

M.N.G. VAN GINKEL-BIESHAAR

# The Impact of Abstract versus Concrete Product Communications on Consumer Decision-making Processes



# **The Impact of Abstract versus Concrete Product Communications on Consumer Decision-making Processes**



# **The Impact of Abstract versus Concrete Product Communications on Consumer Decision-making Processes**

De invloed van abstracte versus concrete productboodschappen op  
besluitvormingsprocessen van consumenten

## **THESIS**

to obtain the degree of Doctor from the  
Erasmus University Rotterdam  
by command of the  
rector magnificus

Prof.dr. H.G. Schmidt

and in accordance with the decision of the Doctorate Board.

The public defense shall be held on  
Tuesday March 20, 2012 at 13:30 hours

by

**Marrigje Nischa Goverdine van Ginkel - Bieshaar**  
born in Dordrecht



## Doctoral Committee

Promoter: Prof.dr.ir. B.G.C. Dellaert

Other members: Prof.dr. Ph.H.B.F. Franses  
Prof.dr. G. Häubl  
Prof.dr. S.M.J. van Osselaer

### Erasmus Research Institute of Management – ERIM

The joint research institute of the Rotterdam School of Management (RSM)  
and the Erasmus School of Economics (ESE) at the Erasmus University Rotterdam  
Internet: <http://www.erim.eur.nl>

**ERIM Electronic Series Portal:** <http://hdl.handle.net/1765/1>

### ERIM PhD Series in Research in Management, 256

ERIM reference number: EPS-2012-256-MKT

ISBN 978-90-5892-300-4

© 2012, Mirjam van Ginkel - Bieshaar

Design: B&T Ontwerp en advies, [www.b-en-t.nl](http://www.b-en-t.nl)

This publication (cover and interior) is printed by haveka.nl on recycled paper, Revive®.

The ink used is produced from renewable resources and alcohol free fountain solution.

Certifications for the paper and the printing production process: Recycle, EU Flower, FSC, ISO14001.

More info: <http://www.haveka.nl/greening>.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without permission in writing from the author.



## **Preface (voorwoord)**

Vaak wordt het promoveren vergeleken met het beklimmen van een berg. Ik was een bergbeklimmer zonder duidelijke wegenkaart op zak. Na de start van mijn promotietraject duurde het enige tijd voordat ik überhaupt de berg had gevonden die ik wilde gaan beklimmen. Misschien was het goed dat ik geen wegenkaart had bestudeerd, want als ik de weg vooraf in detail had bekeken, had ik er misschien wel van afgezien. Nu, ruim 4 jaar later ben ik blij dat ik de weg heb afgelegd.

Toen ik in 1996 afstudeerde, vroeg mijn scriptiebegeleider Harry Commandeur of het misschien iets voor mij was om promotieonderzoek te gaan doen. Mijn antwoord was: “Nu niet, ik wil eerst het bedrijfsleven in.” Harry, bedankt dat jij het promoveren hebt geïntroduceerd als een optie, die vervolgens in mijn hoofd is blijven hangen.

Na meer dan tien jaar in het bedrijfsleven werd de behoefte manifester om eens wat meer tijd te hebben om echt goed onderzoek te doen, en daarbij mijn persoonlijke doelstelling om ooit te promoveren te kunnen verwezenlijken. Philip Hans, bedankt dat je met het Mature talent traject mij de mogelijkheid bood om te gaan promoveren.

Benedict, jou wil ik in het bijzonder bedanken voor de professionaliteit en het geduld dat je tentoonspreidde tijdens de begeleiding van mijn proefschrift. De basiskennis waarover de meeste promovendi bij aanvang beschikken was bij mij al ver weggezaakt, of was niet aanwezig. Toen ik gaandeweg ontdekte dat ik in het topsegment van de marketingwetenschap was gerold, vroeg ik mij regelmatig af of de kloof tussen mijn praktische manier van denken en jouw uitmuntende wetenschappelijke denk- en kennisniveau niet onoverbrugbaar groot was. Jouw herhaaldelijke aanmoedigingen, dat we op de goede weg waren, hebben me enorm geholpen. In ons eerste gesprek gaf je al aan dat je niet geloofde in promoveren in twee jaar. Daarin heb je gelijk gekregen.

Sonja Wendel en Judith de Jong, bedankt dat jullie vanuit je functie bij het NIVEL in dit onderzoek wilden participeren en faciliteren. Jullie actieve meedenken heeft mede richting gegeven aan dit onderzoek. Daarnaast wil ik Ellen van Kleef van de Universiteit van Wageningen bedanken voor haar feedback op een deel van dit onderzoek. Alle leden van de promotiecommissie wil ik hartelijk bedanken. Philip Hans Franses, Gerald Häubl, Stijn van Osselaer, Harry Commandeur, Bas Donkers and Hans van Trijp thanks for your willingness to participate in the committee.

Ik wil mijn collega's van de afdeling marketing hartelijk bedanken. Agapi, Aurelie, Bas, Carlos, Cecilia, Dimitrios, Eelco, Feray, Florian, Gui, Hernan, Isabel, Ivan, Jordana, Luit, Martijn, Nel, Nuno, Peter, Remco, Ron, Sarah, Sonja, Stefan, Tim, Tulay, Vardit, Vijay and Willem, thanks for the joint lunches, the fun and the insightful discussions. Jordana, thank you for being my roommate and being like-minded in a world of marketing modelers. Tulay, bedankt voor de ondersteuning bij allerlei praktische zaken, je uitdagende opmerkingen die zorgden voor leven in de brouwerij, en natuurlijk voor het telkens weer aanvullen van de koektrommel. Veel dank ben ik ook verschuldigd aan Gerrit-Jan, Christiaan en Marcel van het Erasmus Behavioral Lab. Jullie stonden altijd voor mij klaar bij de uitvoering van mijn experimenten in het lab.

In het bijzonder wil ik mijn collega Mature Talents bedanken voor de positieve energie. Karen, Margaretha, Madeleine, Brigitte, Anita, Suzanne, Mariska en Antoinette, jullie waren bij uitstek degenen waarmee het mogelijk was om weer even de dagelijkse werkzaamheden te ontstijgen, te relativiseren, en weer vol goede moed verder te gaan. We waren allemaal bezig met dezelfde ontdekkingsreis.

Madeleine, wat ontzettend lief dat je helemaal uit Edinburgh komt om mijn paranimf te zijn. Ik heb enorm veel bewondering voor je dapperheid en positiviteit, die je toonde in de periode dat ik jou leerde kennen tijdens ons Mature Talent-avontuur. Jouw sterke karakter-eigenschappen dienden voor mij als een voorbeeld als ik even niet meer wist hoe ik met mijn onderzoek verder moest. Ik ben heel blij dat je mijn paranimf wilt zijn. Willeke, dat geldt ook voor jou. Als zussen hebben onze wegen zich zelfs niet gescheiden toen we het ouderlijk huis verlieten, en samen in Rotterdam gingen wonen. Na altijd lief en leed te hebben gedeeld, voelde het volstrekt logisch om jou als paranimf te vragen. Ik ben blij dat je "ja" hebt gezegd, hoewel ik eigenlijk niet anders had verwacht. Ik ben blij om jullie aan mijn zijde te hebben tijdens de verdediging van mijn proefschrift.

Joost, Daan en Alexander, ik heb de afgelopen jaren geprobeerd er veel voor jullie te zijn en toch tussendoor mijn persoonlijke doelstelling om te promoveren te realiseren. Het blijft lastig om uit te leggen wat ik heb gedaan. Joost en Daan, jullie noemen mij een uitvinder van dingen op papier. ("Dat zijn dus eigenlijk dingen waar je niet zoveel aan hebt."). Alexander, jouw visie daarop is dat ik dan toch veel beter kan thuisblijven om jou uit school te halen. In ieder geval hoop ik dat de komende tijd weer vaker te kunnen doen. Sander, jij bent degene die mij steeds aanspoort om het maximale uit mezelf te halen. Jij was degene die mij op de wervingsadvertentie voor Mature Talents wees. Dank je wel.

De meeste dank ben ik verschuldigd aan mijn ouders en schoonouders die altijd klaarstonden om thuis in te springen. Drie dagen per week namen jullie de zorg voor de kinderen op je. Papa en mama, ondanks jullie eigen drukke agenda, hebben jullie nooit nee gezegd als ik vroeg om op de kinderen te passen, ongeacht het moment van de dag. Jullie bedachten altijd een oplossing. Zonder jullie zou dit proefschrift nooit zijn afgekomen!

Mijn doel om te promoveren heb ik bereikt. Aangezien ik het bedrijfsleven mis, en dus weer graag de stap terug naar het bedrijfsleven maak, weet ik nu al dat ik ook de wetenschap ga missen. Het wetenschappelijk denken is onderdeel van mij geworden. Dit intermezzo was de inspanning waard!

Mirjam van Ginkel – Bieshaar  
Ottoland, december 2011





**Table of Contents**

<b>Preface (voorwoord)</b>	<b>v</b>
<b>Table of contents</b>	<b>ix</b>
<b>Chapter 1: Introduction</b>	<b>1</b>
1.1 Prelude	1
1.2 Introduction	2
1.3 Motivation	2
1.4 The Decision-making Process	3
1.5 Message Specificity	4
1.6 Objectives across the Different Studies	4
1.6.1 Objectives: Essay 1	
1.6.2 Objectives: Essay 2	
1.6.3 Objectives: Essay 3	
1.7 Dissertation Outline	6
<b>Chapter 2: Abstract Persuasive Communications are More Effective with a Concrete Example (Essay 1)</b>	<b>7</b>
2.1 Introduction	8
2.2 The Impact of Abstract and Concrete Messages on Consumer Goal Activation and Choice Behavior	10
2.3 Methods and Data	13
2.3.1 Study 1: the Impact of Message Content on Choice Behavior	
2.3.2 Study 2: the Impact of Product Examples on Goal Activation	
2.3.3 Study 3: Multiple Products Interfere with Goal Activation	
2.4 General Discussion	25
2.4.1 Conclusions	
2.4.2 Theoretical Implications	

- 2.4.3 Managerial Implications
- 2.4.4 Limitations and Directions for Further Research

## **Chapter 3: The Differential Role of Abstract versus Concrete Communications: An analysis of the Asymmetry in Mental Representations (Essay 2)** **29**

3.1	Introduction	30
3.2	The Impact of Cognitive Constructs on Tasks and the Underlying Role of Association between Cognitive Constructs	31
3.2.1	Theoretical Framework	
3.2.2	Fluency Theory: the Impact of Cognitive Constructs on Tasks	
3.2.2.1	Fluency Theory: the Impact on Goal Activation	
3.2.2.2	Fluency Theory: the Impact on Product Acceptance	
3.2.3	Spreading-activation Theory: the Association between Cognitive Constructs	
3.3	Methods and Data	36
3.3.1	Study 1: the Impact of Cognitive Constructs on Tasks	
3.3.1.1	Experiment 1A	
3.3.1.2	Experiment 1B	
3.3.2	Study 2: the Relatedness of Cognitive Constructs	
3.3.2.1	Experiment 2A	
3.3.2.2	Experiment 2B	
3.4	General Discussion	46
3.4.1	Conclusions	
3.4.2	Theoretical Implications	
3.4.3	Managerial Implications	
3.4.4	Limitations and Directions for Further Research	

## **Chapter 4: The Impact of Abstract versus Concrete Communications on the Decision-making Process in Adjacent Product Categories (Essay 3)**

**49**

4.1 Introduction	50
4.2 Spreading Activation Within and Between Product Categories	52
4.2.1 Broadening the Psychological Distance Envisaged	
4.2.1.1 Alignable versus Non-alignable Objects	
4.2.1.2 Construal Level Theory	
4.2.2 Spreading Activation	
4.2.3 Broadening Vision and Spreading Activation	
4.3 Hypotheses	55
4.4 Methods and Data	58
4.4.1 Study 1: the Impact of Cognitive Constructs within the Specific Product Category and in Adjacent Categories	
4.4.2 Study 2: the Relatedness of Cognitive Constructs	
4.5 General Discussion	67
4.5.1 Conclusions	
4.5.2 Theoretical and Managerial Implications	
4.5.3 Limitations and Directions for Further Research	

## **Chapter 5: Discussion**

**69**

5.1 Conclusions	69
5.2 Theoretical Implications	70
5.3 Managerial Implications	71
5.4 Limitations and Avenues for Future Research	72

<b>Appendix</b>	<b>75</b>
Appendix A: Examples in the Proposed Decision-making Process	75
Appendix B: Pretest (Essay 1)	76
Appendix C: Website Manipulations to Measure Choice Activation (Essay 1, Experiment 1)	77
Appendix D: Website Manipulations to Measure Goal Activation (Essay 1, Experiment 2)	80
 <b>Summary (English)</b>	 <b>83</b>
 <b>Samenvatting (Nederlands)</b>	 <b>85</b>
 <b>References</b>	 <b>87</b>
 <b>About the Author</b>	 <b>97</b>
 <b>ERIM PhD Series</b>	 <b>99</b>

# **CHAPTER 1.**

## **Introduction**

### **1.1 Prelude**

With the growth of online shopping, a new era of market communication is administered. Internet as a combined communication- and sales-channel, has blurred the borders between persuasive communications to activate goals (i.e., abstract messages that are traditionally communicated via advertisements, commercials and billboards) and concrete recommendations to activate choices (i.e., concrete messages that are traditionally communicated by promotions on the shop floor) (Häubl and Murray 2001). This leads to questions like: What is the best message to communicate on the introductory page of a webshop? Is it effective to communicate an abstract message (e.g., “With Dell you save money”), or is it more effective to communicate about specific products (e.g., eBay shows pictures of a range of daily deals)? The blurring borders between persuasive communications and concrete recommendations call for new research to gain insight in the interplay between abstract and concrete product messages.

These issues are related to more general trade-offs that have to be made between using abstract or concrete messages in marketing communication. For example, is it more effective to communicate an abstract benefit (e.g., “Product X is healthy”) or is it more effective to communicate a concrete attribute (e.g., “Product X does not contain fat”) as a product claim? This question transcends the borders of a specific product category. Companies that offer a broad range of products are often inclined to use abstract communications (e.g. “Dairy of company X is healthy”) if they assume that such messages benefit their whole product range. However, little is known about if this assumption is correct and if an abstract message does indeed have a broader product impact in the decision making process than a specific product message (e.g., “Yogurt X has a low fat level”).

Therefore better insights in the impact of abstract versus concrete product communications on consumer decision making is important to many different marketing communication questions.

## **1.2 Introduction**

In our daily lives, we are exposed to various product messages. A message can be abstract if it only communicates a benefit of a type of product, brand or category (e.g., that yogurt is healthy), but it can also be more concrete if it graphically displays one or more specific products or if it describes the attributes of a specific product. Marketers typically use both abstract persuasive messages and concrete product messages when promoting products to consumers. Whereas abstract messages tend to be most effective at influencing consumer goals and attitudes toward a brand, consumer purchasing behavior can be more directly and effectively influenced with concrete product messages (Lee and Ariely 2006; Payne 1982; Payne, Bettman, and Johnson 1988; Lavidge and Steiner 1961; Court et al. 2009; Edelman 2010; Schultz 1996; Bertrand et al. 2010). Several studies have investigated the impact of making advertisements more specific with pictures (Unnava and Burnkrant 1991; Edell and Staelin 1983; Mitchell 1986; Pieters and Wedel 2004; Miniard et al. 1991) or specifying claims by providing more detail (Wansink, Sonka, and Hasler 2004). Less is known about how the two types of messages (abstract versus concrete) combine to achieve the different goals that the communicating organizations aspire to realize. With the growth of online shopping, the boundaries between persuasive communication and decision support have become blurred (Häubl and Murray 2001). Our aim is to investigate the differential impact of abstract and concrete messages on the realization of two different communication goals: goal activation and purchase increase. This dissertation describes the impact of abstract versus concrete product messages on the different stages in the decision making process, and investigates the underlying mental representations involved in this process. We conducted most of our research in a web-based environment.

## **1.3 Motivation**

Despite the substantial amount of money that is spent on communication in the media and on the shop floor, there is little insight into the differential impact of abstract and concrete messages on behavior and mental representation. However, from the perspective of brand managers and society in general, it is important to understand the impacts of abstract versus concrete messages on the decision-making process. For example, given the growing problem of obesity, it is important to gain insight into the ways in which product communication affects decision making with respect to healthy foods. In the current debate about obesity, there is a growing social awareness that people should be more conscious

about their food choices. Not only product choice but also the process of goal activation (i.e., making salient which goals are important when choosing a product) is important. It is important that consumers discuss not only their purchasing decisions but also their reasons for buying specific products with other people. This dissertation uses the health sector as an area in which to investigate the effects of product messages on consumer decision making in three related essays.

## **1.4 The Decision-making Process**

Within the decision-making process, we distinguish two chronological steps (i.e., decision stages) that are observed in two behavioral tasks: goal activation and choice activation (i.e., target behavior). We define goal activation as the process of making salient which goals are important when choosing products, whereas choice activation is the choice process itself. Each decision stage is accompanied by a distinct mindset (Gollwitzer 1990). Mindsets are defined as cognitive processes and judgmental criteria that can be activated in the course of performing a task (Xu and Wyer 2007; Malkoc, Zauberaman, and Bettman 2010). Mindsets influence how decision makers process and represent related or unrelated information (Malkoc et al. 2010; Meyvis, Goldsmith, and Dhar 2009). A mental representation is a cognitive structure of, for example, a goal that is composed of different types of information (Keller 2003; Labroo and Lee 2006). A mental representation of a goal structure includes the goal, the context and the actions and means associated with the goal (Labroo and Lee 2006). Thus, mental representations describe how concepts are represented in memory (cognitive structures), whereas mindsets describe how these concepts are activated (cognitive processes) to influence attitudes and behaviors. With regard to mental representations, this dissertation focuses on the cognitive relationship between benefits and attributes, which are closely related to goals and choices, respectively. Mental representations and mindsets are influenced by situations, like a recent visit to your doctor who warned you for high bloodpressure, or being temporarily impecunious. In our experiments we control for such situational differences by consistently priming respondents in a normal day-to-day setting.



