim is not context rich interpretations but rather statistical analysis, with a focus on specific factors that are studied in relation to specific other factors (Daymon, Holloway 2002, p. 8). Since logic thinking also includes maths, positivists should strive for quantifiable facts and statistical and systematic analysis, since this will allow for general conclusions, and thus valid knowledge and ultimate truths of the world (Thurén 2009, p. 19). The positivist stance insists on the principle that the nature of the world can be revealed by observation, and that what exists is what we perceive to exist, which is in stark contrast to the interpretive worldview (Burr 2003, p. 3). Positivism can therefore be an effective standpoint when setting out to explain facts. However, if the goal is to understand underlying causes behind the facts, positivism will not be of much use (Thurén 2009, pp. 106-107). In order to gain an overview of the opposing perspectives, the below table has been included.
A SUMMARY OF THE POSITIVIST AND INTERPRETIVE APPROACHES

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Positivist</th>
<th>Interpretive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontological</strong></td>
<td>Nature of reality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Objective, tangible, Single, Fragmentable, Visible</td>
<td>Socially constructed, Multiple, Holistic, Contextual</td>
</tr>
<tr>
<td>Nature of social beings</td>
<td>Deterministic, Reactive</td>
<td>Voluntaristic, Proactive</td>
</tr>
<tr>
<td><strong>Axiological</strong></td>
<td>Overriding goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Explanation” via subsumption under general laws, prediction</td>
<td>“Understanding” based on Verstehen</td>
</tr>
<tr>
<td><strong>Epistemological</strong></td>
<td>Knowledge generated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nomothetic, Time-free, Context-independent</td>
<td>Idiographic, Time-bound, Context-dependent</td>
</tr>
<tr>
<td>View of causality</td>
<td>Real causes exist</td>
<td>Multiple, simultaneous shaping</td>
</tr>
<tr>
<td><strong>Research relationship</strong></td>
<td>Dualism, separation, Privileged point of observation</td>
<td>Interactive, cooperative, No privileged point of observation</td>
</tr>
</tbody>
</table>

Table 1: A Summary of the Positivist and Interpretive Approaches (Hudson, Ozanne 1988, p. 509)

We acknowledge the characteristics of positivism but otherwise abandon the epistemological assumptions of the perspective, keeping within our interpretive stance and aim of reaching an understanding of neuromarketing. Positivism will not be included as part of our scientific stance but rather as an element of analysis incorporated in the investigation of our empirical data, in order to fully grasp all viewpoints and perspectives of the practice of neuromarketing. As we are not positivists, we can neither test nor judge whether the claims put forward by our empirical data, from a positivist point of view, are valid. However, we can judge the scientific standpoint, the approach to science, and how the data is presented.

2.4 Qualitative research

Interpretation is the primary approach to our empirical data and analysis. This makes our overriding research method qualitative, meaning that our chosen theory and
methods emphasise interpretation and understanding, rather than quantifiable data. Put in a simplistic way, qualitative research tends to be associated with words, whereas quantitative research is often linked to numbers.

Researchers who adhere to the qualitative stance are often eager to investigate intentions, motivations and meanings, and are concerned with the social reality of the people involved (Daymon, Holloway 2002, p. 4). As such, qualitative methods are well equipped to uncover and provide insights from various perspectives (Op.cit., p. 1). This enables us, as researchers, to unmask the arguments and opinions surrounding a given subject from the viewpoint of those involved, in this case neuromarketing. This corresponds well with our research questions, as we specifically wish to explore neuromarketing from the perspective of the people involved in the practice; how they view it, describe it and criticise it. Keeping in mind that we are operating within a context rich subject and that: "communication relationships are inseparable from the social and historical contexts in which they occur, and this is reflected in the contextualized nature of qualitative research" (Daymon, Holloway 2011, p. 6), we, as researchers and interpretive investigators, allow room for the context in which our empirical data is produced, that being marketing and neuroscience.

The scope of qualitative research is able to embrace a mosaic of methodological choices and hereby to customise a study. This offers a flexible research setting open to potential multiplicity of interpretations, thereby allowing us to investigate our empirical data in a customised methodological approach, while striving to use multiple sources of evidence in order to fully grasp the field of neuromarketing (Yin 2011, p. 11). The focus of our research is of holistic nature, as we set out with an aim of reaching a rich, detailed and holistic understanding of neuromarketing. Through a range of analyses and interconnected interpretations, we strive to uncover the multiplicity of dimensions within our multiple sources of empirical data (Daymon, Holloway 2002, p. 6).

In uncovering the characteristics of neuromarketing this thesis will follow an inductive approach to research. This corresponds well with the fact that most qualitative research follows an inductive approach. Inductive research methods contrast with deductive
methods, as the two represent different approaches of shifting between data and concepts (Yin 2011, pp. 93-94). A deductive approach is generally the process of drawing conclusions through logical reasoning in order to explain specific phenomena, whereas an inductive approach draw general conclusions from empirical evidence (Ghauri, Grønhaug 2010, p. 15). Thus, within our thesis, qualitative analysis of the empirical data will help us reach a conclusion to our purpose statement. It is important to note that these general conclusions may not be 100 per cent definite, as uncertainties are recognised. However, through analysis of versatile empirical data we are able to arrive at probable results, with an ambition of yielding a representative and trustworthy image of neuromarketing.

2.4.1 Sampling in Qualitative Research

Within qualitative research, the intention is rarely to arrive at statistically valid conclusions, but rather to gain insights and create understanding (Ghauri, Grønhaug 2010, p. 148). Samples within this stance are often chosen in a deliberate manner known as *purposive sampling* (Yin 2011, p. 88) An underlying principle of gaining rich, in-depth information steer the sampling process of qualitative research and samples of one or more units of analyses and observations are most often applied. This is done based on the purpose of the investigation and by selecting specific units of samples, which will produce the most relevant and plenteous data on a given topic (Ibid.). Hence the name *purposive* sampling. When choosing the samples, high priority should be given to units, which will offer contrary perspectives or yield rival explanations and opinions, as this will allow for a favourable foundation for a rich analysis (Ibid.). Thus, within this thesis, our analysis units have been chosen based on their ability to shed light on the subject area of neuromarketing, their different perspectives and opinions on the matter, as well a their diverse academic origin. This will be elaborated further in the chapter 3.
2.5 Quality of the Analysis

When demonstrating their quality of research, researchers often refer to the concepts of reliability and validity. However, these terms stems from quantitative research and the realist worldview and the value of these terms in a qualitative context is therefore widely disputed (Daymon, Holloway 2002, p. 88). Hence, we will instead refer to the concepts of trustworthiness and authenticity in the evaluation of the quality of our analysis. This approach is guided by the interpretive worldview and according to this, trustworthiness and authenticity are demonstrated by the researchers’ documentation of the research process and the decisions made along the way (Op.cit., pp. 92-93). Thus, the strive for trustworthiness and authenticity will be evident in laying out the research methods we intend to use, how we will use them and how they will complement each other, whilst continuously connecting our empirical data and results to our sources, hereby ensuring that the applied strategies are appropriate, while demonstrating methodological transparency. Those positioned within a quantitative research tradition may accuse qualitative studies of being too subjective and vague (Daymon, Holloway 2011, p. 10). However, by paying attention to the criteria of trustworthiness and authenticity, qualitative research may overcome this accusation (Ibid.). We will therefore, focus on demonstrating both trustworthiness and authenticity throughout the course of our thesis.
3 Empirical Foundation

The empirical foundation of this thesis is based on two sources of data material:

2. Two selected articles from the academic world of neuroscience.

3.1 Buy-ology

On the front cover of Buy-ology Lindstrøm promises to reveal, “How everything we believe about what we buy is wrong”. If one man is able to lay bare the whole foundation of why we buy, then taking a closer look seems in place. The book gained a tremendous amount of high-profiled media coverage through numerous mentions in articles, on the Internet and on TV-shows such as 60 Minutes and NBC’s Today Show. The massive exposure of Lindstrøm even led to Time Magazine ranking him as number 88 of the influential 100 Honouree of 2009 (Anderson 2009). Analysing the entire Buy-ology book would be too comprehensive for this thesis and produce too superficial an analysis, failing to ensure a proper level of academic depth. Thus, we have chosen to focus on two main parts of Lindstrøm’s bestseller, which are the two chapters mentioned below. These chapters were purposively selected based on several aspects, but predominately because they clearly demonstrate Lindstrøm’s notion of neuromarketing. Furthermore, these chapters are selected due to their correlation with two Op-Ed pieces published in New York Times, which entailed a heavy amount of reactions from both consumers and the academic field of neuroscience (Lindstrøm 2011c, Lindstrøm 2008a). Thus, showing that the topics of these chapters are of importance to both of these groups. These two chapters are also used to market the Buy-ology book on Lindstrøm’s website, each represented with a short “trailer-movie”, respectively ‘Smoking’ and ‘Religious branding’ (Lindstrøm 2011b), which might suggest that Lindstrom also finds these chapters particularly interesting. The chapters chosen for analysis are:

• Chapter 1: A Rush of Blood to the Head – The Largest Neuromarketing Study ever Conducted (Lindstrøm 2008b, pp. 7-36)

Henceforth, chapter one will be referred to as B1 and chapter six as B6.

B1 includes several basic considerations, explanations and notions on the use of neuromarketing from Lindstrøm’s point of view, which makes it an excellent point of departure in our attempt of understanding his notion of neuromarketing. Furthermore, this chapter focuses on a study concerning the effect of warning labels on cigarette packages, a study which also constituted the foundation of an Op-Ed article in the New York Times “Inhaling Fear” also written by Lindstrøm (Lindstrøm 2008a).

The main focus of B6 is the resemblance and parallelism Lindstrøm claims exist between how religious people react when focusing on their religion and the way consumers react to strong brands. One of the brands mentioned repeatedly is Apple, which Lindstrøm believes has faithful followers in the same way as religions do (Lindstrøm 2008b, pp. 117-121).

Lindstrøm refers to himself as a “global branding expert” (Op.cit., p. 16) and lists famous global corporations such as McDonalds, Walt Disney and Procter&Gamble among his customers (Lindstrøm 2011a). Lindstrøm is originally educated from DBR Reklameskolen (School of Advertising) in Denmark and the bibliography of Buy-ology provides the sources on which Lindstrøm bases his knowledge concerning neuroimaging and neuroscience (Lindstrøm 2008b, pp. 241-245), several of these being very colourful and easily read and do not offer many scientific details. Lindstrøm even states in an interview that he is not “(...) an expert on the brain (...)” (Sullivan 2009, p. 10). When a layman promise to uncover the brain’s deepest secrets (Lindstrøm 2008b, p. 22), the outcome and approach become interesting.

On October 1, 2011, Lindstrøm wrote an Op-Ed piece for New York Times entitled “You love your I-phone. Literally” (Lindstrøm 2011c), explaining how consumers’ relationships with their I-phones are similar to personal relationships with people we
love, and how babies as young as 12 months intuitively know how to use an I-phone. This Op-Ed entailed heavy reactions, especially from the neuroscientific community, leading to no less than 46 PhDs and Professors writing and signing an official complaint to New York Times, expressing their disbelief in how New York Times could publish an Op-Ed so scientifically flawed (Poldrack, et.al. 2011). Thus, considering the fact that no less than 46 PhDs and Professors found Lindstrøm’s work to be scientifically flawed, it is vital to couple his notion of the practice with that of neuroscientific academia and hereby gain the most nuanced picture of the practice. Therefore, in order to critically evaluate the nature of neuromarketing and the pitfalls and benefits associated with the practice, an extensive amount of scientific articles from various well-established and respected medical journals were investigated, leading to the selection of two specific articles. The articles were selected based on their ability to critically review, comment and reflect upon the practice of neuromarketing and furthermore on their ability to explain the anatomic and neurologic processes linked to the practice.

3.2 Two Scientific Articles

Through the use of purposive sampling we selected two scientific articles for analysis. We will now clarify the criteria our purposive sampling is based on.

The two articles have first and foremost been selected based on their neuroscientific background and academic backbone, as this was the most important characteristic in relation to a comparison with Lindstrøm. Both articles are peer-reviewed and published in relevant periodicals, hereby vouching for their academic reliability and trustworthiness.

An important factor when selecting the articles was an interdisciplinary background, meaning that the articles were written by academics from different, complementary fields. The scholars of the articles thus represent academics within marketing, psychology, neuroscience and economy. This seemingly widespread representation of

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3 See appendix 10
academics greatly complements the purpose of this thesis: to shed light on the different attitudes toward the uses of neuroscience in marketing. As neuromarketing covers a wide field of research, it has not been possible to include all research areas of the field in this thesis. Thus, we have chosen to include and place emphasis on critical reviews of the current and future possibilities within neuromarketing and the treating of aspects of neuromarketing and neuroscience related to the topics of B1 and B6.

3.2.1 Neuromarketing: The Hope and Hype of Neuroimaging in Business

In this article the scholars shed light onto the popularity of neuromarketing and, what they believe, to be the two main reasons for the practice’ increasing popularity; a hope of saving money and time compared to other marketing methods and to gain information which is not possible through conventional methods. Furthermore, the article provides an overview of selected traditional marketing research approaches, it presents advantages and disadvantages of the most popular neuromarketing technologies currently used, and it furthermore sheds light on the ethics of neuromarketing. The article addresses problems in relation to marketers’ use of reverse inference and the amount of media coverage these marketers gain.

The authors of this article are:

- **Gregory S. Berns**, Professor of Economics and Neuroeconomics at Emory University (Emory University 2013)
- **David Ariely**, Professor of psychology and behavioural economics at Duke University (Duke University 2012)

The article was published in *Nature Reviews Neuroscience*, which is a journal covering modern neuroscience (Nature Reviews 2013).

Henceforth, this article will be referred to as A1.

3.2.2 Branding the Brain: A Critical Review and Outlook

This article identifies critical issues of past research within the application of neuroscience to marketing, specifically to the consumer psychology of brands and
discusses how to address these issues in future research and furthermore, the article refers to several well-known studies and presents an overview of the main results from these (Plassmann et al. 2012, pp. 18-23).

The authors of this article are:

• **Hilke Plassman,** Assistant Professor of Marketing at INSEAD (INSEAD 2014)

• **Thomas Zoëga Ramsøy,** Senior Researcher and Head of the Decision Neuroscience Research Group at CBS and DRCMR (DRCMR 2014)

• **Milica Milosavljevic Mormann,** Senior Research Associate at the University of Miami (University of Miami 2012, UTS 2012)

The article was published in *Journal of Consumer Psychology* in 2012. This journal “(...) aspires to publish the highest quality scholarship relevant to consumption” (Journal of Consumer Research 2013).

Henceforth, this article will be referred to as **A2.**

In relation to the selection of empirical data it is of crucial importance to notice that the data is not chosen as representatives for *all* neuroscientists and marketers. Many other points of views are represented and recognised within both fields. Our research approach is qualitative, emphasising interpretation and understanding of the chosen empirical data, in which we have the opportunity to compare the scientific notion of neuromarketing with one of the most prominent marketers’ notion of neuromarketing.

As mentioned earlier (cf. section 1.2) due to the limited scope of this thesis the individual analyses of the respective chapters of Buy-ology and the scientific articles can be viewed in appendices 4, 6, 9 and 11. The collective analyses are treated within the thesis, as they are what yield similarities and differences and thus what provide a standard of comparison between the two fields of neuromarketing.
4 The Field of Neuromarketing

This chapter reviews the cornerstones of neuromarketing in order to lay the foundation for this thesis’ subsequent analysis and discussion of the practice. It also serves as a frame of reference in order to establish a mutual point of departure and sets out with the objective of providing the reader with an overview of the main components of neuromarketing. Thus, the below chapter will constitute the balance of the equation neurology + marketing = neuromarketing.

4.1 The Marketing of Neuromarketing

Products are made in the factory, but brands are created in the mind  
- Walter Landon  
(Martínez 2012, p. 115)

Put simply and broadly marketing is "the management process responsible for identifying, anticipating and satisfying customer requirements profitably" (Cornelissen 2008, p. 260) . The practice traditionally revolves around three major disciplines: product management, customer management, and brand management (Kotler et al. 2010, p. 25). Throughout the history of marketing, the practice has adapted and evolved in pace with changing environments, technology and different eras of human life. The marketing landscape has undergone significant developments and much has changed since Neil Borden coined the renowned “marketing mix” in the 1950s and Jerome McCarthy introduced the four Ps in the 1960s (Ibid.). However, despite the fact that the notions of the marketing mix dates back to the 1950s, it is still one of the most dominant ideas in modern marketing and the classic concepts of the four Ps; price, product, promotion and place are still parameters, which companies must manage on an everyday basis and pay significant attention to (Kotler et al. 2005, p. 33). An effective marketing programme is thus, thought to be one that combines the elements of the marketing mix in a coordinated programme designed to achieve the company’s
marketing objectives. Hereby making the marketing mix a company’s tactical toolkit for establishing strong positioning in their target markets (Op.cit., p. 34). Hence, even though the landscape of marketing may have changed significantly since the 1950s, the core concepts remain, to a greater or lesser degree, the same. Generally speaking, marketing works in two ways: it may trigger an instantaneous reaction and/or alter a consumer’s mindset such that behaviour may be affected later on. Thus, marketing first affects brand equity and then, if successful, brand equity later affects behaviour (Plassmann et al. 2007, p. 151). However, as the average consumer in the western world is often exposed to no less than 10.000 brand-related messages every day, the challenge lies not only in affecting behaviour, but also in simply cutting through the immense volume of available data (Morin 2011, p. 135). Several market and consumer research methods are available in this relation, aiming at finding that particular message or product, which will cut through the enormous volume of marketing messages and ensure a strong positioning in the mind of the consumer.

Up until today, most explanations regarding market and consumer behaviour have been based on data stemming from traditional market research tools such as interviews, focus groups, demographic data and surveys, from which consumer thoughts, feelings and behaviour then are inferred (Martínez 2012, p. 5). Qualitative research techniques thus play an imperative part in gaining insight into consumers’ motivations, perceptions and decision-making (Fugate 2007, pp. 385-386). Marketers have for decades sought to comprehend what consumers think and feel simply by asking them. Nevertheless, when it comes to predicting subsequent consumer behaviour in the marketplace, the results of these studies have often been disappointing (McDowell, Dick 2013, p. 26). One of the explanations for these shortcomings has been the notion of subconsciously rooted emotional drivers that have a significant influence on consumers decision-making and which traditional research methods rarely are able to detect (Ibid.). Classic economic theory holds the premise that people are rational human beings, who first of all follow their own interest and base their decisions on rational thinking, accurately assessing available options (Camerer, Fehr 2006, p. 47). However, more recent research point to the fact that most of the time decisions are highly irrational and bear a strong emotional load (Pop, Iorga 2012, p. 634). The role of emotions in consumer decision-making have
by some been labelled as the intuitive consumer model, which often is juxtaposed with the rational consumer model, hereby emphasizing the contrast of the two and stressing the importance of emotions in consumer research (Genco et al. 2013, p. 21). The rational consumer model views the consumer as persuadable by rational arguments and as consciously aware of what drives a purchase decision, whereas the intuitive consumer model argues that preferences rarely are the product of careful logical analysis but rather that habit, experience, and emotional cues provide shortcuts for preferences and decision-making (Op.cit., pp. 35-36).

In 1995, Professor Damasio introduced a new paradigm about how emotions should be viewed as a fundamental component of rationality, by bringing the notion of emotions versus rationality in decision-making into light with his book Descartes’ Error (Du Plessis 2011, p.15). Descartes famously stated, “I think, therefore I am”, this is frequently translated to “I am rational therefore I am”, to which Damasio argued that we are rational because we are emotional (Damasio 2006, pp. 249-252). Hereby, Damasio argues that the power of our emotions to affect rational behaviour and decision-making is an important factor and proposes the idea that rational decision-making actually depends on prior emotional processing (Damasio, Bechara 2005, p. 336). In this relation, an emotion is defined as “a collection of changes in body and brain states triggered by a dedicated brain system that responds to specific contents of one’s perceptions, actual or recalled, relative to a particular object or event”(Op.cit., p. 339). Emotions are thus, a key factor in the interaction between environmental stimulus and human decision processes and the process of deciding advantageously is not only logical but also emotional (Op.cit., p. 368). Emotion and rationality are in other words inextricably interconnected. It is, however, important to note that emotions are not a substitute for reason but rather that emotions assist reasoning and therefore are an important factor to take into consideration (Du Plessis 2011, p. 17).

The marketing mix assumes its function on a rational level in the mind of the consumer. However, corresponding with the notion of the intuitive consumer, emerging research suggests that sound and rational decision-making, in fact, depends on prior accurate emotional processing (Damasio, Bechara 2005, p. 336). Marketing has traditionally
concentrated on the value and competitive advantages of a product or service. However, a more holistic approach to marketing, including the emotional component of the decision-making process is gaining considerable ground in contemporary marketing (Suomala et al. 2012, p. 12). This line of research corresponds very well with Kotler’s latest notion of marketing, *Marketing 3.0*, in which he argues for a need of companies to address consumers as whole human beings, which he defines as consisting of four components: *physical body, mind, heart* and *spirit* (Kotler et al. 2010, p. 34) In other words, Kotler now argues for the need of companies to address the emotions of their customers and aim to understand their anxieties and their desires, if they want to succeed in the contemporary marketing landscape.

Consumers have arguably changed significantly during the past decades; changes that include increased scepticism towards business, greater assertiveness, greater sophistication and less loyalty to companies and individual brands (Zaltman 2003, p. ix-x). New research has also emerged within marketing, arguing for the necessity of taking both the rational and emotional aspects of human nature into consideration. Marketing, it has been contended, has not undergone the same degree of significant changes, as marketers still, more or less, use the same methods for understanding a different consumer (Op.cit., p. x). It is thus only natural to hypothesize that new and (perhaps) more reliable and effective market research methods would be embraced with enthusiasm by marketing practitioners.

### 4.2 The Brave New World of Neuromarketing

Neuromarketing can be considered a sub-area of neuroeconomics, as the practice springs from research initially related to economic relevant behaviour. Neuroeconomics emerged from the crossing of boundaries between economics, psychology and neuroscience and its original outset was to investigate a large number of theories of decision-making, bearing irrationality and emotions in mind, in an effort to advance models of choice and decision and to simply better understand people’s economic behaviour (Rustichini 2009, p. 672). However, instead of just focusing on decision-making processes, neuromarketing is also concerned with evaluating whether a person will respond positively to marketing efforts and potential impact of marketing elements,
and can therefore be considered as a radical and much more specific sub-category of neuroeconomics (Belden 2008, p. 249).

Neuromarketing emerged in the early 2000s and quickly gained great popularity, both within academic and business fields (Fischer et al. 2010, p. 231). Despite the emerging nature of neuromarketing, no particular scholar can be credited as the architect of the practice. The first studies using neuroscientific tools to link affect and electrical patterns in the brain date back to 1979 (Morin 2011, p. 133) and the application of neuroscience to branding and consumer psychology can be traced even further back. In the book “The Hidden Persuaders” published in 1957, the author explores the “(...) possibilities of using the insights of psychiatry and the social sciences to influence our choices and our behaviour” (Packard 1957, p. 1). Packard suggests motivational research and the depth approach (the whys of our behaviour) as a means to research and to approach consumers’ unconscious minds, as he acknowledge that consumers’ actual buying behaviour often differ from what they say themselves about their buying patterns and buying motivation (Op.cit., pp. 4-13).

Returning to our time, the earliest reported use of the word neuromarketing is claimed to be in a press release in 2002 by the American advertising company Brighthouse, where they announced the creation of a business division using the neuroscientific method fMRI for marketing research (Fischer et al. 2010, p. 231). In 2002, Professor Zaltman published the first book on the subject: “How Customers Think”, which is likely to have been a great contributor to the increasing popularity and attention the practice began receiving.

### 4.3 The Neuro of Neuromarketing

“If the human brain were so simple that we could understand it, we would be so simple that we couldn’t.”

- Dr. Emerson M. Pugh
  
  (Pugh 1977, p. 154)
Throughout our thesis, we refer to experiments and methods from the realm of neurology. In this section we will therefore attempt to provide an overview of the main functions and methods involved in the neuroscientific part of neuromarketing. However, given the complex nature of the human brain, and bearing the wisdom of Pugh in mind, an exhaustive description of all aspects is outside the remit of this thesis and readers are kindly directed to more specialised texts for further details (Ledoux 1998, Baars, Gage 2013, Carter 1998). Put in a very simplistic way, neuromarketing is the fusion between marketing and neuroscience and the idea is that through neuroscientific methods, it is possible to watch physical surrogates of the consumer decision-making processes and certain emotional behaviour (Fugate 2007, p. 385). It is the attempt to pinpoint how and where our brain reacts to marketing and advertising stimuli and the attempt to measure the impact of such stimuli. From a general perspective, neuroscientific methods are used to study consumer behaviour, the decision-making processes, emotions in purchase decisions, and marketing phenomena through analyses of the underlying neurobiology (Javor et al. 2013, p. 2).

The field of neuroscience seeks to understand the biological basis of behaviour through the study of the nervous system (Genco et al. 2013, p. 9). It concerns the study of the structure and function of the brain, this being distinct from the study of the mind, which belongs to the area of psychology and cognitive science (Perrachione, Perrachione 2008, p. 304). Neuroscientific tools are used in neuromarketing in a pursuit of a greater understanding of the relationship between stimulus and response, and of complex thoughts such as decision-making, reasoning, object depiction, emotion and memory, which overlap marketing concepts such as positioning, brand loyalty, hierarchy of effects and consumer response (Op.cit., pp. 303-304). Neuromarketing is, in other words, the attempt of mapping brain activity in relation to buying.

In neuromarketing, systems neuroscience, which is the study of how different brain areas or complex brain systems interact, is the main focus (Braeutigam 2005, p. 350). A critical distinction is made between consumer neuroscience, referring to academic research at the intersection of neuroscience and consumer psychology, and neuromarketing, referring to commercial interest in neuro-physiological tools (Javor et
al. 2013, p. 3). There are several ways to measure physiological responses to advertising. Still, there are currently only three well-established and non-invasive methods for measuring and mapping brain activity in this relation; *functional magnetic resonance imaging* (fMRI), *electroencephalography* (EEG) and *magnetoencephalography* (MEG) (Morin 2011, p. 133). Due to their non-invasive nature, these three methods represent the bulk of studies conducted within the field of neuromarketing.

### 4.3.1 Functional Magnetic Resonance Imaging

The method of fMRI is the newest of the three. It is also the most prolific of all brain imaging techniques, as it is relatively easy to implement and completely non-invasive (Senior et al. 2007, p. 155). fMRI offers a method for tracking changes in neural activity and is the dominant technique for the study of brain function, as it is able to visualize networks of neuroanatomical structures involved in complex information processing (Voos, Pelphrey 2013, p. 1). In a standard fMRI procedure, a test subject is placed in a MRI scanner, which is used to capture a series of baseline images of the brain region of interest, both before the subject is performing a cognitive task, such as watching a piece of advertising, and during this task (Morin 2011, p. 134). The first set of images is then subtracted from the second set, hereby making it possible to point out which brain areas have become active during the cognitive task (Zaltman 2003, pp. 117-118). The most common fMRI technique is the *Blood Oxygen Level Dependent* (BOLD) technique, which identifies brain areas with a high level of blood flow (Op.cit., p. 117). In brief, this technique is built on the assumption that areas of high neural activity have higher blood flow than areas of low neural activity. When confronted with particular experimental stimulus, such as advertisements for a product or brand, areas of a test subject’s brain receive more oxygenated blood flow than it does at rest time. The oxygenated blood flow will increase locally within an “active” region of the brain, making fMRI an ideal tool for locating cortical activity (Senior et al. 2007, pp. 155-159). The major advantage of fMRI is that it is able to image deep brain structures - especially those involved in emotional responses. The idea is thus, that through the BOLD technique, scientists will be able to derive whether some advertisements effectively activate certain brain regions, elicits positive emotions and past memory and encodes new memory (Zaltman 2003, p. 118).
4.3.2 Electroencephalography

Another approach to measuring brain activity is EEG. The cells responsible for the biological basis of our cognitive responses are called neurons (brain cells in layman’s speech) and along with synaptic connections, these represent the basis of neural circuitry (Morin 2011, p. 133). In the presence of a particular stimulus, such as a piece of advertising, neurons fire and produce a tiny electrical current, which can be amplified. These electrical currents have numerous patterns of frequencies called brainwaves, which are linked to different states of stimulation (Ibid.). When using EEG, numerous electrodes (up to 256) are placed in various locations on the scalp of the test subject, hereby making it possible to record brainwaves at up to 10,000 times per second (Ibid.). The limitation of EEG is that it does not have good spatial solution, which is the ability of any image-forming device to distinguish small details of an object. Consequently, EEG cannot precisely locate where neurons are firing in the brain, as the electrodes placed on the scalp cannot detect electrical signals that are located much beyond the cortex, which is the outer layer of the cerebrum (Ibid.). Through an EEG device it is possible to collect data anytime and anywhere, as the device used for EEG is portable. Subjects can therefore be observed in a natural setting, such as when shopping, hereby allowing for the study of consumer reactions to be conducted in a supermarket layout or measuring reactions to a television programme, in the participant’s home environment (Zurawicki 2010, p. 49).

4.3.3 Magnetoencephalography

MEG can be considered a cousin to EEG, as the two use somewhat similar approaches. Instead of placing numerous electrodes on the subject’s scalp, a helmet with magnetometers (detectors) installed is placed on the subject’s head (Op.cit., p. 50). It is the argument of MEG that neural processes associated with particular brand-choice stimulus, can be separated into distinguishable stages through observation of MEG responses (Braeutigam et al. 2001, p. 241). Brain activity is the function of electro-chemical signals between neurons and neuronal activity that creates a magnetic field, which can be amplified and then mapped by MEG (Morin 2011, p. 134). Obtaining MEG data involves the measurement of these magnetic fields created by the electrical activity of neuronal clusters (Senior et al. 2007, p. 159). MEG can provide information
about the beginning of any cortical activity and about the specific frequency by which
clusters of neurons fire (Ibid.). Thus, MEG allows for the study of neural clusters linked
to a specific event, such as tasting a particular brand of soda or perceiving a particular
advertisement (Op.cit., p. 163). It is hence the overall ambition to explore whether the
sequence of MEG responses may reveal the recruitment of the generic systems needed
to affect a given brand choice (Braeutigam et al. 2001, p. 242).

It is the ambition and hope that fMRI, EEG and MEG techniques will be able to
advance the content and application of standard market research techniques as well as
identify and measure consumer reactions to marketing stimuli and hereby comply with
the notion of the intuitive consumer model (Zaltman 2003, p. 119).

4.4 Current Uses of Neuromarketing

Numerous different views and opinions on what neuromarketing has been used for and
which possibilities it offers prevail and thus, no consensus about the actual state of the
practice seem to exist. In this section, we will shed light on some of the current uses of
the practise. We will set out with three examples from the motor- and the food industry
and then lastly turn our attention to the entertainment industry. Furthermore, we will
introduce some of the most well known neuromarketing agencies, which are also
mentioned throughout this thesis.

4.4.1 Hyundai Motors

Hyundai uses EEG-tests in the design-process of their cars to measure consumers’
reactions, when looking at specific parts of a car’s exterior design. As Macko, manager
of brand strategy at Hyundai Motors, expresses it: “We want to know what consumers
think about a car before we start manufacturing thousands of them” (Burkitt 2009).
Thus, Mackoo implies that by applying EEG-tests to the design phase, the technology
can potentially save the company money, as “bad” designs will be picked up in the tests
and hereby prevent Hyundai to develop models that will fail on their looks when they
are launched. Macko expects that the company will continue to use EEG-tests and the results hereof to adjust new models’ exterior design in the future (Ibid.).

4.4.2 Cheetos – The Orange Underground

The American snack producer Frito Lay has used neuromarketing on several occasions (Brat 2010).

Through use of neuroimaging Frito Lay found that the glittering, bright-coloured packaging they were using for potato chips in 2008 triggered the anterior cingulate cortex of the brain, an area associated with feelings of guilt. When testing another type of packaging in matte beige colours with images of potatoes and other ingredients perceived as healthy, no activity of the anterior cingulate cortex was evident. Thus, Frito Lay switched out of shiny packaging and opted for the matte design with healthy ingredients depicted instead (Burkitt 2009).

Through EEG-tests Frito Lay also discovered that an important factor for consumers, when choosing Cheetos over other snacks, was the orange cheese dust sticking to the fingers after having touched the snack. The company took this knowledge and developed a campaign of TV-commercials called “The Orange Underground”, with storylines evolving around pranks using the orange coloured cheese dust (Nobel 2013). The commercials were evaluated through both a conventional focus interview and through EEG-tests and according to Ann Mukherjee, Frito-Lay Chief Marketing Officer, the EEG-tests proved much more accurate than the focus group. The focus group reacted negatively to a commercial in which a woman puts Cheetos in a dryer full of someone else’s white clothes, as the group responded that they did not like the prank. However, when conducting EEG-tests where subjects were shown the same commercial, the brain activity showed that the subjects actually really liked the commercial (Burkitt 2009). In fact, “The Orange Underground” campaign was granted The Grand Ogilvy Award from the Advertising Research Foundation in 2009 (Nobel 2013). This commercial is a prime example of how neuromarketing might prove beneficial. It was assumed by Frito Lay that participants of the focus group claimed not to like the commercial because they did not want to appear “mean-spirited” to the other
participants, however, when conducting the somewhat same “interview” of the brain, subjects did indeed like the commercial (Burkitt 2009).

4.4.3 Media

Within the business of media, neuromarketing is often applied. For example to test consumers’ reactions to movie scripts or trailers, to see which parts of a website attract the eyes of the visitors or to see how people react to certain songs. It is, however, rare that movie studios, moviemakers or others in the business willingly admit to the use of the practice (Randall 2011).

Uri Hansson, professor in psychology at Princeton University, argues that movies within certain genres such as horror and science fiction can be edited based on fMRI-test results. The excitement of the viewers’ can hereby be maximised, based on what generates the most activity in the amygdala, which can be described as the “emotional centre” controlling feelings such as disgust, anger lust and fear (Ibid.). Hereby making it possible to create the most favourable building of suspense, particularly within the genres of horror and science fiction. In relation to the movie experiments, Hansson coined the term “Neurocinema” which is now often used in articles concerning this topic (Ibid.). Stephen Susco, writer of the successful horror movie Grudge, agrees with the potential of neurocinema. He considers the application of neuromarketing to movie creation as part of a “(...) natural evolution of major studios trying to maximize profit while making the early creative development, script and storytelling process more scientific as opposed to just based on experience and instinct” (Ibid.).

4.4.4 Predicting Popularity

Scientists Gregory Berns and Sara Moore set out to test the possibility of using fMRI to predict the popularity of pop songs. For this study, they conducted fMRI scans on 27 adolescents, while they were listening to songs of seemingly unknown artists (Berns, Moore 2012, p. 154).
Before the scans were carried out, participants were asked to choose their preferred three genres out of six different ones, as categorized by MySpace. By using the online music network MySpace, the scientists were able to choose songs from artists unknown to the participants. Each participant would listen to 15 seconds clips, which included either the hook or the chorus of a total of 20 songs, within each of their three preferred genres. After each song-clip, the participant would be asked to rate the song on a one to five star scale. Each participant was given a CD with their top-five rated songs as an incentive for them to give their true opinions (Op.cit., pp. 154-156).

Three years after having conducted the experiments, the results were compared to the sales of the songs. As the artists and songs used in the study were relatively unknown, only a few of them were commercially successful after the three years.

The results from the study showed a high degree of correlation between brain-activity, especially within three reward-related brain regions and the success of the songs. The high activity in brain regions could not predict “hit-songs”, however, songs entailing low activity in two of these brain-regions were recognized as “non-hits”. The results did not point to any correlation between the participants’ subjective ratings of the songs and their future sales. Thus, the results indicate that neural responses can be used to predict purchase decisions and cultural popularity in general (Op.cit., pp. 157-158).

The above examples show that neuromarketing is used in several links of the production chain, both in relation to designing new products, redesigning existing products and to market them. The example of Frito-Lay’s experience with using both conventional research methods and neuroscience proves that consumers do not always express their actual thoughts and feelings when asked. However, this might not be intentionally since many of the unsaid feelings and thoughts lie within the sub-consciousness. Accordingly, the neuroimaging of participants in the fMRI-study on cultural popularity showed a higher degree of resemblance with the future hit-songs, than their subjective rankings. The findings of this study furthermore endorse the statements from Susco and Hansson, which argue that film studios will be able to maximise their profits by creating movies aligned with audience preferences. Below, we will now introduce some of the most
famous consulting companies and their approaches to neuromarketing, as several of the companies are mentioned throughout our thesis.

4.4.5 Neuromarketing Companies

4.4.5.1 Brighthouse

The American advertising company Brighthouse was the first to introduce the word neuromarketing in a press release in 2002, announcing the creation of a business division using the neuroscientific method fMRI for marketing research. The company, however, quickly received criticism for having conflicting interests with Emory University, entailing Commercial Alert to ask The Federal Office for Human Research Protections and the U.S. Senate to investigate their research. Shortly after the company was closed down (Fischer et al. 2010, p. 231).

4.4.5.2 NeuroFocus (Now Nielsen Consumer Neuroscience)

NeuroFocus was an American neuromarketing company, which was acquired by the worldwide market research company The Nielsen Company in 2008 and was thus renamed Nielsen Consumer Neuroscience. They use a combination of EEG and eye tracking, combined with traditional marketing research. To improve their research, Nielsen are currently developing the world’s first wireless, dry, EEG-headset, enabling research at many different locations (Nielsen 2014).

4.4.5.3 Millward Brown

Millward Brown, was founded in Britain and now has several locations in Europe, America, Asia, Middle East and Africa. The company combines Eye Tracking, Facial Coding and Implicit Measurement with traditional marketing research (Millward Brown 2014c). The company uses what they call “The Implicit Measurement Technique”, which they on their webpage explain as a technique measuring subconscious reactions based on reaction time. Thus, measuring small reactions, which explicit research might not reveal (Millward Brown 2014b). Among its customers are Johnson’s Baby line, Weight Watchers and Pantene shampoo (Millward Brown 2014a).
4.4.5.4 Neurosense

London-based Neurosense was founded by Gemma Calvert and was allegedly the first to conduct fMRI scans for commercial use (Neurosense 2013a). Apart from fMRI-scans, Neurosense offers biometric measures and implicit reaction speed tests combined with traditional marketing research. The method most often applied by Neurosense is referred to as “psycho-physics” and is a test that can be conducted online. The test measures consumers' subconscious responses to brands along with their implicit response time, by presenting words, brand attributes or images on a computer and measuring respondents’ reaction time (Neurosense 2013c). This online psycho-physical method has been validated alongside fMRI scans, from which highly correlated results of the two approaches have been found (Ibid.). Neurosense lists several famous brands among their clients, i.e. BBC, Coca Cola, Ford, Heinz, Intel and L’Oreal (Neurosense 2013b). Neurosense is also known for collaborating with Lindstrøm on the Buy-ology study, however, the company does not refer to this collaboration on their website.

4.4.5.5 Neuro-Insight

Neuro-Insight was founded by Professor Richard Silberstein in 2005, operates in the USA, UK, Germany and Australia and offers neuromarketing services specializing in the field of marketing communications (NMSBA 2013). The company uses neuroimaging technology to measure how the brain responds to communications and thereby measure the affect on consumers from a piece of advertising. Neuro-Insight uses the technology Steady-State Topography (SST), which records and measures electrical signals at the scalp in order to build a second by second picture of activity in the brain (Neuro-Insight 2013b). It is stated on the company website that Neuro-Insight was a key contributor to Lindstrøm’s book Buy-ology and that GlaxoSmithKline, Nestlé, Mini, and RTL are amongst their clients (Neuro-Insight 2013a).

As seen from the descriptions above, the approaches to neuromarketing and the technologies used within the field vary within the companies. Thus, there are
differences in what each consulting company offers and what they and their customers are able to conclude based on the results of the findings. A shared feature is, however, that they all seem to be combining the new techniques with traditional market research techniques.

4.5 The Most Famous Neuromarketing Study

The most famous study conducted within neuromarketing research and neuroimaging, is a taste test with the chemically very similar drinks; Coca-Cola and Pepsi Cola, a test that is also emphasised in all of our empirical data (Lindstrøm 2008b, p. 25, Ariely, Berns 2010, p. 288, Plassmann et al. 2012, p. 26). This study in many ways proves, how difficult it is to decipher what consumers really think, how consumers do not themselves know what they really think, and how careful companies and advertisers should be before “jumping to conclusions”.

In 1975 Pepsi initiated a marketing campaign called “The Pepsi Challenge”. The campaign, which was running for several years, took place in American shopping centres, where people were invited to participate in a blind taste of two colas (Pepsi and Coca-Cola) and hence state their preference. The conclusion was that more than 50% of Americans preferred Pepsi Cola in favour of Coca-Cola. Not at all happy with the results, Coca-Cola decided to conduct their own test, however, it did not turn out in Coca-Cola’s favour: 57% of the tasters preferred Pepsi (Gladwell 2005, p. 156). These results combined with an increase in Pepsi’s market share were surprising news to the Coca-Cola Company, as they were spending much more on advertising per year than the Pepsi brand did (Op.cit., pp. 155-156).

Thus, in the beginning of the 1980s the Coca-Cola company began their own research on the taste of their product and developed a new version of the original Coca-Cola; New Coke. The New Coke was a little lighter and sweeter and closer to the taste of Pepsi Cola. According to new blind tastes, consumers preferred the New Coke to the original, which made Coca-Cola certain that this product would help them gain market shares from Pepsi. Nevertheless, the launch of New Coke was disastrous. Consumers protested across America, wanting their “Original Coca-Cola” back. Furthermore, Pepsi
never actually increased their market shares as indicated by the results of the taste tests (Op.cit., pp. 156-158).

A reason for the surprising results can be attributed to the fact that a sip-taste similar to the blind tastes conducted in relation to The Pepsi Challenge, will yield different results, than if people are to drink a larger amount. This is due to the fact that our taste buds often prefer the sweeter product (Pepsi) when having a sip, however, when it comes to an entire can or case the less sweet product (Coca-Cola) is more often the preferred choice. Thus, when conducting an experiment like the above, it is important to decide, whether the results of a sip or the intake of a large amount is of interest (Op.cit., p. 159).

In relation to neuromarketing, these results prove that consumers do not always know what they want, even when asked. When asked through blind-tastes, consumers actually preferred New Coke to the original. However, when the product was launched, consumers were not interested in buying it, quite contrarily, they protested against it. Furthermore, the experiment underpins the importance of marketers knowing what they actually want to test. According to Martínez, author of ‘The Consumer Mind’ (2012), consumers’ minds can be differentiated within four categories; between what they think, what they say, what they do and what they feel (Martínez 2012, p. 5). Martínez emphasises that a critical point of traditional marketing research is that “(...) consumers contradict themselves, saying what they want, but doing what they feel” (Ibid.). Thus, Martínez argues that neuromarketing will help marketers acquire more objective information from and about consumers, than through use of traditional marketing tools such as surveys and interviews. Martínez proposes that the most efficient way to apply neuroscience in relation to marketing is through a combination of qualitative, quantitative and neuroscience research, as they hereby will complement and support each other, yielding the richest information possible (Op.cit., p. 6).

4.5.1 Adding Neuroimaging to the Pepsi Challenge

Inspired by the Pepsi Challenge, a group of scientists set out to research how behavioural preferences for food and beverages could be affected by “sensory variables,
hedonic states, expectations, semantic priming and social context” almost 30 years after the original Pepsi Challenge test (McClure et al. 2004, p. 379).

67 participants took part in the study, which included a combination of simple taste tests; both blind and semi blind tests, as well as event-related fMRI scans (Op.cit., pp. 379-380). The scientists wanted to investigate the behavioural and neural responses to the two types of cola, when these were presented anonymously and when participants knew which brand they were tasting. Furthermore, they wanted to investigate whether a correlation between expressed behavioural preference and neural response was found, when measured by fMRI-scans (Op.cit., p. 380).

Before the taste tests, the participants were asked about their preference of Coca-Cola and Pepsi Cola, which were referred to as their standard preferences. Participants showed strong preferences, when asked which kind of cola they preferred, and seemed eager to prove, that they were able to taste the difference (Op.cit., p. 385).

The 67 participants were divided into four groups with 16-18 people in each. Each group was exposed to taste tests and fMRI-scans. Two groups did anonymous taste tests, tasting three pairs of unlabelled cups, each including a Pepsi sample and a Coca-Cola sample. This taste test was repeated after several months, with 15 pairs of unlabelled cups, to check its reliability (Op.cit., pp. 380-381). The other two groups completed semi-anonymous taste tests, including three pairs of cups. For one group one cup in each pair was labelled Pepsi, for the other group one cup was labelled Coca-Cola, however, both cups contained the same product (Op.cit., pp. 382-383). The preferences given through the taste tests were termed behavioural preferences.

Subsequently fMRI-scans were conducted to investigate potential responses in relation to brand information. The fMRI-scans were conducted in a similar manner to the taste tests. The two first groups would see yellow or red flashes of light before receiving a sip of either Pepsi or Coca-Cola, whereas the other two groups, saw either one of the cola labels or flash lights, before receiving the sip of cola (all samples were the same cola as the label shown to the participants) (Op.cit., pp. 380-381).
The results from the anonymous taste tests divided the participants almost equally into three groups preferring either Pepsi, Coca-Cola or having no clear preference. This equal division was well aligned with the division found through the standard preferences (Op.cit., p. 381). However, when comparing these results with those of the semi-anonymous taste tests, differences occurred. These results, accordingly, showed that brand knowledge does in fact affect participants’ behaviour and preferences. Furthermore, it appeared that the brands had different effects on participants’ behaviour. Especially the effect of the Coca-Cola brand was evident. Participants reacted much more positive towards the Coca-Cola sample after seeing the logo, compared to the samples provided after red or yellow lights. This brand-effect was insignificant in relation to Pepsi. Thus, cultural influences seem to have a strong influence, especially concerning Coca-Cola (Op.cit., p. 385).

Based on the results of this study the scientists propose the hypothesis that “(…) In judging stimuli based on multifaceted sensory and cultural influences, independent brain systems appear to cooperate to bias preferences” (Ibid.). The above experiment is a great example of the power of brand equity. When consumers consume a product with a strong brand, they may in fact be consuming brand expectations more than they are consuming the product itself (Genco et al. 2013, p. 144). This idea may sound unlikely if you adhere to the rational consumer model underlying traditional marketing research (as described in section 4.1). However, if you adhere to the intuitive consumer model, which underlies neuromarketing, then the coherence seems natural (Ibid.).

After having established the context of neuromarketing in which this thesis exists, the next chapter will lay out the methodological framework.
5 Methodology

This chapter reviews the analytical backbone of our thesis and sets out with the objective of introducing and reviewing the tools and methods of critical discourse analysis (henceforth: CDA) and the concepts of Toulmin’s model of argumentation, which will constitute the framework of our analysis and discussion. The most optimum investigation for testing the neuromarketing claims put forward by Lindstrøm and the scholars from the field of neuroscience, would naturally be to copy their experiments and research within the setting of neuroscience. However, we, as researchers within the academic field of communication, have neither the skills, tools nor knowledge to conduct such research and will instead rely on our own field of expertise: language and communication. Thus, CDA will function as our tool in uncovering the different attitudes of neuromarketing and hereby shed light on the practice from different communicative perspectives and practices. The below chapter will cover our research tools, concepts and academic approach in establishing the practise of neuromarketing.

5.1 Critical Discourse Analysis

As we are in need of an analytical approach that will help us uncover the claims, attitudes and arguments of neuromarketing, CDA will constitute our analytical entry point to a discussion hereof. CDA is not as such a specific direction of research, as it does not have a unitary theoretical framework but rather, it is an interdisciplinary field with various conceptual and theoretical frameworks that are closely related (van Dijk 2001, p. 353). Dependent on the aim of a given CDA, the possible frameworks are many and may be theoretically and analytically quite diverse yet, however, most kinds of CDA will look into the specific discourse structure, the textual dimension, the social dimension, the use of lexis and notions such as power and interests are often deployed as well (Op.cit., pp. 353-354). CDA will constitute our analytical entry point to a discussion of neuromarketing and below the concepts and tools related to our CDA are introduced, while Fairclough’s three-dimensional model is treated in detail. As Fairclough’s work covers a rather extensive list of concepts, we will below only include those that will form part of our analysis.
5.1.1 Defining Discourse

Discourse has its origins in disciplines such as linguistics and semiotics and at its most
general, a discourse can be described as any system of signs, spoken or written, or even
an image (Burr 2003, pp. 64-66). According to Parker “discourses do not simply
describe the social world, they categorise it, they bring phenomena into sight (...) once
an object has been elaborated in a discourse, it is difficult not to refer to it as if it were
real. Discourses provide frameworks for debating the value of one way of talking about
reality over other ways” (Parker 2004, p. 252). Here, Parker emphasises an important
connection between discourse and reality, underpinning the link to social
constructionism and the active role of language in the construction of the social world.
Discourse is therefore not an entity we simply can define independently; we can only
arrive at an understanding of it by analysing the associated relations (Fairclough 2010, p.
3). The relationship between language and society hereby becomes dialectical of nature.
Language and society affect one another and thus make discourse an important type of
social practice, as a discourse both reproduces and is shaped by other social practices
and relations (Fairclough 2001, p. 19). When discourse analysts read texts they must
thus continually place what they read in questions marks: why was this said, why those
words, and where and how do the connotations of the words conform to different ways
of talking about the world? Hereby, urging a strong reflexivity upon the researcher
(Parker 2004, p. 252). Fairclough uses the concept of discourse in several ways. At the
most abstract level he refers to it as “language use as social practice” and “the kind of
language used within a specific field” and thirdly, in his most concrete notion “a way of
speaking which gives meaning to experiences from a particular perspective” (Phillips,
Jørgensen 2002, pp. 66-67). Hereby, Fairclough defines discourse as the choice of using
language in a particular way instead of another. It is the use of language structured in
different patterns, used in different social settings and social domains. Thus, a discourse
in this thesis will be regarded as a certain structure of language used in a specific social
context.

5.1.2 Fairclough’s Critical Discourse Analysis

Several different approaches to CDA exist; however, this thesis adheres to Fairclough’s
notion of the concept, as it represents one of the most developed approaches and
methods within the discipline (Op.cit., p. 60). Put in the most simplistic way, CDA offers “theories and methods for the empirical study of the relations between discourses and social and cultural developments in different social domains” (Ibid.).

According to Fairclough, CDA differs from a general discourse analysis in, “(...) not just describing discursive practices but also showing how discourse is shaped by relations of power and ideologies, and the constructive effects discourse has upon social identities, social relations and systems of knowledge and belief, neither of which is normally apparent to discourse participants” (Fairclough 1992, p. 12). A key aspect in Fairclough’s approach is hereby that discourse is an important type of social practice, which both reproduces and changes identities, knowledge and social relations and in turn also is shaped by the same factors (Phillips, Jørgensen 2002, p. 65).

The social practice in the context of our thesis is fairly complex, as it embraces both the social practice of marketing and the commercial interests hereof, as well as the neuroscientific practice, which entails a high degree of conventionalism. To further advance a notion of the social context in which our empirical data exist, we have introduced the neuro and marketing of neuromarketing (cf. chapter 4) and thus the different approaches to neuromarketing and the respective context, commercial or academic, in which they exist.

CDA is thus not just the analysis of discourse itself. Rather, it is an analysis of dialectical relations between discourse and other elements, cutting across conventional boundaries between disciplines such as linguistics, politics and sociology, hereby making CDA an interdisciplinary type of analysis or as Fairclough refers to it: transdisciplinary (Fairclough 2010, p. 4). An essential concept in Fairclough’s CDA is the notion of power, which also is regarded as the critical aspect of CDA. This critical aspect of the analysis seeks to produce interpretations and explanations of areas of social life and hereby generate a better understanding of how societies work and produce both beneficial and detrimental effects (Fairclough 2003, p. 203). Thus, the main aim of CDA is to investigate the links between language use and social practice (Phillips, Jørgensen 2002, p. 69).
5.1.3 Defining ‘Power’ in Discourse

Fairclough introduces two types of power in relation to CDA: power in discourse and power behind discourse. For both types of power, Fairclough argues that a specific person or grouping cannot hold power, since power is won through social struggles and thus, also can be lost (Fairclough 1994, p. 43). Power in discourse is concerned with the relational power among participants. When one participant holds the power, he will try to control and constrain the contributions of the powerless participant in what Fairclough refers to as an unequal encounter. The powerful participant can then constrain the contents, relations or subjects (Op.cit., p. 46). In relation to power in discourse, Fairclough also introduces the notion of hidden power, especially in regards to the mass media, which involves the sharp division between producers and interpreters (Fairclough 2001, p. 41). Within mass media, the nature of the power relations enacted is often not clear, hereby representing reasons for seeing it as involving hidden relations of power. The discourse producers exercise power over consumers in that they have sole producing rights and therefore can determine what is included and excluded (Op.cit., pp. 41.46). Here, Fairclough also pays special attention to causality and to “(...) who is represented as causing what to happen, who is represented as doing what to whom” (Fairclough 1994, p. 51). In the notion of hidden power, Fairclough emphasises the one-sided nature of a media product as the greatest contributor of the hidden power. However, as Fairclough himself notes, hidden power may as well occur in a face-to-face meeting and is therefore not exclusively related to the mass media (Fairclough 2001, p. 46). Nevertheless, due to the lack of interaction between discourse producer and consumer, it is often within the media that the hidden power is detectable.

The notion of power behind discourse is essentially a digression of hidden power, as “(...) the shaping of orders of discourse by relations of power it not generally apparent to people” (Ibid.).

Power behind discourse thus describes the construction of the orders of social practices and holds the idea “(...) that the whole social order of discourse is put together and held together as a hidden effect of power” (Fairclough 1994, p. 55). In relation to hidden power Fairclough introduces discourse type, which is the conventions and genres used
in a particular discourse, shaped by those who possess the power in a given discourse, for example in the situation of a doctor speaking to a patient (Fairclough 1994, pp. 58-61, Phillips, Jørgensen 2002, p. 67). Fairclough also introduces **power and access to discourse**, which concerns the questions “*Who has access to which discourses, and who has the power to impose and enforce constraints on access?*” (Fairclough 1994, p. 62). Fairclough argues, that not “*anyone*” is free to say whatever they like, due to constraints within discourses, power and social practices (Op.cit., p. 63). In this relation, it is important to make a clarification of the concept of free speech. Free speech, in the context of our thesis, refers to the political and human right of having freedom to speak and communicate one’s opinion, which is exactly what Lindstrøm does. He uses his free speech to gain access to scientific discourses and through these convey his ideas of neuromarketing, despite heavy objection from the scientific community. Lindstrøm has been heavily criticised by numerous scholars⁴ for his generous and over-interpretive use of the scientific language (Du Plessis 2011, p. 151).

### 5.1.4 Text, Meanings and Interpretations

Fairclough proposes a relational approach to text analysis, which involves several levels of analysis (Fairclough 2003, p. 35-37). In this relation, Fairclough emphasises the importance of distinguishing internal relations and external relations. **External relations** relate the text to its surroundings. **Internal relations** include analysis of the text itself. **Intertextuality** is the presence of other texts, elements of texts or references to other texts, within a text. Thus, intertextuality is part of the external relations. Elements of other texts can be present both directly as quotations and indirectly as summaries without reference. Another type of intertextuality is **manifest intertextuality**, which is a pronounced type of the practice, in which texts explicitly draw on other texts by for example quoting them (Phillips, Jørgensen 2002, p. 73). An **Intertextual chain** is found, when a series of texts incorporates elements from the others (Fairclough 2010, pp. 420-421). **Interdiscursivity** is a digression of intertextuality, occurring when different discourses and genres are mixed together in a communicative event (Phillips, Jørgensen 2002, p. 73). Interdiscursivity is the analysis

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⁴ See Appendix 10
of the mix of genres of discourses, which are articulated together in a communicative event and which the event draws upon (Fairclough 2001, p. 218). Often, interdiscursivity entails new interdiscursive mixes, based on creative and complex mixes of discourses, which might lead to discursive and socio-cultural change (Phillips, Jørgensen 2002, p. 73).