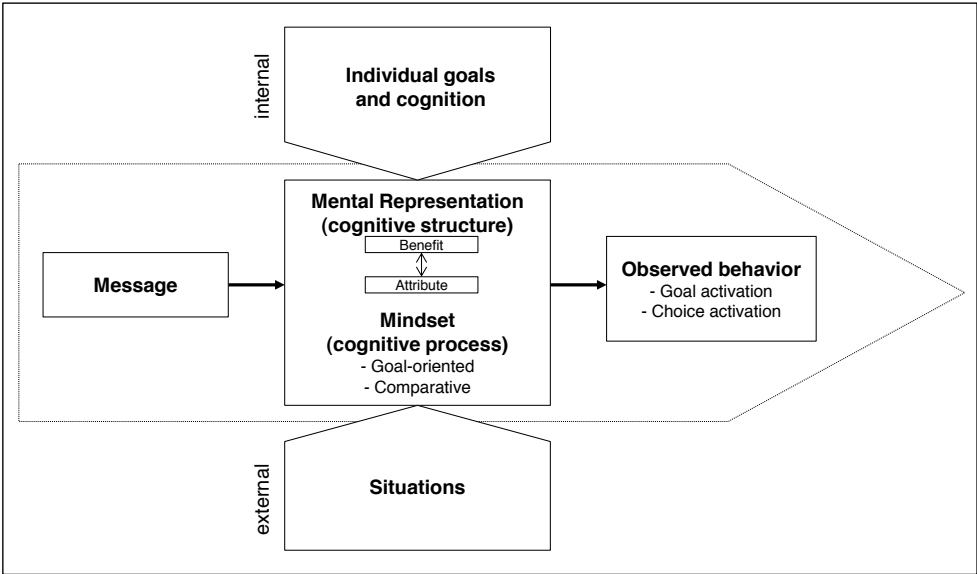


Figure 1: The decision-making process<sup>1</sup>

1.5 Message Specificity

Messages are the type of communication studied in this research. Message specificity is defined along a spectrum of concreteness. Abstract messages communicate a benefit of a type of product, brand or category (e.g., that yogurt is healthy). In this study, concreteness is increased by communicating an attribute rather than a benefit or by additionally describing one or more specific products. Products can be seen as collections of attributes. This thesis focuses on non-personalized messages.

1.6 The Objectives of the Different Studies

The overall objective of this dissertation is to provide meaningful insight into the differential impact of abstract and concrete messages on the decision-making process. The following sections outline the three essays in more detail.

<sup>1</sup> Appendix A provides a version of Figure 1 that is extended with concrete decision examples

***1.6.1 Objectives: Essay 1***

With the growing importance of online environments, the boundaries between persuasive communication and decision-making support have become blurred. Online advertising often allows for instant buying, and recommendations often influence the decision-making process outside of a consumer's awareness (i.e., recommendations persuade consumers to make certain decisions). On the basis of this fact, one might suggest that, to promote desirable consumer behavior, companies should combine the strengths of motivational (goal-based) messages with concrete (action-based) product suggestions. We developed a theoretical model to describe the impact of message content on goal activation and product choice. The objective of essay 1 is to provide insight into how abstract-benefit messages and specific product messages can be most effectively combined to influence consumers' daily decisions and thereby promote the product choices desired by the communicating organization.

***1.6.2 Objectives: Essay 2***

In essay 2, we focus on the single-product message, which, in essay 1, is described as the most effective message for activating goals and choices. The objective of this essay is to provide insight into the underlying cognitive structure that explains the impact of abstract versus concrete messages on goal activation and choice activation by exploring mental representations.

***1.6.3 Objectives: Essay 3***

Because most decisions are not made in isolation, the objective of essay 3 is to provide insight into the differential impact of abstract and concrete single-product messages on perception, choice activation and mental representation with respect to products in adjacent product categories. Because psychological distance is relevant when accounting for adjacent product categories, we expect abstract messages to become more effective when we compare the impact on adjacent products with the impact on products within a specific category. Our expectation is based on construal level theory.

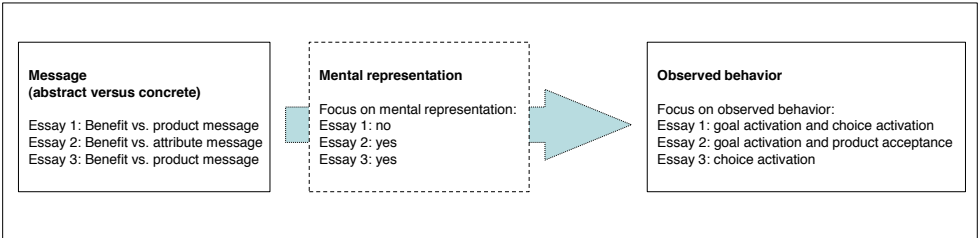


Figure 2: Elements of the decision-making process studied in the different essays

1.7 Dissertation Outline

This dissertation addresses three different studies in Chapters 2, 3 and 4, as depicted in table 1. The three studies interrelate; they all examine the differential impact of abstract and concrete messages on the decision-making process.

<b>Central research question:</b> What is the effect of abstract versus concrete messages on the decision-making process, in which we distinguish goal activation and choice activation, and what is the mental representation behind it?					
Ch.	Essay	Objective	Domain	Theories	Data
1	Introduction				
2	Essay 1: Abstract Persuasive Communications are More Effective with a Concrete Example	What is the effect of abstract versus concrete messages on behavior?	• <u>Behavior</u> : goals and choice • <u>Within</u> product category	• Fluency theory (Lee and Labroo 2004) • Mindsets (Xu and Wyer 2007, 2008)	• Experiments (experimental and observational methods)
3	Essay 2: The Differential Role of Abstract versus Concrete Communications, explicated by Asymmetry in the Mental Representation	What is the effect of abstract versus concrete messages on mental representation?	• (Behavior and) <u>Mental representation</u> • <u>Within</u> product category	• Fluency theory (Labroo and Lee 2006; Aaker and Lee 2001) • Spreading activation (Collins and Loftus 1975)	• Experiments (experimental methods)
4	Essay 3: The Impact of Abstract versus Concrete Communications on the Decision-making Process in Adjacent Product Categories	What is the effect of abstract versus concrete messages on adjacent product categories, focusing on mental representation?	• <u>Mental representation</u> • <u>Between</u> product categories	• Fluency theory (Labroo and Lee 2006; Aaker and Lee 2001) • Construal level theory (Trope and Liberman 2003, 2010) • Spreading activation (Collins and Loftus 1975)	• Panel data • Experiment (experimental methods)
5	Conclusion				

Table 1: Overview of the three studies in this dissertation

In essay 1 (Chapter 2), the joint impact of abstract and concrete messages on behavior is investigated. Essay 2 (Chapter 3) focuses on the impact of abstract versus concrete single-product messages on behavior and on the underlying mental representations within the product category concerned. Essay 3 (Chapter 4) extends the findings to decision making in adjacent product categories. We use different theoretical research streams across these studies to address our research objectives. All of the studies apply to the health field. Finally, Chapter 5 discusses the main findings across the three studies and concludes with several implications, limitations and future research questions.

## **CHAPTER 2.**

### **Abstract Persuasive Communications Are More Effective with a Concrete Example**

#### **ABSTRACT**

*With the growth of online shopping, the boundaries between persuasive communication and decision support have become blurred. Online advertising often allows for instant buying, and recommendations often influence the decision-making process outside of a consumer's awareness which can be seen as persuasion. We investigate the impact of different message contents on consumer purchasing decisions. We distinguish two sequential decision-making stages: a goal-oriented stage and a comparative stage. The two stages are characterized by distinct mindsets: the goal-oriented stage is more abstract, and the comparative stage is more concrete in nature. Adding single or multiple concrete products to abstract benefit messages amplifies choice activation. However, if multiple products are added, goal activation is hindered. A single-product message can translate activated goals into a concrete product choice and unlike multiple-product messages a single-product message does not instantly induce a comparative mindset, which suppresses goal-oriented considerations. Thus, we provide insight into how different messages interact with consumers' mindsets in daily decisions and can be used to steer product conversations and product choices in beneficial directions. Data from three experiments examining the promotion of healthy product choices provide support for our hypotheses.*

## 2.1 Introduction

Marketers typically use both abstract and concrete messages when describing products to consumers (Vakratsas and Ambler 1999). For example, Coca-Cola may advertise that it “opens happiness,” but it also shows that its family-size bottles are now on sale at a local retailer. Prior research has shown that, although abstract descriptions of products are most effective at influencing consumers’ general goals and attitudes toward a brand, concrete product messages are more likely to directly influence consumer choice behavior (Lee and Ariely 2006; Payne 1982; Court et al. 2009; Edelman 2010; Bertrand et al. 2010). However, relatively little is known about the combined effect of the two types of product messages. If the effects of abstract persuasive product communications could be enhanced by those of concrete product examples to impact goal activation and product choice behavior, this combined effect may be particularly fruitful for marketing managers (Lambrecht and Tucker 2011).

Abstract product messages typically promote a category or brand by emphasizing the broad benefits and goals that it may help consumers attain and are not specific to a single product (e.g., “improves your health” and “is great for having fun”). This type of abstract message is effective (in part) because it can change consumers’ cognitive activation of product benefits that are important to them (Labroo and Lee 2006; Aaker and Lee 2001). Such changes in activation can affect consumers’ subsequent choice behavior. However, abstract product messages are also relevant because they can lead consumers to think and communicate differently about *why* they buy specific products. For example, in public debates on financial investments or consumer obesity, there is a growing awareness that people should be more conscious about why certain product decisions are good for them (Moorman and Matulich 1993). The importance of influencing consumption goals and consumer word-of-mouth discussions is also recognized in social networking environments, where peer-to-peer communication is crucial and where consumption narratives can strongly affect brand and community appreciation (Thompson 1997; Trusov, Bucklin, and Pauwels 2009).

In contrast, marketing messages that present concrete product alternatives are expected to influence consumer choice more directly by, for example, changing the information that consumers have about specific products and by highlighting the concrete product options in their decision-making processes (Xu and Wyer 2008). Such direct effects on consumer choice are also highly relevant to marketing managers. Therefore, in

this research, we study the combined effects of abstract and concrete product messages. We investigate whether conveying specific product examples to consumers along with abstract product messages can help consumers translate a goal into a product choice that corresponds with this goal and help consumers understand why certain choices are more beneficial than others.

In accord with fluency theory (Lee and Labroo 2004; Alter and Oppenheimer 2009), we predict that concrete product messages can better bridge the gap between goal activation and product choice than abstract product messages alone. In particular, we expect that, in the cognitive product comparison step of the decision, consumers process messages about specific products more fluently than abstract messages. Hence, we hypothesize that by combining abstract product messages with concrete product examples, consumer choices are guided more easily toward products that correspond with the abstract message.

We also investigate whether the anticipated increase in choice probability comes at the expense of suppressing goal activation. Recent research has demonstrated the subtle, yet powerful, role that mindsets play in dictating decision making (Xu and Wyer 2007). We build on prior research showing that certain tasks can induce consumers to activate a “downstream” mindset in their decision processes without activating the mindset that normally precedes this mindset. Examples of tasks that induce such inhibition of initial abstract mindsets in favor of later more concrete mindsets include consumer participation in price determination (e.g., in auctions) (Chandran and Morwitz 2005), and when making initial purchases (Dhar, Huber, and Kahn 2007). We anticipate that such mindset skipping can also be evoked (but at a more detailed level of the decision-making process) if abstract product messages are presented along with concrete product alternatives.

We expect that this effect operates more subtly in the context of joint abstract and concrete product messages. In particular, we hypothesize that an abstract product message combined with *multiple* product alternatives operates in line with the previous examples and that consumers are not well able to cognitively connect goal activation and product choice. Instead, consumers are more likely to bypass goal activation in the decision-making process and directly move on to a comparison orientation. However, we also anticipate that if a *single* product example is combined with an abstract product message, consumers go through these mindsets sequentially. Hence, we expect that consumers can activate goals at least as well as they would if there was only an abstract product message and that they can also translate the activated goals into choice behavior at least as well as

they would if multiple product alternatives were presented. The reason is that abstract product messages combined with a single-product example can be processed fluently both in the goal-activation and in the product-comparison stages of the decision-making process (Lee and Ariely 2006; Lee and Labroo 2004).

## **2.2 The Impact of Abstract and Concrete Messages on Consumer Goal Activation and Choice Behavior**

Consumers generally go through distinct mindsets in the different stages of the decision-making process (Kahneman and Tversky 1979; Payne 1976; Gollwitzer 1990; Dhar et al. 2007; Xu and Wyer 2008). In this research, we focus on the deliberative stage of the decision-making process, in which individuals think about their goals and seek to define the desired outcomes of their possible actions (Gollwitzer 1990). Recently, Xu and Wyer (2007, 2008) refined this deliberative stage by distinguishing between two specific steps involved: 1) a goal-oriented step, in which consumers define the desired performances or outcomes of their actions, and 2) a comparative step that incorporates the consumer's preferred choice from among the alternatives. We adopt these two steps in our analysis of consumer decision making in this research (see figure 3). Because each of the two steps is accompanied by a distinct mindset that is determined by the different objectives and tasks to be solved within each step, we refer to the corresponding mindsets as the goal-oriented and comparative mindsets (Dhar et al. 2007; Gollwitzer, Heckhausen, and Steller 1990; Xu and Wyer 2007, 2008).

If a consumer is exposed to a product message, the impact of the message on the consumer's behavior can differ depending on the decision-making step during which the consumer was exposed to the message (Chandran and Morwitz 2005; Dhar et al. 2007; Xu and Wyer 2008). The first such difference that we investigate is whether an abstract versus a concrete product message is processed differently depending on the consumer's mindset in the decision-making process. We raise this question because we expect that if a message is congruent with a consumer's mindset, the message is processed more fluently than if it is not congruent with the consumer's mindset (Lee and Ariely 2006; Lee and Labroo 2004). Cognitively, consumers may have a special preparedness for solving certain tasks in each mindset, which differs for each step of the decision-making process. The characteristics of a mindset are determined by the unique qualities of the different tasks to be solved within each decision-making step. Because the different mindsets tailor a

person's cognitive apparatus to meet the typical task demands of each stage, consumers generate more mindset-congruent thoughts than mindset-incongruent thoughts, and hence, messages that are mindset-congruent are also processed more easily (Gollwitzer et al. 1990).

Processing fluency may be perceptual or conceptual in nature (Tulving and Schacter 1990; Lee and Labroo 2004). Whereas perceptual fluency involves the processing of physical features, conceptual fluency reflects the ease with which a target comes to consumers' minds when processing meanings (e.g., Hamann 1990). In our context, the degree to which a product message is conceptually fluent with the consumer's mental representation is critical. Whittlesea (1993) showed that respondents rate target words more favorably when they appear in a predictive context than when they appear in a neutral context. Processing fluency theory posits that a more favorable attitude may result from the ease with which the information is processed (Lee and Labroo 2004). We propose that this finding can be extended to the processing of abstract versus concrete product messages.

Whereas an abstract product message does not recommend a specific product, concrete product messages do. In an abstract product message, generic goals or benefits are typically the central part of the message and are mentioned in combination with a broad product category or brand. However, in concrete product messages, specific product alternatives are included in the message. Because a goal-oriented mindset is characterized by an orientation toward goals, we anticipate that abstract product messages are processed more fluently than concrete product messages in this mindset. At the same time, because a comparative mindset involves more detailed product features, such that the consumer can choose between products, we expect that concrete product messages are processed more fluently in a comparative mindset (Anderson 1981; Payne, Bettman, and Johnson 1993; McFadden 1986).

Hypothesis 1:

The inclusion of concrete examples increases the effect of abstract persuasive messages on the target behavior.

*Bypassing the Goal-activation Mindset*

Product messages can also influence consumer decisions by becoming a part of the consumer's task environment and may thereby influence the consumer mindset as well. In



particular, product messages may lead consumers to not always follow the typical decision-making process of going through the naturally occurring decision stages and to bypass stages that normally precede other decision stages. We base this expectation on previous research on mindset shifts that has found similar inhibitions of earlier mindsets in favor of later mindsets in other contexts. Chandran and Morwitz (2005) showed that consumers who participate in price-determination interactions (e.g., in auctions), instead of buying fixed-price offers, directly adopt an implementation-oriented mindset. Dhar et al. (2007) demonstrated that initial purchases are a stimulus that incites people to bypass the goal-activation stage. These authors showed that making an initial purchase moved consumers from a deliberative to an implemental mindset. This finding implied that in subsequent purchases, even if they were unrelated to the initial purchase, consumers were less likely to deliberate between goals that reflected their wants and needs, in contrast to what they would normally do (Gollwitzer et al. 1990). Xu and Wyer (2008) showed that stimulating people to make any type of comparative judgment gives rise to a comparative-judgment mindset in subsequent situations and causes them to bypass the preceding mindsets.

We anticipate that product messages can lead consumers to bypass an initial step of the decision-making process in a similar way. This expectation is in line with Escalas and Luce (2004), who found that the focus of thoughts can be manipulated by advertisements. In our analysis, we distinguish between the impact of providing *single* versus *multiple product examples*. We do so because we expect that multiple-product messages “fast-forward” consumers to a comparative mindset (corresponding to the second decision step) but that single-product messages do not.

In the first (goal-oriented) decision step, where consumers investigate their goals with respect to the product being considered and weigh the pros and cons of buying a product, the consumers conduct a goal-oriented search for information. We expect that being exposed to a single product example does not affect the consumer’s decision mindset. However, we anticipate that being exposed to multiple product examples can trigger the second (product-comparison-oriented) decision step because these examples inherently cause consumers to think about which of the alternatives they prefer (Xu and Wyer 2008). In this second step, there is relatively less attention given to and recall of goal-related information than in the first stage.

### Hypothesis 2:

Including multiple concrete examples inhibits the activation of goals that are in line with the abstract persuasive communications, whereas including a single concrete example does not.