According to Fairclough, a difficult aspect of the interpretation of texts is that what is being said rests on what is unsaid, making it important to understand the unsaid “assumptions” (Fairclough 2003, p. 11). Thus, the interpreter will, to some degree influence the analysis, depending on the interpretation of the unsaid. Furthermore, the analyst influences the analysis through selection of what is important and what is not. All textual analysis is inevitably selective in the sense that the analyst choose to ask certain questions and focus on selected parts, which naturally leaves out other parts (Op.cit., p. 14). This selection is also detectable within this thesis. (cf. chapter 3)

5.1.5 A Three-dimensional Framework for Studying Discourse

According to Fairclough, a discourse has three functions (Phillips, Jørgensen 2002, p. 67, Fairclough 1994, p. 72):

1. An identity function: which contributes to the construction of social identities.
2. A relational function: which contributes to the construction of social relations.
3. An ideational function: which contributes in the creation of systems of knowledge and meaning.

In all analyses of discourse the order of discourse and the communicative event are both important focal points (Phillips, Jørgensen 2002, p. 67). Fairclough defines an order of discourse as “(...) sets of conventions associated with social institutions” (Fairclough 2001, p. 14) meaning that it is the sum of genres and discourses used within a certain social domain. A communicative event is every instance of language use; let it be an article, conversation or speech (Phillips, Jørgensen 2002, p. 68). In regards to our subject area of neuromarketing, an example of this are the conventions of medical
communication used in the neuroscientific articles, while the communicative events are the articles themselves. The relationship between the order of discourse and the communicative event is also of dialectical nature, as the order of discourse can be considered a system, which the communicative event can both reproduce by following conventions and alter by using the discourses in a new manner (Op.cit., pp. 71-71).

According to Fairclough “social structures define what is possible, social events constitute what is actual, and the relationship between potential and actual is mediated by social practice” (Op. cit., p. 223). Social practice is thus the greater social context of a communicative event and can furthermore be seen as “(...) articulations of different types of social elements which are associated with particular areas of social life” (Op.cit., p. 25). Discursive practises are the processes of producing and consuming texts and are considered as an important type of social practise, as they contribute to the formation of the social practises (Phillips, Jørgensen 2002, p. 61).

A communicative event has, in Fairclough’s model of CDA, three dimensions; a textual dimension, a discursive dimension and a social dimension. In seeing language as discourse and as social practice, Fairclough places great emphasis on the necessity of analysing the three dimensions and the dialectical relationship between them (Fairclough 2001, p. 21). The three-dimensional framework for studying discourse is illustrated below:
The inner part of the model is the textual dimension, which focuses on analysis of the linguistic features of a text. The middle layer is the discursive dimension and represents the production and consumption of texts. The exterior part of the model is the social dimension, which concentrates on socially accepted rules, hereby laying out the basis for the interpretation of a text. It is important to note that although Fairclough argues that the dimensions must be kept separate in theory, when using the model in practice, the boundaries are quite vague and as the dialectical relationships of the dimensions are strong, they will overlap. The fact that Fairclough wishes to keep the dimensions separate almost becomes a self-contradiction, as he demands dialectic connections separated and hereby demands a great effort from the analyst. In reality, the model corresponds with the epistemological standpoint of the hermeneutic circle, in which the individual parts can only be fully comprehended in reference to a whole, indicating a
clear interaction between the whole and the parts and emphasises the need for both (cf. section 2.1).

5.1.6 The Textual Dimension

The textual dimension is Fairclough’s point of departure for a discourse analysis, as it focuses on the analysis of the formal and internal features of a text. By analysing the linguistic features it is possible to shed light on how discourses are textually activated (Phillips, Jørgensen 2002, p. 83). Fairclough here introduces three focus areas: vocabulary, grammar and textual structure (Fairclough 2001, pp. 92-93). We will in our work place our main focus on the vocabulary, thereby investigating how the choice of words affects the presentation and argumentation of neuromarketing. An example of such use is when Lindstrøm refers to “(...) the Bethlehem Star-like Apple logo” (Lindstrøm 2008b, p. 121) Fairclough introduces several tools and concepts for a detailed textual approach to discourse analysis, which draw on British linguist Michael Halliday’s notion of functional grammar (Phillips, Jørgensen 2002, p. 65). Halliday’s multifunctional view of texts supports Fairclough’s opinion of discourse as an important social practice (Stillar 1998, p. 14), and Fairclough also refers to Halliday as his main source and inspiration in regards to Linguistics (Fairclough 2003, p. 227). When analysing the choice of words, we will therefore draw on Halliday’s notion of modality and attitudinal lexis, which will be elaborated below.

Fairclough does not provide a framework or method for analysing the textual dimension but rather a series of analytical tools, which can be identified and then brought together in a joint analysis. We will below elaborate on the concepts and notions relevant for our analysis, hereby laying the groundwork for later use. In our analysis, the textual structure will be investigated by looking at the general structure of the selected chapters in Buy-ology and the two scientific articles.

We will be looking at the vocabulary and the specific word choices used in relation to the argumentation within the empirical data. Vocabulary usually refers to the language used to talk about and within a given discipline, for example in medicine; where the word doctor is fundamental to the field (Anonymous 2011). Through Fairclough’s CDA, we will carry out an investigation of the argumentation and which specific words the
argumentation is built on, relating to how Lindstrøm and the scholars approach neuromarketing and legitimise their claims – or lack thereof. These findings will then later be supplemented with Toulmin’s notion of argumentation analysis, hereby ensuring the most thorough and in-depth investigation of the arguments and claims put forward. Moreover, we will look at the general choice of words in regards to its factuality and how this word choice might be used to negotiate the factuality of given statements.

The concept of modality is related to grammar and to the authority of a writer or speaker and it refers to the degree of affinity or affiliation related to a given statement. Thus, expressing intermediate degrees between the polarities of positives and negatives, such as yes and no (Halliday 1994, p. 88). According to Fairclough, “Modality is a major dimension of discourse(...)” (Fairclough 1992, p. 160) Halliday uses the concept modality specifically to refer to functions of modal verbs (i.e., can, could, may, might, must, ought to, shall, should, will, would) in understanding both positional and relational personal meaning (Stillar 1998, p. 35). However, modality can be expressed through several means. A speaker can for example commit completely to a statement by presenting it as the truth – ‘truth modality’ or incorporate a modal such as ‘maybe’ or ‘perhaps’ to distance herself from the statement (Phillips, Jørgensen 2002, p. 84).

Modal adverbs such as ‘probably’ or ‘possibly’ and the equivalent modal adjectives ‘probable’ or ‘possible’ are often used as well as other forms of hedging such as “sort of” or “a bit” (Fairclough 1992, p. 159). Accordingly, tenses are used to express modality, e.g. “(...) simple present tense “is” realizes a categorical modality” (Ibid.). Subjectivity and objectivity might also express modality, as objectivity i.e., ‘It is true’ does not indicate whom this statement comes from, thus implying categorical modality, and implying some degree of power. When expressing the same subjectively, ‘I think it is true’, it is clear, that the statement is presented from the author’s perspective, and with the author’s affinity to the statement (Ibid.). In relation to use of modality in the media, Fairclough suggests that they often transform interpretations of complex events into ‘facts’ and ‘truth’ (Op.cit., p. 160). Thus, using, what Phillips and Jørgensen terms ‘truth modality’.
In regards to linguistic modality, a distinction is made between **epistemic** and **deontic** modality. Epistemic modality concerns knowledge, whereas deontic concerns right and wrong (Portner 2009, p. 2). Hedging is a variant of epistemic modality and is often found in academic writing, as it is “central to academic writing as it expresses possibility rather certainty (…)” (Hyland 1998, p. viii). It is a grammatical structure, in which it is possible for the author or speaker to assess the statement put forward, as it hereby enables the author to express a perspective on a given statement and to introduce unproven claims with caution (Op.cit., p. 6). Hedging is thus when authors use cautious language to mark the strength of a claim, or their own stance towards this claim. Oppositional to hedges, **boosters** can be used to express or emphasise certainty (Hyland 2004, p. 87). Halliday’s **attitudinal lexis** concerns the use of adjectives and adverbs and how these are used to position meaning potentials (Stillar 1998, pp. 35-36). We will make use of attitudinal lexis by analysing how Lindstrøm and the scholars make use of adjectives and adverbs in their positioning of neuromarketing. I.e. Lindstrøm’s extensive use of superlative adjectives, when describing the Buy-ology study: “*As the most advanced brain-scanning technique (…)*” (Lindstrøm 2008b, p. 8) or “*(…) the best scientists and the most sophisticated instruments around (…)*” (Op.cit., p. 33).

Fairclough suggests that **grammatical moods** can be used to distinct the main sentence types **declarative**, **imperative** and the two types of **interrogative**; ‘yes/no’ and ‘wh’. In this relation he proposes the following distinctions: **Declarative** sentences are recognised, when the subject is mentioned before the verb. ‘*Yes/no*’ **interrogative** is recognised when the verb is mentioned before the subject, implying a question. ‘*Wh*’ **interrogative** sentences initiated with a ‘wh’ word (who, where, why). **Imperative** sentences do not include a subject (Fairclough 2003, pp. 115-116). These sentence types can emphasise what the author wants to express; declarative sentences are often declaration of statements, whereas yes/no interrogative implies a yes/no answer, ‘wh’ interrogative sentences implies an elaborative answer, whereas an imperative sentence can be used as a demand.

By using the above concepts we will be able to disclose how neuromarketing is approached in our empirical data. In addition, they will also provide a basis on which
we will be able to identify discourses, after we have established how neuromarketing is communicatively approached.

**Figure 3: Textual Dimensions (Own Creation)**

5.1.7 **The Discursive Dimension**

In the interactional part of the model, we find the discursive dimension. Fairclough defines the discursive practice as the processes of detailed linguistic analysis of text, including the production, distribution and interpretation. In other words: the production and consumption of a text (Op.cit., p. 129). The communicative event plays an important role in this dimension, as does the process of creating it. It should be taken into consideration how many producers are involved in creating the event, who the producers are, what their intentions are, along with the time span of the development process, in order to fully grasp the nature of the communicative event (Fairclough 1992, p. 78). Fairclough argues that: “The most obvious distinguishing features of a discourse are likely to be features of vocabulary” (Fairclough 2003, p. 129). Thus, to be able to distinguish discourse in a text, Fairclough suggests an identification of the main themes and the particular angle from which they are presented, along with an establishment of the frequency and co-occurrence of words. We can hereby locate and analyse the different discourses in our empirical data by looking at the main themes and identify the vocabulary that expresses these themes, which will lead us to an identification of the
discourses our empirical data draw on. When having identified the discourses, we will distinguish weak discourses from dominating discourses, hereby enabling us to determine, which discourses are articulated most frequently in disclosing neuromarketing.

**Intertextuality** and **interdiscursivity** (cf. section 5.1.3) are also part of the discursive dimension, as it concerns a text’s relations to other texts and how the communicative event draws on previous events and discourses. According to Fairclough, a high degree of intertextuality may signal both stability and instability and continuity and change in a text, depending on whether or not the combination of discourses challenges the existing conventions or merely reproduces them in a new combination (Phillips, Jørgensen 2002, p. 74).

Fairclough’s discursive dimension will assist in clarifying which discourses are drawn upon in our empirical data and if intertextuality is used. This dimension will also lay the groundwork for our further analysis of neuromarketing; a comparison of the different notions and attitudes towards the practise and hence form a basis that can be related to the social dimension.

![Figure 4: Discursive Dimension (Own Creation)](image-url)
5.1.8 The Social Dimension

The social dimension is the exterior layer of the model and the broader social practice of which the dimensions are part. It is here, in the analysis of the relationship between discursive practice and the broader social practice that the analysis reaches its conclusions, since the relationship between texts and social practice is mediated by the discursive practice (Op.cit., p. 69). Socially accepted rules and conditions are approached in this process and the discursive practice is addressed and related to change, power, ideology and social aspects (Op.cit., p. 87). As mentioned above, discourse is both constructed and constructing, hereby contributing in shaping the social practice and is also being shaped by it. It is through the discursive practice, in which people use language to produce and consume texts, that texts form and is formed by social practice (Op.cit., p. 69). To portray the social context in which our empirical data exists, this thesis introduces neuromarketing and its related ideas and practices, hereunder both concepts from the field of neuroscience and marketing. Hereby, our analysis of the social dimension incorporates the neuroscientific approach to neuromarketing, as well as a general introduction to the current status and use of the practice, enabling us to place our empirical data into context.

Figure 5: Social Dimension (Own Creation)
5.1.9 Linking the Dimensions

In relation to the purpose of our thesis, an understanding of neuromarketing, Fairclough’s approach to CDA constitutes a favourable point of departure. We, as researchers within communication, have a very limited knowledge of the medical world and neither access nor the qualifications to verify the neurological and technical claims in a neuroscientific setting. However, with the help of Fairclough, we have another way of testing the claims put forward, which is through a scrutinisation of the arguments used in the presentation and interpretation of neuromarketing by disassembling our empirical data piece by piece.

The analysis of our empirical data will be based on Fairclough’s notion of the textual, social and discursive dimensions. The respective analyses of the selected chapters of Buy-ology and the two scientific articles will be compared, hereby making clear their respective notion of neuromarketing and attitude towards it as a whole. Thus, leaving us with a clear image of Lindstrøm’s and the articles’ view of neuromarketing and hereby laying out a frame allowing for a thorough comparison of the two views.

5.2 A Critical Note on CDA

A criticism mentioned by several theorists is the divisiveness within the field of CDA; it is too broad and entails so many aspects of analysis and varying theoretical approaches that it is hard to actually discuss it as one method of analysis (Hammersley 1997, p. 237, Phillips, Jørgensen 2002, p. 91). Fairclough’s inconsistent use of concepts such as discourse (cf. section 5.1.1) and CDA entails criticism, as this often proves a contributor of great confusion when reading his texts. For instance, the term CDA is inconsistently used to describe two different things: one is the critical analysis of discourses developed by Fairclough and the wider part of discourse analysis, which CDA (as developed by Fairclough) is also a part of (Phillips, Jørgensen 2002, p. 60). A question, which also lingers is how to delimit a discourse. Fairclough offers no guidance in deciding when one discourse stops and another begins but rather leaves it up to the researcher to decide (Op.cit., p. 143).
Fairclough’s notion of power and its position in CDA receive both positive and negative
criticism. The negative critique often concerns Fairclough’s socialist political views
(Fairclough 1994, p. 5), which some critics believe to have influenced his work, thus,
affecting the CDA to be a tool for socialistic analysis instead of a tool for neutral
analysis (Hammersley 1997, p. 239).

When applying CDA it can be quite problematic to distinguish between the discursive
dimension and the social dimension, since the boundaries are quite unclear (Phillips,
Jørgensen 2002, p. 89). Another practical implication when working with CDA is that
Fairclough’s model does not include any instructions or methods on how to identify
different discourses, social practice and power of language use (Op.cit., p. 90). This
may entail subjectivity from the researcher and lead to a determination on finding
specific results. In this relation, we acknowledge that we as researchers within the
hermeneutic tradition bring pre-conceptions with us into the interpretation process,
which in turn will affect the outcome of the interpretation. Conversely, the lack of
directions can also be turned into a positive, as we as researchers hereby are given free
rein in our analyses. Hence, we will use Fairclough’s model and related concepts in the
way we find most fruitful. Excluding irrelevant elements of Fairclough’s extensive body
of theory allows for greater precision and focus in our analysis, as we hereby are able to
focus on the analytical aspects of importance in relation to our purpose statement and
research questions.

5.3 Toulmin’s Argumentation
In this paragraph, Toulmin’s model of argumentation will be introduced. Argumentation,
as a linguistic phenomenon, aims at the explanation of facts and the justification of
actions (Galdia 2009, p. 156). Thus, Toulmin’s notion and model of argumentation will
be introduced as our primary tool in uncovering which overriding claims and arguments
Lindstrøm and the two scientific articles present and furthermore how these claims and
arguments are supported. Based on citations in leading scientific journals from 1988-
2004, Toulmin is regarded as one of the top ten philosophers of science and
philosophical logicians of the 20th century (Loui 2006, p. 35). Hereby, representing a
solid analytical approach for our work with the argumentation of our empirical data.
According to Toulmin, all claims can be questioned, hereby challenging the sender of a given claim to present solid and supportive grounds for the claim to be conceded.

“As with a claim to a right, though it may in the event be conceded without argument, its merits depend on the merits of the argument which could be produced in its support” (Toulmin 2003, p. 11).

To analyse the process of argumentation Toulmin in 1958 published his argumentation model in the book “The Uses of Argument”. A model that today is known as Toulmin’s Model of Argumentation. When published, British scientists and press ridiculed the book, the model, and Toulmin himself. The book was even referred to as “Toulmin’s anti-logic book” (Toulmin 2006, p. 26). However, despite the ridicule, the book soon became part of the communication studies curriculum at several American universities (Ibid.). Scholars within different fields of social sciences have even paid credit to Toulmin later on: Goodnight, e.g. claims that the model “(...) opened the door to the recovery of practical reason, the development of informal logic, and the advances of critical thinking into the realms of the everyday uses of argument” (Goodnight 2006, p. 39). Toulmin himself argues that part of the success of his model can be credited his use of colloquial words, which everybody understands, hereby making it a book for laymen and academics alike (Toulmin 2006, p. 29). In relation to this model, it is crucial to notice that Toulmin’s focus is on the rhetorical parts of an argument, not the formal logic of the argumentation.

Toulmin uses the words argumentation and argument to term two distinct activities: Argumentation is the entire process of making claims and backing them up when they are challenged (Toulmin 1979, p. 13). Thus, the argumentation is the process, which can be analysed through use of the model. Reasoning is used in this context and refers to “(...) the central activity of presenting the reasons in support of a claim (...)” (Ibid.). Argument does not, in this context, refer to a dispute or discussion between two or more parties. In this context, argument is in Toulmin’s notion equal to “(...) a train of reasoning (...) the sequence of interlinked claims and reasons (...)” (Ibid.).
It is important to note that Toulmin emphasises the importance of analysing all arguments in correlation with their context, the communicative situation and the parties involved (Op.cit., p. 7). In regards to our epistemological stance, Toulmin’s notion of arguments is well aligned with social constructionism in the sense that social constructionists argue that the way we see the world is shaped by the knowledge, opinions, assumptions we carry with us. For example, one’s historical and cultural background, such as a specific education, will most likely affect how one argues for a case.

5.3.1 Toulmin’s Model of Argumentation

The function of Toulmin’s model of argumentation is to analyse arguments via the process of presenting a claim (the basic model) and, if necessary, defending this claim against a challenge (the extended model) (Hitchcock, Verheij 2006, p. 1). The model is based on two classical argumentation modes: syllogism, which is logic reasoning based on deduction and the rhetorical conclusion, also referred to as the enthymeme, which is based on opinions and presumptions (Jørgensen, Onsberg 2006, p. 12).

5.3.1.1 The Basic Model

Toulmin’s basic model encompasses three elements, which always must be identified, when analysing argumentation:

1. **Claim** (C) is the point of view that the sender wants the recipient to accept and agree with. It is what is being argued for and the claim is most often presented explicitly in the argumentation (Jørgensen, Onsberg 2006, p. 14). Thus, the claim is both the starting point, as well as the goal of the argumentation process or, in other words, also the conclusion of the argumentation (Toulmin 1979, pp. 29-30).

2. **Data** (D) is the information, facts or evidence, which the sender uses as support for the claim and it is explicitly presented in the argument (Toulmin 2003, pp. 90-93) Data is, in earlier work by Toulmin, also referred to as Grounds (G) (Toulmin 1979, p. 33). However, we will use the notion of Data.
3. **Warrant** (W) links claim and data together. Warrant is a general point of view, rule or law, shared by the sender and the receiver, which is an implicit part of the argument (Toulmin 2003, p. 91-93) Warrant is described as *carrying* the accepted data to the claim, to certify the truthfulness or acceptability of this claim (Brockriede, Ehninger 1960, p. 45).

The above notion of how an argument is build, draws on Toulmin’s original presentation in his opus magnum; “The Uses of Argument” from 1958. Nevertheless, other scholars argue that data is often presented before the claim, implying a “therefore”, whereas the reversed order entails a “because” either implied or included in the claim (Ibid.). Jørgensen and Onsberg agree with Toulmin, in that practical argumentation most often follows a move from claim towards data, as the claim is what is most important for the sender to present. Afterwards, a justification to support this claim is introduced. Thus, the claim is often mentioned prior to the justification (Jørgensen, Onsberg 2006, p. 16). Data and warrants are often intermingled. However, as seen from the above, they serve different purposes and should therefore be distinguished.

### 5.3.1.2 The Extended Model

In cases where the argument or the quality of the data is being challenged the argumentation model is often extended, as it hereby requires further backing by the sender.

The extended model incorporates three additional elements, which are:

4. **Modal qualifier** (Q) states the strength of the claim, indicating the degree to which the sender is willing to vouch for the accuracy of the claim (e.g. definitely or probably) (Toulmin 2003, pp. 93-94)

5. **Rebuttal** (R) specifies the potential reservations and elements of uncertainty transported from warrant to claim. Thus, rebuttal includes circumstances that will invalidate the claim (Op.cit., p. 94).

6. **Backing** (B) is connected to the warrant as part of the argumentation, when doubt is expressed in regards to whether or not the warrant is acceptable. If doubt is expressed, further documentation must be presented to justify the foundation of the claim (Op.cit., p. 96). The backing might actually be a
complete argument in itself, including both claim and warrant (Brockriede, Ehninger 1960, p. 45).

![Figure 3: Toulmin’s extended model (Toulmin 2003, p. 97)](image_url)

As evident in the model, an argumentation in its extended form can consist of up to six elements; however, all elements are not necessarily present in all types of arguments. The incorporation of the elements depends on the complexity of an argument, meaning to which extent an argument is being challenged.

Arguments can be divided into either lines or hierarchies. However, most often an argumentation will include both. In a line of arguments, the arguments are of equal importance, mentioned e.g. as “first of all”, “second of all” etc. A hierarchy of arguments consists of one superior argument and one or more subordinate arguments (Jørgensen, Onsberg 2006, pp. 27-28).

### 5.3.2 Elements of an Argument

#### 5.3.2.1 Fields of Arguments

Toulmin introduces the concept **field of arguments** for arguments sharing the same logical type of backing or conclusions. A field in this relation can, i.e., be different types of science, such as medicine or communication. Some aspects of argumentation, termed **field-invariants**, do not change regardless of the field, whereas others are dependent on the field and thus named **field-dependents** (Toulmin 2003, pp. 14-15). Fields of arguments varies, since they address different sorts of problems (Op. cit., p. 154). The warrants used in natural sciences build on general laws of nature and in
medicine they are based on diagnostic description, whereas in judicial contexts they build on statutes, precedents and rules (Toulmin 1979, p. 53). Different fields posses different criteria for argumentation, e.g. in relation to degrees of formality and precision (Op.cit., pp. 195-197). In relation to neuromarketing, this can cause problems, as neuroscientists are used to argue within the natural sciences, which require strictly documented data, opposed to marketers, who are used to argue based on commercial interests, which often entails a need for ‘selling’ one’s arguments. Accordingly, Toulmin argues that a clear difference between different fields is that the data relevant and necessary for argumentation differ (Toulmin 2003, p. 16) Furthermore, the vocabularies used within the two fields differ, which might further complicate their communication, when technical terms are not correctly understood.

Toulmin also argues that differences within the way we assess arguments may also differ within one field (Ibid.). In doing so, Toulmin again emphasises the importance of considering the specific circumstances when analysing an argumentation. In this relation, Habermas also has a note of caution, as he to emphasises the importance of considering the context, the parties involved, and the discourse used in an argumentation. For example, a layman and a specialist within the same field will use different argumentations when arguing for the same thing (Habermas 1981, pp. 36-37).

5.3.3 Division of Arguments

Toulmin argues that arguments can be divided into different categories of arguments. All arguments will, in simplified circumstances, fit into one of these divisions, however, he emphasises that these divisions follow an oversimplified notion of argumentation (Toulmin 2003, p. 134) . The categories of arguments will be elaborated below.

5.3.3.1 Analytical and Substantial Arguments

Analytical arguments follow the same form or pattern: “All A’s are B’s”. Thus, the conclusion is included in the data and does not require any inference. “Pure” analytic arguments are rare, as these exclude all other conclusions and need to be based on universal, unchanging premises (Op.cit., pp. 138-139).
Substantial arguments build on content and thus involve inference in the form of a warrant to connect the data to the claim of the argument (Op.cit., pp. 125-128). Thus, formulations such as “this must be the case” or “this would be the only answer” will often be used in substantial arguments.

5.3.3.2 Warrant-using and Warrant-establishing Arguments

Warrant-using arguments involve deduction, as these build on warrants, “(...) whose acceptability is taken for granted” (Op.cit., p. 111).

Warrant-establishing arguments involve induction, as arguments seen in scientific papers, where “(...) the acceptability of a novel warrant is made clear by applying it successively in a number of cases in which both data an conclusion have been independently identified” (Op.cit., p. 112). In other words, as the names of the categories imply, the first kind uses a pre-accepted warrant to establish a conclusion, whereas the other establishes a warrant for future use based on its accordance with previously accepted data and conclusions.

5.3.3.3 Conclusive and Tentative Arguments

Conclusive arguments are also referred to as ‘necessary’, as the argument in such a case is “necessarily the case”. In other words, conclusive arguments leave out other arguments.

Tentative arguments are referred to as probable arguments, as these are ‘probably’ the right conclusion but cannot be claimed for certain (Op.cit., p. 130).

5.3.3.4 Formally Valid and Informally Valid Arguments

An argument is formally valid when “(...) its conclusion can be obtained by appropriate shuffling of the terms in the data and warrant” (Op.cit., p. 137). Thus, if this is not possible the argument is informally valid. A formally valid argument might thus, lead to a false conclusion.
Toulmin acknowledges the difficulties in distinguishing these categories and emphasises that confusing them or mixing them up can lead to crucial errors in analyses (Op.cit., p. 125). In this relation Toulmin argues that the fundamental distinction between the arguments, is their analytical or substantial nature (Op.cit., p. 138).

5.3.4 Classification of Arguments

The fields of argumentation introduced above focuses on the differences of argumentation in relation to the context. In this relation Toulmin argues that many warrants share some of the same functions and features, regardless of their respective fields. Thus, Toulmin proposes a classification of general types of argument (Toulmin 1979, pp. 147-155). However, he emphasises that this classification must be used with caution, as it is important to always analyse arguments with respect to their specific context and field, the people, the situation and possible counter claims (Op.cit., pp. 147-148).

When reasoning (or proposing an argument) from analogy, one uses a similar case to support a claim based on the assumption that since these two cases are fairly similar, if the claim was true in one case, it is also true in the other. Thus, this type of reasoning requires a similar case as supporting evidence (Op.cit., p. 148). Reasoning from generalisation entails a grouping of objects or people to make general claims about this grouping. When using generalisation, it is crucial that the generalisation is based on a solid sample (Op.cit., p. 150). Reasoning from sign encompasses a sign, which can reliably be expected to occur together with a given object. Thus, when observing the sign one can reliably claim that the object will also be present (Op.cit., p. 151). When one event or condition causes another, then these are causally connected. Toulmin refers to this type of argumentation as reasoning from cause (Ibid.). When applying reasoning from cause, it is important to distinguish between correlation and actual causality. Reasoning from dilemma is based on a claim that only two explanations are possible and that both of these are bad (Op.cit., p. 174). When an argument is based on the authority of a person or institution, it is referred to as reasoning from authority.

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5 Reasoning from generalisation is sometimes also referred to as mass argument, based on quantitative method.
Toulmin recognises that this classification only includes the types of acceptable reasoning most often used. He furthermore withstands that distinguishing the various kinds of reasoning can be difficult (Ibid.).

When classifying arguments based on the rhetorical proof of the argument, three types are recognised: arguments, which are based on data referring to phenomena in the external world are called logical or substantive. Arguments based on the quality of the source are called ethical or authoritative, whereas the last sort is based on inner drivers or values are known as pathetic or emotional (Brockriede, Ehninger 1960, p. 48). In can in this relation be noted that the three classifications are based on Aristotle’s Three Persuasion modes, logos, ethos and pathos.

Jørgensen and Onsberg combine the classifications of arguments with the rhetorical proof of the argument, hereby arguing that reasoning from analogy, generalisation, sign, and cause (they also add classification) appeals to the intellect, whereas reasoning from authority and motivation appeals to our emotions (Jørgensen, Onsberg 2006, pp. 55-56). Thus, substantive and authoritative arguments, as defined above, appeal to the intellect, whereas emotional arguments appeal to our emotions.

When used inaccurately, argumentation is unsound and this is referred to as fallacies. Toulmin recognises two general types of fallacies. The first is claims that are based on unwarranted assumptions, e.g. hasty generalisations, drawn from too small- or unrepresentative samples. The second type is based on ambiguity, e.g. if the same word is used inconsistently within one argument (Toulmin 1979, p. 158, p. 179).

### 5.3.5 Critique of Arguments

After having introduced Toulmin’s model of argumentation and his notion of argumentation, we will now give a brief introduction into some of the features that distinguish good arguments from less good, or even bad, arguments.

Some of the essential merits of arguments can be found in the explanations above. First of all, it needs to be clear, what kind of issue the argument concerns (which field of
arguments it is related to) and what the **purpose** of the argumentation is. The data need to be relevant and sufficient to support the claim. The warrant, which supports the data, must be based on solid backing. Furthermore, the argument should explicitly state the strength or modality of the claim. If rebuttals are present, then these need to be explained thoroughly (Op.cit., p. 106).

Toulmin emphasises the importance of two arguing parties “(...) to reach a common understanding about the starting point of their argument” (Op.cit., p. 107). They need to clarify the purpose of the argument and within which field the argument rests; e.g. judicial or ethical. He argues that if they cannot agree on a shared standpoint, from which they will address the problem, they need to acknowledge each other’s standpoints and their differences. In other words: “They need to agree to differ”. Practically, he admits, this can be a difficult process (Op.cit., p. 108). The difficulties in this are often based on the different cultural and historical backgrounds of the parties, as explained by the social constructionists. If it is possible to agree on a shared standpoint in relation to the problem, the different elements of the argument ought to be properly used as described in the paragraph above.

### 5.4 The Toulmin Model on a Critical Note

As with many other theoretical models, Toulmin’s has received criticism from various scholars. One of the consistent critique points, in particular points to Toulmin’s theories as being too general and relativistic.

Habermas criticises Toulmin’s classification of fields of argument for “*not clearly separating conventional claims, which are context dependent, from universal validity claims*” (Habermas 1981, p. 36). Habermas thus, presents his own schematic proposal on how to divide **types of argumentation**, incorporating forms of argumentation and the two reference dimensions; **problematic expressions** and **controversial validity claims** (Op.cit., p. 23). However, one could argue that Toulmin takes this into consideration by emphasising the importance of argument-analysis to consider the context of the argument, and the generalisation that is necessary to create this sort of classification (Toulmin 1979, pp. 147-48).
Freeman argues that Toulmin’s notion of the field is too relativistic. He finds Toulmin’s use of warrants problematic, in the sense that it does not distinguish warrants established by different intuitions. Consequently, Freeman takes on an epistemic approach to classify warrants into four modes of intuition (Freeman 2006, p.98). Bermejo-Luque further criticises Toulmin for his relativistic approach, pointing to his own criticism of relativism in the book *Human Understanding* (Bermejo-Luque 2006, p. 71).

Freeman furthermore argues that Toulmin’s notion of fields is too broad, as he argues that it is not clear what exactly constitutes a field (Freeman 2006, p. 89). Hitchcock and Verheij also supports the critique on fields, arguing that some cases include conflicting rules and considerations, pointing to the notion that Toulmin’s model fits “easy cases” but is not applicable in more complex cases, including controversies (Hitchcock, Verheij 2006, pp. 11-12).

For the purpose of this thesis, Toulmin’s model will, as mentioned in the beginning of the chapter, be used to analyse the claims presented in the empirical data and shed light on how the authors argue for their claims and their notion of neuromarketing. We will in this relation mainly use the basic model and the classification and division of arguments. Fields of argumentation will also be approached, as the empirical data stems from different fields.
6 Empirical Analysis

Below we will carry out an investigation of our empirical data and its notions of neuromarketing. For the individual chapter analyses, we kindly direct the reader to appendices 4 and 6.

6.1 Chapters One and Six of Buy-ology

6.1.1 Textual Dimension

The general textual structure of the chapters is almost identical. They both open with an explicit reference to a popular song and then continue on to a neuroscientific experiment and a figurative description of it, strongly resembling storytelling. After having introduced the experiments, Lindstrøm moves on to telling numerous small, independent stories in both chapters and shuffles storylines around, whereby it becomes difficult to tell the different stories and storylines apart. Both chapters have this intertwined structure of small stories complementing each other and occurring in between descriptions of studies and anecdotes related to the experiments of the chapters and Lindstrøm’s own life. Lindstrøm hereby makes it difficult to tell where his studies end and others begin, as well as what is fiction, facts and contemplations. He uses the textual structure in a rather clever manner, as he in both chapters initially promises to elaborate further on several aspects of his opinions and studies, which is then followed by another and often very different anecdote, hereby making the reader forget about the promised answers and elaborations. Due to the textually very intertwined descriptions and stories, he manages to diffuse the claims and promises that are not followed through. Both chapters consist of various small paragraphs, however, no subheading occurs alongside them. The chapters are rounded up similarly with an explicit statement to why the reader should be excited for the following chapter.

6.1.1.1 Vocabulary

Both chapters are an expression of how Lindstrøm views neuromarketing and how he makes us of scientific argumentation in regards to his word choice. Lindstrøm relies on scientific terms for explaining various aspects of his experiments and in explaining
the related brain activity, reactions and outcome, for example by stating: “(...) a flurry of activity in their caudate nucleus” (Lindstrøm 2008b, p. 108). By using the lexis of neuroscience he places an emphasis on the legitimacy of his statements, as he hereby presents himself as knowledgeable within the field of neuroscience. However, he does not use scientific terms exclusively, as he, often after having referred to the technical term, uses his own construct of the term afterwards, for example the *Nucleus Accumbens* becomes *the craving spot* (Op.cit., p. 14). However, it is mainly in reference to the research of others that Lindstrøm uses the scientific lexis and when referring to his own studies, it is mainly done in layman’s terms with wording such as *brain activity*. Through this word choice, Lindstrøm is able to create a reader-friendly and vivid narrative, which uses the correct terms and concepts intertwined with his own notions and concepts. Both chapters also draw heavily on implicit and explicit references to personal stories and anecdotes, hereby contributing to creating a colourful and entertaining word choice and language, full of metaphors and symbols, which serve to make Lindstrøm himself an important part of the narrative. He also makes several striking comparisons, which serves to underpin his strong opinions and again contributes to the rich word choice, as when he compares the grandeur of the Vatican with Louis Vuitton’s flagship store in Paris (Op.cit., p. 116). The way Lindstrøm in general uses scientific terms and concepts strongly emphasises the fact that Lindstrøm is a layman in terms of neuroscience. In describing the nun study in B6, Lindstrøm explains how the nuns lay on the “*fMRI’s examination table*” (Op.cit., p. 107) however, no such thing as an fMRI examination table exists, as fMRI is the technique used in the MRI scanner and not an actual object (cf. section 4.3.1) In relation to word choice it is also worth noticing that Lindstrøm continuously refers to Buy-ology as the *study* instead of the *book*.

Nearly all of Lindstrøm’s descriptions are vivid and long, hereby creating a persuasive and vivid impression of the object in question. An example of this is his description of the execution of two experiments in B6. Lindstrøm describes how subjects “*One by one, over the course of several days (...) filed into (...)*” (Op.cit., p. 107, p. 124). Thus, the reader is left with the impression that Lindstrøm was present at both studies, as he continues on to describing the particular setting where the two scans were carried out.
What is important to notice in this relation is that Lindstrøm was in fact only present at one of the experiments. The first study, which concerns the attempt to locate a ‘God spot’ in the brain, was carried out by neuroscientists at Université de Montréal and is an independent study with no connection to Lindstrøm or Buy-ology (Beauregard, Paquette 2006). When reviewing the scientific article on the “God spot” study, a rather different and quite scientific and objective explanation of the study is given. In general, Lindstrøm’s choice of words is a heavy mix of science, branding, emotional wording and own colloquial constructions of the scientific counterparts. Vivid explanations, anecdotes and stories of great brands are given much more prominence than the scientific aspects and lexis and this coupled with Lindstrøm’s consistent use of symbols and metaphors, greatly advances the notion of a persuasive and less objective text, entailing a low degree of formality and objectivity.

6.1.1.2 Grammar

What is noteworthy in both chapters and most prominently in B6, is Lindstrøm’s evident lack of modal verbs. By leaving these out, Lindstrøm presents his statements, stories and opinions as the truth. This can also be referred to as categorical modality, as Lindstrøm expresses the statements as rock solid factuality. Lindstrøm commits to his statements by using categorical modality, as he ascribes objectivity to nearly all them. Hereby not indicating that the statements are in fact his own opinion but rather presenting them as categorical factuality. When Lindstrøm does use modal verbs it is to strongly emphasise the probability of something, for example: “You couldn’t get any more cutting edge (…)” (Lindstrøm 2008, p. 24). Here, Lindstrøm uses the modality to boost the truth of his statement and by applying this booster he is able to demonstrate that he is fully committed to the statement (Phillips, Jørgensen 2002, p. 84). The fact that Lindstrøm mostly relies on modality in relation to knowledge is an expression of epistemic modality.

In both chapters, Lindstrøm makes heavy use of attitudinal lexis as a means of intensifying his statements. “Unsurprisingly, the scans revealed (…)” (Lindstrøm 2008b, p. 108) and “(…) chances are pretty good (…)” (Op.cit., p. 16). Lindstrøm’s main use of intensifying modals can be grouped into two categories: one being how
‘unsurprising’ or ‘obvious’ an observation is, the other being how ‘groundbreaking’ or ‘extraordinary’ something is. When something is thought to be obvious, it often relates to what is regarded as the underlying theory for the Buy-ology study, whereas the study itself, the individual experiments that altogether constitute the whole Buy-ology study, and the results hereof are most often referred to by use of superlatives. Such as “(...) groundbreaking neuromarketing study” (Op.cit., p. 9) and “(...) the most provocative pieces of research” (Op.cit., p. 111). In general, Lindstrøm often acts as his own judge through use of attitudinal lexis. However, also in relation to various other aspects such as when he speaks of “successful religions” (Op.cit., p. 113), since the notion of what constitutes a successful religion seems rather biased and vague. Just as the general textual structure of the chapters can be compared to that of a novel, so can the very extensive use of adjectives. The many adjectives serve to make what could have been an objective statement rather subjective and provide the reader with a very figurative storytelling, making the chapters and narrative quite vivid, however, it also causes very long and at times heavy descriptions. In relation to this storytelling narrative, Lindstrøm’s mentioning of himself and his actions almost creates the notion of him being on a personal quest to save marketing. On several occasions he states that “I’d set off on a quest” (Op.cit., p. 11) and “(...) I felt I could help uncover our minds’ (...) – and just maybe push brain science forward (...)” (Op.cit., p. 23).

A heavy, yet consistent, mix of personal pronouns is also evident in both chapters. A noteworthy mix in this relation is his referencing of research, as Lindstrøm uses different pronouns at various times, hereby indicating differences in ownership. He intermingles the use of our study, my study and the study constantly, hereby leaving it up to the reader to comprehend when he is referring to his own research, research done in collaborations with others or research from a third party. Hereby, the ownership of the study constantly changes, which leaves a rather confusing image of which research Lindstrøm actually has been a part of and which research is drawn upon as examples of other studies.

Through his linguistic style and grammatical mood, Lindstrøm also manages to involve and appeal to his readers by continuously asking them to consider certain
statements and at times even using imperatives: “Think about it” (Op.cit., p. 18) and “look at the front of your iPod” (Op.cit., p. 122). Lindstrøm is hereby constantly referring directly to the reader through a very heavy use of grammatical moods. He also uses interrogative sentences and no less than 27 in B6, for example: “Have you ever paid a visit to the Vatican?” (Op.cit., p. 115). However, even though the questions linguistically appear as imperatives and interrogatives, they often function more as a rhetorical question than something actually requiring an answer. Hereby, Lindstrøm almost instructs the thinking of the reader, nearly bordering an attempt of manipulation of the flow of thought, as he continuously directs the attention of the reader in a certain direction.
6.1.2 Discursive Dimension

Below is a table clarifying which discourses Lindstrøm makes use of in B1 and B6.

<table>
<thead>
<tr>
<th>Discourse</th>
<th>Chapter 1 (B1)</th>
<th>Chapter 6 (B6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Brain Discourse</td>
<td>Dominating</td>
<td>Present</td>
</tr>
<tr>
<td>Brand Discourse</td>
<td>Present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Business Discourse</td>
<td>Not present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Changing Political Elections</td>
<td>Present</td>
<td>Not present</td>
</tr>
<tr>
<td>Discourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating History Discourse</td>
<td>Dominating</td>
<td>Not present</td>
</tr>
<tr>
<td>Destruction Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Educational Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Emotional Discourse</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Fashion Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Happiness Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Informing Discourse</td>
<td>Present</td>
<td>Not present</td>
</tr>
<tr>
<td>International Brand Guru</td>
<td>Dominating</td>
<td>Not present</td>
</tr>
<tr>
<td>Discourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Discourse</td>
<td>Present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Magic Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Marketing Discourse</td>
<td>Dominating</td>
<td>Dominating</td>
</tr>
<tr>
<td>Me Discourse</td>
<td>Dominating</td>
<td>Dominating</td>
</tr>
<tr>
<td>Money Discourse</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Name-dropping Discourse</td>
<td>Present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Neuromarketing</td>
<td>Present</td>
<td>Not present</td>
</tr>
<tr>
<td>Online Discourse</td>
<td>Not present</td>
<td>Present</td>
</tr>
<tr>
<td>Parallel Discourse</td>
<td>Not present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Passion Discourse</td>
<td>Present</td>
<td>Not present</td>
</tr>
<tr>
<td>Product Discourse</td>
<td>Present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Religious Discourse</td>
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<td>Dominating</td>
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<td>Scientific Discourse</td>
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<td>Present</td>
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<tr>
<td>Secretive Discourse</td>
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<td>Present</td>
</tr>
<tr>
<td>Smoking Discourse</td>
<td>Dominating</td>
<td>Not present</td>
</tr>
</tbody>
</table>

Table 2: Discourses in B1 and B6
6.1.2.1 Discursive Practice

Both chapters draw on a variety of discourses, which is visible in their high level of intertextuality and interdiscursivity. A total of 34 discourses were found in the two chapters, all of which are present in the above table. The table also shows the fairly low degree of recurrence between the two chapters, as only eight discourses recur in both chapters of which only two are dominating in both: the marketing and me discourse.

Despite the fact that both chapters share neuromarketing as focal point, the use of the brain and scientific discourse differ greatly in relation to the degree to which they appear. In B1, both discourses are dominating whereas they only are present in B6. Lindstrøm emphasises the scientific nature of neuromarketing greatly in B1, specifically through the scientific discourse, and he introduces several technical terms related to the brain via the brain discourse. Through the scientific discourse Lindstrøm draws heavily on the notions of positivism as he presents his research as data derived from logic thinking and scientific experiments and as stemming from an authoritative source of knowledge. B1 greatly serves to underpin this notion of valid research, which has been given a scientific seal of approval. In general, B1 serves a somewhat introductory purpose in relation to the technical tools and concepts used throughout the book, hence the greater prominence. In B6, the scientific and brain discourses have been greatly downplayed in favour of less technical discourses and word choice, as Lindstrøm in this chapter mainly draws on his own colloquial terms and concepts instead. Thus, Lindstrøm’s communicative approach to the scientific aspect of neuromarketing is less outspoken in B6 and his scientific focus has been downplayed quite significantly. What is also interesting to notice in regards to Lindstrøm’s use of the scientific and brain discourse is how he draws on them. The words constituting the two discourses are scattered throughout both chapters and hereby the discourses almost become pseudo-discourses. They appear in such a manner and with such low frequency that the reader is left with the impression that they are not as such serving any explanatory cause but rather, serve as instrument to emphasise a scientific backdrop that does not exist, hence giving them a pseudo-scientific notion.

The fact that the same discourses are not dominant in both chapters, greatly influences
the point of attention for the reader in the individual chapter. In B6, the most dominant discourse is the religious discourse and hence the discursive eye catcher, as everything within the chapter is paralleled and related to religion. The religious discourse is used as a mean to exemplify how neuromarketing can be put into practice and thus, serves as one of the focal discourses of the chapter. The religious discourse is continuously related to the parallel discourse, as B6 is one long comparison of branding and religion and their many common traits. Despite the fact that the parallel discourse is articulated through only a few different words, it is omnipresent and dominating throughout B6 in the many comparisons that are continuously drawn: “(...) the emotions we (...) experience when exposed to iPods, Guinness, and Ferrari sports cars are similar to the emotions generated by religious symbols such as crosses, rosary beads, Mother Teresa, the Virgin Mary and the Bible” (Lindstrøm 2008b, p. 125). In B1, the international branding guru discourse imbues the whole text and Lindstrøm himself is hereby greatly highlighted, making him a focal point and discursive eye catcher of the chapter. Another important discourse in B1 is the creating history discourse, as Lindstrøm makes a great effort of explaining and describing how groundbreaking his study is and how exited the reader should be for the chapters and presentations of research to come. Hereby, many of the chapter specific discourses serve to pinpoint the focal point for the specific chapter and lead the attention of the reader in a specific direction. Again, emphasizing the notion of reading independent stories and not necessarily parts of a greater whole or chapters of a book.

The only discourses which are dominant in both chapters are, as mentioned above, the me and marketing discourses. This is evident in the way Lindstrøm greatly emphasizes his own work and role in the studies, referring to my work, my study, I proved and so forth continuously. The marketing discourse is very dominant, however, it does not stand out as much as many of the other discourses, as it blends in more naturally in the context of the book: neuromarketing. By continuously using the marketing and me discourse together, marketing becomes an integrated part of Lindstrøm’s identity and vice versa, almost indicating a hybrid discourse of the two: a me-marketing discourse. In fact, the emphasis on and domination of these two discourses are so evident and strong that it almost questions whether it is neuromarketing that is the focal point of the
book, or in reality Lindstrøm and his marketing career. In this relation, another interesting discourse is the name-dropping discourse, which is present in B1 and dominant in B6. Returning to the notion of B1 serving a somewhat introductory purpose for the remainder of the book, it seems reasonable to assume that had the mentioning of brands played a more significant part in B1, then the name-dropping discourse would also have been dominating here. In B6, on every given opportunity, Lindstrøm explicitly mentions titles, brand names and people related to a given brand, place or company. Nothing is too insignificant to be mentioned. This greatly draws attention to Lindstrøm’s exhaustive portfolio of brands and people he has worked with and throws a smokescreen on the actual substance of many of his claims.

In relation to Lindstrøm’s use of discourses it is interesting to notices that despite the fact that he has written a book about neuromarketing, a neuromarketing discourse is only evident in B1, however, completely missing in B6. It can be argued that the scientific and marketing discourse together implicitly constitutes a neuromarketing discourse, however, the use of the two do still not fully create an actual neuromarketing discourse. What is also interesting to notice in this relation is the fact that the word neuromarketing is not even used in B6. The scarce use and complete lack of the neuromarketing discourse in the respective chapters, further enhances the notion of Buy-ology being more about Lindstrøm himself than about neuromarketing.

6.1.2.2 Intertextuality

The very first thing Lindstrøm does in both chapters is to make use of manifest intertextuality with the respective chapter titles and explicit quotes “A Rush of Blood to the Head”, which is a song and album by Coldplay and “I Say a Little Prayer”, which references Dionne Warwick’s song with the same title from 1967. In fact, all of the chapter titles in Buy-ology are references to popular songs\footnote{See appendix 6}. By initiating each chapter this way, Lindstrøm is very likely to strike a common denominator in all of his readers, as the likeliness of recognizing one or more titles is high. Hereby, he is also able to downplay the level of complexity in regards to neuromarketing, as it can be argued that pop songs have a much lighter and entertaining ring, than technical terminology.

\footnote{See appendix 6}
Several other quotes and stories are also explicitly referenced within both chapters, hereby also constituting manifest intertextuality or at least what appears to be manifest intertextuality. Despite the fact that several pieces of text are highlighted as quotes, it is not possible to check if they in fact are, as no source of reference appears alongside them. This is also the case for the chapter titles, if one does not know it is a song title, then there is not reference explicitly stating so.

**Intertextuality** is highly evident in both chapters, as Lindstrøm in both cases draws heavily on previous research related to neuromarketing and a large number of stories and in particular anecdotes related to both branding, his personal and especially professional life. **Internal relations** are also visible, as both chapters have explicit references to other chapters of the book, hereby creating a notion of several interconnected studies spanning across both time and place. This, however, is most obvious in B1, which, as mentioned above, has a somewhat introductory function for the following chapters. **External relations** are prominent throughout both chapters as well, including references to other studies within neuromarketing, marketing campaigns, famous persons and brands. This high degree of intertextuality and internal intertextuality also serves to link the chapters together. As previously mentioned, they carry a strong resemblance to individual stories and perhaps this was evident to Lindstrøm as well, since he has found it necessary to pinpoint the links to the other chapters of the book and hereby emphasise that they are in fact interconnected.

**Interdiscursivity** is also evident throughout both chapters, as Lindstrøm draws on several established discourses and interweave them with his own. For example, when using the marketing discourse he often incorporates the me discourse, hereby creating a hybrid discourse: the international brand guru discourse. The interdiscursive mix of the scientific and marketing discourses often attempts to blur the lines between the two discourses, hereby enabling Lindstrøm to create his own presentation of the two, both individually and in combination. In B6, Lindstrøm continuously articulates the religious discourse and marketing discourse together and by drawing on evidence from two different contexts, he creates his own context in which the two established discourses almost melt together in a perfect synergy, again serving as a mean by which Lindstrøm
can direct the attention of the reader. Interdiscursivity is also very evident in the way in which Lindstrøm constantly interweaves the me discourse in almost every other discourse, hereby infusing a piece of Lindstrøm in everything that is touched upon. According to Fairclough, intertextuality and interdiscursivity can be an expression of instability, stability, change and continuity - depending on the use. In the case of Buy-ology, the use of interdiscursivity creates a notion of change, as Lindstrøm draws on established discourses and conventions in new ways, however, he does it so consistently and thoroughly that it does not come across as change but rather, as continuous and coherent text.

In relation to Lindstrøm’s use of intertextuality and especially his use of manifest intertextuality, it is important to notice, as also mentioned above, the source references. Lindstrøm does not include many references and those that can be found in the last part of the book are mainly website addresses, which does not offer any further directions or the possibility of deciphering a title or other useful information. Thus, making it very difficult to decode and validate them. An example of this is dr. Montague’s study concerning Coca Cola and Pepsi Cola. Through our own research, we have gained access to the original article. However, if we were to find the article based on the information presented by Lindstrøm it would be quite difficult, as the only information he gives is the following (long) web-address:


Had Buy-ology been electronic it would have been somewhat defendable including a source reference in this way, however, when done in a book it appears a hopeless task to retrieve the source. It requires quite an effort to write the entire link correctly and if Science Direct at some point in time change their linking structure, the link will not work and the reader of Buy-ology will not have many chances of finding the article. However, had Lindstrøm referenced the article based on one of the academically approved reference methods, such as Harvard Referencing, it would have been a lot
easier to gain access to his sources. Lindstrøm’s choice of referencing also leaves the impression that he purposefully attempts to derail the retrieval of his references. In this relation, it is interesting to notice that B1 has 20 source references listed, fourteen of these are web-addresses, from which only five are working. The reference list for B6 only includes four web-addresses, out of which only two are actually working.\footnote{The web addresses have been verified February 2, 2014.} In relation to B6, Lindstrøm uses more than two pages to describe what he coins ‘the nun-study’. The reference he presents to this study is ScienceDaily.com, which uses the rather popularized title “Brain Scan Of Nuns Finds No Single 'God Spot' In The Brain” along with a very light version of the article. However, through a rather extensive online search, we were able to locate the original peer-reviewed article with the rather different title ‘Neural correlates of a mystical experience in Carmelite nuns’ (Beauregard, Paquette 2006). Thus, Lindstrøm does not provide much help for his readers, should they wish to locate any of his source material. In general, when going through Lindstrøm’s references, one cannot help but notice the lack of scientific sources. However, as the above example shows, it is difficult to actually see from Lindstrøm’s style of reference, which type of source he has actually used. Nevertheless, many of the references point towards mainstream media, such as New York Times, The Newyorker, Newsweek and Daily Mail. Furthermore, his indications of the references within the respective chapters also seem a bit peculiar; as they are not to be found where one would normally place these in accordance with academic standards (Day 1998, p. 56). Rather, they are scattered at what appears to be random coincidence, again not providing much help, should one wish to check the manifest intertextuality or any of the sources in general.

6.1.3 Social Dimension

The social dimension is where the broader social practice, socially accepted rules and conditions can be approached and related to the discursive practice. In regards to this it is important to notice that Lindstrøm is writing “for everyone” (Lindstrøm 2008b, p. 227), as this greatly widens audience. Thus, no prerequisite knowledge is required for reading Buy-ology. By writing a book for everyone, Lindstrøm is furthermore able to
circumvent the academic norm of intersubjective testability, as he explicitly states that his audience is not scientific academia and hereby does not necessarily have to comply with their conventions. Thus, as specialists within the field of neuroscience, or the lay audience for that matter, are not able to review his research, observations or results, Lindstrøm is free to formulate his statements as vividly as he wishes, for example when he labels his work as *groundbreaking*.

The Buy-ology study is conducted through the use of fMRI and SST. fMRI is a well known, and academically standardised brain imaging technology, as above (cf. section 4.3.1). SST, however, is a method that we have not been able to locate in the vast amount of articles, which have been scrutinised in relation to the research for our thesis, hereby bringing the prevalence of the practice into question. Lindstrøm, in B1, claims to have selected “(...) the best scientists – and the most sophisticated instruments around (...)” (Op.cit., p. 33). However, in the appendix of Buy-ology he states that, “Since Neuro-Insight, the company that performed our SST-scans, is an independent market research provider that uses its own brain measurement equipment and resources (...) it was not subject to the same ethical review proceedings as the fMRI experiments” (Op.cit., p. 223). Hereby implying that the SST method is actually not as scientific or academically grounded as suggested throughout the book. What is noteworthy in this relation is that by applying the SST method, the results of Buy-ology based on this method, which is the majority, cannot be approved as data within an academic context. The experiments have not been conducted through standard review proceedings and do therefore not follow the notion of intersubjective testability, as the private company NeuroInsight has exclusive rights to the methods and results.

Another important element of the social dimension is Lindstrøm’s ‘crave for fame’. He explicitly states in an interview with a Danish newspaper that what drives him, is fame(Vestergård 2008). This serves as a possible explanation of his importance of underpinning all results as *groundbreaking* and *provocative* and his explicit statement “I’m a global branding expert” (Op.cit., p. 16), as Lindstrøm hereby continuously directs the attention of the reader towards himself and what he has achieved and what he has uncovered. In this way, Lindstrøm’s social practice becomes an agenda of not
serving to making neuromarketing famous but rather: himself. According to Fairclough, social practice can be thought of as ways of controlling the selection of certain possibilities and the exclusion of others, as it determines the link between practice and context (Fairclough 2003, p. 25). Thus, Lindstrøm carefully selects only the positive and groundbreaking possibilities and excludes everything mediocre, which would work against his image as a branding expert and he hereby attempts to control how he is perceived. Social practice is also the articulation of different social elements and hereby, social practices creates and articulate discourses (Fairclough 2003, p. 25). This is evident in Lindstrøm’s heavy use of the me discourse and the articulation of the international branding guru discourse, which both serve to greatly highlight Lindstrøm and his competencies. It also suggests a reason to why the neuromarketing and scientific discourse are not dominating: Lindstrøm’s own fame is first priority.