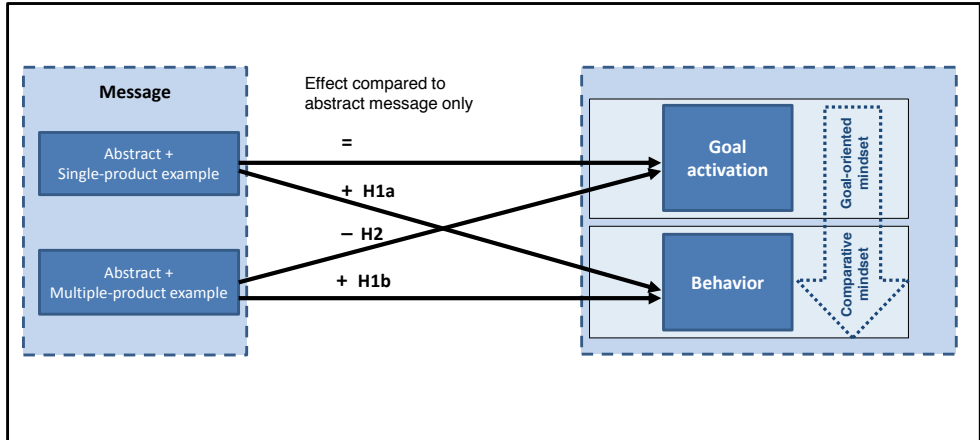


Figure 3: The effects of abstract and concrete messages

## 2.3 Methods and Data

### Domain

In our experiments, we address consumer goal activation and behavior in the domain of food choices. The effectiveness of food-related messages has been shown to depend strongly on the format and content of information, which influence information processing and decision quality (Moorman 1990). Recent research has addressed the impact of health communication on food choices (e.g., in relation to societal problems connected to obesity) (Finkelstein and Fishbach 2010; Chandon and Wansink 2007; Kozup, Creyer, and Burton 2003). Governmental institutions are extending campaigns to reduce obesity and other welfare-related diseases (e.g., <http://www.letsmove.gov>), and several manufacturers and retailers have also started their own initiatives (e.g., <http://www.healthyweightcommit.org>).

### ***2.3.1 Study 1: the Impact of Message Content on Choice Behavior***

Study 1 examines hypothesis 1 and focuses on the impact of the three types of messages on (healthy) product choice behavior. That is, this study investigates whether providing either a single or multiple concrete product examples along with abstract product messages more strongly influences consumer choice behavior than exposing consumers to an abstract product message alone.

#### *Methods*

In study 1, we test H1 and measure the impact of including concrete product examples in abstract persuasive messages on consumer choice behavior. We test the hypothesis in the context of food product choice behavior in a hypothetical online purchase from an online store.

We used a between-subject design with three versions (message content: an abstract product message only, an abstract product message plus a single product example, and an abstract product message plus multiple product examples). A key concern in this study might be that the impact of a message with product examples on choice behavior is influenced by directly priming the product that is presented to the respondent. According to existing priming theories, the visualization of concrete products plays a significant role in healthy product choice activation (Van Osselaer et al. 2005). To rule out such priming effects, we only used single- and multiple-product examples that were not a part of the choice set shown to the respondents.

The respondents were students at a large university in the Netherlands and were brought to a private cubicle equipped with a computer. First, the respondents read an introductory page in which they were asked to imagine that they needed grocery products but did not have enough time to visit a supermarket. Therefore, they used an online store to order the products. Among other items, they needed snacks to eat at their university on a normal day. After this introduction, the respondents were asked to click on a button that took them to the snack section of the online store. For the purpose of this experiment, we designed a simple website of a hypothetical grocery store.

A total of 90 respondents were randomly and equally allocated across the three experimental conditions. In the first condition, the respondents were exposed to an abstract product message (“Choose healthy when you have a snack”) on the snack section page, with a picture of an unbranded plate with crackers/cookies. In the second condition, the respondents were exposed to an abstract message combined with a single product example.

This message consisted of a picture of a specific leading A-brand snack, which was accompanied by a health slogan stating, “This product is healthy”. In the third condition, the respondents were exposed to an abstract product message combined with multiple product examples. This message consisted of pictures of five different leading A-brand snacks that were presented simultaneously. Each snack was accompanied by a health slogan stating, “This product is healthy”. All product examples were positioned as healthy alternatives in the actual product market that respondents would see on a day-to-day basis. The inclusion of these products in the study was based on a pretest.

After the respondents were shown one of the different web pages, they first indicated which from a list of goals were important to them when buying snacks. The respondents could select one or more from the following goals: 1) Good taste, 2) Spending less money, 3) Good for your health, 4) Convenience, 5) Good for your digestion, 6) Good quality and 7) Other.

Next the respondents were asked to choose a snack out of a choice set of six snacks, three of which were unhealthy and three of which were healthy. This classification was evaluated in a pretest ( $N=49$ ) that confirmed that the three healthy products were perceived as significantly healthier than the three unhealthy products [ $M_{\text{Mars}} = 1.29$  ( $sd = .54$ ),  $M_{\text{Twix}} = 1.46$  ( $sd = .58$ ),  $M_{\text{Snickers}} = 1.44$  ( $sd = .65$ ) versus  $M_{\text{Sultana}} = 3.54$  ( $sd = .68$ ),  $M_{\text{Evergreen}} = 3.92$  ( $sd = .90$ ),  $M_{\text{Bammetje}} = 3.88$  ( $sd = .87$ ) (based on a five-point Likert scale; 1 = unhealthy, 5 = healthy).] Afterwards, the respondents were financially rewarded in another room in which they had left their coats and bags.

Then, as a second and consequential experimental task, they were told that they could also choose a snack to take home because some snacks were left over from a previous study. The respondents were not aware that we recorded their choice of snacks. In this real-world test, the respondents were offered a choice of four snacks, two of which were unhealthy and two of which were healthy.

## *Results*

We hypothesized that, providing specific product examples in the message increases the probability of the target behavior (i.e., making a healthy product choice). Our results show that in the hypothetical task, the results were in the expected direction but only marginally significant (i.e., 47% of the respondents who saw an abstract message and 68% of the respondents who saw an abstract message enriched with concrete product examples chose a healthy product, respectively),  $t(1, 87) = 1.95$ ,  $p = .055$  (two-tailed) (see Figure 4).

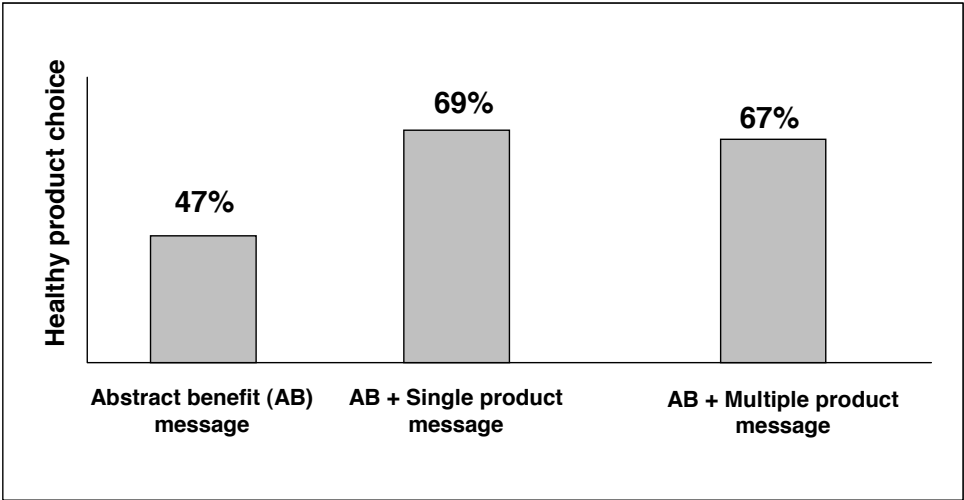


Figure 4: The results of the hypothetical product choice (Study 1)

The results of the consequential choice however are more strongly significant and also confirm the hypothesis. When offered a choice of a snack upon exiting the meeting room, more respondents selected a healthy snack after they had product examples (along with the abstract product message) in the experiment than if they had only seen the abstract message (i.e., 27% vs. 59% of the respondents chose a healthy product, respectively),  $t(1, 87) = 3.03$ ,  $p < .01$  (two-tailed) (see Figure 5). Thus we find moderate support for H1 in the hypothetical choice condition and strong support for this hypothesis in the consequential condition.

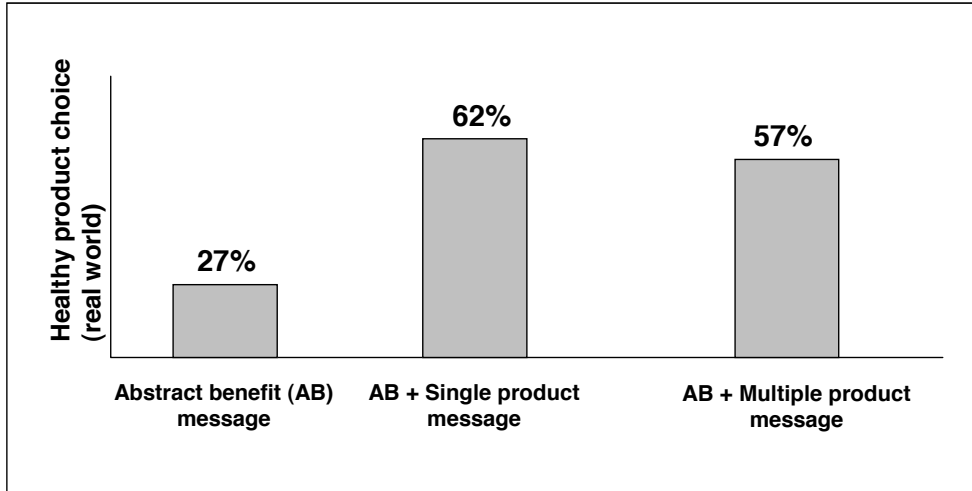


Figure 5: The results of the real-world product choice (Study 1)

In Study 1 we also collected some data that can provide insights in consumers' goal activation in the different message conditions because respondents were asked to select which goals were most important to them when buying snacks. An analysis of this data shows that there is no significant difference between the levels of health goal activation between respondents who saw an abstract benefit message and respondents who saw an abstract benefit messages enriched with a concrete product examples (57% of the respondents who saw an abstract message, 62% of the respondents who saw an abstract message enriched with one product example, and 60% of the respondents who saw an abstract message enriched with multiple product examples activated a health goal, respectively). Thus we find that goal activation was unexpectedly high for all conditions in experiment 1, which seems to indicate that H2 may not be supported. This may be due to the fact that the goal activation task in this experiment was an aided recall task in which respondents were presented with a list of the possible goals that they might find important. Therefore respondents may have been inclined to indicate relatively many goals and perhaps to indicate socially desirable goals relatively more often. To overcome this shortcoming in the design of the first experiment, we designed a second experiment in which respondents were asked to freely elicit goals.

### ***2.3.2 Study 2: the Impact of Product Examples on Goal Activation***

Study 2 examines the impact of three different message contents on consumer goal activation and investigates whether abstract product messages combined with a single product example have a significantly greater impact on goal activation than abstract product messages combined with multiple product examples (H2). We also investigate whether abstract product messages combined with single product examples do not differ significantly from abstract product messages in terms of goal activation.

#### *Methods*

A total of 129 students from a large university in the Netherlands participated in the experiment. Respondents took approximately ten minutes to complete the task and were rewarded with a snack. All of the respondents were brought to a private cubicle that had a computer. First, respondents read an introductory page in which they were asked to imagine that they had to prepare a meal for their households on a regular Thursday evening. The respondents were asked to imagine that they were considering buying a yogurt dessert. They were then asked to open the website of a hypothetical grocery store designed for the experiment.

We applied a between-subject design with three different versions. Forty-three respondents participated in version 1. They were exposed to an abstract product message (“Yogurt is healthy”) on the first page of the shop with a picture of an unbranded tray with plain yogurt. A second group of 43 respondents participated in version 2. These respondents were exposed to an abstract product message along with a single product example, which was a picture of a specific A-brand yogurt product accompanied by a health slogan stating, “This product is healthy”. The third group of 43 respondents was exposed to an abstract product message along with multiple product examples, which were pictures of five different A-brand yogurt products presented simultaneously. Each product was accompanied by a health slogan stating, “This product is healthy”.

After the respondents were shown one of the different web pages, they were asked to mention one or more goals that were important to them when buying yogurt, in an open-ended question. As an additional response measure respondents were asked to select goals from a list. A list of goals was presented to them on the basis of the findings of Ter Hofstede, Steenkamp, and Wedel (1999), who also investigated the consumer yogurt market. These goals were the following: 1) Good taste, 2) Spending less money, 3) Good

for your health, 4) Convenience, 5) Good for your digestion, 6) Offering choice to family members, 7) Good quality and 8) Environmentally friendly.

### *Results*

The results of the open ended question show that the abstract benefit message and the abstract benefit message combined with a single product example led to a significantly higher health-goal activation than the abstract message combined with multiple product examples [ $t(1, 127) = 2.44, p < .05$ ], as hypothesized (H2). The abstract benefit message did not differ from the abstract benefit message combined with a single product example, with respect to health-goal activation [ $t(1, 84) = -1.14, p = .26$ ]. These findings are consistent with our expectation that multiple-product messages promote a comparative mindset within consumers and suppress a goal-oriented mindset.

The results of the pre-listed question asking which goals were important to the respondent when buying yogurt as a dessert further support these findings. Here, we also found that the activation (i.e., selecting pre-listed goals) of health as a goal was significantly more likely for the respondents who were shown an abstract product message or the abstract message combined with a single product example than for the respondents who were shown the abstract product message along with multiple product examples [ $\chi^2(1) = 3.80, p < .05$  and  $\chi^2(1) = 4.72, p < .05$ , respectively, both two-tailed]. The abstract product message did not differ from the abstract product message combined with a single product example with respect to health-goal activation [ $\chi^2(1) = .05, p = .82$ ].



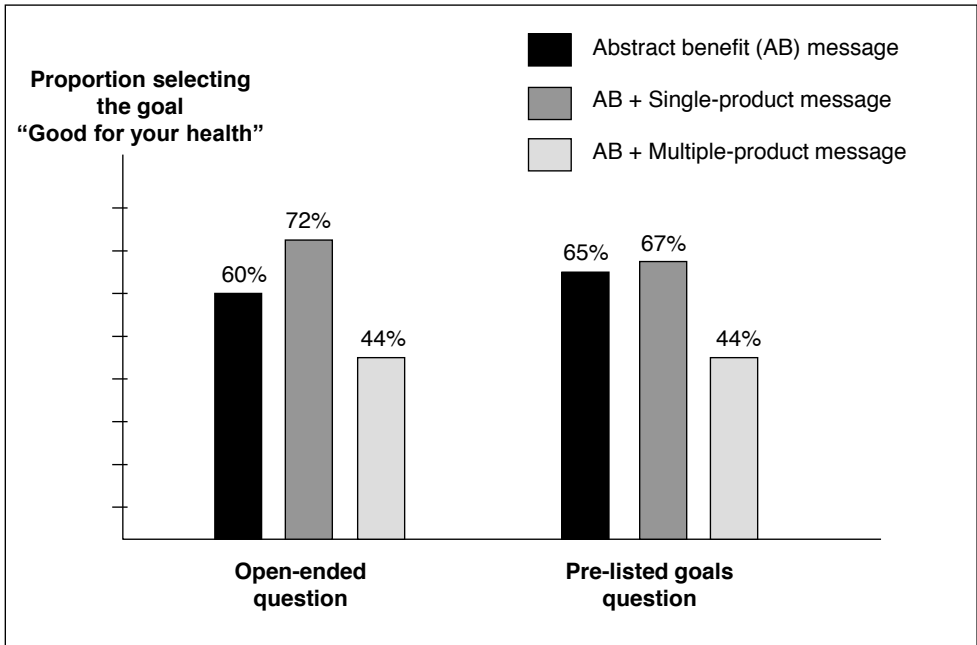


Figure 6: The impact of message content on the activation of health as a goal (Study 2)

2.3.3 Study 3: Multiple Products Interfere with Goal Activation

The aim of study 3 is to develop further process-level insights into the extent to which different product messages affect the focus of consumers’ thoughts with respect to goal-versus product-comparison-oriented aspects. We draw on query theory to explain why in different mindsets certain thoughts are more accessible in the consumer decision-making process than other thoughts (Johnson, Häubl, and Keinan 2007).

Query theory assumes that people decompose valuation questions into a series of queries (i.e., sub-questions) and that they serially execute these queries. This decomposition and execution process is typically automatic. That is, the decision maker performs these tasks without being aware that he or she is doing so. As a result, activation interference between different questions is likely to occur, and query order matters. The first query typically results in a richer and more heavily weighted component of the consumer’s mental representation of a decision than the second query (Johnson et al. 2007; Weber et al. 2007; Weber and Johnson 2006).

In the goal-oriented stage, we expect consumers to ask themselves *why* they are interested or not interested in certain goods. In contrast, in the comparative stage, we

predict that consumers will ask themselves *which* product to choose. Therefore, if this process explanation holds, we expect that presenting consumers with multiple-product examples cognitively moves them toward a product-comparison mindset and evidence of this effect should present itself in consumers' decision-making behavior. This effect should be apparent both in the content and number of aspects that consumers include when asked to generate a listing of decision aspects.

In study 3 we primarily distinguish goal-oriented considerations versus product-oriented considerations in general, because this framework is not limited to health. Additionally we investigate the impact of the distinct health messages on the activation of health-goals, which can be seen as a process check of study 2.

### *Methods*

A total of 45 students from a large university in the Netherlands participated in the experiment. The experiment was run on computers in a lab setting. All of the respondents were brought to a private cubicle that had a computer. The respondents were randomly assigned to one of three versions. The experiment took approximately 15 minutes to complete, and the respondents were rewarded with a snack afterward. The responses from three respondents were excluded; two of them did not complete the questionnaire, and one had misunderstood the task.

The respondents were assigned either to an abstract product message only, to an abstract product message with a single product example, or to an abstract product message with multiple product examples. First, the respondents read an introductory page on which they were asked to imagine that they had to prepare dinner for their households on a normal Thursday evening and that they would need a yogurt dessert for this dinner. Subsequently, they entered the yogurt section of an online grocery shop. The respondents were randomly assigned across the three conditions. In the first condition, the respondents were shown an abstract product message only ("Yogurt is healthy") with a picture of an unbranded tray with plain yogurt. In the second condition, the respondents were shown a single product example composed of a picture of a specific A-brand yogurt product, which was accompanied by an abstract product message that consisted of a health slogan stating, "This product is healthy". In the third product condition, the respondents were shown pictures of five A-brand yogurt products, each of which had an abstract product message that consisted of a health slogan stating, "This product is healthy". After the respondents were shown the web page, they were asked to describe their considerations when buying

desserts for the friends for whom they had to prepare dinner. These questions were asked in an open-question format in which the respondents needed to provide a minimum of one consideration and could provide up to six considerations in total.