Lindstrøm’s marketing background also plays an important part in the social dimension and in the social practice, as he uses several marketing tools, both in regards to the use of communication within the Buy-ology book but also in relation to branding, to market both himself and neuromarketing. Hereby, marketing is strongly emphasised as an important aspect of the social dimension. Through his rhetoric style, Lindstrøm not only interweaves himself into the Buy-ology study but also into his notion of neuromarketing in general and coupled with the vast amount of coverage he has received in mainstream media; Lindstrøm almost becomes synonymous with neuromarketing. Thus, in can be argued that Buy-ology is written by a marketer to promote himself, his study and neuromarketing in general. An example of this multi-faceted promotion is seen on page 11, where the Buy-ology study is presented, not only as Lindstrøm’s personal quest, but also as the most revolutionary neuromarketing experiment in history, able to reveal hidden truths of the human brain (Lindstrøm 2008b, p. 11). Lindstrøm emphasises that he (being a consumer himself) does not want to help companies gaining an ability to manipulate the consumers with his study (Op.cit., p. 22). Through this statement, he expresses an understanding for the consumers’ potential fears in relation to neuromarketing and promotes himself as ethically responsible as he further elaborates on how he has turned down projects, which he found to be unethical. Lindstrøm also implies that consumers ought to be concerned, as he himself expresses private concern
“I’m as susceptible to products and brands as anyone”, as well as professional concern “(...) I wasn’t interested in helping companies manipulate consumers” (Ibid.). This also serves to enhance Lindstrøm’s postulate of writing for everyone.

As mentioned earlier Lindstrøm, especially in B1, uses the me and the international branding guru discourses to brand himself. Incorporated in the international branding guru discourse is the branding of Lindstrøm himself, as one of the best marketers worldwide. He raises himself above his colleagues and competitors, e.g. when stating that “In essence, neuromarketing revealed what I’d always believed (...)” (Op.cit., p. 33). Thus, Lindstrøm’s social practice is primarily discursive, as it is through this aspect that he is able to reproduce and change knowledge of neuromarketing, as well as constructing his own identity as a branding expert. It is also through his social practice that Lindstrøm is able to construct a notion of neuromarketing for everyone.

6.1.3.1 Power

It can be argued that Lindstrøm makes use of what Fairclough refers to as power in discourse and furthermore hidden power. Power in discourse is enacted through the way in which Lindstrøm holds the relational power, as the people mentioned in the chapter are powerless participants in the sense that they have no power in how they are quoted or how their work is presented. Lindstrøm solely controls and constrains their contributions and the content of the chapter, leaving him as the judge of which data should be emphasized and brought forward. Hidden power often occurs when there is a sharp division between text producer and consumer, as the text producer hereby has sole power to select, which information is included and what is excluded. Lindstrøm singlehandedly selects how to present the findings of his research, which parts he wishes to reveal, what aspects to emphasize and what to leave out. Lindstrøm furthermore draws on power from the established discourses; the scientific and brain discourses to provide validity to the study and its results. This power draws on the positivist notion of science being the highest form of knowledge. Hence, the focus on validity and statistics is of importance, serving to present the results of the Buy-ology study as scientific facts. However, as mentioned above, the study does not actually with academic standards, as there is no record of how any of his experiments have been
conducted or the specific results and observations hereof. Through use of the marketing and international branding guru discourses, Lindstrøm also credits himself power within the field of marketing and hereby downplay the importance of presenting the results of the study, by conveying a notion of authority as sufficient backing for his many claims in regards to the possibilities of neuromarketing.

6.1.4 Argumentation

Through the use of Toulmin’s model of argumentation, the main claim of each chapter has been analysed. We will thus, present the main findings in relation to these specific claims, before approaching Lindstrøm’s argumentation in general and as a whole in relation to the Buy-ology study. Noticing that a main claim and several sub-claims are present in each chapter, it can be argued that each chapter includes a hierarchy of arguments.

The **claim** found in B1 is that: Warning labels on cigarette packages have “(...) become a killer marketing tool for the tobacco industry” (Op.cit., p. 15). The following information is presented to serve as **data** for the claim: “Warning labels (...) had no effect suppressing the smokers cravings at all” (Op.cit., p. 14) “(...) by activating the Nucleus Accumbens, it appeared they actually encouraged smokers to light up” (Op.cit., p. 15). However, the data for the claim is quite unclear and vague and hereby questionable, since Lindstrøm does not present neither the details concerning the methods and results of the experiment nor the precise number of participants. The **warrant** is recognised as a generalisation based on smokers, who were not allowed to smoke for four hours in connection the experiment (Op.cit., p. 7). **Modal Qualifiers** and **Rebuttals** are not recognised in relation to this experiment. The lack of these can be due to Lindstrøm’s notion of the claim being the only possible explanation, thus not finding it necessary to include any of these. Lindstrøm presents his **backing** in the shape of various numbers and presumable facts concerning the costs related to smoking and a story from an Australian Convenience Store, about which warning labels and pictures smokers preferred on their cigarette packages ((Op.cit., pp. 11-12). Relating the above argumentation concerning cigarette-warning labels to Toulmin’s classification of arguments, it can be argued that Lindstrøm uses **reasoning from Generalisation.**
takes this generalisation a step further when arguing that the experiment regarding cigarette-warning labels is plausible in all cases of disclaimers and health warnings “What effect do disclaimers and health warnings have on us? (Read on.)” (Op.cit., p. 12). Lindstrøm’s argument can be challenged by questioning whether data based only on smokers is applicable, if he wants to demonstrate that the warning labels had “(...) become a killer marketing tool for the tobacco industry”. In order to prove this, scans from non-smokers should be included as well, since these would be the segment the tobacco industry would pursue, if targeting new customers. The argumentation is illustrated in the model below.

Figure 6: Lindstrøm’s claim in B1. Own creation based on Toulmin’s simple model

The overall claim put forward by Lindstrøm in B6 is the, to him, obvious parallelism between religion and branding, which is explicitly stated: “clearly, spirituality and branding are inextricably linked” (Op.cit., p. 111). The data is found through a neuroimaging experiment, which showed that “when people viewed images associated with strong brands (...) their brains registered the exact same patterns of activity as
"they did when they viewed religious images" (Op.cit., p. 124). On this ground the **warrant** is that: if images of brands and religious icons create the same brain activity, then they must also be closely connected. A **modal qualifier** is incorporated in order to strengthen the claim: “Bottom line, there was no discernible difference between the way subjects’ brains reacted to powerful brands (...) and religious icons and figures” (Op.cit., pp. 124-125). This serves as modality, as Lindstrom hereby indicates a factual assertion rather than a guarded view. **Backing** is expressed explicitly through Lindstrøm’s investigation of the religions of the world, in which he interviews 14 prominent religious leaders and discovers that: *almost every religion has ten common pillars underlying its foundations (...) and just as I suspected, these pillars have a lot in common with our most beloved brands and products*” (Op.cit., p. 111). Coupled with this is the implicit notion that Lindstrøm is a *brand expert* (Op.cit., p. 119) and therefore is able to draw parallels between branding and religion. No evidence of a **rebuttal** to back Lindstrøm’s claim was found in the chapter. The argumentation is illustrated in the model below.

**Figure 7**: Lindstrøm’s claim in B6. Own creation based on Toulmin’s simple model
6.1.5 General Argumentation in Buy-ology

Lindstrøm mainly argues through the use of conclusive arguments in Buy-ology, which is evident in the way he lays out his arguments as the only ‘possibility’ and does not reflect on other possibilities or explanations. There is only one possible conclusion: Lindstrøm’s. The conclusive arguments are made visible through his choice of words and in particular in his use of intensifying modals (cf. section 6.1.1.2), as by adding a “clearly” or “unsurprisingly” Lindstrøm emphasizes the conclusive nature of his arguments. Most noteworthy in relation to the arguments are their biased nature, as no contrasting or even supportive opinions or research are included to shed light on the matter, further advancing the impression of a conclusive argument. Lindstrøm’s conclusive arguments can, however, be challenged according to Toulmin’s notion of an argument, which we will exemplify below.

In B1, Lindstrøm claims that the Buy-ology study is “a groundbreaking neuromarketing study” (Op.cit., p. 9). With this statement Lindstrøm presents the overriding claim, which the remainder of the book aims to support – that his Buy-ology study is groundbreaking. Throughout B1, several sub-claims, data and warrants are presented as support for this overriding claim. We will, through the use of Toulmin’s basic model, examine some of the Lindstrøm’s sub-claims, data and warrants. In relation to Toulmin’s model, these sub-claims, can also function as backing for the overriding claim. The details Lindstrøm presents throughout B1 concerning size, cost and duration of the study are used as data and thus the warrant is that since the study is larger and more expensive than any other studies, and as Lindstrøm has worked on it for three years, it is in fact groundbreaking. A sub-claim of the size of the study is that “It was twenty-five times larger than any neuromarketing study ever attempted” (Op.cit., p. 11). Lindstrøm supports this sub-claim repeatedly, as he points out how the study involved ”2081 volunteers” (Ibid.) and “over two thousand study subjects” (Op.cit., p. 22). However, the number of study subjects of the individual experiments is in fact much lower. In B1 “The thirty-two smokers in today’s study” (Op.cit., p. 11) are mentioned and “a similar sample of smokers in the United States” (Op.cit., p. 9). Hence, the precise number of study subjects in this individual experiment is not stated. In relation to the experiment concerning religion and sport, the number of participants is
stated to be *sixty-five male participants* (Op.cit., p.123). Thus, to challenge the sub-claim concerning the overall size of his Buy-ology study, it would be relevant to ask, which studies Lindstrøm draws comparison from. Especially because his Buy-ology study, is in fact not one study per say but several individual experiments constituting a whole. By presenting his Buy-ology study as *the largest study ever conducted*, he implicitly states that he is knowledgeable of the total amount of research conducted within the context of neuromarketing, however, this seems reasonable to question. Thus, Lindstrøm’s claim and sub-claim can be challenged greatly.

Chapters two till ten all introduce an individual experiment, which is part of the overall Buy-ology study and these individual experiments hence serve as data, which support the overriding claim: “*a groundbreaking neuromarketing study*”. Several pieces of data and the sub-claims they serve to support are introduced in B1, however, they are not further elaborated before the respective chapter they belong to. For example, in B1 an introduced sub-claim is: “*Is our buying behaviour affected by the world’s major religions?*”, which is succeeded by a preview to the data (“*You bet and increasingly so.*)” Nevertheless, this claim and data are not to be found in B6. Still, as previously mentioned, Lindstrøm, in B6, presents the results of the experiment concerning religion to be “*(...) as groundbreaking as the study itself*” (Op.cit., p. 121). Thus, instead of presenting the relevant data he presents a new claim. What Lindstrøm presents as claim and data in B6, concerns the parallelism between religion and branding, not whether religions affect consumers’ buying behaviour. This type of argumentation is seen throughout both chapters; new claims are continuously presented, whereas the supporting data and hence warrant are often very difficult to find, if not completely missing.

### 6.1.5.1 Division of Arguments

After having exemplified how Lindstrøm specifically and heavily uses conclusive arguments, we will now move on to Toulmin’s notion of division of arguments and explore the argumentation from a more general perspective.

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8 No explicit reference is made to chapter six, however, as chapter six is the only chapter concerning religions, this must be the chapter in question.
Lindstrøm makes use of **analytical** arguments, as many of his conclusions are included in the data and therefore do not require any inference, as his arguments are presented as being the only explanation and hereby excludes all other explanations. For example “the most successful products are the ones that have the most in common with religion” (Op.cit., p. 120) and “clearly, our emotional engagement with powerful brands (...) share strong parallels with feelings about religion” (Op.cit., p. 126).

Lindstrøm also argues through **warrant-using** arguments. However, what is noteworthy in this relation is the fact that he rhetorically makes the arguments appear as if they were **warrant-establishing**. Warrant-establishing arguments are based on induction, in which the premises seek to provide strong evidence for the validity of the conclusion. However, Lindstrøm relies on deduction rather than induction. Deduction involves arriving at a logical conclusion, which is considered valid if it is logically consistent, however, it does not have to be true in the sense that it corresponds with reality. For example, “Like religions, successful companies and successful brands have a clear, and very powerful sense of mission” (Op.cit., p. 113) and “Successful religions also strive to exert power over their enemies (...) this kind of us vs. them mentality can be seen throughout the consumer world as well” (Ibid.). These two arguments are based on logic validity and hence deduction. Due to their logic correlation between premises and conclusion, the examples also show use of **formally valid arguments**, however, what is important to notice in this relation, is that if one or both premises are false the conclusion drawn from the premises will also be false. Thus, through his argumentative and rhetoric style, Lindstrøm is actively attempting to present his arguments and claims as correct and as unquestionable as possible.

### 6.1.6 The Missing Conclusion

In B1, Lindstrøm presents his expected conclusion to the Buy-ology study: “The results of the brain scan studies I carried out were just as provocative, fascinating and controversial as the cigarette research project. One by one, they brought me closer to a goal I’d set out to accomplish: to overturn some of the most long-held assumptions, myths, and beliefs about what kinds of advertising, branding, and packaging actually work to arouse our interest and encourage us to buy. If I could help uncover the
subconscious forces that stimulate our interest and ultimately cause us to open our wallets, the brain-scan study would be the most important three years of my life” (Op.cit., pp. 15-16). By saying that he will “overturn some of the most long held assumptions (…)” Lindstrøm indicates that he already knows the results of the Buy-ology study, being that the way marketing has been handled up until now is wrong. Chapter eleven, which is called ‘Conclusion’, does not actually conclude anything. Concluding arguments are presented, for example “In this book, you’ve witnessed an historic meeting between science and marketing” (Op.cit., p. 194) and “Neuromarketing is still in its infancy (…) it will certainly help predict certain directions and trends that will alter the face, and the fate of commerce across the world” (Op.cit., p. 204). The ‘conclusion’ chapter introduces even more studies and advertising examples and is rounded up with an invitation for the reader to visit Lindstrøm’s website (Op.cit., p. 205). Thus, Lindstrøm’s conclusive chapter does anything but conclude rather, it further builds suspense and leaves the reader with even more loose ends and questions.

6.1.7 Lindstrøm’s Notion of Neuromarketing

Based on the above analysis, we will now approach Lindstrøm’s notion of neuromarketing. In this relation, Lindstrøm’s marketing background is of significant importance, as this insinuates that he is actually a layman in relation to neuroscience. Lindstrøm considers neuromarketing to be a tool, which will be able to ‘save’ marketing by providing “the naked truth” for marketers (Op.cit., p. 22). Lindstrøm both expresses his notion of neuromarketing in general and through his statements concerning the Buy-ology study, as the study is in fact based on neuroimaging. Thus, as Lindstrøm hopes to “(...) uncover the subconscious forces that stimulate our interest and ultimately cause us to open our wallets (...)” (Op.cit., p. 16) with the help of the Buy-ology-study, he must consider it a prospect of neuromarketing. In regards to neuromarketing in general, Lindstrøm argues “So if marketers want the naked truth – the truth, unplugged and uncensored, about what causes us to buy – they have to interview our brains” (Op.cit., p. 22). Thus, he compares neuroimaging with one of the traditional marketing research tools of interviewing consumers. He furthermore describes the ability of these tools as “They don’t weaver, hold back, equivocate, cave in to peer pressure, conceal their
vanity, or say what they think the person across the table wants to hear. No: like fMRI, SST was the final word on the human mind. You couldn’t get anymore cutting-edge than this (...) neuroimaging could uncover truths (...)” (Op.cit., p. 24). Thus, insinuating that the results of traditional consumer interviews are inadequate. From these examples it is clear that Lindstrøm has high expectations in relation to the application of neuroimaging to marketing and believes that it can be used in relation to “(...) uncovering the brain’s deepest secrets” (Op.cit., p. 22).

Accordingly, Lindstrøm claims that the results of the Buy-ology study have “(...) revealed the hidden truths behind how branding and marketing messages work on the human brain (...)” (Op.cit., p. 11). Thus, to sum up; Lindstrøm advocates the use of neuromarketing as the future research method for marketing and does not mention any limitations of the capabilities of the practise rather the quite contrary.

6.2 Two Scientific Articles on Neuromarketing

Based on the individual analyses of A1 and A2, we will now summarise the main findings and put these into context and perspective and examine the scholars’ notion of neuromarketing. For an overlook of the findings of the individual chapter analyses, we kindly direct the reader to appendices 9 and 11.

6.2.1 Textual Dimension

The general structure of the two articles is very similar and in accordance with conventions within academic writing (Hyland 2004, p. 63). Both initiate with the title of the article, followed by the scholars’ names and an abstract. Then follows an introduction, coupled with a description of the article’s purpose. From here, the articles differ vaguely in how the structure continues. A1 explicitly states three research questions, which will be investigated throughout the article, whereas A2 does not have any specific research questions as such but rather sets out to critically review existing literature on neuromarketing. However, despite the subtle difference in their outset, the articles continue in a somewhat identical structure. First, they set out by explaining the practice of neuromarketing in a rather general manner, which tools are used and in what
context and so forth, as they consider it necessary to understand the context of the field of neuroimaging before one can understand the application. Secondly, they review existing literature and hereby arrive at sub-conclusions, before continuing to review more literature and arrive at yet another sub-conclusion. A constant comparison between own findings and existing literature is also evident in both, along with continuous reflections on their respective findings in relation to the world of product marketing and consumer psychology. Both articles are rounded up with a conclusion and suggestions for future research directions and areas of interest. A very high level of literature references is also evident in both articles and the last pages in both articles are filled out by the reference list, a feature which is considered as central in academic writing (Op.cit., p. 22).

6.2.1.1 Vocabulary

The **word choice** is both very formal and technical and the articles hereby lend themselves to a very factual and technical impression and presentation. In both articles, a heavy use of abbreviations is also evident, as the full Latin and medical terms often only are used as introduction to a given concept. Afterwards an abbreviation is used, advancing the notion of ‘insider knowledge’ and thus, the notion of two articles written by academics for an academic audience. For example “(...) the application of inhibitory TMS to subjects’ dlPFC decreased subjects’ predicted values (...)” (Plassmann et al. 2012, p. 31). The consistent use of factual and objective terms serves to create a concise and precise argumentation in relation to word choice, hereby leaving out unnecessary descriptions and redundant data. Thus, the word choice concurs with academic language as proposed by theory (Day 1998, p. 2). The word choice also serves to incorporate validity in the two articles, as existing research is critically reviewed and related to the methods by which the data was retrieved.

In regards to **Attitudinal lexis**, the scholars present their statements in a very factual manner and keep within a rather objective stance. However, on a few occasions they do express some of their findings in a more assessing manner, for example “Interestingly, in these follow-up studies (...)” (Plassmann et al. 2012, p. 25) or when wishing to shed light on both strengths and weaknesses of a research method, e.g. “(...) the simpler approaches (...) are easy and cheap to implement but they provide data that can include
bias, and are therefore seen as not very accurate” (Ariely, Berns 2010, p. 284). The scholars thus mainly draw on attitudinal lexis, when wish to highlight something of particular significance.

This factual presentation can be linked to the scientific nature of the articles, as they hereby are able to emphasize the information and findings without using distracting features and idiomatic expressions. A1 includes only one metaphor “(...) the ‘holy grail’ of hidden information” (Ariely, Berns 2010, p. 287) which can be considered as commonly known, whereas the analogy “(...) analogous to identifying a genetic polymorphism associated with a particular cancer without understanding what that gene does – which is likely to yield specific but not general insights” (Ibid.) requires knowledge from within the field of medicine to fully grasp the meaning. A2 only presents one analogy used to describe neuromarketing as a ”magnifying glass to observe mental processes without asking consumers directly” (Plassmann et al. 2012, p. 30). Even in using metaphors and analogies, it is still within the realm of science, again serving to underpin the factual and concise formulations found within the articles.

6.2.1.2 Grammar

Both articles have a very consistent use of epistemic modality and thus how the scholars position themselves in regards to their work. In this relation, hedging is used consistently and is a central element in both. Hedging plays a central part through the way it conveys caution and possibility and is evident through an extensive use of the modals would and should, as the scholars hereby urge a sense of caution upon the reader, the results and themselves throughout the articles. In both articles can is the most used modal and it primarily occurs in relation to the findings of the capabilities of neuroscientific research, hereby expressing certainty in relation to evidence that the scholars have collected and presented, such as “Expectation can modulate what consumers pay attention to via brain structures that include the dorsolateral cortex” (Op.cit., p. 21) and “Such similarities suggest that neuroimaging can become a useful tool (...)” (Ariely, Berns 2010, p. 285). Hedging if also used in relation to accuracy and to express somewhat cautious certainty “One particular brain area could be involved in encoding both brand personality associations and brand familiarity” (Plassmann et al.
2012, p. 29). In general, an extensive use of modality as hedging is incorporated in both articles when referring to possible explanations, hereby underpinning the notion that none of the findings are definitive, but rather that they are probable. The modal should is also used in the same manner in both articles, serving to indicate recommendations from the scholars, often in regards to what they consider as advisable and feasible directions for future research and scholars “(...) the academic community should take this topic seriously (...) We should ask deeper questions (...)” (Ariely, Berns 2010, p. 291).

Both articles have a rather similar and intertwined use of personal pronouns and passive voice. The passive voices serves to emphasise objectiveness and to depersonalise the statements in the articles, as these statements do not include any first-person pronouns. This can be attributed to the notion of what is important in the articles is not who said it but what was done and by downplaying their own emphasis, the scholars can emphasise research and findings. The usage of personal pronouns is seen only in relation to presentation of research methods e.g. “three fundamental questions, which we will address” (Op.cit., p. 284), concerning results: “we conclude with a broader view (...)” (Plassmann et al. 2012, p. 30) or as part of hedges in relation to results: “we can at least identify” (Ariely, Berns 2010, p. 289). The articles are both structured mainly by declarative sentences. A grammatical structure, in which the articles differ, is through the use of interrogative sentences. These are not present in A2. However, they are used occasionally in A1, where they i.a. serve as research questions. Thus, underpinning the notion of two factual texts, which strive to stay objective throughout the course of laying out their findings.

6.2.2 Discursive Dimension

Below is a table clarifying which discourses the scholars make use of in their articles and in which article the respective discourses are present.
<table>
<thead>
<tr>
<th>Discourse Type</th>
<th>Hope and Hype (A1)</th>
<th>Branding the Brain (A2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbreviation Discourse</td>
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</tr>
<tr>
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<td>Present</td>
</tr>
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<td>Article Discourse</td>
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</tr>
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<td>Dominating</td>
</tr>
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<td>Brand Discourse</td>
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<td>Present</td>
</tr>
<tr>
<td>Concluding Discourse</td>
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<tr>
<td>Economy Discourse</td>
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<td>Growth Discourse</td>
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<tr>
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<td>Dominating</td>
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<td>Memory Discourse</td>
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<td>Neurological Discourse</td>
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<td>Online Discourse</td>
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<td>Political Discourse</td>
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<td>Rational Discourse</td>
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<td>Reward Discourse</td>
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<tr>
<td>Skepticism Discourse</td>
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<tr>
<td>Scientific Research Discourse</td>
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<td>Dominating</td>
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<tr>
<td>Time Discourse</td>
<td>Not present</td>
<td>Dominating</td>
</tr>
<tr>
<td>Uncertainty Discourse</td>
<td>Dominating</td>
<td>Dominating</td>
</tr>
<tr>
<td>Validity Discourse</td>
<td>Dominating</td>
<td>Dominating</td>
</tr>
</tbody>
</table>

Table 3: Discourses in A1 and A2
As seen from the above table, both discursive similarities and differences are evident. Between the two articles a total of 39 discourses were found of which five are dominating in both. The dominating discourses that the articles share are the: brain, validity, marketing, scientific research and uncertainty discourses.

What is interesting to note in relation to the dominating discourses, is the fact that they almost all relate to what can be considered as general rules for scientific writing and the epistemological standpoint of positivism. All results are continuously reflected upon in terms of their validity, pinpointing weaknesses as well as strengths, while describing the research methods from which the results have been derived, hereby opening up for intersubjective testability. The aim of positivism is to create as valid knowledge as possible and by using the validity discourse the scholars are able to demonstrate this aim and the degree to which it is achieved. The uncertainty discourse almost serves to emphasise the validity discourse, as the scholars (again) constantly reflect upon their findings, which is evident through words such as bias, problematic and critical issues. Moreover, this discourse is also made visible through the extensive use of hedging in both articles, serving to emphasise caution and reflection in the results put forward and underpinning the important notion validity. The scholars do not hereby express uncertainty nor vagueness through the discourse but rather that their results are not necessarily final, hereby leaving room for further research.

As both articles share the same focal point, neuromarketing and research hereof, the brain and scientific research discourses are often used together in an interwoven manner, hereby conveying both articles to a rather consistent use of medical terms used in conjunction with their respective approach to research and its related research methods. The dominating use of the scientific research discourse also corresponds with the notion of intersubjective testability, which entails a description of the applied research methods, hereby enabling other researchers to verify or falsify the results derived from the research. In relation to the scientific and brain discourses, an abbreviation discourse is very often found in both articles, as after having introduced

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9 “Scientific text is precise, impersonal and objective. It typically uses the third person, the passive tense, complex terminology, and various footnoting and referencing systems” HARTLEY, James. Academic writing and publishing - A practical handbook, p.3.
the full Latin term of a given aspect, the abbreviation is frequently used later on when referring to the same aspect. This is done so frequently that the abbreviations become a discourse in themselves. This reflects that the scholars have a strong emphasis on the actual neurological processes related to the practice of neuromarketing and furthermore a continuous relating of these functions in regards to research, this correlating with the abovementioned validity discourse.

The marketing discourse is also dominating in both articles. The brain discourse is often related to the neuro-part of neuromarketing, the marketing discourse is thus what constitutes the marketing-part. The marketing discourse is mainly used to put the neurologic research into context, in regards to how and where neuroscientific tools and methods may play a part in marketing. What is noteworthy in relation to all the dominant discourses is the fact that they operate simultaneously and overlap each other throughout the articles, in order to construct and convey the scholars’ impressions and opinions of neuromarketing.

Article specific discourses are also evident, relating to the respective theme of the article. In A1, both a hope and hype discourse is present, which is naturally related to the article’s title and objective of pinpointing what is hope and what is hype in relation to the use of neuromarketing, thus serving as the frame of reference within the discursive use in the article. In A2, the scholars set out with the objective of critically reviewing the application of neuromarketing, leading to a dominating time discourse in terms of what has been done and what could be done in the future and a dominating neurological discourse, relating to quite detailed descriptions of which neurological tools and processes are of interest in relation to an application to marketing. Thus, apart from a few article specific discourses, the articles share many of the same discourses and hereby convey themselves to a rather consistent presentation of neuromarketing and its uses. The discursive approach to neuromarketing furthermore seems to be highly conventionalised within both articles, as they draw on many of the same dominating discourses. Despite the fact that they content-wise differ, as they are covering two different purposes of research, they still appear carry the notion of great resemblance, as
they share so many of the same discourses. Hereby, the articles adhere to almost the same notion of constructing a scientific article and explaining neuromarketing.

6.2.2.1 Intertextuality

Intertextuality is extensively used throughout the two articles, since they both include a wide range of external relations in the shape of previously conducted research within neuromarketing and related fields. What is evident in the use of external relations is the academic style of including citations, as this style adheres to the norms within academic writing (Day 1998, p. 56). In A1, the 84 references are indicated through use of numerical endnotes, whereas A2 has made use of parentheses to state the surnames of scholars and the year of publication, of the 185 references, with the remaining reference details presented alphabetically as the last part of the article. Both articles have a very high level of intertextuality in regards to previous research and as the articles set out with the purpose of critically reviewing the use of neuroscience in relation to marketing and branding, this high level of intertextuality serves to create an equally high level of stability and continuity. The scholars continuously relate their own findings and thoughts to the work and data of others, hereby creating a high level of reflection and nuanced opinions on the practice, as they draw on previous events and established discourses, such as the scientific and brain discourses, hereby making use of interdiscursivity. A low level of interdiscursivity is evident in both articles, as they mainly draw on established discourses within scientific writing and thus do not reproduce conventions in a new way. Interdiscursivity is often regarded as the attempt to create various types of hybrid constructs by using established discourses or conventions associated with other practises in a new configuration. One could argue that the merging of a marketing discourse and brain discourse is interdiscursivity. However, as the practise of neuromarketing is gaining ground and prominence, the discourse is likewise perceived as established and the lines between the two individual discourses are being erased, leading to natural merging of the two into the neuromarketing discourse.