To interpret the considerations, we used two independent coders. These coders were instructed to classify each consideration as one of two questions: “Which goal do I want to reach with this dessert?” and “Which concrete products or product characteristics are most attractive to me?” The coders agreed on 85.6% of the considerations. For the considerations that they did not agree on, a third coder was consulted.

### *Results*

The number of thoughts listed by the respondents in the three different versions did not differ significantly ( $M_{\text{abstract product message}} = 4.3$ ,  $M_{\text{single-product message}} = 4.7$ ,  $M_{\text{multiple-product message}} = 4.4$ ;  $F(2; 1.609) = .36$ ;  $p = .70$ ). As expected, the number of goal-oriented considerations mentioned by the respondents who saw the abstract product message was significantly higher than the number of goal-oriented considerations mentioned by the respondents who saw the multiple-product message [ $t(1, 25) = 2.84$ ,  $p < .01$  (two-tailed)]. Additionally, in accordance with our expectations, the number of product-oriented considerations mentioned by the respondents who saw the abstract product message was significantly lower than the number of product-oriented considerations mentioned by the respondents who saw multiple-product message [ $t(1, 25) = 2.43$ ,  $p < .05$  (two-tailed)]. As assumed, the outcomes for the group that saw the single-product message fell in between the outcomes for the groups that saw the abstract product message and multiple-product message. The number of goal-oriented considerations mentioned by the respondents who saw the single-product message were significantly higher than the number of goal-oriented considerations mentioned by the respondents who saw the multiple-product message [ $t(1, 26) = 2.46$ ,  $p < .05$ ]. Compared with the respondents who saw the abstract product message, the number of goal-oriented considerations mentioned by the respondents who saw the single-product message was lower, as expected, but the difference was not significant [ $t(1, 27) = .41$ ,  $p = .68$ ]. The number of product-oriented considerations mentioned by the respondents who saw the single-product message was, as expected, in between the number of product-oriented considerations mentioned by the respondents who saw the abstract product message and by the respondents who saw the multiple-product message. However, neither of these differences was significant [ $t(1, 27) = 1.07$ ,  $p = .29$  and  $t(1, 26) = 1.42$ ,  $p = .17$ , respectively].

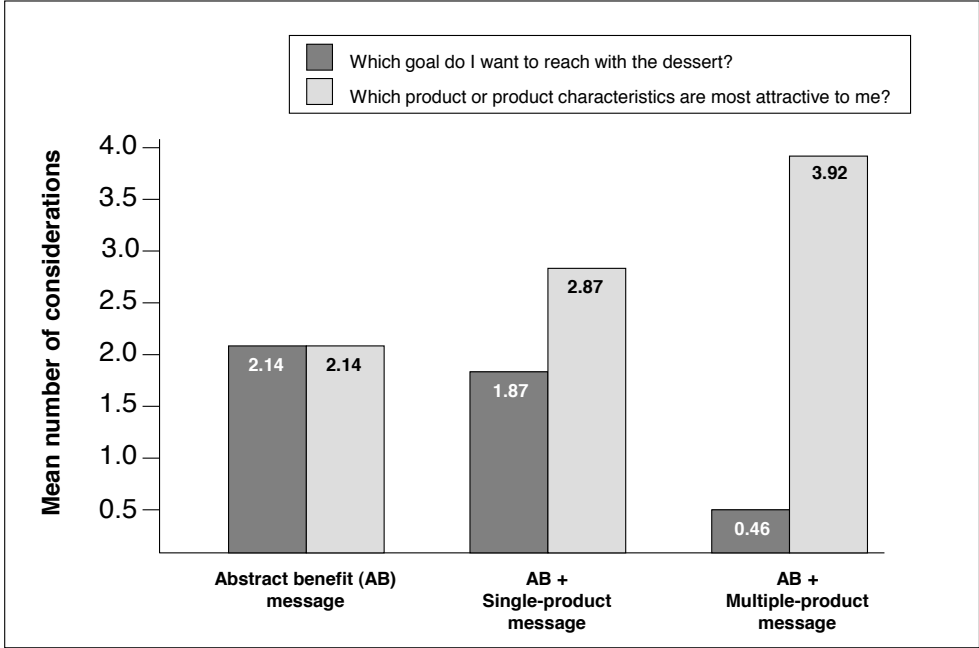


Figure 7: Considerations per type of message (Study 3)

The sequential nature assumed by query theory predicts that the type of considerations generated will change during the process of listing aspects. For respondents in the goal-oriented mindset, in which they are brought with the abstract product message or with the single-product message, we expect that aspect listings would initially consist of mostly goal-oriented considerations and that comparative considerations would be produced more frequently toward the end of the listing. We expect the reverse for respondents who are brought in a comparative mindset via a multiple-product message.

Because respondents listed different numbers of considerations, we tested this prediction by calculating a score that reflects each respondent's tendency to produce goal-oriented considerations before generating comparative considerations. This score is the standardized median rank difference of aspect types (SMRD) and is defined as  $2(MR_g - MR_c)/n$ , where  $MR_g$  = the median rank of goal-oriented considerations in a respondent's sequence,  $MR_c$  = the median rank of comparative-oriented considerations in a respondent's sequence, and  $n$  = the total number of aspects in a respondent's sequence. The SMRD score can take on values ranging from 1 (i.e., all comparative-oriented considerations were listed before any goal-oriented considerations) to -1 (i.e., all goal-oriented considerations

were listed before any comparative-oriented considerations). Several respondents were focused so heavily on one type of consideration that they did not mention the other type of considerations. This finding may be explained by retrieval-induced forgetting. In these cases, the SMRD score was set to -1 or 1.

As we expected, the mean SMRD score was lower for the respondents in the goal-oriented mental representation ( $SMRD_{\text{abstract product message}} = .10$ , and  $SMRD_{\text{single-product message}} = .20$ ) than for the respondents in the comparative-oriented mental representation ( $SMRD_{\text{multiple-product message}} = .73$ ),  $t(1,25) = 2.19$ ,  $p < .05$  and  $t(1,26) = 1.80$ ,  $p < .10$ , respectively.

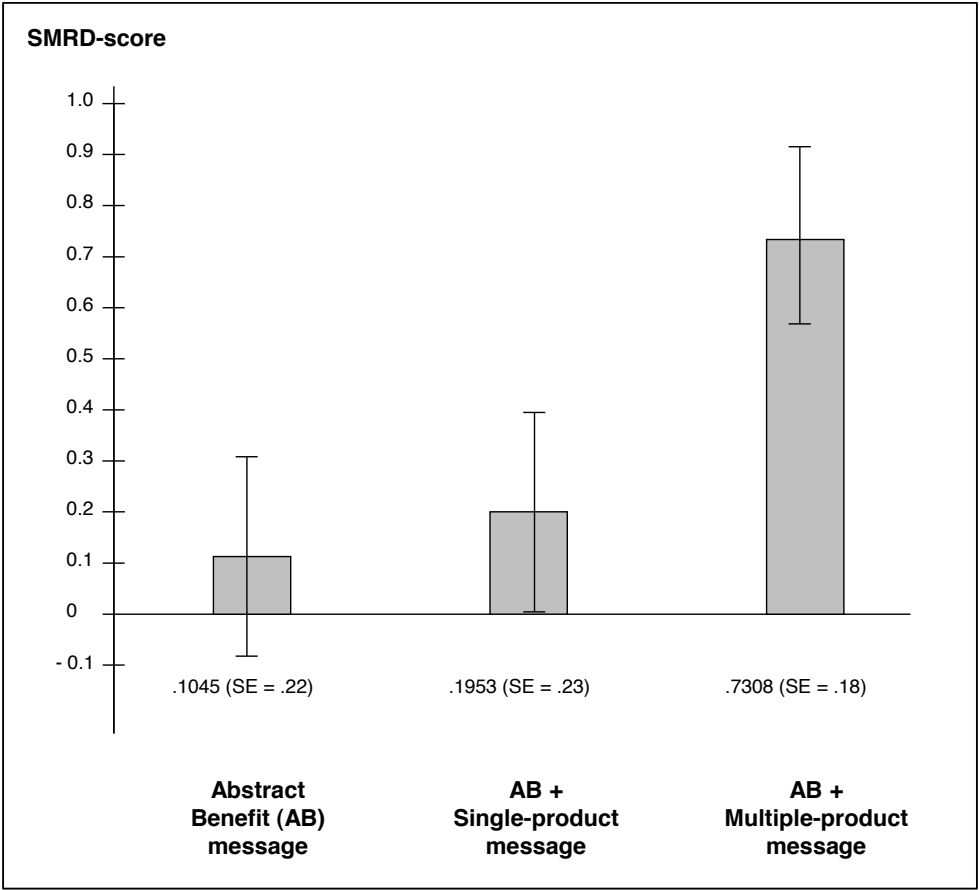


Figure 8: The SMRD-score per type of message (Study 3)

This experiment confirms our expectation that at a cognitive process level, multiple-product messages lead to less goal activation. Although the respondents who were exposed to an abstract product message or a single-product message began by mentioning their goals, the respondents who were exposed to a multiple-product message began by mentioning comparative characteristics.

Finally, when focussing on health goals only in our analysis, we found that respondents who saw an abstract message or an abstract message enriched with a single product example were more likely to activate health goals than respondents who were exposed to an abstract benefit message enriched with multiple products ( $t = 2.20$ ,  $p < .05$ , two-tailed). This finding further confirms our findings in study 2.

## **2.4 General Discussion**

### **2.4.1 Conclusions**

With the growing importance of online environments, the boundaries between persuasive communications designed to activate goals and concrete recommendations designed to activate choices have become blurred. Online advertising often allows for instant buying, and recommendations often influence the decision-making process outside of consumers' awareness, which can be seen as persuasion. On the basis of this fact, one might suggest that to promote desirable consumer behavior, advertisers should consider combining the strengths of more motivational (goal-based) messages with more concrete (action-based) product suggestions. However, there is a risk of "over-balancing". If consumers are pushed too strongly toward a concrete mindset by (action-based) product suggestions, they will not be able to cognitively activate their underlying goals. This might be especially harmful to word-of-mouth and other consumer-to-consumer interactions in social networks, in which, from the marketers' point of view, it is important that consumers explain not only what they bought but also *why* they bought it.

The essay presented here focuses on the impact of three types of persuasive messages, which vary from abstract to more specific, on consumer decision making. We developed a theoretical model to describe the impact of message content on goal activation and product choice. This essay provides insight into how abstract product messages and concrete product examples can be best combined to influence consumers' daily decision-making processes. The contribution is twofold. The first contribution is more theoretical, and the second contribution is more managerial. Our first contribution is that we provide

insight into how message content impacts the steps that consumers encounter when making purchasing decisions. The focus of consumers' thoughts can be manipulated by showing certain messages. Our second contribution is that we show that abstract product messages are effective at activating goals, whereas multiple-product messages are not. However, goal activation does not appear to be a guarantee of effective product choice. Abstract product messages are not effective at generating product choices desired by the communicating organization, whereas multiple-product messages are. In contrast, single-product messages have the best of both worlds. They are effective at activating goals, and they lead to effective product choice.

### ***2.4.2 Theoretical Implications***

This essay provides better insight into how organizations can combine abstract and concrete messages to influence consumers' decision-making processes. Whereas the current literature is split into the fields of advertisement and persuasion, this essay brings these fields of research together.

Further, our research adds to a recent stream of research that shows that certain tasks lead consumers to certain stages in the decision-making process while bypassing the (normally) preceding stages. Whereas Dhar et al. (2007) showed that initial purchases lead to a comparative mindset, and whereas Xu and Wyer (2008) showed that prior choice situations (without buying as a condition) lead to a comparative mindset, we show that certain message content can lead to a comparative mindset while bypassing the goal-oriented mindset.

### ***2.4.3 Managerial Implications***

One might assume that for a persuasive message to be effective, the message must be able to activate goals in the goal-oriented stage and that this will lead to the right product choice in the choice stage. We have demonstrated that this assumption is not necessarily true. It depends on the situation which types of communication are most effective. If one is simply focused on selling as many products as possible in the short term, multiple-product messages may be effective. However, if the aim is to change consumer behavior to create conscious consumers, focusing on goal activation is important. There is an ongoing societal debate in several developed countries about how to change consumers' health lifestyles. This debate is a typical example of an attempt to make people conscious about

their buying behaviors. In this case, it is important that consumers are aware of the underlying aspects involved in healthy product choices.

Additionally, for managers, focusing on goal activation is becoming increasingly important because of the growing impact of word-of-mouth marketing and the growth of consumer-to-consumer interactions in social networks. Word-of-mouth marketing is appealing because it combines the prospect of overcoming consumer resistance with low cost and is fast, especially if it is spread through technology such as the internet. However, to overcome consumer resistance, it is not enough for consumers to explain which products they buy. Even more important is that they explain *why* they buy these products.

#### ***2.4.4 Limitations and Directions for Further Research***

We focused on decision making with respect to food (yogurt products and snacks), which are rather fast-moving and low-involvement goods. Further research should investigate whether our findings are applicable to other product types.

In this essay, we focused on describing the differences in the impact of different types of messages on the purchasing process. We did not detail the underlying theories that form the explanations for these outcomes. In the next essay, we will focus on these theories.





# **CHAPTER 3.**

## **The Differential Role of Abstract versus Concrete Communications: An Analysis of the Asymmetry in Mental Representations**

### **ABSTRACT**

*We investigate respondents' mental representations to explain the impact of abstract benefit messages versus concrete attribute messages on the decision-making process, which is measured by goal activation and product acceptance. In accord with fluency theory, we expect that concrete messages are more effective at activating product acceptance and that abstract messages are more effective at goal activation. As expected, we find that concrete messages are more effective at activating product acceptance. However, contrary to the expectations of fluency theory, concrete messages are as effective as abstract messages at goal activation. We show that this finding can be explained by the fact that bottom-up cognitive associations between benefits and attributes are much stronger than top-down cognitive associations between benefits and attributes within respondents' mental representations. This strong cognitive bottom-up association causes concrete attribute messages to be highly effective at goal activation. We conclude that concrete attribute messages are more effective than abstract benefit messages at promoting a specific product at the point of purchase.*

### 3.1 Introduction

While shopping in a supermarket, consumers are exposed to many product messages. One important type of in-store platform for such messages is product packaging. Some messages (product claims) are more generic in that they show product benefits (e.g., that the product is healthy or delicious), whereas others are more specific by showing product attributes (e.g., that the product is low cholesterol or contains less than 3% fat). Brand owners invest in package designs and perform market research to test which product claims on packages are most effective. Several studies show that when such product claims are presented, consumers have more favorable attitudes toward the product (Kozup, Creyer, and Burton 2003; Andrews, Netemeyer, and Burton 1998; Roe, Levy, and Derby 1999). Customers give greater weight to the information mentioned in claims than to the information available in the Nutrition Facts panel (Roe et al. 1999). A claim is more easily processed and more persuasive if it is simplified and short (Wansink, Sonka, and Hasler 2004). However, there is a lack of fundamental research on the question of whether messages about abstract benefits or concrete attributes are more effective at impacting consumer decisions as intended by the communicating organization at the point of purchase. The existing research primarily focuses on the impact of concrete attribute claims (Balasubramanian and Cole 2002; Russo et al. 1986). In an earlier study, Andrews et al. (1998) distinguished between benefit claims and attribute claims but did not find a difference in the effectiveness of each of these types of claims in spreading activation to non-featured nutrient content and disease risk. According to these authors, this lack of a difference may be due to a floor effect (i.e., the data is all hitting the bottom end of the distribution, because the grades cannot go below a certain level). Thus, this topic invites further research.

Within the decision-making process, there are different stages that are accompanied by distinct mindsets (Kahneman and Tversky 1979; Payne 1976; Gollwitzer 1990; Dhar, Huber, and Kahn 2007; Xu and Wyer 2007, 2008). We focus on the goal-oriented step, in which consumers define the desired outcomes of their actions (Xu and Wyer 2007), and the product-oriented step, in which product behavior is investigated, by measuring product acceptance (Escalas and Luce 2004).

In accord with fluency theory (Labroo and Lee 2006; Aaker and Lee 2001), which states that mindset-congruent thoughts are processed more easily than mindset-incongruent thoughts, one might expect that abstract messages are more effective at activating goals

and that concrete messages are more effective at generating product acceptance. However, if an asymmetrical relationship exists in the cognitive structures between abstract and concrete messages, it is not clear how the joint effect of the two messages plays out. Anisfeld and Knapp (1968) found an asymmetrical relationship between superordinate and subordinate words. In a free-association task, the researchers found that subordinates tend to evoke superordinates more strongly than superordinates evoke subordinates. The impact of abstract benefit messages versus concrete attribute messages on goal activation and product acceptance depend on how easily people can transfer from abstract benefits to concrete attributes and vice versa. Spreading-activation theory explains how a message can activate related constructs (Collins and Loftus 1975).

This essay shows that concrete messages (attribute claims) are more effective than abstract messages (benefit claims) at the point of purchase. Our first study, which consisted of two experiments, demonstrates two points: 1) concrete messages are more effective at generating product acceptance than abstract messages, and 2) there is no significant difference in the effectiveness of the two types of messages at activating goals. Through an additional study consisting of two experiments, we show that these findings can be explained by the asymmetrical spreading activation between attributes and benefits.

### **3.2 The Impact of Cognitive Constructs on Tasks and the Underlying Role of Association between Cognitive Constructs**

In their decision-making process, consumers encounter distinct mindset stages (Kahneman and Tversky 1979; Payne 1976; Shocker et al. 1991; Gollwitzer 1990; Dhar et al. 2007; Xu and Wyer 2008). We distinguish a goal-oriented stage and a product-oriented stage (Xu and Wyer 2007, 2008), each of which is accompanied by a distinct mindset. Each mindset gives rise to different types of target behavior. The target behaviors we consider in the decision-making process are goal activation in the goal-oriented stage (Gollwitzer 1990) and product behavior in the product-oriented stage (Escalas and Luce 2003, 2004; Xu and Wyer 2007, 2008). We define goal activation as the process of making salient which goals are important when buying products. In this stage, consumers define the desired performances or outcomes of their actions. We define product behavior as the consumer's behavior toward the product(s) taken into consideration. In this research, product behavior is measured by investigating product acceptance, which is based on the research conducted

by Escalas and Luce (2004), who investigated the likelihood of buying or using a product as a measure of product acceptance.