As the articles are written within an academic context, they also include internal relations in the sense that both articles are initiated by an abstract, which provides a
brief overview of the forthcoming content of the article and its purpose. At the end of the articles, internal relations are also found, when the scholars refer to previous sections of the article in drawing their conclusion, when they point to future research areas and give their acknowledgements, implying a reflection of their own work. Intertextuality between the articles is seen in several occasions, for example when A2 explicitly refers to A1 in relation to the benefits associated with consumer neuroscience (Plassmann et al. 2012, p. 18) and refers to A1’s study concerning use of reverse inference (Op.cit., p. 30), and when presenting the potential of neuroscience as applied to consumer psychology (Ibid.). Seeing that final ratification of academic attributions does not occur until other academics are citing them, A2 is in this way contributing to the approval of the research presented in A1 (Hyland 2004, p. 20). An implicit reference to A1 is given in A2, when referring to “(...) most of the hype around the potential of consumer neuroscience and neuromarketing (...)” (Plassmann et al. 2012, p. 32). This is recognised as an implicit reference, as this is the only occurrence of the word hype and it is used in relation to the research-topic of A1. It can also be regarded as an implicit reference to Buy-ology, seeing that A1 refers to Buy-ology in relation to their first mentioning of hype (Ariely, Berns 2010, p. 284). Furthermore, A1 refers to several previous studies conducted by Plassmann, who is co-authoring A2, and A2 refers to several studies conducted by both of the scholars of A1. This constant use of intertextuality also serves the purpose of making the scholars’ observations more plausible, as the articles through the notion of other similar studies are able to emphasise credibility (Fahnestock 1986, p. 283).

6.2.3 Social Dimension

According to Fairclough, the discursive dimension springs from the social dimension, as the related social practice influences how reality is perceived and articulated within the discursive practise. The social context of the two articles is that of scientific writing, positivism, neuromarketing and research within the field of neuroscience. In this relation, the communicative approach to both scientific writing and research appears to be highly conventionalised (Hartley 2008, p. 3). Despite the fact that many of the discourses differ, the articles draw on the same dominating discourses in regards to accounting for their approach to research and their applied methods. Thus, it can be
argued that the scholars draw on socially accepted rules and conditions in regards to the field of academic writing, positivism and scientific research, and hereby the social dimension is shaping the discourses, as the dominating discourses all relate to the social practise. The discourses mirror how scientific writing and research generally are approached within scientific fields, as high priority is given to validity and the applied research methods. Hereby, a great emphasis is placed not only on the results but also on how the results have been derived. Intersubjective testability is also rooted in the social context, hereby calling upon the convention of laying bare the methods in which scientists have reached their conclusion. The conventions of how scientific research should be presented thus establish the scientific order of discourse, while at the same time reflecting the discourses. As our analysis pointed out, a high level of intertextuality is evident in both articles, which again is an expression of the social practise. The social context of scientific articles dictates the use of reliable and valid sources, hereby conventionalising the use of the work of others’ in demonstrating the validity and reliability of the scholars’ own results. This conventionalisation can also be related to the numerous standards for publishing scientific articles, as many publishers have a general framework and guidelines for how articles must be communicatively constructed. The high degree of intertextuality may also serve as a backing for the scholars, as another convention within scientific writing is peer review. Peer review is the evaluation of others within the same field of competence and is employed to uphold standards of quality and grant credibility (Day 1998, pp. 121-122). The ways in which the articles have been communicatively constructed are thus premised upon the conventions for scientific writing and hence the social practise of delivering intersubjective testability, valid data and the pressure of peer review.

6.2.3.1 Power

In relation to Fairclough’s notion of power, no power relations as such are found within the articles. Power in discourse entails an unequal encounter between contributor and participants and power behind discourse concerns the idea that the social order of discourse is put together and held together as a hidden effect of power. However, as the articles are written within the social context of science, no power relations are, to the best of our knowledge, detectable. It is a text written by academics for academics and
thus, the scholars do not attempt to alter any orders of discourses, they do not constrain
nor control the participants and in respect to the positivist stance of the scholars, no data
appear to have been deliberately omitted which, otherwise, would have led to hidden
power. However, should a layman decide to pick up one of the articles, a case of power
in discourse may become evident, as the encounter would be unequal and controlled by
the scholars, as their scholarly discourses inherently influence the encounter. It can be
further argued that if the scholars wished for their research to reach the mass media and
a lay audience, then their articles could perhaps have conveyed the observations more
clearly. This further calls upon the idea of a possible power struggle, in which the use of
discourses almost borders the monopolisation of knowledge to the academic society,
advancing the before mentioned notion of “insider knowledge” and thus the notion of
two articles written by academics for an academic audience and in this sense thus serve
to uphold the academic power.

<table>
<thead>
<tr>
<th>Scholarly Discourses</th>
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<tbody>
<tr>
<td>Academic Discourse</td>
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<tr>
<td>Biologic Discourse</td>
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<tr>
<td>Brain Discourse</td>
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<tr>
<td>Neuroimaging Discourse</td>
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<td>Neurological Discourse</td>
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<tr>
<td>Scientific Research Discourse</td>
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<tr>
<td>Validity Discourse</td>
</tr>
</tbody>
</table>

Table 4: Scholarly Discourses

6.2.4 Argumentation

The articles include both hierarchies of arguments, and lines of arguments, as is seen in
the three research questions in A1, which are all of equal importance (Ariely, Berns
2010, p. 284). In each article, the dominant claim has been analysed in accordance with
Toulmin’s model of argumentation. We will below present the respective claims from the articles.

In A1 the following claim was found: “(...) brain imaging will provide an accurate marketing research method that can be implemented even before a product exists” (Ibid.). The data is presented through numerous studies, proposing how neuroimaging can help companies in the early design or production phase, in relation to four different lines of business. The studies concerning food products serve as example in our examination of the claim. Thus, the data is the results from three different studies, of which two show how the different dimensions of the multisensory perception of flavour “(...) have been mapped onto distinct brain regions, but with substantial overlap” (Op.cit., pp. 288-289) and the third showing “The OFC is consistently linked to perceived pleasantness, whereas viscosity and fat content seem to be represented in the insula” (Op.cit., p. 289). The warrant is the generalisation based on induction, based on the assumption that since studies have proved that the claim is true for various lines of business, then the sample is considered solid and will therefore also be true for other lines of business. Modal qualifiers are seen through the use of modality and hedging in the conclusion: “(...) we think that the real pay-off will come during the design process. Using fMRI data during design could affect a wide range of products (...)” (Op.cit., p. 291). The modal qualifiers are hereby used to downplay the strength of the claim. Rebuttals are not indicated since they are unnecessary, as the scholars ‘only’ suggest that using fMRI could affect other products than those mentioned in the data. Backing is not explicitly recognised in regards to the warrant. However, it can be seen as represented in regards to the ethical concerns, as it is stated “Product manufacturers could use neural information to coerce the public into consuming products that they neither need or want” (Ibid.). Thus, hinting that product manufacturers might be able to interfere with the personal sphere and the free will of consumers. Accordingly, the scholars emphasise their hope for manufacturers to use the knowledge “(...) to identify new and exciting products that people want and find useful” (Ibid.). The argumentation is illustrated in the model below.
The claim approached in relation to A2, is the first claim presented in the article and concerns the focal point of the article, which is that “(...) researchers and practitioners alike are excited about applying neuroscience to the consumers psychology of brands” (Plassmann et al. 2012, p. 18). The information or data that is used to support the claim, is that: “the number of publications in top marketing journals and Google references around this topic has grown exponentially and the same holds for the number of neuromarketing companies founded” (Ibid.). This data specifically demonstrate why it is reasonable to claim that neuromarketing is gaining popularity and hence leading to the warrant that if there is exponential growth in all of these three parameters, then there must be equal excitement and attention to the practice. A backing is implicitly found in the article through the high level of intertextuality, as it can be argued that if numerous studies have been carried out in relation to the application of neuroscientific tools to consumer psychology, then there must at least be an interest and probably also
excitement. As seen from the above, this claim follows Toulmin’s simple model and only further incorporates a backing. Hence, neither modal qualifier nor rebuttal is found in the article, which corresponds well with the fact that the scholars’ claim is not being challenged. However, in relation to minor sub-claims in the article, both modal qualifiers and rebuttals are seen, often expressed through use of hedging. The above argumentation is illustrated in the model below.

Figure 9: Claim from A1. Own creation based on Toulmin’s simple model

6.2.5 General Argumentation in the Articles
In the section below we will thus look at the similarities of the argumentation presented in the articles. As both articles are written with an academic purpose being furthering the knowledge of neuromarketing, and as they are addressing the same field of problems, their arguments can, according to Toulmin’s theory, be regarded as belonging to the same field of arguments, as they share the same logical type of backing and conclusions (Feigl 1981, p. 369). Thus, they share the same criteria for argumentation,
e.g. in relation to formality and precision, also referred to as field-dependent arguments. This is evident through several similarities within their usage of references, vocabulary, textual structure and use of hedging. The use of data is another important factor within the academic field. As seen in both of the articles, the applied data is generated through scientific induction, which is presented through use of hedging, implying that new experiments might bring new results. Thus, knowledge is presented as current knowledge, which might change, e.g. when new technologies or methods are developed for neuroimaging. Another important factor in relation to data is the intersubjective testability. This is crucial in relation to research within a positivist stance, since this holds that the applied research methods are presented in a manner, which enables others to repeat and thus test the results and observations put forward (Ibid.). This is e.g. seen in article A1, when the scholars refer to their research methods, such as Poldrack’s method of frequency-analysis based on the BrainMap (Brainmap 2013) database (Ariely, Berns 2010, p. 285, Brainmap 2013) or ‘Box 1’ showing how the study concerning ‘NAc activation in studies of tasks with and without reward’ was conducted (Op.cit., p. 287).

6.2.5.1 Division of Arguments

In terms of division of arguments, the articles use substantial arguments, which often are recognised through the use of hedging, indicating that other conclusions might exist. The arguments are additionally perceived as warrant-establishing, as they involve induction. All arguments in the articles are furthermore recognised as tentative, as they are not claimed to be certain but formulated through use of hedging, hereby incorporation a sense of caution. As the arguments are logically valid, they are also recognised as formally valid, meaning that if the premises are logically correct, then the conclusion will also be correct.

Toulmin argues that the warrants of many arguments, even though they do not necessarily exist within the same field, often share some features. Accordingly, we will now examine the articles’ argumentation and warrants in relation to Toulmin’s classification of arguments. Reasoning from generalisation is often used, as a research-sample is used for generalisation. Reasoning from cause is also used, e.g. in
relation to the problems associated with using reverse inference in neuromarketing, arguing that as it can be considered an invalid method in some cases, it causes invalid conclusions. The scholars use their authority implicitly, in relation to their critique of marketers’ hype concerning the prospects of neuromarketing, and **Reasoning from Authority** is hereby recognised. The authority is furthermore implicitly expressed through a thorough and consistent use of intertextuality to support presented claims, as well as through adhering to academic conventions.

Based on the above findings, it is evident that the two articles draw on similar notions of neuromarketing. This is visible through their discourses when communicating their research and reviews in relation to neuromarketing and through their similar use of argumentation. This demonstrates that both articles are written within the same social context, scientific academia and research, and draw on the same communicative approach and scientific worldview. Article specific elements and discourses are evident within the two, however, despite this, they still appear very similar and share an almost identical structure and hence approach to research. One of the main findings we can take away from the above is how the scholars perceive the practice of neuromarketing.

### 6.2.6 The Scholars’ Notion of Neuromarketing

In relation to the findings presented above, we will now approach A1 and A2’s general notions of neuromarketing, pinpointing both similarities and differences within these. In relation to this, the academic backgrounds of the scholars are important to emphasise, as these are determining factors in their presentations of the practise. Due to their backgrounds, what they are presenting is the sum of the research parts, in terms of what has been established and pointed out through their respective research. In A1, the scholars express a wish not to be “(...) passing judgement on whether neuromarketing works” (Op.cit., p. 289) and more generally speaking of neuromarketing “It is too early to tell but (...) we think that there is much that neuromarketing can contribute to the interface between people and business and (...) foster a more human-compatible design of the products around us” (Op.cit., p. 291). The scholars of A1 continue on saying “(...) neuromarketing as the examination of the neural activities that underlie the daily
activities related to people, products and marketing (...) could become a useful and interesting path for academic research and (...) marketers” (Ibid.). With the above statements the scholars thus see potential and hope within the practice of neuromarketing, yet they still express a somewhat guarded enthusiasm. They acknowledge that neuromarketing might prove advantageous in several domains of marketing and especially in relation to the design process of products, such as that of food and entertainment, and especially in helping companies identify products that people will find desirable and useful (Op.cit., p. 291). Despite the possibilities seen in relation to the application of neuromarketing, the scholars doubt that it will be cost-effective compared to existing market research tools (Ibid.). In A2, the scholars “(...) think academics and practitioners alike could and should be excited about this new field” (Plassmann et al. 2012, p. 30). Subsequently, a somewhat similar notion of the practise, as presented in A1, is recognised. Here it is stated that the practise has potential as “(...) it can be viewed as a new methodological tool (...) to observe mental processes without asking consumers directly for their thoughts (...) and that “(...) neuroscience can be viewed as a source of theory generation, supplementing traditional theories from psychology, marketing and economics” (Ibid.).

The articles suggest different applications for neuroscience in relation to several domains of marketing. A1 suggests, as mentioned above, that neuromarketing will be particularly useful in the design process of products but also recognises applicability in relation to sales efforts (Ariely, Berns 2010, p. 291). In relation to sales efforts, A2 refers to a study showing that even though consumers did not prefer the taste of “food items with brighter packaging” they often chose these in fast-decision processes (Plassmann et al. 2012, p. 21). Yet another study is mentioned in A2 in relation to branding, as this showed that companies should focus on displaying the brand in a print ad, as this proved to be the most effective way to ensure that consumers pay attention to the ad and thus also to its other elements (Ibid.). A2 further suggests that findings and concepts from neuroscience can be integrated in interdisciplinary studies within consumer psychology “without actually applying neuroscientific methods”, as neuroscience may offer significant improvements in the understanding of preference
and decision-making and hereby lead to a greater interdisciplinary understanding (Op.cit., p. 32).

An ethical view is suggested in A1, as they express a concern of companies using neuromarketing to “coerce the public into consuming products that they neither need or want”. However, they elaborate on this by turning their concern into a hope: that neuromarketing instead will be used to “(...) identify new and exciting products that people want and find useful”. (Ariely, Berns 2010, p. 291). Additionally, the scholars in general criticise the marketers’ hype (Plassmann et al. 2012, p. 32, Ariely, Berns 2010, p. 284, p. 288, p. 291) of neuromarketing, and their attempt to “(...) push a neuromarketing agenda (...)” (Ariely, Berns 2010, p. 284), arguing that it should not be left to marketers and mainstream media to control the marketing agenda, thus underpinning their general opinion of neuromarketing; that the practise has great potential though still in its infancy and hereby the need for further research. Through future research and developments of tools, such as MVPA10, A1 suggests that “(...) neuroimaging will soon be able to reveal hidden information about consumer preferences” (Op.cit., p. 291). This is supported in A2, suggesting that neuromarketing could be seen as a method for “(...) opening ‘the black box’ of consumers brains (...)” (Plassmann et al. 2012, p. 29). However, this is only seen as an option if the task of overcoming the problem of extensive use of reverse inference is solved. Accordingly, the scholars suggest that “(...) neuroscientific findings as a novel source of understanding the mechanisms underlying consumer psychology (...)”(Op.cit., p. 32).

To sum up, the scholars display a positive attitude towards neuromarketing and describe the practice as carrying potential. However, further research must be conducted and emphasis is on the neuroscientific community to be more present in the media, instead of leaving it to marketers and mainstream media to control the neuromarketing agenda.

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10 Multivoxel Pattern Analysis
6.3 Comparison of Buy-ology Chapters and Scientific Articles

We will in this section sum up the main findings from the above analyses in terms of noteworthy and relative similarities and differences between the scientific articles and Buy-ology. Whenever we refer to the empirical data, we refer to all of the data meaning both chapters of Buy-ology and both articles.

6.3.1 Textual Dimension

The general structure of the articles differs greatly from the structure of the Buy-ology chapters. The articles follow the conventions of academic writing and a very logic step-by-step structure that is easy for the reader to follow, whereas B1 and B2 carry more of a resemblance to the field of fiction and no overall or consistent structure is evident as such. Both A1 and A2 emphasise that before it is possible to comprehend the application of neuroimaging to marketing, it is necessary to understand the tools and hence, they both structurally begin with a thorough introduction to these tools. Buy-ology offers no such introduction rather, the explanations of neuroimaging tools are scarcely scattered throughout B1 and B6 in no recognisable structure. The body of the articles lend themselves to the same consistent structure, where the reader is continuously guided through the different steps the scholars take. In B1 and B6, the structure carries a strong resemblance to a narrative created for entertainment and everything is greatly intertwined, again not lending itself to any detectable structure. Both A1 and A2 round up with a conclusion and suggestions for further research, hereby providing closure of the articles. Lindstrøm does quite the contrary, both in B1 and B6, and in the chapter labelled “conclusion” he even builds further suspense instead of providing closure.

As all of the texts treat the topic of neuromarketing, parts of the vocabulary are similar. E.g. when using medical terms regarding the brain or technical terms regarding neuroimaging. However, a strong difference within the word choice is seen through the scholars’ mentioning of specific brain parts or regions. An example hereof is Nucleus Accumbens, which Lindstrøm refers to as “the craving spot” (Lindstrøm 2008b, p. 14). In A1 and A2, when Nucleus Accumbens is not mentioned by its full name the medical
abbreviations NAc or NAcc are used instead, which in general is how the medical terms are referred to in the articles. Another noteworthy difference is the very emotive and vivid word choice used in Buy-ology, compared to a very factual and concrete use in the articles. In general, Lindstrøm’s word choice is very generous in the sense that he has numerous redundant explanations and descriptions, which serves to create an entertaining narrative, hereby emphasising stories and downplaying facts and research. A1 and A2 lend themselves to a very factual and objective presentation of neuromarketing and thus, no redundant descriptions or word choice is found. Rather, the word choice is quite scarce and with descriptions cutting straight to the case. Hereby underpinning a notion of Lindstrøm’s chapters serving entertainment, whereas the articles serve enlightenment.

6.3.1.1 Grammar

Adjectives and adverbs are used extensively in B1 and B6, often in superlative forms, whereas they are rarely seen in A1 and A2. The use of adjectives and adverbs in Buy-ology is often recognised in relation to vivid descriptions in order to create reader-friendly and entertaining texts. Several adjectives are e.g. used when Lindstrøm describes his own physical appearance in B1. In general, Lindstrøm lends himself to very long descriptions, whereas the articles rarely use any redundant or unnecessary adjectives or adverbs, emphasising concreteness and objectivity.

In regards to sentence structure, Lindstrøm incorporates all of Fairclough’s four categories in relation to grammatical moods. Declarative sentences are widely used both in Buy-ology and the articles, while interrogative sentences are apparent in B1, B6 and A1. In A1 interrogative sentences are used in the shape of research questions and in Buy-ology they are seen both as research questions and as a means to directly address the reader “Did you know that (…)”(Op.cit., p. 117). In the same way, imperative sentences are used in Buy-ology to address the reader, e.g. “consider how much superstition” (Op.cit., p. 19) or “look at the front of your I-pod” (Op.cit., p. 122). The articles do not address the readers directly at any point, why no imperatives are found within these.
**Personal pronouns** is recognised in all parts of the empirical data, however, the use of pronouns differs a lot in respective functions. In relation to the articles, *we* is often used in relation to specify methods or future research directions, whereas Lindstrøm often uses *I* or *me* in relation to his motives for conducting the study or presenting other details about himself and in general, incorporates a very strong sense of *me* throughout the chapters. What is noticeable in relation to the differences in use of personal pronouns is how Lindstrøm takes ownership of the Buy-ology study, which according to theory, often is seen within marketing writing (Hyland 2004, p. 35). On the contrary, the scientific scholars do not express ownership of their studies or the achieved results. Rather, their observations are presented in a very depersonalised manner, in accordance with scientific conventions (Op.cit., p. 33). In this relation, Lindstrøm places more emphasis on who did what, while the scientific scholars pay more attention to what was done, e.g. through use of **passive voice**, which is also found in all of the empirical data. The passive voice is often used to imply objectivity, as e.g. in A1: “It is clear that market tests give the most accurate answer, but having to a market test on every product would defeat the purpose of market research (...)” (Ariely, Berns 2010, p. 285) or in B6: “If people are willing to pay sums for things (...) they believe have religious (...) significance, then clearly spirituality and branding are inextricably linked” (Lindstrøm 2008b, p. 111). Both of these examples show that passive voice can be used as **modality** markers. The functions of these modalities are nonetheless very different. Lindstrøm uses modality in the shape of **intensifiers or boosters** (Hyland 2004, p. 87) and hereby greatly emphasises his results and their correctness, whereas the use of modality in the scientific articles is mostly recognised as **hedging** (Op.cit., p. 88). Hereby, the scholars, contrary to Lindstrøm, downplay the certainty of the presented statements, implying that other results might be found at a later stage, e.g. if more precise technology within neuroimaging is invented or that there is a possibility that someone will prove the researchers wrong.

In general, it can be argued that Lindstrøm uses the linguistic tools available within the textual dimension to intensify the power of his statements, hereby strongly underpinning the **groundbreaking** nature of his study and findings. In the articles, the linguistic tools are used to create a sense of caution in relation to the results and
methods put forward, hereby creating a more humble and objective presentation of the statements. It can in this sense be argued that the scholars rather overstate their caution than overstate their findings. The articles follow the conventions of academic writing in terms of how they use the language and textual structure, whereas Buy-ology is much more difficult to categorise, as it does not follow the conventions for scientific writing but rather includes a more creative mix of linguistic tools and structures in presenting statements, hereby creating a quite entertaining and at times confusing structure, as Lindstrøm shuffles many of the storylines and structures around. Hereby, it is quite difficult to place Buy-ology within any type of structural framework or genre.

6.3.2 Discursive Dimension

Lindstrøm draws on a wide variety of discourses, both established and his own “hybrid” discourses. In B1 and B6 a total of 34 discourses are recognised. The scientific articles include 39 discourses in total, from which most can be recognised as often occurring within an academic context. As all four parts of the empirical data concern studies within neuromarketing they do, not surprisingly, share several discourses, such as the scientific, brain, marketing and neuromarketing discourse.

A noteworthy difference regarding discourses is the many discourses applied in B1 and B6, which have no relation to the study. An example hereof is the me discourse that is seen in both B1 and B6, which is used to include Lindstrøm as a omnipresent narrator, even describing his physical appearance, traits and career. This is not seen in the scientific articles. Only the names, titles, and employers of the scholars are presented here and this information is presented outside the body of the articles. Accordingly, Lindstrøm is an important part of B1 and B6 and he is virtually interweaved in the study and to such an extent that he has his own discourse, whereas the study is the sole focus of A1 and A2. Furthermore, it is the content, methods and findings of the research that are present and emphasised in A1 and A2 through the discursive practice. In B1 and B6, many redundant details concerning the external factors of Lindstrøm’s research are strongly emphasised, which is evident through the scientifically redundant discourses money, creating history, name-dropping, the bigger the better, and international.
The use of scientific discourses is also quite different between Buy-ology and the articles. In B1 the scientific discourse is used to emphasise the scientific nature of neuromarketing and the Buy-ology study, e.g. through mentioning of scientific technologies or the explanation concerning Lindstrøm’s thoughts on choosing participants from different countries for the study. In the articles, the scientific discourses focus more on the methodology, e.g. through wordings such as *methodological approach, Bayesian statistics, follow-up studies, and statistical models.*

When noticing the use of scientific and brain discourses in B1 and B6, one might wonder why a validity discourse cannot be recognised, as it would have been obvious to use several places. In general, the discursive differences between Buy-ology and the articles are manifold but most noticeable are Lindstrøm’s use of many imaginative and quite liberal discourses, compared to a rather conservative use within the articles, which follows the conventions of academic writing.

### 6.3.2.1 Intertextuality

All of the empirical data include a high degree of intertextuality. The use of intertextuality is nonetheless very different in numerous aspects. One aspect is the type of texts that are incorporated as intertextuality. In Buy-ology, several cases of intertextuality functions as storytelling, e.g. when marketers are compared to Christopher Columbus and when Lindstrøm refers to stories from the world of marketing. Other references in B1 and B6 include articles from mainstream media and commercial studies. However, Buy-ology also incorporates scientific research, such as the Coke vs. Pepsi study. This study is also mentioned in A1 and A2, however, it is described very differently in Buy-ology than in the articles, this will be further elaborated below. This might be due to the fact that Buy-ology is written for *everyone,* why the language and the prerequisites are quite different, than if writing for an academic audience. In relation to Lindstrøm’s mentioning of the “nun study” in B6, vivid descriptions are again evident, e.g. in describing how the nuns “(...) *made themselves as comfortable as possible (...)*” (Lindstrøm 2008b, p. 107), a feature that is not recognised in the original scientific article, since it is not related to neither the method, nor the results (Beauregard, Paquette 2006). Furthermore, as described above (cf. section 6.1.1), it is often hard to recognise in Buy-ology, which parts of the text are
actual references and which are made-up stories from pure imagination. Accordingly, the indications of source references seem rather illogical. In comparison, all incorporated texts in A1 and A2 stem from academic studies conducted within related fields and the references are clearly indicated, emphasising a clear distinction between when the scholars express their own or others’ results, whereas source references are scattered loosely throughout Buy-ology, making it is difficult pair intertextuality and source reference. Another significant difference is that of comparison between own findings and existing literature. This comparison is evident throughout both of the articles, whereas it is not seen in B1 and B6.

Buy-ology and the two articles together constitute an intertextual chain, as A1 explicitly refers to Buy-ology both in relation to their notion of hype found in books and articles that “push a neuromarketing agenda” (Ariely, Berns 2010, p. 284) and in relation to use of reverse inference. A2 refers directly to A1 in several relations (Plassmann et al. 2012, p. 18, p. 30). An implicit reference to both A1 and further back to Buy-ology is given in A2, when referring to “(...) most of the hype around the potential of consumer neuroscience and neuromarketing (...)(Op.cit., p. 32). It is regarded as an implicit reference to A1 due to the word-choice, which is part of the title of A1 and is related to the research topic of A1. The reference further relating back to Buy-ology is explained above, as A1 refers directly to Buy-ology in relation to the hype concerning neuromarketing. As A1 and A2 both refer to a vast amount of academic studies related to neuromarketing, they share several references. One of these is a study conducted by McClure et al. (2004) (cf. section 4.5.1) concerning behavioural preferences in relation to Coke and Pepsi. As this is one of the most famous studies conducted within neuromarketing, it is also, as mentioned above, used as reference in B1. However, the use of the reference again varies considerably between the articles and B1, as Lindstrøm not only describes the methods and/or findings from the study, but also incorporates his own colourful explanation to the findings: “(...) the emotions rose up like mutinous soldiers to override respondents’ rational preference for Pepsi” (Lindstrøm 2008b, p. 26). This carries a strong resemblance to his presentation of the
‘nun study’, as the reader again is left with the impression that Lindstrøm himself was present during the experiment, which, as with the nun study, is not the case.

6.3.3 Social Dimension

The social dimensions of the scientific articles differ in several aspects from that of Buy-ology and many of these differences can be ascribed to the purpose of the respective texts. While the purpose of the articles is to generate knowledge, the purpose of Buy-ology is of commercial nature. This entails several differences, which we will elaborate further below.