**3.2.1 Theoretical Framework**

Two theories play a central role in our framework: fluency theory and spreading-activation theory. Processing fluency pertains to the ease or difficulty with which external information can be processed (Winkielman et al. 2003). The differential impact of various messages on goal activation and product acceptance is determined by the extent to which those claims are fluent in the distinct decision stages. If a message is congruent with a consumer’s mindset, the message is processed more easily than if a message is incongruent with the consumer’s mindset. Fluency moderates the impact of advertising on perceptions and decision making (Labroo and Lee 2006; Aaker and Lee 2001). Spreading-activation theory provides us with a helpful approach to investigating how benefits and attributes are related to each other. This theory provides insights into the directionality and strength of this relationship. That is, spreading-activation theory is used to generate insights into the relationship between cognitive constructs (H2), whereas fluency theory is used to derive insights into the impact of cognitive constructs on tasks (H1 and H3).

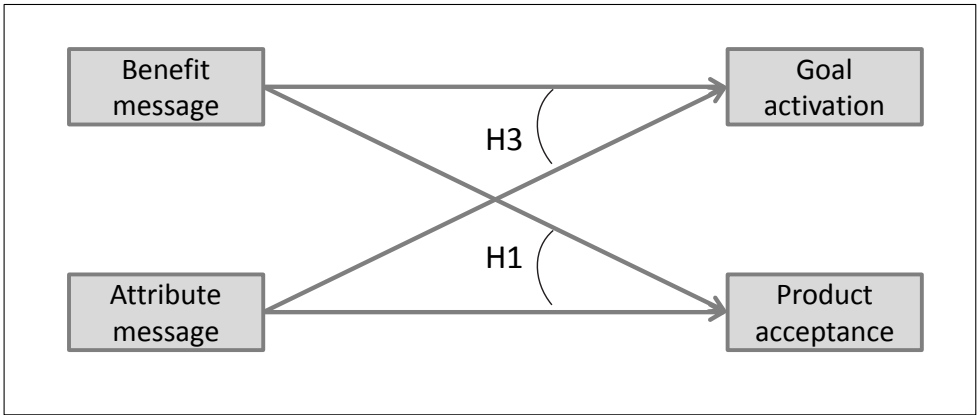


Figure 9: Theoretical framework: the impact of cognitive constructs on tasks

**3.2.2 Fluency Theory: the Impact of Cognitive Constructs on Tasks**

Processing fluency is the ease with which information is processed in the mind, whether it is the generation of a perception (i.e., perceptual fluency), the retrieval of information from memory (i.e., retrieval fluency) or the assignment of meaning to an event (i.e., conceptual

fluency) (Janiszewski and Chandon 2007; Alter and Oppenheimer 2009). From Tversky and Kahneman (1973) we learn that the cognitive aspects that spring to mind more readily exert greater influence on judgment. Feelings of fluency impact judgments and behaviors, such as brand and product evaluations and purchase intentions (Ferraro, Bettman, and Chartrand 2009; Janiszewski 1993; Labroo, Dhar, and Schwarz 2008; Lee and Labroo 2004; Petrova and Cialdini 2005). Whether a specific cognitive construct is fluent depends on the specific task. A good example is the goal state (e.i., the state one is working toward when trying to reach a goal) that can facilitate knowledge that is consistent with the goal (Aarts, Dijksterhuis, and De Vries 2001; Moskowitz 2002). In sum, in accord with fluency theory, one might argue that an abstract benefit message is fluent if goals are activated and that a concrete attribute message is fluent if product behavior is activated.

### ***3.2.2.1 Fluency Theory: the Impact on Goal Activation***

The existing research shows that abstract benefit messages are more effective at goal activation than concrete attribute messages (Labroo and Lee 2006; Aaker and Lee 2001). Goals are organized as cognitive structures in memory. Goals become more accessible if goal-related constructs are activated, which, in turn, affect subsequent judgments and behaviors. Further, a concept becomes easier to process if its goal structure has become more accessible through a recent activation because some of its semantic associations, especially those related to goal-satisfying benefits, may have been primed (Labroo and Lee 2006). Because fluency improves congruent decision making, one might expect that messages that refer to benefits create fluent goal activation rather than those that refer to attributes because benefits are more closely linked with goals than attributes are. Consumption benefits can be thought of as goals afforded by the consumption of products (Van Osselaer et al. 2005).

However, Shah and Kruglanski (2003) show that means (i.e., means used to achieve a goal) can also contribute to goal attainment by activating the goal with which they are associated. This finding implies that concrete attribute messages can be effective at activating goals, whereas attributes or products composed of a bundle of attributes are means to fulfilling goals. These researchers show a “bottom-up” mechanism through which thought about the means activates the goals (Shah and Kruglanski 2003).

### ***3.2.2.2 Fluency Theory: the Impact on Product Acceptance***

Several approaches which describe the choice process fit within a framework in which products or brands are represented as a set of attributes that are relevant to consumer choice. Specifically, choice probabilities can be seen as functions of product attributes (Shocker and Srinivasan 1979; McFadden 1986; Holmes and Adamowicz 2003). Given this attribute-oriented mindset regarding product behavior, we argue that attribute messages are more fluent than benefit messages at this stage. Attribute messages spring to mind more readily if people have an attribute-oriented mindset and thereby exert greater influence on judgment. Tsai and McGill (2011) found that fluency increases confidence for people processing in concrete mindsets.

### ***3.2.3 Spreading-activation Theory: the Association between Cognitive Constructs***

Prior research has shown that the presence of a health claim leads to a higher rating for the product on other health attributes not mentioned in the claim (Andrews et al. 1998; Roe et al. 1999). Andrews et al. (1998) explain this phenomenon through spreading-activation theory, which was developed by Collins and Loftus (1975). Spreading-activation theory offers a conceptual framework for how the cognitive activation of different concepts might work. If a concept is primed (e.g., by a “no cholesterol” claim), activation is spread by an expanding set of links in the network (e.g., inferences that the advertised brand is “low fat”, “healthy” or “will not contribute to heart disease”). However, this activation process becomes attenuated the farther it travels outward in the network. Broniarczyk and Alba (1994) describe interattribute inference, which refers to a case in which the value of a missing product attribute is inferred from another attribute of the same brand.

We propose that spreading activation between abstract benefits and concrete attributes is not symmetric. Linkages between cognitive entities may be asymmetrical in terms of strength because the direction that is processed more frequently develops stronger relations (Barsalou and Sewell 1985). We hypothesize that it is easier to make bottom-up connections than top-down connections because the bottom-up relationship is often unique, whereas the top-down relationship is multi-faceted (e.g., the health benefit is derived from multiple attributes, such as “low fat”, “added vitamins”, or “low sugar”). This argument is in accordance with previous findings that in a free-association task, subordinates evoke superordinates more strongly than superordinates evoke subordinates (Anisfeld and Knapp 1968). Gist theory provides a second reason to expect it to be easier to cognitively activate more general abstract benefits from concrete attributes than vice

versa. Gist extraction is the notion that as people encode informational inputs, they extract senses, patterns and meanings from these inputs (Reyna 1981). The functional advantages associated with processing gist, such as the memorability of gist and the ease with which it can be processed, explains why mature reasoners may prefer intuitive reasoning in headlines (Brainerd and Reyna 1990; Reyna and Brainerd 1990).

We further investigate the impact of abstract benefit messages versus concrete attribute messages on the perception of the communicated item itself. MacKenzie found that if an attribute is discussed more extensively in an advertisement, the importance of the attribute increases in the perception of the consumer because the advertisement affects the amount of attention paid to the attribute (MacKenzie 1986).

Hypothesis 1:

Attribute messages have a greater impact on product acceptance than benefit messages.

Hypothesis 2:

Spreading activation from attributes to benefits is stronger than spreading activation from benefits to attributes.

The second hypothesis implies that a concrete attribute message generates a stronger association with the corresponding benefit than the association with an attribute generated by an abstract benefit message.

We argue that the connection from an attribute to the corresponding benefit will be made easily, which makes an attribute as effective as a benefit at activating goals. This statement is supported by the findings of Shah and Kruglanski (2003), which indicate that a pursued goal is more accessible if it is primed from the bottom up by its means or attributes.

Hypothesis 3:

Attribute messages and benefit messages both have a greater impact on the activation of goals compared to a situation in which no message is communicated.



### **3.3 Methods and Data**

#### *Domain*

Our studies focus on the impact of product messages on healthy decision making with respect to food. We chose this domain because it connects to the intensive public attention this topic has received in the fight against diseases such as obesity. Additionally, health seems to have more dimensions than other concepts, such as indulgence.

#### **3.3.1 Study 1: the Impact of Cognitive Constructs on Tasks**

##### *Goal*

In study 1 we investigate the impact of benefit messages and attribute messages on goal activation and product acceptance. In experiment 1A, we test our hypothesis that attribute messages are more effective at creating product acceptance than benefit messages. In experiment 1B, we test our hypothesis that both attribute messages and benefit messages have a significant positive impact on activating goals compared with a situation in which no message exists.

##### **3.3.1.1 Experiment 1A**

This experiment focuses on measuring the impact of abstract benefit messages versus concrete attribute messages on product acceptance. We expect that concrete attribute messages lead to more accurate behavioral intentions than abstract benefit messages. Concrete attribute messages are expected to be more fluent in the product-oriented stage than abstract benefit messages.

##### *Respondents*

In total, 148 undergraduate students in the Economics department of a large university in the Netherlands participated in this research. The respondents took approximately 10 minutes to complete a questionnaire. They received a snack for participating in the research. Forty-five percent of the respondents were female. The respondents' genders had neither direct nor interaction effects on our results. The respondents' satisfaction with their weight had a main effect on their intentions to buy or to use a free sample of the product. However, as there was no interaction effect and as the respondents who were unsatisfied about their weight (16%) were equally divided between the two versions of the survey, those variables are not discussed further.

### *Stimuli and Design*

The survey consisted of two different versions and was executed in a between-subject design. Half of the respondents saw a message that communicated a benefit of Crispy Crackers: “Crispy Crackers for a slim body”. The other half of the respondents saw a message that communicated an attribute of Crispy Crackers, which corresponded to the aforementioned benefit: “Crispy Crackers are very low in calories”. The product does not exist in the Dutch market. Our manipulations of the message are based on a means-end chain analysis of food products, which shows that the mentioned benefit (diet) and attribute are related to each other and that the benefit is at a higher level in the means-end structure than the attribute (Ter Hofstede, Steenkamp, and Wedel 1999).

### *Procedure and Measures*

After showing the message, we asked the respondents to answer some questions on a seven-point Likert scale. To measure the action tendency of the respondent, we asked whether the respondent would buy the product and whether he or she would use a free sample of this product (1 = “No, I surely will not”, 7 = “Yes, I surely will”). To compare the attractiveness of the two messages, we also asked the respondents to rank this aspect on a seven-point Likert scale (1 = not attractive at all, 7 = very attractive).

### *Results*

The respondents who had seen the attribute message were significantly more willing to buy Crispy Crackers than the respondents who had seen the benefit message ( $M_{\text{attribute message}} = 3.27$ ,  $M_{\text{benefit message}} = 2.40$ ) ( $t = -3.35$ ,  $p < .001$ ). Additionally, the willingness to use a free sample was significantly higher among the respondents who saw the attribute message than among the respondents who saw the benefit message ( $M_{\text{attribute message}} = 5.54$ ,  $M_{\text{benefit message}} = 4.71$ ) ( $t = -2.45$ ,  $p < .05$ ). These outcomes are in line with our expectations based on fluency theory. At the point of purchase, attribute messages seem to be more fluent. The messages did not differ with respect to attractiveness ( $M_{\text{benefit message}} = 3.15$ ,  $M_{\text{attribute message}} = 3.42$ ) ( $t = -.914$ ,  $p = .36$ ).

#### **3.3.1.2 Experiment 1B**

In this experiment, the impact of abstract benefit messages and concrete attribute messages on goal activation are measured. Because we expect that abstract benefit messages and

concrete attribute messages are both effective at goal activation, we compare the outcomes with a control situation.

### *Respondents*

In total, 53 students from a large university in the Netherlands participated in this experiment by filling in a short questionnaire in a computer lab. The respondents were rewarded with a snack. Forty-two percent of the respondents were female. The respondents' genders did not have any effect on the results. Seven respondents (13%) were unsatisfied with their weight. The satisfaction level regarding weight did not have a main effect or interaction effect on the results.

### *Stimuli and design*

We used three different versions of the questionnaire in a between-subject design. The respondents were asked which goals were important to them when buying a snack. They could choose one or more of the following options: 1) Indulgence, 2) Not too expensive, 3) Good for your health, 4) Convenience, 5) Good for the environment/Sustainable, 6) Good quality, and 7) None of these goals. These options were partially based on the aspects used by Ter Hofstede et al. (1999).

The first group consisted of 19 respondents and was shown an abstract benefit message of Crispy Crackers beforehand. This message said, "Crispy Crackers for a wholesome and vital body". The second group consisted of 18 respondents and was shown a concrete attribute message of Crispy Crackers beforehand. This message said, "Crispy Crackers contain a very low level of fat." The third group consisted of 16 respondents and functioned as the control group. These respondents did not receive any message beforehand. The brand "Crispy Crackers" does not exist on the Dutch market.

### *Results*

Both the respondents who saw the benefit message and the respondents who saw the attribute message mentioned "Good for your health" as an important goal when buying snacks significantly more often than the respondents in the control group ( $t = 2.54$ ,  $p < .05$  and  $t = 2.34$ ,  $p < .05$ , respectively). The activation of the goal "Good for your health" did not differ between the two types of messages ( $t = .14$ ,  $p = .89$ ).

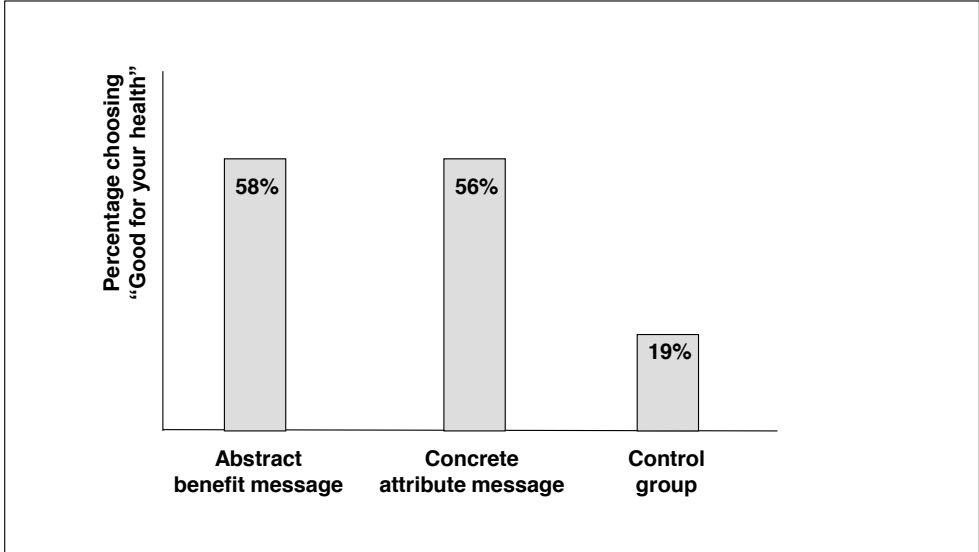


Figure 10: Percentages of the respondents among the three groups choosing the goal “Good for your health”

We expected that the respondents exposed to a benefit message or an attribute message mention more goals than the respondents in the control group. This expectation is based on spreading activation. If a concept is primed, activation tags are spread by tracing an expanding set of links. If priming of a concept does not take place, the activation tags do not spread. The outcomes for the respondents exposed to a benefit message were in the expected direction but only marginally significant ( $t = 1.98$ ,  $p = .056$ ). Respondents exposed to an attribute message mentioned more goals than the respondents in the control group. These outcomes were strongly significant ( $t = 3.12$ ,  $p < .01$ ). The number of mentioned goals did not differ between the two distinct messages ( $t = -1.13$ ,  $p = .27$ ). On the basis of the expectation that benefits activate goals more strongly than attributes, a higher number of mentioned goals might be expected in the group exposed to the (abstract) benefit message. However, the expectation that there is a strong bottom-up spreading activation from attributes contradicts the notion that the group exposed to an abstract benefit message mentions a higher number of goals. The outcomes suggest a strong spreading activation generated by attributes.

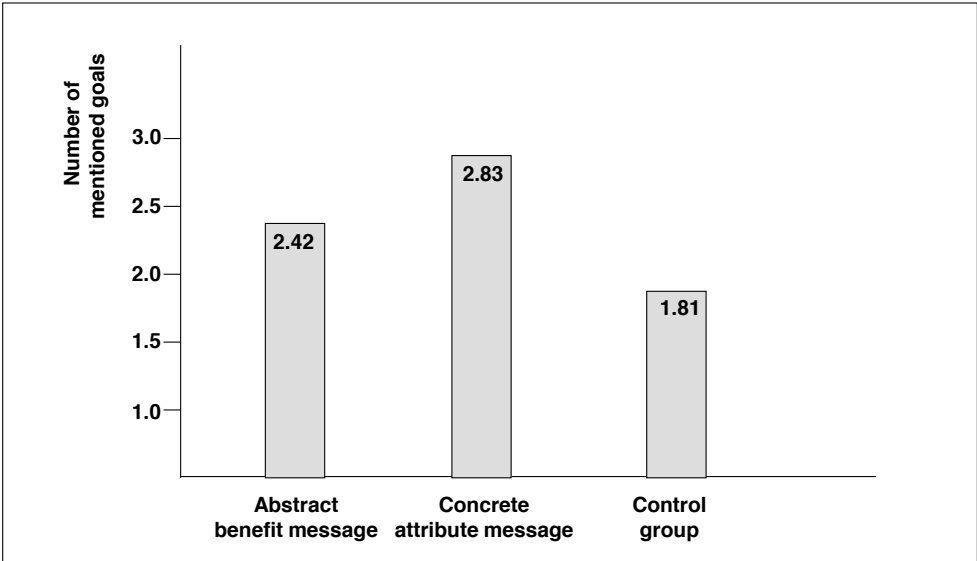


Figure 11: Number of mentioned goals for the three different groups

**3.3.2 Study 2: the Relatedness of Cognitive Constructs**

*Goal*

In study 1, we found that abstract benefit messages and concrete attribute messages are equally effective at activating goals. However, attribute messages are more effective than benefit messages at creating product acceptance. We propose that this conclusively higher impact of attribute messages is caused by an asymmetrical spreading activation between benefits and attributes. In study 2, we investigate whether there is an asymmetrical spreading activation between the two types of messages.

**3.3.2.1 Experiment 2A**

In this experiment, we investigate the directionality of spreading activation. It is also a process check on the existence of spreading activation.

*Method*

We measured the directional strength of association between benefits and attributes in all possible directions by using a computer-based response-time sequential priming method. The response-time measurement is a method of obtaining more detailed insights into the relatedness of aspects that form the bases for spreading activation (Lei, Dawar, and

Lemmink 2008; Shah and Kruglanski 2003). Response-time sequential priming is well established in special psychology and consumer research as a method of measuring the strength of association among the nodes in a cognitive structure (e.g., Bargh and Chartrand 2000; Herr, Farquhar, and Fazio 1996).

### *Respondents*

A total of 140 students from a large university in the Netherlands participated in a response-time measurement experiment that was part of a larger study. Of the respondents, 55% were female. The entire study took approximately 20 minutes to complete, and the respondents were rewarded with a snack. Two respondents were excluded from the dataset because they were not able to answer the questions of relatedness within the given timeslot.

### *Stimuli and Design*

There were four different versions of the survey, which was executed in a between-subject design. In the first version, the top-down association between benefits and attributes was measured. In the second version, we measured the bottom-up association. In the third and fourth versions, we measured the horizontal relationships between two attributes or between two benefits in two different directions. The respondents were exposed to a primer and then a target after a short delay. Following the established practice (e.g., Herr et al. 1996; Lei et al. 2008), we set the stimulus onset asynchrony at 750 milliseconds (ms). We used a box with two buttons and asked the right-handed respondents to respond to the question of “relatedness” between two issues that appeared on the computer screen by pressing the right button (“yes”) or the left button (“no”) as rapidly as possible while remaining accurate in their responses. We used the reverse pattern of keys for the left-handed respondents.

### *Procedure and Measures*

The task consisted of six practice questions followed by four blocks of eight questions in a randomized order. Each block contained four combinations with a clear relationship and four combinations without a clear relationship. Two blocks contained food-related benefits and attributes, and two blocks involved other subjects. The first and second versions tested vertical relationships, and the third and fourth versions tested horizontal relationships. In the first version, the first word in each pair was a benefit (e.g., healthy). After a delay of

750 ms, an attribute (e.g., low fat and ready to eat) that may or may not have been directly related appeared on the screen as the second word. The response latency, which was measured in milliseconds, was taken as an inverse indicator of the strength of the association between the two aspects. In the second version, we switched the appearance sequence. The first word in each pair was an attribute, and the second word was a benefit. In the third version, we tested the relationships between two attributes and between two benefits. In the fourth version, those relationships were tested in the opposite direction.

### *Results: Directionality*

Each of the four versions was assigned to 35 respondents. After eliminating two respondents who were not able to answer the questions within the given timeslot, the experiment included 35 respondents for version 1 (top-down relationship), 34 respondents for version 2 (bottom-up relationship), 34 respondents for version 3 (horizontal relationship) and 35 respondents for version 4 (horizontal relationship in the opposite direction).

The survey considered two different benefits, “health” and “tastiness”, and three different types of attributes: a) attributes related to the “health” benefit, b) attributes related to the “tastiness” benefit and c) attributes not directly related to either “health” or to “tastiness”. Subsequently, we measured the response time between benefits and attributes that had a clear relationship. We also measured the response time between benefits and attributes that did not have a relationship. In table 2, we report all of the answers that were given correctly (i.e., the respondents answered “yes” when there was a relationship and answered “no” when there was no relationship). All of the wrong answers were not considered. The results showed a significant asymmetrical activation of attributes from benefits versus the activation of benefits from attributes.

Benefit	Attribute	Activation of attribute from benefit (ms)	Activation of benefit from attribute (ms)	Asymmetry (2-tailed)
health	low fat	1210 (n=33)	801 (n=32)	t 63 = 3.708, p = .000
health	low cholesterol	1180 (n=27)	960 (n=32)	t 47.833 = 1.927, p = .060
health	ready to eat	1326 (n=29)	981 (n=31)	t 58 = 2.420, p = .019
health	mild taste	1506 (n=26)	1040 (n=24)	t 48 = 2.796, p = .007
health	added vitamins	1272 (n=27)	845 (n=30)	t 55 = 3.134, p = .003
health	low sugar	1454 (n=32)	781 (n=29)	t 59 = 5.624, p = .000
health	convenience	1444 (n=33)	1007 (n=33)	t 64 = 3.836, p = .000
health	rich taste	1576 (n=15)	1131 (n=8)	t 21 = 2.016, p = .057
indulgence	mild taste	1442 (n=14)	1330 (n=16)	t 28 = 0.534, p = .597
indulgence	pure ingredients	1356 (n=29)	964 (n=31)	t 58 = 2.841, p = .006
indulgence	ready to eat	1471 (n=27)	988 (n=24)	t 49 = 3.005, p = .004
indulgence	added vitamins	1586 (n=27)	1318 (n=19)	t 44 = 1.456, p = .153
indulgence	rich taste	1183 (n=32)	863 (n=33)	t 63 = 2.380, p = .020
indulgence	fresh ingredients	1140 (n=34)	729 (n=33)	t 65 = 4.026, p = .000
indulgence	convenience	1559 (n=29)	1009 (n=32)	t 59 = 3.416, p = .001
indulgence	low cholesterol	1723 (n=26)	981 (n=32)	t 56 = 5.448, p = .000

Table 2: Mean response times (in milliseconds) based on those respondents who gave the correct answer

The mean response times are summarized in figure 12. The vertical arrows represent the response times between aspects that have a clear relationship, and the diagonal arrows represent the response times between aspects that do not have a relationship.

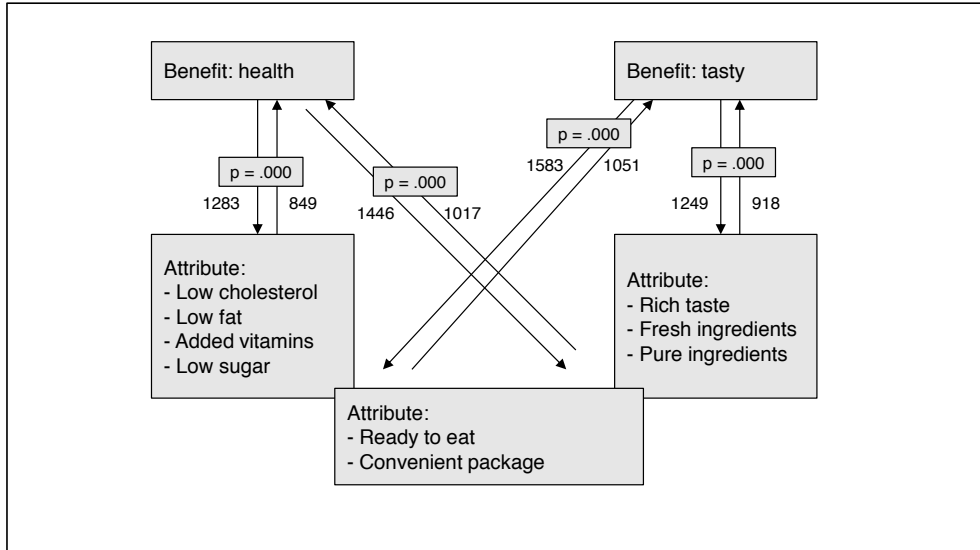


Figure 12: Mean response times between related and unrelated concepts



Between the related concepts as well as between the non-related concepts, there is asymmetrical spreading activation. The mean response time for the related concepts is slightly lower than the mean response time for the non-related concepts.

### **3.3.2.2 Experiment 2B**

This experiment can be seen as a validation check in which the spreading activation effects of attributes and benefits are compared by using another method to measure spreading activation. In this experiment, the goal is to determine whether we can also detect asymmetrical spreading activation between benefits and attributes when we measure their impacts in a more direct manner by asking for evaluations.

#### *Respondents*

In total, 205 students from a large university in the Netherlands participated in this experiment. Respondents had to complete a questionnaire in the lab and were rewarded with a snack. Afterward, 3 respondents were excluded because they had not answered all of the questions. Five other respondents were excluded because they completed the questionnaire in less than 180 seconds, which was significantly lower than the mean duration time ( $M_{\text{duration time}} = 853$  seconds). The analysis was based on 179 respondents.

#### *Stimuli and Design*

We tested five different versions of messages about margarine in a between-subject design. We tested three concrete attribute messages (“Low-fat margarine”, “Low-cholesterol margarine” and “Margarine with added vitamins”), one abstract benefit message (“Healthy margarine”) and a control version. The respondents were shown an image of a non-existent margarine brand, which was the same in every version and which was accompanied by one of the described messages. The respondents in the control version were only shown the image.

#### *Procedure and Measures*

In this experiment, the respondents were told that because they did not have time to go to the supermarket, they had to log into the website of a supermarket. One of the products that they needed was margarine for bread. After this priming task, the respondents were exposed to one of the five messages for a specific margarine product. Afterward, they received an open question asking which aspects are important when buying margarine.

This open question was designed to generate insight into the respondents' mental processes. To measure spreading activation, we asked the respondents four questions: whether they think the recommended margarine has a low fat level, lowers the cholesterol level, contains added vitamins and is healthy. Those four questions had to be answered on a five-point Likert scale (1 = not agree, 5 = agree).

### *Results*

Table 3 shows the outcomes of this experiment. We found some results that suggest asymmetry between the benefits and attributes, as we found in experiment 2A. The respondents who saw the "low-fat" version evaluated the margarine as being significantly more "healthy", compared to the control version ( $M_{\text{low fat version}} = 3.29$ ,  $M_{\text{control version}} = 2.78$ ;  $t = 2.10$ ,  $p < .05$ ). The answers of the respondents who saw the "added vitamins" version were in the expected direction but only significant at a 10% level ( $M_{\text{added vitamins version}} = 3.24$ ,  $M_{\text{control version}} = 2.78$ ;  $t = 1.86$ ,  $p < .10$ ). The answers of the respondents who saw the "low cholesterol" version were not significantly different in terms of health evaluation. These findings thus provide partial support for the bottom-up spreading activation from attributes to benefits.

The respondents who saw the "healthy" version however did not rate the margarine higher than the control group on any attribute. Thus, there is no significant top-down spreading activation from benefits to attributes, whereas there seems to be a moderate bottom-up spreading activation from attributes to benefits.

Additionally, there is a strong spreading activation from attributes to other attributes. The respondents who saw an attribute message ("low fat", "low cholesterol" or "added vitamins") not only rated the mentioned attribute significantly higher than the respondents in the control version but also rated most of the non-mentioned attributes significantly higher than the control group. Thus, we conclude that spreading-activation effects of the concrete attribute messages are stronger than spreading-activation effects of the abstract benefit messages.

I think this margarine ...	Control version	Low fat	Low cholesterol	Added vitamins	Healthy
...has a low fat level	1.92	3.61 (p=.000)	2.95 (p=.000)	2.37 (p=.082)	2.35 (p=.102)
... has a cholesterol-lowering function	1.81	2.32 (p=.022)	4.12 (p=.000)	2.34 (p=.012)	2.13 (p=.145)
... contains added vitamins	2.14	2.24 (p=.679)	2.71 (p=.015)	3.66 (p=.000)	2.28 (p=.619)
... is healthy	2.78	3.29 (p=.039)	3.00 (p=.403)	3.24 (p=.067)	2.83 (p=.867)

Table 3: Spreading-activation effects

Another interesting difference between abstract and concrete messages is that the concrete attribute messages have a significantly more positive impact on the perception of the recommended aspect than the control version ( $M_{\text{low fat}} = 3.61$ ,  $t = 6.56$ ,  $p < .001$ ;  $M_{\text{low cholesterol}} = 4.12$ ,  $t = 10.85$ ,  $p < .001$ ; and  $M_{\text{added vitamins}} = 3.66$ ,  $t = 5.67$ ,  $p < .001$ ), whereas the abstract benefit message does not have this positive impact ( $M_{\text{healthy}} = 2.83$ ,  $t = .15$ ,  $p = .87$ ).

### 3.4 General Discussion

#### 3.4.1 Conclusions

Within the domain of single-product messages, a concrete attribute message seems to have more impact on goal activation and product acceptance at the point of purchase than an abstract benefit message. Although there is no significant difference in goal activation between the two types of messages, the concrete attribute message is more effective at generating product acceptance than the abstract benefit message. Our studies show that the asymmetrical cognitive relationship between benefits and attributes is the underlying reason for this phenomenon.

#### 3.4.2 Theoretical Implications

This essay provides a meaningful insight into the mental representation that underlies the decision-making process and provides a theoretical explanation for the finding that concrete messages have a greater impact at the point of purchase than abstract messages. To our knowledge, we are the first to use response-time measurement techniques to obtain insight into the influence of messages that vary in their levels of concreteness on the decision-making process.

### ***3.4.3 Managerial Implications***

The problem discussed in this essay is of high practical relevance for managers. All companies that introduce massproducts to the consumer market spend a considerable amount of money researching how to market their products. Our research shows that, on the basis of the existing cognitive structures in consumers' mental representations, concrete messages are more effective than abstract messages at activating goals and creating product acceptance within the category. In the next essay, we will explore in greater depth the assumption that abstract messages have a broader impact, over the borders of the specific product category, to adjacent product categories in a company's portfolio.

### ***3.4.4 Limitations and Suggestions for Further Research***

The aim of this research was to generate insight into the differential impact of abstract benefit messages and concrete attribute messages on the decision-making process. The messages we used were fictive but were based on existing benefits and attributes that were gathered from prior research (Ter Hofstede et al. 1999). We want to stress that some of the messages used (e.g., "Crispy Crackers for a slim body" and "Crispy Crackers for a wholesome and vital body") are not allowed to be used in practice. However, although forbidden from being used explicitly, there are examples of companies that use these types of messages in an implicit manner (e.g., a Kellogg's commercial).

A limitation in our research is that we did not test the believability of the messages in experiment 1A. In this experiment, we found that a concrete attribute message is more effective at generating product acceptance than an abstract benefit message. Although we did not find any differences in the attractiveness of the messages, a difference in the believability might impact the outcomes. According to the economics of information theory (e.g., Ford, Smith, and Swasy 1990; Nelson 1974; Smith 1990), consumers tend to be more skeptical of subjective (e.g., "healthy") claims than of objective ("no cholesterol") claims. Nevertheless, the abstract term "health" is mentioned as an important issue by the respondents to the survey conducted in experiment 2B.

According to the results of experiment 1B, both attributes and benefits appear to be effective at activating goals. In the next chapter, we go one step further and measure the impact of abstract versus concrete messages on product decisions in adjacent product categories. Because of the greater distance and in accord with alignability theory and

construal level theory, we expect benefit messages to be significantly stronger than attribute messages at activating goals in adjacent product categories.

## CHAPTER 4.

### **The Impact of Abstract versus Concrete Communications on the Decision-making Process in Adjacent Product Categories**

#### ABSTRACT

*In this essay, we investigate the impact of abstract benefit messages versus concrete product messages on the evaluation and choice of products in adjacent product categories (i.e., products not belonging to the same category as the product mentioned in the message, but belonging to a related product category). On the basis of alignability theory and construal level theory, one might expect that the evaluation and choice of products in categories that are more psychologically distant are influenced more positively by abstract benefit messages than by concrete product messages. This is expected for products in adjacent categories that are more psychologically distant than products within the focal category mentioned in the messages. However, in adjacent product categories, we find that concrete product messages strongly impact the evaluation and choice of products. We base our findings on a study involving the clients of a health insurance company. An explanation can be found in the asymmetrical relationship between products and benefits.*

## 4.1 Introduction

Consumers often make a series of choices within different product categories that are taken into account simultaneously (e.g., a consumer in the hair care aisle may consider buying one or more items among shampoo, conditioner and styling gel) (Goldsmith and Dhar 2008). In most research on choice theory, product decisions are studied in isolation, and adjacent product decisions are not considered. In our previous research, we found that concrete messages have a greater impact on the evaluation and choice of the concerning product than abstract messages. However, what is the impact of concrete versus abstract messages on the evaluation and choice of products in adjacent product categories?

Johnson (1984) and Malkoc, Zauberan and Bettman (2010) found that individuals who are asked to compare alternatives with non-alignable features seek to render the attributes comparable by representing the alternatives at increasingly higher levels of abstraction. Abstraction increases the comparability of otherwise non-comparable options. Moreover, construal level theory (Trope and Liberman 2010) addresses comparability by relating the compatibility of issues to construal levels (in the sense that higher psychological distance involves lower compatibility). High-level construals can be viewed as more abstract, coherent and superordinate mental representations than low-level construals. Because high-level construals are more general, they bring to mind more distal instantiations, as well as viewing relationships from a greater distance to see them clearly (Trope and Liberman 2010). Experimental research has shown that respondents implicitly associate psychological distance with high-level construals and psychological proximity with low-level construals. The association between psychological distance and construal level can be activated automatically without conscious deliberation (Trope and Liberman 2010), which implies that high-level construal cues are fluent in the case of psychological distance and that low-level construal cues are fluent in the case of psychological proximity. Thus, processing is most efficient if there is a congruency between the psychological distance and the presentation medium. Construal levels expand and contract one's mental horizon. A high-level construal is formed by an abstract mindset, whereas a low-level construal is shaped by a concrete mindset. If people are focused on a specific product category, the products in an adjacent product category are arguably more psychologically distant than the products within the specific category. This argument implies that abstract messages, which induce an abstract mindset, might have a greater impact on the products in an adjacent product category and that concrete messages, which induce a concrete

mindset, might have a greater impact on the products within the concerning product category.

To explain the impact of abstract versus concrete messages on products that differ in psychological distance, we can apply spreading-activation theory. Spreading activation between concepts means that if a concept is stimulated, activation spreads out along the paths of the network in a decreasing gradient. Thus, a concept that is stimulated can stimulate other concepts<sup>2</sup>. However, this activation process becomes attenuated the farther outward it travels. Activation is similar to a signal from a source that becomes attenuated as it travels outward. The more properties that two concepts have in common, the more links these properties create between the two nodes and the more closely related the concepts become (Collins and Loftus 1975).