An important difference is the respective audiences that the authors are aiming at. Buy-ology is written for everyone, while the scientific articles are written for academics. Thus, a prerequisite knowledge, or the capabilities of retaining this if needed, can be expected in relation to the articles. Buy-ology aims at a wide and lay audience, which entails that everyone should be able to read and understand the content hereof. As mentioned above, Lindstrøm uses Buy-ology to promote his study, himself and neuromarketing in general. Furthermore, Lindstrøm presents the Buy-ology study as his life’s work, whereas the scientific articles can be said to present pieces of a larger puzzle of knowledge within the field of neuromarketing. The commercial aspect of Buy-ology is also seen in the economical foundation of the financial funding of the study, an aspect that will be further elaborated below.

The positivist stance of the scholars is visible through their expressed need for examining what neuromarketing is actually capable of. This is i.e. seen in A1 “Allowing for the assumption in neuromarketing that the brain contains hidden information about preferences, it is reasonable to set aside, for the moment, the issue of ‘hidden’ and ask what relationships are known to exist between brain activity and expressed (that is, not hidden) preference” (Ariely, Berns 2010, p. 284). The above quotation clearly shows that the scholars want tangible proof for the actual capabilities of neuromarketing. Conversely, it can be argued that Lindstrøm attempts to draw on this positivist stance as well, when expressing his results from the Buy-ology study as knowledge derived from scientific research and as adhering to academic standards. However, as explained above,
these results cannot be approved as valid knowledge according to a positivist stance, as they do not comply with the standards regarding intersubjective testability. According to Hyland “An important aspect of the positivist-empirical epistemology that characterizes a great deal of scientific endeavour is that the authority of the individual is subordinate to the authority of scientific procedure” (Hyland 2004, p. 33). Here it can be argued that Lindstrøm is doing the exact opposite: his scientific procedure is greatly secondary to himself and his promotion hereof. Thus, despite the fact that the articles and Buy-ology exist in two very different social dimensions, science and marketing, Lindstrøm almost attempts to make his work fit in the context of science. He attempts to present his work as scientific, he attempts to present his results as valid and he presents himself as knowledgeable within the field of neuromarketing. However, despite his efforts, Lindstrøm and his statements do not manage to cross over from the world of marketing to the world of science. This is especially due to lack of the possibility of intersubjective testability, as there is no way of reproducing any of his work and hereby verify or falsify his conclusions. Lindstrøm presents the world of branding and marketing to perfection, however, in regards to articulating his work as scientific and present his social practice as scientific as well he is not very successful. The scholars on the other hand, they practice their presentation of the scientific aspects to perfection, hereby leaving a clear impression of their field of expertise. Also, they greatly prioritise their findings and description of methods and approaches, hereby living up to Hyland’s notion of the individual being subordinate to the scientific procedure. It is the findings that are paramount, not necessarily the scholars.

6.3.3.1 Power

In regards to power, the scholars and Lindstrøm make use of it in different ways. As Lindstrøm has set out on a quest he has an agenda of convincing his audience of his opinions and hence, the use of power in discourse and hidden power is evident in both B1 and B6. As it generally goes with the mass media, Lindstrøm is physically separated from his audience and is therefore free to decide what is included and what is excluded, hereby making it possible to present neuromarketing exactly as he wishes. Also, he freely chooses which discourse types are included and how they are used, furthering the notion of hidden power. The scholars are also separated from their audience, however,
as the scholars are subject to the conventions of academic writing and the field of science, they are not free to say or do exactly as they wish or use their discourse types as freely as Lindstrøm does. Therefore, the type of power they are able to express is more related to the power of their findings and their power and authority as scientists. Furthermore, they already have access to the necessary discourses and thus do not need to use power in order to convey and gain access to the appropriate ones. However, Lindstrøm relies on gaining access to discourses, as he must use his discourses to steer the attention and perception of the reader and hereby create the notion of a text that is much more scientific and valid than the case is. In this relation, Lindstrøm uses his free speech in gaining access to the scientific and brain discourses. Thus, Lindstrøm needs power in discourse and uses power in discourse, whereas the articles convey their power through their authority as scientists and their use of scientific discourses.

6.3.4 The Use of Argumentation

Individual claims have been investigated in the respective analyses of the empirical data, hereby creating a notion of which type of argumentation the authors rely on. All of our empirical data approach argumentation in relation to the use of reverse inference, however, in very different manners. Below, we will compare the argumentation of reverse inference in the articles to the argumentation surrounding its use in Buy-ology.

6.3.4.1 Reverse Inference – Attacking an Argument

A research method often applied in relation to neuromarketing and which mentioned in both articles, is reverse inference. Reverse inference is the logical inference that if brain signal A is active, then mental state B must be active (Genco et al. 2013, p. 17). Academic brain science progresses largely on forward inference, in which an experiment induces a particular state of mind and then measures a particular brain or body response (Op.cit., p. 308). The degree to which reverse inference can go wrong, is directly proportional to the number of other brain states the induced brain or body state can be associated with. For example, in relation to experiments involving the insular cortex, which has been found to be active in nearly one-third of all mental states induced fMRI tests (Ibid.). A solid portion of the argumentation in Buy-ology builds on
reverse inference and what is noteworthy and interesting in this relation, is that the scholars of A1 and A2 directly attack claims built on reverse inference.

An example of the use of reverse inference is seen in relation to use of vocabulary, when Lindstrøm coins the Nucleus Accumbens as “the craving spot”. The reasoning for this concept is that “This region is a chain-link of specialized neurons that light up when the body desires something” (Lindstrøm 2008b, p. 15). In claiming this, Lindstrøm uses a formally valid argument based on deduction, as his conclusion formally and logically follows the premises. The scholars of A1 implicitly attack the premises of Lindstrøm’s argument, as they carry out an investigation to estimate the probability of a reward process through the observation of the Nucleus Accumbens, through and examination referred to as Poldrack’s method of analysing the BrainMap database (Ariely, Berns 2010, p. 286) and state that “(...) cognitive processes (...) are multifactorial and cannot be reduced to a single area of activation. Conversely, a given brain region may be involved in multiple cognitive processes” (Ibid.).

The scholars of both articles furthermore argue that “the practice of measuring an increase in BOLD activity in a region such as the ventral striatum or OFC and then concluding that a ‘reward-related’ process was active has become increasingly common” (Op.cit., p. 285). This is explicitly stated in A1 and directly referenced in A2 (Plassmann et al. 2012, p. 30). The result of their analysis was “(...) a Bayes factor of 9, which is considered moderate to strong evidence for a causal relationship” (Ariely, Berns 2010, p. 286). The scholars argue that this result is “meaningful in a statistical sense” (Plassmann et al. 2012, p. 30), however, they also point to possible bias in relation to this rather liberal method arguing that, “In real-world settings, the ability to infer whether an individual likes something based on NAc activation alone may be substantially less” (Ariely, Berns 2010, p. 286). To examine this further the scholars include other studies conducted in relation to Nucleus Accumbens activity and value-based decision making, which leads to the conclusion that several brain regions are involved in consumer choices, and that it thus is too simplistic to “(...) view the striatal and OFC activity as a read-out of liking, and the insula as a disgust-meter (...)” (Ibid.).

A2 also continuously refer to this study in their argumentation against using reverse inference as a method and also carry out their own review of the practice and argue that
“one can identify at least one major issue that needs the attention of researchers applying neuroscience tools for branding (...) : how to overcome the problem of reverse inference” (Plassmann et al. 2012, p. 29) Thus, this example demonstrate how the articles attack Lindstrøm’s argumentation, by attacking the premises of the argument.

In regards to argumentation, it is evident that the articles are written within an academic field and thus the presented arguments follow an academic framework of constantly relating own observations to those of others along with a high degree of formality, which is expected within the field. Buy-ology, however, is written for commercial purposes and thus not limited to certain degrees of formality or conventions and hence, explains Lindstrøm’s rather liberal use of formally valid arguments, in which his conclusions formally and logically follows the premises, however, their content can be attacked as proven above.

6.3.5 What Does Neuromarketing Have to Offer

The scholars are positive in regards to the potential of neuromarketing but also recognise a need for the academic world to take more control of what is communicated about this method, instead of leaving it to marketers and mainstream media. A specific point of critique that the scientists points to, in regards to Lindstrøm and other marketers is, as also pointed out above, the use of reverse inference, which they find to be “(...) too simplistic to be of use in a real-life setting”. (Ariely, Berns 2010, p. 286) and that “(...) the fact that reverse inference is problematic is partly due to the fact that functional brain imaging research is still relatively new and (...) that a single brain area can multitask” (Plassmann et al. 2012, p. 29). In this relation, it is crucial to notice the differences in the social dimensions for the scientific articles compared to Buy-ology. As mentioned above, the articles are written for academics to generate knowledge. Conversely, Buy-ology is written by a marketer to promote himself and his study and, most importantly, to sell books. In this relation, neuromarketing almost appears to serve as a pretext for Lindstrøm to write a book about himself and his capabilities and the many ways in which they can be applied to marketing.

The scientific articles thus serve an academic purpose, while Buy-ology serves a commercial purpose and these different purposes are visible in the different notions and
presentations of neuromarketing. The scholars are judged on their ability to present their findings and must also comply with the conventions of academic writing, in order to ensure that their articles will be accepted and hereby meet the criteria for a peer-review. Thus, their statements and presentations hereof must be fully supported by their findings and observations. Lindstrøm argues that since his SST scans were not conducted in a university, they did not need to follow the same ethical review proceedings as the fMRI scans (Lindstrøm 2008b, p. 223). Thus, Lindstrøm actually admits, in the appendix of his book, that the study is not as scientific as his descriptions implies, despite the heavy emphasis on the scientific aspect in B1. Buy-ology as a book furthermore serves a commercial purpose in the sense that it is produced with the goal to sell as many copies as possible. Furthermore, several companies including GlaxoSmithKline sponsored the study (Op.cit., p. 229). This might affect the notion of neuromarketing and the communication of the findings from the study, as Lindstrøm hereby have sponsors with a stake in the outcome. Especially in regards to the presentation of the experiment conducted in B1 about warning labels on cigarette packages, as GlaxoSmithKline, according to Lindstrøm (Ibid.) is one of the world’s leading providers of products used in relation to help smokers quit their habit. The results are communicatively presented to strongly suggest that the tobacco companies actually use the labels as a marketing tool (Op.cit., p. 15), when it in fact is a law-imposed regulation.

Regarding the general use of neuromarketing, Lindstrøm does not imply any limitations concerning the use of the practise. Rather, he leaves the reader with the impression that the sky is the limit. He, amongst other comments, praises the practise for being able to reveal hidden truths, which he also claims is done through the Buy-ology study. The articles suggest that neuromarketing holds great potential, A1 even presents the notion of neuromarketing as possibly being able to reveal hidden information as well. The article however, emphasises that this is a future potential “neuroimaging will soon be able to reveal hidden information about consumer preferences” (Ariely, Berns 2010, p. 291) . Thus, the article contradicts Lindstrøm’s statements that “(...) like fMRI, SST was the final word on the human mind (...) neuroimaging could uncover truths” (Lindstrøm 2008b, p. 24) and that the results of the Buy-ology study “(...) revealed the hidden
truths behind how branding and marketing messages work on the human brain (...)” (Op.cit., p. 11). The articles both focus on the problem with reverse inference, which must be overcome before neuromarketing might offer a method for “(...) opening ‘the black box’ of consumers brains (...)” (Plassmann et al. 2012, p. 29). A1 suggest that this might be done through further development of the analytical tools applied in neuromarketing such as MVPA\(^\text{11}\). Until then, A2 suggests viewing “(...) neuroscientific findings as a novel source of understanding the mechanisms underlying consumer psychology (...)” (Op.cit., p. 32).

Lindstrøm, on several occasions relates neuromarketing to George Orwell, or terms the practice “Orwellian”, thus implying that the consumers might perceive neuromarketing as such, however, Lindstrøm himself does not share this ethical concern rather, he appears to mock it (Lindstrøm 2008b, p. 35). This does in some ways downplay the many striking statements he makes about the capabilities of neuromarketing, as if there is no need for concern, then perhaps the capabilities of neuromarketing are not as groundbreaking as they are presented to be, as “uncovering the brain’s deepest secret” (Op.cit., p. 22) denotes a certain risk of manipulation. An ethical concern is also expressed in A1, where the scholars express a hope that companies will use neuromarketing to invent new products that consumers want instead of creating products which they cannot resist, but actually do not want. However, as seen above, the articles do not find the current state of the practice to have reached this ‘Orwellian’ level yet, which might be the reason for A2 not to express ethical concerns.

Roughly speaking, two types of neuromarketing exist: one within academic research and one within a commercial context. The scholars and Lindstrøm each represent their respective fields.

\(^{11}\) Multivoxel Pattern Analysis
6.4 Lindstrøm’s Neuroscientific Accommodation

“Anyone who has ever tried to present a rather abstract scientific subject in a popular manner knows the great difficulties of such an attempt”

- Albert Einstein 1948

(Fahnestock 1986, p. 276)

As our above analyses demonstrated, Lindstrøm’s presentation of neuromarketing differs significantly from that of the academic world. Especially in the way it is constructed and the data supplied to support claims. Despite the lack in data for many of Lindstrøm’s conclusions, it can nevertheless be argued that it was his presentation of the practise that secured neuromarketing a breakthrough in the mainstream media (Bain 2012). Lindstrøm’s view secured him, as previously mentioned (cf. section 3.1) a significant amount of media coverage, the title as one of Time Magazine’s 100 Influential Honourees of 2009, and numerous bestselling honours around the world. Acknowledgements which all served to underpin the noteworthy attention Lindstrøm and Buy-ology received. Despite the vivid and entertaining narratives of Buy-ology, it seems plausible to argue that many of Lindstrøm’s points are actually based on neuromarketing observations accommodated to a general (lay) audience coupled with an easy-to-read narrative and discourse. As his approach exists in a commercial context, the truthfulness of his statements is secondary to the entertainment value.

In general, the way Lindstrøm present his view of neuromarketing does, in our opinion, play a major part in the bestselling success of Buy-ology and in this relation, his use of discourses. Some discourses have a stronger impact on the mass media than others (Phillips, Jørgensen 2002, p.74). This means that it i.e. is more difficult for a purely academic discourse to be picked up by the media, as they often are information-heavy and rich in scientific concepts and technical terminology, hereby proving difficult to comprehend and decipher. A hybrid discourse that combines academic discourse and a somewhat popular discourse or, which is easier to understand for the lay audience, is much more likely to be taken up in the media (Ibid.). Lindstrøm constructs his own information about neuromarketing from a number of different discourses, without exclusively drawing on the ones belonging to the field of science. What Lindstrøm is
able to do is speak to his audience in a voice everyone can understand. The lay audience will probably not understand the middle inferior orbitofrontal cortex however a sense of reward is comprehensible for everyone. By altering or combining the nature of an academic discourse with something “lighter”, the discourse becomes more digestible and understandable to the media and layman. In Buy-ology, Lindstrøm interweaves a scientific discourse with a me, brain and marketing discourse, hereby creating a lighter “hybrid” version of the scientific discourse. Lindstrøm uses own concepts and leaves out medical abbreviations and any intermediate results, hereby going straight from claim to conclusion, again underpinning the notion of an ultra light-version of a scientific text, as no information-heavy details are provided. In general, Lindstrøm provides a minimum of scientific explanations in regards to his research and conclusions. What is noticeable in this relation is the fact that the few terms and concepts that have been included often are redundant to the logic of both his explanations and conclusions. His use of neuroscience is thus more of a rhetoric instrument than relevant information about the research. Accordingly, the use of medical concepts could easily have been omitted, without interfering with the cohesiveness of the book. However, according to a study conducted at Yale University: “Nonexperts judge explanations with neuroscience information as more satisfying than explanations without neuroscience, especially bad explanations” (Weisberg et al. 2009, p. 476). This may prove a valid explanation for why Lindstrøm has chosen to include medical terms and why they are loosely interjected every now and then: to make his statements more convincing.

### 6.4.1 Accommodation of Scientific Observations

The popularisation of scientific observation, the passing from original research intended for scientific peers into popular accounts aimed at a broad audience, is known as scientific accommodation (Fahnestock 1986, p. 275). Thus, a change of audience brings a change of genre. Scientific accommodations often emphasise the uniqueness, rarity and originality of observations and hereby confer greater certainty on the reported facts and one of the frequent features in creating this originality and certainty, is the removal of hedges (Ibid.). As our analyses pointed out, the scientific articles make heavy use of hedging whereas no hedges are, to the best of our knowledge, detectable in the chapters
of Buy-ology. Rather, Lindstrøm uses intensifiers for the majority of his statements, hereby underpinning his notion of *groundbreaking* research. According to theory, true accommodation of scientific writing involves finding the points of interest in the given topic, which will appeal to the readers who are not scientists (Op.cit., p. 280). This is evident in Buy-ology, in the way Lindstrøm continuously points to the many groundbreaking possibilities of neuromarketing, which is further reflected in the presentation of the Buy-ology study. As indicated in the analyses, research within neuroscience, conducted after the publishing of Buy-ology, points to the fact that a refinement of the applied tools and further research within the practice may lead to neuromarketing becoming a novel method of understanding the mechanisms underlying consumer behaviour. However, this somewhat fluffy notion of the practise is by Lindstrøm transformed into the fact that neuromarketing is already able to reveal *hidden truths* and *the naked truth* and that neuromarketing hereby will ‘save’ marketing. By leaving out intermediate results, turning medical terms in to own concepts and incorporating vivid explanations and conclusions, Lindstrøm is accommodating the scientific notions of neuromarketing to the lay audience. Even the title ‘Buy-ology’ can be perceived as an example of scientific accommodation, as it couples the colloquial word 'Buy' with the ending 'ology', which is normally used to convey a subject of study or branch of knowledge (Oxford English Dictionary 2014). Thus, the ending is used to make the title sound like it is a new scientific field of study.

With his presentation of the practice Lindstrøm is not necessarily telling untruths, he simply selects to communicate the information that serves his purpose and leaves out the pieces, which do not. Thus, the main purpose of his writing is not to validate his statements but rather to celebrate them. In this sense, Buy-ology becomes one long celebration of the marvels of neuromarketing and all the major benefits marketers can draw from the practise. Lindstrøm appears almost overly enthusiastic and positive and one cannot help but take in some of this enthusiasm. Lindstrom virtually seduces the reader with his claims of *groundbreaking* and *provocative* research and the *largest neuromarketing study ever conducted*, coupled with vivid tales from the world of marketing and entertaining anecdotes from his professional life as a *brand guru*. In this sense, Lindstrøm uses a public voice, which everyone can understand to entertain and
sell his notion of neuromarketing. What is important to emphasise in this relation, is the notion of something everyone understands, as this plays a significant part in scientific accommodation and in the attention given to Lindstrøm and Buy-ology. Everyone can read and understand Buy-ology, however, everyone cannot necessarily pick up a scientific article and reach the same notion of understanding. In this relation, Lindstrøm actually achieves his goal of writing a book for everyone. Lindstrøm’s non-academic style in relation to use of references also complies with the purpose of writing for everyone. One might wonder, why he for example in relation to the ‘nun study’, refers to a mainstream media version of the article, instead of the original written by academics. However, should a lay audience want to check the reference, the science daily article is much easier to comprehend than the original.

6.4.2 Lindstrøm’s Entertaining Science

In 2012 Dr. Calvert, who was one of the two researchers conducting Lindstrøm’s Buy-ology study, was interviewed about bridging the gap of the academic world of neuroscience and business (Bain 2012). Here, she was directly asked about Lindstrøm’s high-profile application of her work and his not entirely convincing conclusions: “Buy-ology was a great success in terms of putting neuromarketing on the map globally and while some of the conclusions arrived at might have sounded rather sensationalist, it is a hard task indeed to put across complex scientific findings in a way that’s easy to understand and entertaining for a lay audience” (Ibid.). This corresponds very well with the above notion of scientific accommodation, as Calvert greatly implies that Lindstrøm has turned her scientific observations into a rather exaggerated description of the wonders of neuromarketing. Lindstrøm managed to put neuromarketing on the map, however, in a very different manner than the scientific field would have done. Rather than downplay the possibilities of neuromarketing, he describes them in a celebratory manner aimed at the marvel of the audience and perhaps most important of all, in a voice and language which everyone can understand. Keeping this in mind, it is reasonable to infer that perhaps it was actually scientific accommodation and marvelling that was necessary, in order for mainstream media and the lay audience to take in the notion of neuromarketing. Had it not been for the vivid explanations and celebrations in Buy-ology, then perhaps neuromarketing would still belong to the
academic world of scientific articles and academic audience. Immediately after the above question, Calvert is asked about her general opinion about the hype surrounding neuromarketing: “It’s very irksome if people are overselling or misrepresenting what can be achieved or what a particular technology can and can’t do” (Ibid.). As Calvert allegedly is referring to the general hype surrounding neuromarketing, there is no telling if she is referring to Lindstrøm and Buy-ology. However, one can easily assume that she implicitly is referencing the book and as no other has portrayed the practice in such flattering terms as Lindstrøm and created the same hype as he has.

Another indicator, which suggests that Lindstrøm has wished to generate a reader-friendly and entertaining tale of neuromarketing, is the fact that he has used a ghostwriter. The use of the ghostwriter is not easily detectable, as the reader will have to go through the whole of Buy-ology, the appendix and then in the last section “Acknowledgements” arrive at the mentioning of ghostwriter Peter Smith (Lindstrøm 2008b, p. 226). Using a ghostwriter may simply be due to a lack of eloquence and writing skills, however, it may also insinuate a wish on Lindstrøm’s behalf to create the best neuromarketing tale possible. Through the writing style, Lindstrøm practically stands out as a mediator between the field of science and the general public and by using scientific elements and concepts in the way he does, he creates an enjoyable and very entertaining text. He uses intertextuality and anecdotes in a clever textual structure, where his relational richness seeks to speak to the reader. Several places, Lindstrøm attempts to almost create a bond with the reader and emphasise the fact that he has not written his book for the benefice of big companies but rather take the side of the consumer: By uncovering the brain’s deepest secrets, I wasn’t interested in helping companies manipulate consumers – far from it. (…) I also want to sleep well at night knowing I’ve done the right thing (…)” (Op.cit., p. 22).

Based on our previous analyses, it is can be argued that one of Lindstrøm’s main purposes in Buy-ology is to accommodate scientific writing and research to a broad audience. His writing is, as mentioned extensively, not aimed at neither marketing nor academic journals rather; it is aimed at everyone (Op.cit., p. 227). This can also be coupled with the fact that Buy-ology serves a commercial purpose, as it is produced to
sell as many copies as possible and not just to enlighten the mass media and general public about neuromarketing.

Acknowledging Lindstrøm’s marketing background, Buy-ology can also be considered a well-orchestrated marketing campaign, working to promote not only the book and study, but also Lindstrøm himself who, as noted previously (cf. section 6.1.3), is driven by fame. Judging by the massive media coverage the book and Lindstrøm received in the wake of the publication, the campaign must be regarded as a success. As described above (cf. section 6.1.6) the concluding chapter is finalised by encouraging the reader to visit Lindstrøm’s website, which further supports the notion of it being part of a marketing campaign.

Conclusively, Lindstrøm’s presentation of neuromarketing is not necessarily the most correct in terms of scientific explanations; however, it does prove to be very easy-to-read and entertaining. Based on the above it can thus be argued that in getting through to the mass media and lay audience, an entertaining and easy-to-read narrative beats scientific correctness.
7 Discussion

7.1 The afterword of Buy-ology

After the actual chapters of Buy-ology, a longer section including afterword, appendix, acknowledgements, notes, bibliography and index is found. Quite a few aspects of this section caught our attention.

The first part of this final section in Buy-ology is the afterword. The focal point here is the recession, which seems natural in relation to the context of marketing and the year of publication being 2008. However, this does not actually relate to the previous topics presented in the chapters, which makes it somewhat irrelevant and redundant.

The appendix presents information regarding the Buy-ology study and its methods, however, not in details, which otherwise would have ensured reproducibility rather, the overall and most detailed explanation of the methods is: “I took these hypotheses, and after doing the necessary research, thought up a way to test them, using cutting-edge neuroimaging techniques” (Lindstrøm 2008b, p. 221). The only aspect Lindstrøm elaborates on is the neuroimaging techniques, however, it is done in a rather general way and not specifically related to the various experiments or how he has used them. Most of the details in this respect have already been presented in the book, however, the statements are more downplayed in this section, e.g. in relation to SST, the technique used for 1.979 out of the 2.081 scans conducted (Lindstrøm 2008b, p. 34)This is in B1 described as “(...) an advanced version of the electroencephalograph (...) which tracks rapid brain waves in real time” (Op.cit., p. 12). In the appendix, SST is described in more details through the dozen discrete areas of the brain which SST measures, however, one might wonder why only eleven areas are mentioned, if a dozen is the total amount (Op.cit., p.222). The resemblance to EEG is left out, and the real-time aspect is described as “(...) thirteen times per second (...) what amounts to a real-time activity log for those dozen brain regions” (Op.cit., p. 223). Lindstrøm furthermore points to the fact that SST scans are not related to university facilities and thus not to the same ethical review proceedings as the fMRI experiments. It seems peculiar though that this
is not mentioned in B1, as Lindstrøm several times therein refers to a hospitals ethical committee overseeing the experiments, which however, in the appendix, is presented as The Central Ethics Committee in United Kingdom (Ibid.). This committee thus, was only involved in the fMRI experiments, which only include 102 out of the total 2,081 scans (Lindstrøm 2008b, p. 34). In this relation, an elaboration on what The Central Ethics Committee and ethical review proceedings actually involve, would have been very useful. Nowhere in Buy-ology is it stated, which experiments were overseen by the committee or in which relation. It appears that Lindstrøm by his use of the scientific discourse and by leaving out certain details attempts to portray the study as more scientific than it actually is, hereby leading to a questioning of its trustworthiness. The acknowledgements pay credit to Peter Smith, who has been working as Lindstrøm’s ghostwriter. When choosing to pay credit to the ghostwriter, one might wonder, why he is mentioned only in the acknowledgements and not as co-writer in the introduction or on the title page. It is also in this section that Lindstrøm explains how he went from writing a business-to-business book to writing for everyone, as well as thanking the sponsors who financed the study. In this relation it is noteworthy that despite securing “eight multinational corporations” (Op.cit., p. 36) as sponsors, he still had to “put in some money of my own” (Ibid.). After reading the appendix and acknowledgements, one cannot help but wonder if this whole section serves as a disclaimer for all of the boosted statements presented previously in regards to the Buy-ology study. The very last sentence of the acknowledgements goes “I feel like I’m at an Academy Awards ceremony – where’s the statue?” (Op.cit., p. 230). Thus, emphasising that what is most important in relation to Buy-ology is neither the study, nor the results, but Lindstrøm himself and accordingly: the branding of him as a brand guru.

As mentioned in the analyses, academic writing follows standard conventions in regards to references (Day 1998, p. 56). Such conventions are not recognised in Lindstrøm’s use of references, neither concerning the indication of references within the book nor within the reference list. Rather, the reference list is presented as notes in the last part of the book, with most of the references featured as website addresses, which, as explained by Day, can lead to much frustration for the reader (Op.cit., p. 59). Furthermore, the many website addresses entails scepticism, as these can easily be changed, thus not leaving
the reader many options in the attempt of locating the desired reference. What is also noteworthy is Lindstrøm’s heavy use of mainstream media articles describing scientific research, instead of referring to the original scientific articles. If Lindstrøm explicitly wanted to state his source references then this could easily have been done, by simply providing the title of the article or study in question. In not doing so, Lindstrøm appears to be throwing a smokescreen over his sources, which hereby questions the trustworthiness of the study.

The notes are succeeded by a bibliography, which is written as a coherent text, explaining which books and articles Lindstrøm read while doing research for the book. As Lindstrøm states in an interview (Sullivan 2009, p. 10) he is not an expert on brains. This is evident from his use of bibliographical sources, which mainly consist of popular scientific books and mainstream media articles. One might wonder, whether these sources are sufficient as research material for a layman, when writing a book in the context of neuroscience.

### 7.2 No time for Proofreading?

Considering the great emphasis Lindstrøm places on the time-span of the Buy-ology study, it is striking how many loose ends the book encompasses. We will below elaborate on two aspects, which in particular caught our attention and a third, which appear to be bordering plagiarism.