Memory representation is the link between construal level theory and spreading activation. An abstract mindset, which is accompanied by a wide psychological horizon, leads to another memory representation rather than a concrete mindset, which is accompanied by a narrow psychological horizon. The principal process underlying memory performance is the retrieval operation. The cognitive units shape an interconnected network and retrieval is performed by spreading activation throughout the network (Anderson 1983). Because high-level construals are broad, they bring to mind more distant instantiations of concepts, and because low-level construals are narrow, they bring to mind more proximal instantiations of concepts (Trope and Liberman 2010). On the basis of these findings, we argue that from abstract benefit messages, which are broad, there is more spreading activation toward adjacent products, which are the more distant instantiations, than from concrete product messages, which are narrow.

The abovementioned theories about the broadness of the mental horizons based on mindset abstractness (Johnson 1984; Trope and Liberman 2010) and spreading activation (Collins and Loftus 1975; Anderson 1983) are the two cornerstones of our argument that abstract benefit-oriented messages are more effective at activating the evaluation and choice of adjacent products than concrete product-oriented messages.

Malkoc et al. (2010) studied the impact of processing mindsets (abstract versus concrete) on the present-bias of people. These researchers found that an abstract mindset reduces the present-bias. They argue that present-biased preferences are caused by consumers' inability to take a broader perspective. Accordingly, these researchers

---

<sup>2</sup> A concept corresponds to particular words, senses of words or phrases. Thus, a concept not only is a noun but also can be a verb or a notion.



conjecture that systematic shifts in mindset abstraction may moderate other contextual and framing effects. Our study can be seen as one of those extensions. We induce an abstract mindset within our respondents by showing them an abstract benefit message. We then investigate whether this mindset leads to a more positive evaluation and a higher rate of choosing adjacent products (because of higher spreading activation) than a concrete mindset induced by a concrete product message.

However, the main contribution of our research is the finding that, contrary to the results expected in accord with the findings of Johnson (1984), Anderson (1983), Trope and Liberman (2003, 2010) and Collins and Loftus (1975), the benefit message/product message ratio, which denotes the impact of benefit messages compared with that of product messages on product evaluation or product choice, is not higher in adjacent product categories than under closely related products. Our findings are based on data from a panel of clients of a Dutch health insurance company. An explanation can be found in the asymmetrical relationship between products and benefits (i.e., in a weak top-down relationship between benefits and products), which leads to asymmetrical spreading activation.

## **4.2 Spreading Activation Within and Between Product Categories**

### ***4.2.1 Broadening the Psychological Distance Envisaged***

#### ***4.2.1.1 Alignable versus Non-alignable Objects***

People who are asked to compare alternatives with non-alignable features will try to render the attributes comparable by representing the alternatives at increasingly higher levels of abstraction (Johnson 1984). Vallacher and Wegner (1989) and Liberman and Trope (1998) developed an action identification scale that can be used to test whether individuals have an abstract or a concrete mindset after they manipulate the alignability of certain objects. For example, Wakslak and Trope (2009) and Malkoc et al. (2010) conducted studies that manipulated the mindsets of their respondents by having them compare either alignable or non-alignable objects. In the alignable condition, the respondents compared two digital cameras. Respondents were provided with information about the same seven features for each camera (e.g., battery life and digital zoom). In the non-alignable condition, the researchers provided the respondents with information about seven different features for each camera (e.g., battery life for the digital camera and focus for the traditional camera).

If the distance between products is great (i.e., if the products are non-alignable), people are inclined to move upward to a higher level of abstraction. At a higher level of abstraction, the comparability of the products will increase.

#### ***4.2.1.2 Construal Level Theory***

Construal level theory (Trope and Liberman 2003, 2010) also shows that a higher psychological distance leads to a more abstract mindset, whereas a more abstract mindset expands one's mental horizon (Trope and Liberman 2010). As psychological distance increases, construals will become more abstract. The reverse is true as well; as the level of abstraction increases, the psychological distances envisioned by people increase as well. Construal levels expand and contract one's mental horizons. When people have a high-level construal, they have another mental representation, than when they have a low-level construal, which implies that other types of information are fluent in the distinct situations.

Trope and Liberman (2010) state that the various dimensions of psychological distance are interrelated. These researchers found that a common dimension of psychological distance underlies the different dimensions of distance. Through this common dimension, these distance dimensions are mentally associated with one another. For example, remote locations bring to mind other people rather than oneself and the distant future rather than the near future. The basic premise of construal level theory is that all the dimensions of distance are linked to the level of mental construal such that a high-level construal will bring to mind more distant objects and that a low-level construal will bring to mind closer objects. Scholars have found evidence for these associations between distance and construal level. For example, Bar-Anan, Liberman and Trope (2006) examined the associations between the level of construal and psychological distance by using an Implicit Association Test. In this study, the respondents were presented with stimuli from four different categories: stimuli referring to a high-level construal (e.g., category names such as "drinks"), stimuli referring to a low-level construal (e.g., product names such as "Coke"), stimuli referring to low psychological distance (e.g., the word "ours" or the word "friend"), and stimuli referring to high psychological distance (e.g., the word "stranger" or the word "theirs"). The results from this study show that respondents implicitly associate psychological distance with high-level construals and psychological proximity with low-level construals. This study also demonstrates that the association between psychological distance and construal level can be activated automatically without conscious deliberation.

### ***4.2.2 Spreading Activation***

The extent to which an abstract benefit message or a concrete product message impacts the evaluation or choice of another product depends on spreading activation. Each concept is surrounded by a network of related concepts. If a concept is stimulated, activation spreads out along the paths of the network in a decreasing gradient. The decrease is inversely related to the strength of the links in the path. Activation can only start out at one node at a time. Activation decreases over time and is reduced by intervening activities (Collins and Loftus 1975). The more properties that two concepts have in common, the more links that these properties create between the two nodes and the more closely related the concepts are. Priming can focus on the lexical network, the semantic network, or both (Collins and Loftus 1975). However, in our essay, priming of the semantic network is most relevant. The messages used in advertisements often lead to generalizations and inferences, which are caused by spreading activation (Andrews, Netemeyer, and Burton 1998). If a concept is primed (e.g., “product X is healthy”), spreading activation can lead one to infer that a related product is also healthy. However, this inference is not based on facts and, thus, might be invalid.

Products from adjacent categories (i.e., different product categories that are close to each other) have lower commonalities than products within the same category. For this reason, it is expected that a product message leads to less spreading activation and, as a result, has less impact on the evaluation or choice of a product in an adjacent product category than on the evaluation or choice of a product within the same category. If people have to compare non-alignable products (i.e., if the commonalities between the products are low), the people are inclined to move toward a higher level of abstraction. At a higher abstraction level or construal level, non-alignable attributes become alignable because the person’s mental horizon expands such that the commonalities between the products increase (Johnson 1984; Trope and Liberman 2010). We expect that an abstract mindset will lead to higher spreading activation between an abstract benefit message and an adjacent product than a concrete mindset.

### ***4.2.3 Broadening Vision and Spreading Activation***

Johnson’s (1984) and Trope and Liberman’s (2003, 2010) theories on mindset abstractness versus mental horizons and the theory of spreading activation (Collins and Loftus 1975; Anderson 1983) can be linked together by memory representation. Construal level theory is a cognitive process theory that addresses memory representation. An abstract mindset

accompanied by a wide psychological horizon leads to a different memory representation than a concrete mindset accompanied by a narrow psychological horizon. The essential process underlying memory performance is the retrieval operation. The cognitive units form an interconnected network, and retrieval is achieved by spreading activation throughout the network (Anderson 1983). Making non-alignable items alignable by broadening a person's mental horizon enables the more distant nodes in the spreading-activation process to become more salient. Because high-level construals are broad, they bring to mind more distant instantiations of concepts, and because low-level construals are narrow, they bring to mind more proximal instantiations of concepts (Trope and Liberman 2010). On the basis of these findings, we argue that from abstract messages, which are broad, there is more spreading activation toward adjacent products, which are the more distant instantiations, than from concrete messages, which are narrow. The more properties two concepts have in common, the more links these properties create between the two nodes and the more closely related the concepts are. This argument implies that spreading activation between non-alignable products is stronger on a higher benefit-oriented level than on a lower product-oriented level.

### **4.3 Hypotheses**

To test the hypotheses, we define products within the same category as products that support a common goal and products in adjacent categories as products that are related but support different goals (assigned as products in category 1 versus products in category 2, respectively, in figure 13).

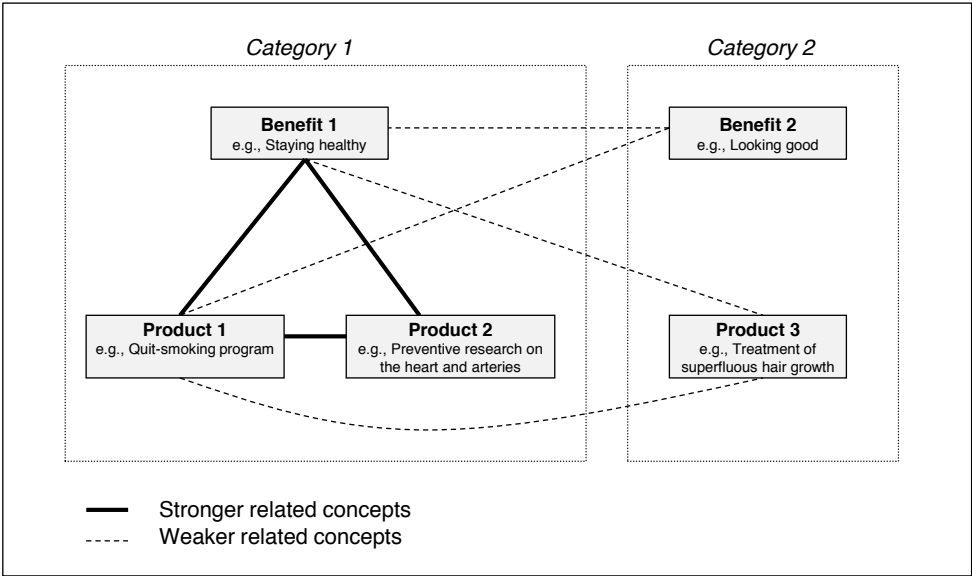


Figure 13: Two adjacent product categories within the health care aisle.

A pretest must point out whether the chosen products within the category are more strongly associated with one another than they are to products in the adjacent category.

In accord with the aforementioned theory, we propose that the more abstract the mindset is, the higher the spreading activation will be toward an adjacent product category. Therefore, we check the validity of the statement that communicating “benefit 1” has a bigger impact on “benefit 2” than communicating “product 1” has on “benefit 2”.

We hypothesize that benefits lead to stronger spreading activation of products within a specific category than of products in an adjacent category. Further, we hypothesize that spreading activation between products within a specific product category is stronger than spreading activation between products in adjacent categories. These arguments lead to our first hypothesis:

Hypothesis 1a:

Recommending a benefit within the same category has a more positive impact than recommending a benefit from another category on a target product’s evaluations.

Hypothesis 1b:

Recommending a product within the same category has a more positive impact than recommending a product from another category on a target product's evaluations.

In accord with Johnson (1984), Trope and Liberman (2010), Collins and Loftus (1975) and Anderson (1983), we argue that an abstract mindset is more fluent when evaluating adjacent products than a concrete mindset. Within a specific product category, an abstract mindset does not have such an advantage in fluency over a concrete mindset. Thus, compared with a concrete product-oriented message, an abstract benefit-oriented message leads to more spreading activation of adjacent products than of a product within the specific product category. We argue that the benefit message/product message ratio, which compares the impact of benefit messages with that of product messages on product evaluation or product choice, is higher for products in adjacent product categories than for products within the concerning product category. The ratio between the benefit message and the product message is measured to correct for eventual differences in the quality of the messages.

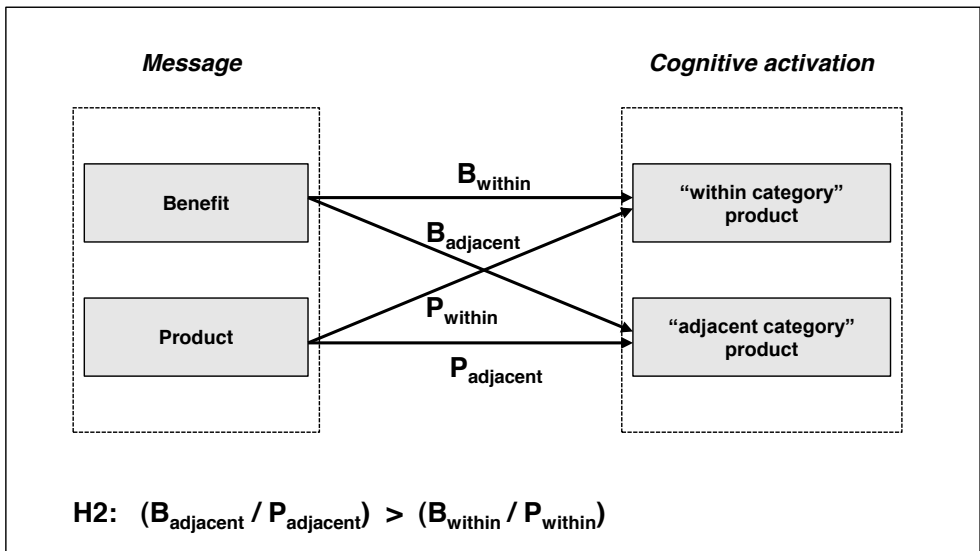


Figure 14: Conceptual framework and hypothesis 2

Hypothesis 2:

The ratio (impact of recommending a benefit on product evaluation/impact of recommending a product on product evaluation) is higher in an adjacent product category than in a category of closely related products.

As a validity check, we also investigate whether hypothesis 2 can be accepted when we use the choice of products instead of the evaluation of products as the dependent variable.

Validity check:

The ratio (impact of recommending a benefit on product choice/impact of recommending a product on product choice) is higher in an adjacent product category than in a category of closely related products.

## **4.4 Methods and Data**

### *Domain*

In this essay, we focus on the Dutch health insurance system, which was subject to a number of far-reaching changes in 2006. The new system introduced managed competition, which allows consumers to freely change their insurers and insurance plans on a yearly basis. This competition causes insurers to strive for low prices and high quality of care. Information about the difference in prices and quality can be easily accessed on the internet. There are hardly any differences among the basic packages from different insurers, but there are differences in the complementary insurance (De Jong, Van den Brink-Muinen, and Groenewegen 2008). In this market, people decide whether to buy additional complementary insurance products in adjacent categories at the same time. As a result, this market is an interesting domain for our research. The changes are recent, and only a limited amount of research has been done in this field to date. The changes to the Dutch system have received a considerable amount of international attention from both policymakers and researchers.

#### ***4.4.1 Study 1: the Impact of Cognitive Constructs within the Specific Product Category and in Adjacent Categories***

##### *Goal*

The goal of study 1 is to gain insight in the impact of abstract benefit messages versus concrete product messages on the evaluation and choice of products in two categories: 1) products belonging to the same category as the products and benefits used in the messages, 2) products belonging to adjacent product categories.

##### *Methods and Data*

To gather the data for this research, we cooperated with the Netherlands Institute for Health Services Research (NIVEL), which is the national institute for health services research in the Netherlands. NIVEL operates a partially internet-based panel of a large health insurance company's clients. These clients participated as members of the panel on a voluntary basis. For the purpose of this research, a survey was administered to 580 members of this panel. They were selected from the panel on the basis that they had not participated in a recent survey. The members received the questionnaire by e-mail, and after one week, those who had not replied received a reminder to do so. The survey's website was closed two weeks after the first invitation.

##### *Measurement Approach*

The questionnaire consisted of three parts. In the first part, the respondents were asked to imagine that they were considering switching to another health insurance company and that they were going to read a message in a newspaper about a specific insurance company. The first of two versions contained an abstract benefit-oriented message stating, "Insurance company X scores very well at keeping its clients healthy". The second version contained a concrete product-oriented message stating, "Insurance company X's quit-smoking program scores very well". This product ("quit-smoking program") serves the goal used in the benefit message "staying healthy". After reading the message, the respondents were asked to evaluate several services of that specific insurance company on benefit level or on product level and to answer questions that measured choice activation. We used two types of complementary insurance products. Some products were part of the specific product category in which the respondents were primed and served the goal "staying healthy". Some products were adjacent products and served a different goal, that of "looking good". This difference resulted in a 2-by-2 design (message concreteness  $\times$  product type) that was



partially between subjects (message concreteness) and partially within subjects (product type). In the second part of the survey, we performed a validation check by investigating the relationships that the respondents saw between the different benefits and products mentioned in the questionnaire. In the third part, we asked some personal questions.

### *Sample Characteristics*

In this study, 290 panel members received the version of the survey that communicated an abstract benefit-oriented message: “Insurance company X scores very well at keeping its clients healthy”. The other 290 panel members received the version of the survey that communicated the following message: “Insurance company X’s quit-smoking program scores very well”. A message about a “quit-smoking program” is a concrete product-oriented message. The response rate was 57%, amounting to 331 respondents. Two respondents were excluded because they did not fill in the entire questionnaire. The respondents without any education or only with primary-school-level education were excluded because several of their answers led to outliers, which indicated that some of them did not understand all of the questions. For these reasons, our dataset consisted of 319 respondents. The socio-demographics of the sample showed an emphasis on older men: 71% of the respondents were male, and the mean age was 66.5 years.

### *Results: Pretest and Validity Check on Relationships between the Concepts Used*

In a pretest on a group of 16 respondents whose profiles corresponded with those of the members of the panel, we measured the perceived relationships between the products and benefits mentioned in figure 13 on a five-point Likert scale (1 = items fit very poorly together, 5 = items fit very well together). We concluded that those combinations worked better than the other products and benefits that we had tested. A validation check in the main questionnaire, which was rated on the same five-point Likert scale, showed that the respondents rated the relationship between used benefits and products as predicted (see figure 13). The horizontal and vertical relationships within the specific product category were all significantly stronger than the relationships between the adjacent product categories ( $M_{\text{staying healthy} - \text{quit-smoking program}} = 3.63$ ,  $M_{\text{staying healthy} - \text{preventive research on the heart and arteries}} = 4.12$  and  $M_{\text{quit-smoking program} - \text{preventive research on the heart and arteries}} = 3.55$ ). All of the measured relationships between adjacent product categories had means ranging from 2.27 to 2.70. The difference between the lowest mean of the strongly related issues and the highest mean of the weakly related issues is highly significant ( $t = 11.74$ ,  $p < .001$ ).