On page 24 Lindstrøm states “As I mentioned earlier, eight out of every ten products launched in the United States are destined to fail” (Lindstrøm 2008b, p. 24). However, this previous mentioning is, to the best of our knowledge, nowhere to be found. On page 20 he mentions how much corporations in the United States spent on advertising in 2005 and later mentions that product launches in Japan fail 9.7 times out of ten. However, a previous comment on product launches in the United States is nowhere to be found. The second example of a loose end is not only related to the text, but also questions the methods of one of the experiments. In the appendix, when explaining how hypotheses were used as foundation for the experiments, Lindstrøm states that: “One hypothesis was that cigarette warning disclaimers actually encouraged smoking”
However, in B1 when explaining what inspired him to the study he states: “For a long time, I’d noticed how the prominently placed health warnings on cigarette boxes seemed to have bizarrely little, if any, effect on smokers” (Op.cit., p. 9). This hypothesis is also aligned with the presentation of the results, which initially points out that the labels had “no effect on suppressing the smokers’ cravings at all” and then after further analysis showed that they “(...) had in fact stimulated (...) ‘the craving spot’” (Op.cit., p. 14). Thus, Lindstrøm presents quite different notions of the same hypotheses.

One wonders, whether the proof reading process have been forgotten or done carelessly, or whether in fact, the hope is that the reader will never check the details, references an so forth.

On page 18, Lindstrøm argues that it, in 2003, had become clear to him that “traditional research methods, like market research and focus groups, were no longer up to the task of finding out what consumers really think”. What is noteworthy in this relation is that Gerald Zaltman in 2003 published his book ‘How Customers Think’ (cf. section 4.2) on the topic of neuromarketing, which has a certain resemblance to Lindstrøm’s wording what consumers really think.

On the sleeve of ‘How Customers Think’, Zaltman mentions how nearly 80% of new offerings fail (Zaltman 2003). Lindstrøm also introduces several numbers concerning product launches and failures (Lindstrøm 2008b, p. 24), however, the reference stated in this relation does not work, why it has been impossible to verify the numbers. The sleeve of Zaltman’s book furthermore mentions that “95% of our thinking happens in our unconscious” and so does a paragraph in the book, which is then followed by a reference to Turner’s ‘On the Origins of Human Emotions’. Similarly, Lindstrøm (Lindstrom 2008b, p. 19) states that 85 percent of the time our brains are on autopilot, however, neither in this case is any reference indicated, why one could suspect, that Lindstrøm mentions another and lower number than Zaltman, as a means of safeguarding himself. Another striking similarity is seen when Lindstrøm argues that marketers should be interviewing our brains (Lindstrøm 2008b, p. 22)since ‘Interviewing the Mind/Brain’ is actually the title of chapter five in Zaltman’s
As seen from the scientific articles, referencing to existing literature is a common feature of academic writing (Hyland 2004, p. 22). Based on the similarities between Buy-ology and ‘What Customers Think’, we find it hard to believe that Lindstrøm has not taken inspiration from Zaltman. Thus, to just rephrase ‘What Customers Think’ to “what consumers really think” is, in our opinion, regarded as tending plagiarism and accordingly questioning the originality and trustworthiness of Lindstrøm’s statements.

7.3 Who Knows the Truth

As stated in (cf. section 6.1.1.2) Lindstrøm consistently use truth modality in presenting his statements. Whether he presents himself, the Buy-ology study, its results or other statements, they are presented as undisputable facts. Hence, leading to a notion of the attempt to eliminate any questions regarding the truthfulness of the statements. However, given the fact that nowhere is any results or methods described in detail, Lindstrøm achieves quite the opposite on several occasions. In addition to the questions arising in the wake of Lindstrøm’s descriptions of methods and results, several other statements stand out as quite peculiar. For example when Lindstrøm states, “By way of profession, I’m a global expert” (Lindstrøm 2008b, p. 16). Lindstrom backs this statement with an explanation of how it is a mission for him to figure out what consumers think and how he has helped a long list of brands, which Lindstrøm assumes that the reader have been in contact with. What is noteworthy on this long list of products is that no single brand name is mentioned. The nearest thing to a mentioning of a brand is iPod speakers, which most companies within electronics produce. Accordingly, no brands, or companies are mentioned in relation to his work. On the very first page of Buy-ology, before the list of contents and forewords, the initiating of the book is a description of Lindstrøm, “As one of the world’s most respected marketing guru’s he advises top executives at companies including the McDonald’s Corporation, Nestlé, PepsiCo, Microsoft, The Walt Disney Company and GlaxoSmithKline” (Op.cit., p. i). As mentioned previously (cf. section 6.3.5), GlaxoSmithKline are also sponsoring
the Buy-ology study. However, even so, to the best of our efforts\textsuperscript{12}, we have not been able to uncover any mentioning regarding any type of collaboration between the above-mentioned companies, neither through an extensive Google search nor through the respective web pages of the companies. Nor have we been able to find any information on Lindstrøm’s behalf, explaining in any detail how he has helped these brands. Thus, corresponding with the notion of how Lindstrøm cleverly serves ‘pieces of the truth’ to emphasise the pieces that he want us to know of.

Lindstrøm’s website, similarly to the remaining parts of his communication, is marked by a clever use of communication, by emphasising the details he wants accentuated, while hiding others. I.e. when mentioning: “\textit{Recipient of TIME Magazine's "World's 100 Most Influential People" in 2009}” (Lindstrøm 2011a) leaving out the fact that he was ‘only’ number 88. On his website, he again lists all the brands mentioned above, whom he is “\textit{dispensing his brand of wisdom to}” (Ibid.). Nor in this case, any details concerning how he has assisted these brands occur, nor any statements from the brands, as is often seen on websites. Lindstrøm includes a page on his website titled ‘Predicting the future’. On this page he asserts several previous predictions, which he has made and which have supposedly proven to be right, these are shown by coupling alleged statements with future inventions. E.g. he allegedly said that “\textit{the future of brand building would happen almost entirely online}” the same year as the www was invented. However, as no sources are indicated, which could verify these statements, it is impossible to do so. One so-called prediction we can dismiss is one stated in Buyology: “\textit{I predict that (...) by 2012, neuroscience will begin to dominate all election predictions}” (Lindstrøm 2008b, p. 30). As seen from the elections held in these past few years, this prediction has not been fulfilled. One could, however, argue that if Lindstrøm had reduced the intensity of this prediction, his chances for it to be fulfilled would have increased. Including a geographical limit such as ‘all American elections’ could have done this.

\textsuperscript{12} We have googled all brand names + one of the following combinations: ‘Buy-ology’, ‘Buyology’ or ‘Lindstrom’, and found no relevant hits within the first 20 results for each search. Furthermore, we also searched for these three words on the brands’ global websites.
7.4 Public Critique of Lindstrøm

The two scientific articles included in our empirical data were chosen based on purposive sampling, as they, i.e., demonstrate a different perspective on neuromarketing compared to that of Lindstrøm and also are of a more interdisciplinary nature. As seen from our analysis, these articles both implicitly and explicitly criticise Lindstrøm. Many other neuroscientists, marketers and others have questioned and criticised Lindstrøm’s methods, which we will now exemplify, in order to discuss what have led to this vast amount of critique.

Lindstrøm contributes to columns in several publications, one of them being New York Times (NYT) where he contributes to the Op-Ed\(^{13}\) piece. On October 1, 2011, the title of the Op-Ed piece was ‘You Love Your iPhone. Literally’ and the piece evoked heavy discussion and criticism. Amongst other reactions, 46 scholars\(^{14}\) led by Professor Ross Poldrack signed an open letter to the NYT editor, expressing their disappointment “(...) that the Times has published extravagant claims based on scientific data that have not been subjected to the standard scientific review process (...)” (Poldrack, et.al. 2011) As part of their argumentation against Lindstrøm’s claims they point to his use of reverse inference. In the piece Lindstrøm argues that the Insular Cortex is “associated with feelings of love and compassion” (Lindstrøm 2011c), however, the scholars counter argue that it “is active in as many as one third of all brain imaging studies” (Poldrack, et.al. 2011). The letter was printed in an edited and shortened version in NYT October 5, 2011.

Tal Yarkoni, Ph.D. in psychology, chose to raise his critique on his blog and criticises Lindstrøm’s use of reverse inference in a rather telling manner. He compares Lindstrøm’s results of how consumers love their iPhone with alcoholics whose brains “(...) failed to display a putative biomarker for addiction, it would be strange indeed to say ‘well, you show all the signs, but I guess you’re not really addicted to alcohol after all’ ”(Yarkoni 2011b)Yarkoni furthermore points to the fact that the current available methods within neuroimaging are not able to identify accurate fMRI biomarkers for any

\(^{13}\) Op-Ed is an abbreviation for ’opposite to the editorial page’

\(^{14}\) See appendix 10
kind of addiction. He thus proposes: “we should, to put it mildly, be very sceptical that Lindstrom’s study was ever in a position to do what he says it was designed to do” (Ibid.). Furthermore, Yarkoni questions the representative value of the eight study participants. He acknowledges that one cannot expect too much evidence from an Op-Ed piece but points to what he believes is the biggest problem: “we have no way of evaluating Lindstrom’s claims, period, because (as far as I can tell), his study hasn’t been published or peer-reviewed anywhere” (Ibid.). Emphasising that he does not think this is the case, Yarkoni suggests that Lindstrøm actually could have made all this up, as there is no opportunity of validating neither the research nor results.

Eric Du Plessis criticises Lindstrøm and Buy-ology in his book ‘The Branded Mind’ from 2011 (Du Plessis 2011, pp. 150-151). What is noticeable about his critique is that he, being a marketer himself, even criticises Lindstrøm for concluding too vividly and for popularising his findings. Author Roger Dooley appraises Buy-ology as a ‘must read’ for marketers. However, he also emphasise that he hopes that the research behind the book “is also published in a way that it opens up for scholarly review”. Since he believes that neuromarketing lacks “academic research that validates the ability of brain scans (...) to predict results in the market place”(Dooley 2008). However, Lindstrøm’s personal assistant has informed us upon a direct request, that the findings from the study are confidential.

Lindstrøm claims that his results are provocative and groundbreaking, however, as the results never have been presented in detail, these claims cannot be verified. According to theory: “A scientific experiment, no matter how spectacular the results, is not completed until the results are published” (Day 1998, p. ix) . On his Brain Ethics blog, Thomas Ramsøy wrote in 2011 that Lindstrøm two years in advance of this blog post had claimed that the results would be out soon (Ramsøy 2011). However, as mentioned above, the results of the study has now changed from pending to confidential. The fact, that the results are not laid out in the open, is well aligned with the presentation of Buyology as Lindstrøm’s personal and commercial quest to brand himself, as they results hereby are secondary to his own branding. The fact that the scientific field of

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15 See appendix 9
neuroscience has explicitly asked Lindstrøm for validation and proof of his observations and results, is a clear expression of their frustration with his presentation of the practice, as there is no telling which grounds his many claims are built on. Furthermore, it seems odd not to publish the results, unless there are commercial interests involved. As seen from the examples above, Lindstrøm is not only criticised by neuroscientists but also marketers. The main point of criticism is the non-published methods and results and the extensive use of reverse inference.

After having established how several scientists raise critique towards Lindstrøm and his methods, we will now discuss the grounds for this in detail below.

In the aftermath of the heavy criticism pointed at NYT and Lindstrøm in relation to ‘You love your iPhone. Literally.’ Lindstrøm actually replied, by leaving the same comment on blogs belonging to several of the scholars who had signed Poldrack’s letter (Yarkoni 2011a). However, this reply does not bring anything new to the table but merely presents more statements in line with those presented in Buy-ology and the Op-Ed, focusing on name-dropping, the magnitude of the Buy-ology study and an attempt to use a scientific research discourse to validate the study and findings.

7.5 The Struggle Between Neuroscientists and Marketers

Several neuroscientists and marketers, in addition to those referred to, have criticised Lindstrøm. The critique is grounded in many of the aspects mentioned above, however, other points are also of relevance. Below, we will elaborate on what we consider plausible explanations for the heavy criticism pointed towards Lindstrøm.

As seen from the description (cf. section 6.4) Lindstrøm has received much attention and managed to put neuromarketing on the map. In this sense, he has accomplished what neuroscientists have not been able to themselves. Thus, in some ways, Lindstrøm has been stealing the academic field’s thunder. Not only is he the one receiving all the attention and the one earning the money, he is also taking the easy way out in not publishing any of his results. Furthermore, what Lindstrøm presents as a groundbreaking study is actually built mostly on methods, which the scientists regard as
problematic e.g. in relation to reverse inference. As described (cf. section 6.4), scientific discourses are often hard to get through to the media. The scientists are thus challenged when attempting to explain why they do not agree with Lindstrøm to a lay audience, as this is often done in their academic language and not lay terms. Accordingly, Lindstrøm’s notion of neuromarketing is what the lay audience adhere to, as Lindstrøm’s communicative approach is the most comprehensible and entertaining. Acknowledging the scientists’ positivist stance and the academic standards they comply with, their frustration is understandable when suddenly everyone understands the general notion of neuromarketing based on the very radical view of Buy-ology. As Lindstrøm’s work in some places is bordering plagiarism of Zaltman’s book title and notion of neuromarketing, other cases of plagiarism might be found in other chapters of Buy-ology. Another aspect that carries a strong resemblance to plagiarism is the presentation of the nun study. Lindstrøm hereby steals the thunder of other’s work, as he is not referencing his sources or in any way paying credit to the originator, as is the norm.

As scientists may experience difficulties in reaching mainstream media with academic communication and discourses, their aggressive reactions toward Lindstrøm may be a reflection of their frustration hereof. Furthermore, instead of focusing on neuromarketing, when he is in the media, Lindstrøm merely brands himself. Thus, the focus of neuromarketing becomes secondary to himself. Lindstrøm is thus not helping to promote the work conducted within neuromarketing as a field, quite the contrary. Furthermore, one can imagine the frustration experienced by the academics, when they are asked by media to elaborate on Lindstrøm’s findings, which they consider invalid.

The fact that Lindstrøm has played an important part in placing neuromarketing on the map also entail problems, as it hereby is the ‘popular’ presentation of the practice that is known and not the scientific groundwork. Lindstrøm himself emphasises that he is a marketer and points to his conclusions being based on interpretations rather than actual facts, meaning that his so-called scientific study may be regarded as pseudoscience. The struggles between the neuroscientific community and Lindstrøm can be perceived as an unequal encounter, according to Fairclough’s notion of power. What is interesting in
this perception is that each part holds power, however, in relation to different aspects. The scientific community possesses power in relation to knowledge, methods and academic argumentation. On the contrary, Lindstrøm possesses power in relation to the media, as he has caught their attention and knows how to communicate with and through them.

Noticing how much media coverage Lindstrøm has received in relation to Buy-ology, one might suggest that the scientists could learn from Lindstrøm in regards to which discourses the media pick up on. Whether an entertaining and easy-to-understand communication of science, politics and other topics, which are considered ‘heavy’ is actually desirable, is however quite another discussion.
8 Conclusion

The purpose of this thesis was to gain a better understanding of the concept of neuromarketing and furthermore discuss how the concept is communicatively approached in the context of our empirical data. This is illustrated by analyses of Lindstrøm’s and the scholars’ respective work, hereby enabling us to uncover and understand comparative differences and similarities in their approaches to and views of the practice.

Our approach to reaching this understanding was anchored in the tradition of hermeneutics. The hermeneutic circle is evident throughout the thesis, as the overall conclusion and understanding is based on the various part analyses and on continuously relating the different parts to each other, hereby creating a reciprocal process between parts and whole and ultimately arriving at an understanding of the whole through an understanding of the parts.

In uncovering how our empirical data communicatively approaches neuromarketing, social constructionism and the active role of language in the construction of the social world have also played an important part, as we, through the discursive construction of Lindstrøm’s and the scholars’ notion of the practice, are able to lay bare their respective opinions and views.

Thus, roughly speaking, two types of neuromarketing exist: one within academic research and one within a commercial context. The scholars and Lindstrøm each represent the respective fields.

Lindstrøm considers neuromarketing to be a tool that will be able to ‘save’ marketing as marketers will be served “the naked truth – the truth unplugged and uncensored” by interviewing consumers’ brains. Lindstrøm expresses his enthusiasm for neuromarketing through vivid descriptions of both the practice in general and through his Buy-ology study, which communicatively is rather emotionally and subjectively constructed especially in regards to word choice. Lindstrøm describes neuromarketing as being able to lay bare the forces that stimulate our interests and buying-behaviour
and ultimately cause us to buy. He even argues that neuromarketing will provide marketers with the ability to uncover the buying mind’s deepest secrets. Accordingly, Lindstrøm advocates the use of neuromarketing as the future market research method and mentions no limitations in regards to the capabilities of the practice. Even though his descriptions are overly enthusiastic and positive, he does not offer any explanation for the exact usage or application of neuroscientific tools to marketing. Through his discursive practice Lindstrøm positions himself as an expert within neuromarketing. He relies heavily on a mix of scientific and marketing discourses in explaining his work, however, as the scientific discourse is scattered loosely throughout the chapters and greatly downplayed in favour of marketing and Lindstrøm himself, the focal point of the chapters becomes Lindstrøm. Lindstrøm’s heavy use of conclusive argumentation mainly serves to underpin his above notion of neuromarketing and to emphasise the magnitude and groundbreaking nature of the Buy-ology study.

The scholars present their notion of neuromarketing in a quite different manner. Rather than presenting certainties and final conclusions, their argumentation is based on academic research and their communicative approach is very factual and objective. They approach their findings with caution, which is evident through their extensive use of hedging and a more downplayed and guarded enthusiasm. However, despite all the hedging and cautiousness they still express enthusiasm. Their discursive practice is characterised by a strong focus on the methods and findings within their articles and on emphasising the validity hereof. The scholars see future potential in neuromarketing and argue that the practice might function as a tool for opening ‘the black box’ of consumers’ brains, however, it will require further research and development of analytical tools. The scholars also point to the fact that it should not be left to marketers and mainstream media to control the neuromarketing agenda or to interpret the potentials of applying neuroscience to marketing, criticising Lindstrøm’s and other marketers’ hype of neuromarketing. As a continuation hereof, the scholars point to marketers’ extensive use of reverse inference, which they emphasise is a problem that must be overcome before neuromarketing might prove beneficial.
The main reason for the differences in Lindstrøm’s and the scholars’ notions of neuromarketing, is to be found in their different backgrounds. Lindstrøm is a marketer working to brand himself, whereas the scholars are generating knowledge. A lot of the critique that the scholars put forward is not so much directed at neuromarketing as a practice, but rather towards Lindstrøm and other marketers for their conclusions of the practice, which are based on extensive use of reverse inference. Furthermore, the critique pointed towards Buy-ology concerns the secrecy around it. Since neither the methods, nor the results are available, the study does not offer the possibility of verification or falsification. Hence, the study cannot be approved within an academic context.

In general, it is evident that the scholars enforce and uphold a positivistic stance, hereby not accepting research that does not offer intersubjective testability or in other ways serve to enforce a notion of hype. Thus, as the field of neuromarketing and the application of neuroimaging to marketing are still in their infancy, the scholars solely adhere to what has been proven academically.

Apart from their different backgrounds, the scholars’ and Lindstrøm’s incentives for writing about neuromarketing also differ widely, which again affect their communication. Lindstrøm writes about marketing and neuromarketing to brand himself in his aspiration for fame. Thus, Lindstrøm must sell his vivid messages to the wide public and to everyone. The scholars write about neuromarketing in an attempt of contributing with more and new knowledge to the field. Thus, they, in adhering with a positivistic stance, aim to communicate their results in a clear and concise manner, hereby ensuring the possibility of intersubjective testability and in which they rather overstate their caution than overstate their findings. Despite Lindstrøm’s lack in scientific documentation, he has managed to get his notion through to mainstream media and the lay audience and has furthermore received a vast amount of media coverage and bestseller honours in relation to Buy-ology. Lindstrøm explicitly states that Buy-ology is for everyone. This is seen in his communication, which is based on popular and hybrid discourses, simple word choices and extensive use of vivid descriptions, metaphors and analogies. Lindstrøm leaves out complex medical
abbreviations and scientific explanations and instead introduces his own simplified concepts. The popularisation of scientific observation is also known as scientific accommodation. As this practice often emphasises the uniqueness, rarity and originality of observations, Lindstrøm’s Buy-ology is recognised as an example of scientific accommodation, serving to convince the lay audience that neuromarketing is capable of more than what is actually proved through scientific research. Through his writing style, Lindstrøm practically stands out as a mediator between the field of science and the general public and by using scientific elements and concepts in the way he does, he creates an enjoyable and very entertaining text. He uses intertextuality and anecdotes in a clever textual structure, where his relational richness seeks to speak to the reader. Lindstrøm entertains his audience by celebrating his statements instead of validating them. Lindstrøm uses a rhetoric which sells, however, his evidence and documentation are insufficient and un-academic and hence, so is his notion of neuromarketing.
9 Reflections

The respective fields of our empirical data have rather different opinions in regards to the practise and also very different ways of portraying their work. The scientific articles proved to be of a very consistent nature and followed a logic framework and structure, hereby making it fairly straightforward to apply analytical tools and methods to the data. The quite opposite was the case for Buy-ology. There is no structure in the book as such; no common thread is readily detectable and the book is as much, if not more, about Lindstrøm himself as it is about neuromarketing. Lindstrøm is Buy-ology and Buy-ology is Lindstrøm. From an objective point of view, Buy-ology is in many ways an intriguing book, which presents many interesting and entertaining aspects. However, when going beyond the initial surface, it is also tremendously complex and structured in a way, in which it becomes difficult to tell what is fact and what is fiction. The analysis of Buy-ology thus proved to be quite a challenge and Lindstrøm ended up playing a much bigger part than anticipated. However, this was not due to his academic skills and level but rather the lack thereof, as explaining neuromarketing from his point of view is almost like explaining how to build castles in the sky.

When applying Fairclough and CDA to Buy-ology one could almost wish that Fairclough had an extra instrument in his toolbox: an anti-discourse. Several places in Buy-ology, especially in relation to Lindstrøm’s descriptions of his Buy-ology study, some discourses are so prevailingly missing that they become evident through their absence, hence our notion of an anti-discourse. Especially a validity discourse would have been highly relevant in several places and is hereby evident by its absence. An example of this is Lindstrøm’s most detailed description of his Buy-ology study: “I took these hypotheses, and after doing the necessary research, thought up a way to test them, using cutting-edge neuroimaging techniques” (Lindstrøm 2008b, p. 221). Here, it would have been highly relevant to include a detailed description of what the hypotheses, research and techniques actually involved. As evasive and deceptive descriptions go, Buy-ology is a masterpiece. At no point in the book does Lindstrøm actually address and describe the methods used in his many experiments but rather, he spends his time making vivid descriptions of irrelevant aspects. Hereby saying a lot without really saying anything. This use of language made it very difficult to describe
his descriptions because when addressing the crux of the matter, the crux often turned out to be missing. This led to Lindstrøm taking up an extensive amount of space in the thesis. We had anticipated that Buy-ology would require a certain amount of space, however, not as extensively as ended up being the case. Describing the scientific articles’ notion of neuromarketing was fairly straightforward and we were able to do it in a somewhat short and precise manner, due to their consistent nature. However, describing Lindstrøm and his rather weaving and intermingled explanations took a lot of effort and much more extensive descriptions, in order to lay bare his notion.

Our thesis partly exists in a field in which we are (now, advanced) laymen: neuroscience. Bearing this in mind, our interpretation of the capabilities and possibilities of neuromarketing are not based on research and experiments conducted within a neuroscientific setting but rather, it is the uncovering of the language, arguments, notions and presentations surrounding its use. We do acknowledge that details invisible to the lay eye may have escaped our attention. However, the fact that we are researchers within the field of communication is not to be considered a weakness but rather, as an analytical standpoint and approach yielding different results and perspectives from that of medical science, hereby counterbalancing the scientific field with strengths and aspects from our field of expertise: communication.

What we have been able to bring to the table of neuromarketing is a critical review of the arguments, evidence and the statements surrounding its use. As researchers within communication, we have the abilities to critically revise the communicative approach to the practise, the factual consistency, and hence overall presentation and notion of neuromarketing, and hereby arrive at a thorough understanding of the practice, based on the way practitioners within the field have presented it.

Whether or not an actual shift in the marketing paradigm is on its way is too early to tell, as neuromarketing is still in its infancy. The scholars are reluctant, yet positive in their views on the future potential and if we follow Lindstrøm’s line of thought, then a paradigm shift has already taken place. In the present situation, the application of neuroscientific tools to market research can, in our opinion, serve as an effective
supplement to existing market research tools, as also seen within neuromarketing companies (cf. section 4.4.5). However, keeping the infancy of the practice in mind, relying exclusively on results generated from it is unlikely to yield the same richness of information that traditional research will. Nevertheless, at this point of state, we believe that applying neuroscientific research to traditional research may uncover useful information in relation to reactions produced by advertising stimuli, thereby serving to create a greater understanding of a decision-making process. In the long run, however, neuromarketing may prove to be a paradigm shift within marketing, as great and yet unexplored potential does seem to lie beneath the surface. If the practice does gain momentum, an important aspect to take into consideration would be the incorporation of ethical guidelines and standards surrounding the use. As with many other things, the outcome relies on the intentions behind the use and thus, what may be an innocent research tool in the hands of some, may prove a powerful tool of manipulation in the hands of others. If neuromarketing in fact does advance radically and reaches a critical level of effectiveness, safeguarding consumers’ autonomy will become a very important aspect.
## 10 List of Responsibilities

Below table assigns responsibility of each section of the thesis to one of the authors.

<table>
<thead>
<tr>
<th>Section</th>
<th>Marianne</th>
<th>Cecilie</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction (including all sections in this chapter)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Theory of Scientific Methods</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.1 Hermeneutics</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.2 Social Construction</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.3 Positivism</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.4 Qualitative Research</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.5 Quality of the Analysis</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Empirical Foundation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3.1 Buy-ology</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3.2 Two Scientific Articles</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. The Field of Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4.1 The Marketing of Neuromarketing</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4.2 The Brave New World of Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4.3 The Neuro of Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4.4 Current Uses of Neuromarketing</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4.5 The Most Famous Neuromarketing Study</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5. Methodology</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1 Critical Discourse Analysis</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1.1 Defining Discourse</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5.1.2 Fairclough’s Critical Discourse Analysis</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5.1.3 Defining ‘Power’ in Discourse</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1.4 Text, Meanings and Interpretations</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5.1.5 A Three-dimensional Framework</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1.6 The Textual Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1.7 The Discursive Dimension</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5.1.8 The Social Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.1.9 Linking the Dimensions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.2 A Critical Note on CDA</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Section</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>5.3 Toulmin’s Argumentation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.3.1 Toulmin’s Model of Argumentation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.3.2 Elements of an Argument</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.3.3 Division of Arguments</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.3.4 Classification of Arguments</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.3.5 Critique of Arguments</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5.4 The Toulmin Model on a Critical Note</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. Empirical Analysis</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1 Chapters One and Six of Buy-ology</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.1 Textual Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.2 Discursive Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.3 Social Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.3.1 Power</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.4 Argumentation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.5 General Argumentation in Buy-ology</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.6 The Missing Conclusion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.1.7 Lindström’s Notion of Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2 Two Scientific Articles on Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2.1 Textual Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2.2 Discursive Dimension</td>
<td>X</td>
<td></td>
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<tr>
<td>6.2.3 Social Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2.4 Argumentation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2.5 General Argumentation in the Articles</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.2.6 The Scholars’ Notion of Neuromarketing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3 Comparison of Buy-ology and Scientific Articles</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.1 Textual Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.1.1 Grammar</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.2 Discursive Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.3 Social Dimension</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.4 The Use of Argumentation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.3.5 What Does Neuromarketing Have to Offer</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>X</td>
<td></td>
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<tr>
<td>---------------------------------------------------------------</td>
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</tr>
<tr>
<td>6.4 Lindstrøm’s Neuroscientific Accommodation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4.1 Accommodation of Scientific Observations</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6.4.2 Lindstrøm’s Entertaining Science</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7. Discussion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7.1 The Afterword of Buy-ology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2 No Time for Proofreading?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7.3 Who Knows the Truth?</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7.4 Public Critique of Lindstrøm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 The Struggle Between Neuroscientists and Marketers</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8. Conclusion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>9. Reflections</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
11 Bibliography