*Results: Hypotheses and Related Validity Checks*

We began by executing the validity check, which determined whether the spreading activation from the benefit “staying healthy” toward the benefit “looking good” is bigger than the spreading activation from the product “quit-smoking program” toward the benefit “looking good”. We found that the respondents who had received a benefit-oriented message rated the adjacent benefit (“looking good”) significantly higher than the respondents who had received a product-oriented message ( $M_{\text{benefit-oriented message}} = 2.91$  versus  $M_{\text{product-oriented message}} = 2.74$  ( $t = 2.05$ ,  $p < .05$ ).

To test hypotheses 1 and 2, we asked the respondents to read one of the abovementioned newspaper messages and to rate how that specific insurance company would score on an adjacent product (“treatment for superfluous hair growth”) that did not belong to the benefit “staying healthy” and on a product (“preventive research on the heart and arteries”) that belonged to the benefit “staying healthy”. The respondents rated these questions on a five-point Likert scale (1 = very bad, 5 = very good). Hypothesis 1a states that spreading activation from the benefit “staying healthy” toward the product “treatment for superfluous hair growth” is lower than spreading activation from the benefit “staying healthy” toward the product “preventive research on the heart and arteries”. We tested whether the impact of recommending the benefit “staying healthy” leads to a higher rating of the product “preventive research on the heart and arteries” than of the product “treatment for superfluous hair growth” ( $M_{\text{preventive research on the heart and arteries}} = 3.82$ ,  $M_{\text{treatment for superfluous hair growth}} = 2.71$ ,  $t = 13.30$ ,  $p < .001$ ). Hypothesis 1b states that spreading activation from the product “quit-smoking program” toward the product “treatment for superfluous hair growth” is lower than spreading activation from the product “quit-smoking program” toward the product “preventive research on the heart and arteries”. We tested whether the impact of recommending the product “quit smoking program” leads to a higher evaluation of the product “preventive research on the heart and arteries” than of the product “treatment for superfluous hair growth” ( $M_{\text{preventive research on the heart and arteries}} = 3.60$ ,  $M_{\text{treatment for superfluous hair growth}} = 2.57$ ,  $t = 10.85$ ,  $p < .001$ ). These outcomes confirm hypotheses 1a and 1b.

In our second hypothesis, we investigated the ratio between the impact of benefit messages and the impact of product messages on the respondents’ evaluations of two types of products: products within the concerning category and products within an adjacent product category. Our second hypothesis states that the ratio between the impact of benefit messages and the impact of product messages is higher for products in an adjacent product

category than for products within the concerning product category. By comparing the ratio in the adjacent product category with the ratio within the concerning product category, we correct for differences in quality between the abstract benefit message and the concrete product message. The respondents who received the benefit-oriented message rated the product “treatment for superfluous hair growth” relative to the product “preventive research on the heart and arteries” lower ( $M^{\text{“treatment for superfluous hair growth”}} - M^{\text{“preventive research on the heart and arteries”}} = -1.11$ ) than the way in which respondents who received the product-oriented message evaluated the product “treatment superfluous hair growth” relative to the product “preventive research heart and arteries” ( $M^{\text{“treatment for superfluous hair growth”}} - M^{\text{“preventive research on the heart and arteries”}} = -1.03$ ). However, the difference was not significant ( $t = -.63$ ,  $p = .53$ ). Thus, we can conclude that an abstract benefit message does not have a greater impact in adjacent product categories than a concrete product message compared with the impact on closely related products. Therefore, we reject hypothesis 2.

As a validation check of these findings, we investigated the impact of both types of messages on choice activation in adjacent product categories and compared this impact with the impact on choice activation in the concerning category. On the basis of our findings, we do not expect an abstract benefit message to lead to more choice activation in adjacent product categories than a concrete product message. Additionally, we correct for the difference in the strength of the two messages by comparing the ratio in the adjacent product category with the ratio within the concerning category. After the respondents read the benefit-oriented message and the product-oriented message, they were primed for a situation in which they had decided to switch to a new insurance company with the same coverage that they had with the former insurance company. Subsequently, they were allowed to buy additional complementary health insurance products at a 20% discount. The respondents were asked whether they would buy one or more additional health insurance products (no = 0, yes = 1). The respondents who answered that they would buy additional health insurance products were asked to select one out of nine additional health insurance products. Three of those products belonged to the category “staying healthy”: 1) preventive research on the heart and arteries, 2) preventive injections against flu at any age, and 3) dietary advice focused on lowering cholesterol levels. Additionally, six of those products did not belong to the category “staying healthy”: 1) facelift, 2) treatment for superfluous hair growth, 3) eyelid surgery without medical indication, 4) treatment for age spots, 5) domestic help in case of an ill partner, and 6) walking aid service. We coded -1 if the respondents only chose products serving the “staying healthy” benefit. We coded 1 if

the respondents only chose products from the adjacent product category. We coded 0 if the respondents chose products from both categories or if the respondents did not choose any product. We found that the ratio of the activation of product choice via a benefit message and via a product message (ratio of the impact of benefit message on choice/the impact of product message on choice) was not greater within the category of adjacent products than within the closely related product category ( $t = -.56, p = .58$ ).

We cannot accept hypothesis 2, possibly because a weak top-down relationship exists between superordinate benefits and subordinate products. This relationship may explain why the strong spreading activation between adjacent categories on a high level does not generate high spreading activation on an adjacent product.

#### ***4.4.2 Study 2: the Relatedness of Cognitive Constructs***

##### *Goal*

The goal of study 2 is to find an explanation for the weak impact of abstract benefit messages on the evaluation and choice of products in adjacent product categories in the mental representation of consumers. We propose that an asymmetrical relationship between benefits and products explains the weak role of abstract benefit messages on the evaluation and choice of products in adjacent product categories, compared to concrete products messages. In our previous essay, we found an asymmetrical relationship between attributes and benefits in line with the findings of Anisfeld and Knapp (1968), who found that subordinates tend to evoke superordinates more strongly than superordinates evoke subordinates. Additionally, in this essay, we performed a response-time measurement experiment to investigate the relationship between subordinate products and superordinate benefits.

##### *Methods*

Response-time measurement is a method for measuring the strength of an association between concepts in a cognitive structure (e.g., Bargh and Chartrand 2000; Herr, Farquhar, and Fazio 1996) and is useful for obtaining more detailed insights into the relatedness of concepts, which are the bases for spreading activation (Lei, Dawar, and Lemmink 2008; Shah and Kruglanski 2003).

### *Respondents*

A total of 140 students from a large university in the Netherlands participated in a response-time measurement experiment. The survey took approximately 20 minutes to complete and was part of a larger survey. The respondents were rewarded with a snack afterward. Two respondents were excluded from the dataset because they were not able to answer the questions of relatedness within the given timeslot.

### *Stimuli and Design*

We measured the directional strength of the association between benefits and health insurance products in all possible directions by using a computer-based response-time sequential priming method. The respondents were exposed to a primer and then a target after a short delay. Following the established practice (e.g., Herr et al. 1996; Lei et al. 2008), we set the stimulus onset asynchrony at 750 milliseconds (ms). We used a box with two buttons and asked the right-handed respondents to respond to the question of “relatedness” between two issues that appeared on the computer screen by pressing the right button (“yes”) or the left button (“no”) as rapidly as possible while remaining accurate in their responses. We used the reverse pattern of keys for the left-handed respondents.

### *Procedure and Measures*

The task consisted of six practice questions followed by four blocks of eight questions in a randomized order. Each block contained four combinations with a clear relationship and four combinations without a clear relationship. Two blocks addressed the benefits related to healthcare insurance and health insurance products. The respondents were randomly assigned to four different versions. The first and second versions tested vertical relationships, and the third and fourth versions tested horizontal relationships. In the first version, the first word in each pair was a benefit (e.g., staying healthy). After a delay of 750 ms, a health insurance product (e.g., preventive injection against flu) that may or may not have been related to the first word appeared on the screen as the second word. The response latency, which was measured in milliseconds, is taken as an inverse indicator of the strength of the association between the two concepts. In the second version, we switched the appearance sequence; the first word in each pair was a product, and the second word was a benefit. In the third version, the relationship between two products

respectively between two benefits was tested. In the fourth version, those relationships were tested in the opposite direction.

### Results

Each of the four versions was assigned to 35 respondents. After eliminating two respondents who were not able to answer the questions within the given timeslot, the experiment consisted of 35 respondents for version 1 (top-down relationship), 34 respondents for version 2 (bottom-up relationship), 34 respondents for version 3 (horizontal relationship) and 35 respondents for version 4 (horizontal relationship in the opposite direction). For every combination of words, we selected the respondents who gave the correct answers. For the word combinations with a clear relationship, the respondents who answered “yes” were selected, and for the word combinations without a clear relationship, the respondents who answered “no” were selected. Incorrect answers were excluded.

The results showed a significant asymmetrical activation of health insurance products from benefits versus benefits from health insurance products. The respondents who initially saw the product associated the concepts significantly faster than the respondents who initially saw the benefit. This can be concluded from table 4, which shows that the bottom-up activation of benefits from products is significantly faster than the top-down activation of products from benefits, for all measured combinations of concepts. The strength of relationship is inversely related to the number of milliseconds the respondents need to see the relationship. Moreover, a higher percentage of respondents answered the questions correctly when they initially saw the product than when they initially saw the benefit (93% and 83%, respectively). This finding confirms the hypothesis that the bottom-up relationship between products and benefits is significantly stronger than the top-down relationship.

Benefit	Product	Top-down activation of product from benefit (ms)	Bottom-up activation of benefit from product (ms)	Asymmetry (2-tailed)
Staying healthy	Quit-smoking program	1803 (n=33)	1182 (n=30)	$t_{61}=2.968, p=.004$
Staying healthy	Preventive research on the heart and arteries	1743 (n=32)	1053 (n=33)	$t_{63}=3.894, p=.000$
Staying healthy	Treatment of superfluous hair growth	1703 (n=29)	964 (n=31)	$t_{58}=5.137, p=.000$
Looking good	Treatment of superfluous hair growth	2603 (n=26)	1228 (n=30)	$t_{54}=4.700, p=.000$
Looking good	Preventive research on the heart and arteries	1584 (n=25)	1049 (n=33)	$t_{56}=4.584, p=.000$
Looking good	Quit-smoking program	2575 (n=29)	1696 (n=32)	$t_{59}=2.085, p=.041$

Table 4: Top-down and bottom-up relationships (only correct answers)

To get a complete insight in the reason why abstract benefit messages are weaker in activating the evaluation and choice of products in adjacent product categories, than expected on the basis of alignability theory and construal level theory, we compare the top-down activation of (adjacent) products from benefits with the horizontal activation between (adjacent) products. Therefore, we also investigated the response time on (horizontal) product combinations, which were measured in two directions in a between-subject design. Because there is no directionality in a horizontal relationship, we calculated the means of all of the horizontal relationships regardless of which word was mentioned first.

<b>Relationship between items</b>	<b>Response time (milliseconds)</b> (respondents who gave an incorrect answer were excluded) (weighted average)
<b>Top-down (belonging to the same category)</b> - Staying healthy – Quit-smoking program - Staying healthy – Preventive research on the heart and arteries - Looking good – Treatment for superfluous hair growth	2010 (n=91)
<b>Top-down (not belonging to the same category)</b> - Staying healthy – Treatment for superfluous hair growth - Looking good – Preventive research on the heart and arteries - Looking good – Quit-smoking program	1972 (n=83)
<b>Horizontal: products (belonging to the same category)</b> - Preventive research on the heart and arteries – Quit-smoking program	1488 (n=50)
<b>Horizontal: products (not belonging to the same category)</b> - Preventive research on the heart and arteries – Treatment for superfluous hair growth - Quit-smoking program – Treatment for superfluous hair growth	1763 (n=121)

Table 5: Horizontal and vertical relationships between items

To reduce the impact of outliers a logarithmically transformation is executed on the data. There is a significant difference between the associations among the products in the same category and the associations among the products in different categories ( $M_{\text{same category}} = 1488$  ms,  $M_{\text{different categories}} = 1763$  ms) ( $t = -2.45$ ,  $p < .05$  (two-tailed)). Additionally, the top-down association between benefits and adjacent products differs from the association between products and adjacent products in the expected direction, but is only slightly significant at a 10% level ( $M_{\text{benefit on adjacent product}} = 1972$  ms,  $M_{\text{product on adjacent product}} = 1763$  ms) ( $t = 1.55$ ,  $p = .109$  (two-tailed)). These results show that spreading activation between

products is strong and that concrete product messages seem more effective in activating the evaluation and choice of other products than abstract benefit messages, also in adjacent product categories. There is no significant difference between the impact of benefits on products belonging to the same category compared to the impact of benefits on products belonging to an adjacent category ( $M_{\text{benefit on concerning product}} = 2010 \text{ ms}$ ,  $M_{\text{benefit on adjacent product}} = 1972 \text{ ms}$ ) ( $t = .12$ ,  $p = .91$  (two-tailed)). This outcome confirms our statement that the top-down activation from benefits to products is rather weak, however does not confirm our statement that the impact of benefits on products within the category is stronger than the impact of benefits on products in adjacent categories.

We found a strong asymmetry in the top-down and bottom-up relationships between superordinate benefits and subordinate products. The top-down relationship between superordinate benefits and subordinate products was significantly weaker than the bottom-up relationship. This finding explains why the strong spreading activation between the benefits of adjacent categories does not reach the subordinate adjacent product.

## 4.5 General Discussion

### 4.5.1 Conclusions

Contrary to the expectations generated by alignability theory (Johnson 1984) and construal level theory (Trope and Liberman 2010), the impact ratio of benefit messages and product messages is not higher in an adjacent product category than within the concerning product category. In other words, a benefit message does not have a more positive impact on the evaluation of adjacent products compared to the evaluation of products within the concerning category, when we relate this to the impact of a product message. An investigation of the impact of benefit messages and product messages on the choice of products instead of the evaluation of products leads to similar outcomes. These findings can be explained by the weak top-down relationship between benefits and products. There is a strong asymmetrical relationship between abstract benefits and concrete products that undermines the role of benefit messages in the evaluation and choice of adjacent products.

### 4.5.2 Theoretical and Managerial Implications

This essay adds a new dimension (the asymmetrical relationship between abstract and concrete concepts) to alignability theory and construal level theory. This new dimension disrupts the outcomes expected on the basis of those existing theories. In the market, we



observe that brand owners of a brand that contains several product categories, often use abstract messages in their advertisements. Examples include Knorr (food products) (“Good food matters”), Nivea (skin care) (“We care for your skin” and “Beauty is love, life and care”) or Iam’s (pet food) (“If you want to have more than just a dog”). The underlying reason for using abstract messages in advertisements may be the perception that those messages serve the whole product range more than specific messages do. However, our findings show that this perception is not valid.

Since competition was introduced to the Dutch health insurance market in 2006, it has become important for health insurance companies to learn how to communicate to attract new customers. Dutch health insurance companies offer a wide variety of additional health insurances - on top of the basic insurance – which makes the question on which level to communicate highly relevant. Our case study on the health insurance market provides interesting insights for the players in this field. The argument that using abstract messages instead of concrete product messages is better if you want to promote products or treatments in adjacent categories does not hold. Concrete messages about a good performance on a certain health treatment may be effective at promoting other health treatments.

### ***4.5.3 Limitations and Directions for Further Research***

A remaining question is how far the spreading activation of concrete product messages, which is found to be relatively strong, stretches. Our research focused on products in adjacent product categories, which can be defined as products in product categories that are linked. However, can we draw the same conclusions if we focus on other product categories that are not adjacent? For example, Unilever offers products under the Blue Band brand that range from cooking margarine to bread, which are non-adjacent products. It would be interesting to extend the investigation to non-adjacent products in further research.

# **CHAPTER 5.**

## **DISCUSSION**

### **5.1 Conclusions**

This dissertation provides meaningful insights into the impact of abstract versus concrete communications on consumer decision-making processes. We deepened our insight from the findings of the first essay by unraveling the underlying cognitive structures of the human mind in the second essay. In the third essay, we broadened the applicability of our findings by investigating the impact of abstract versus concrete communications in fields beyond the product category in question. This dissertation accounts for and attempts to determine how to anticipate the blurring borders between persuasive communications to activate goals and concrete recommendations to activate choices or product acceptance. The traditional communication instruments, such as advertisements, commercials and billboards, used to activate goals and promotions on the shop floor, used to activate choices, are being increasingly taken over by the internet. On the internet, the separation between communications intended to activate goals and communications intended to activate choices has faded.

Essay 1 shows us that the focus of a person's thoughts can be manipulated by showing certain messages and provides insight into the interplay between abstract and concrete product communications. Abstract benefit messages are effective at activating goals, whereas multiple-product messages are not. However, goal activation does not appear to be a guarantee of effective product choice. Abstract benefit messages are not effective at generating product choices in line with the recommender's expectations, whereas multiple-product messages are. In contrast, single-product messages are effective at activating goals, and they lead to effective product choice. Because the single-product message appears to provide the best of both worlds, this type of message is further investigated in essay 2.

Essay 2 investigated the impact of an abstract single-product message (benefit claim) versus a concrete single-product message (attribute claim) on goal activation and product acceptance. The first finding of this essay states that abstract single-product messages are only effective at goal activation, whereas concrete single-product messages are effective at both goal activation and product acceptance. The second finding provides

insight into the underlying reason for the first finding. An investigation of the mental representation showed an asymmetrical cognitive structure between benefits and attributes. We used two different methods and found that the bottom-up relationship between subordinate attributes and superordinate benefits is stronger than the top-down relationship.

In essay 3, we investigated the impact of abstract benefit messages and concrete product messages on goal activation and choice activation in adjacent product categories. We undertook this additional research because, in accord with alignability theory and construal level theory, one might expect abstract messages to have a greater impact on the decision-making process in adjacent product categories than concrete messages compared with their impact within the specific product category. However, essay 3 shows that concrete messages seem to have the greatest impact in adjacent product categories. This can be explained by the asymmetrical relationship between abstract benefit messages and concrete product messages.

Throughout the dissertation, we find that concrete messages have a stronger impact than more abstract messages. In essay 1, we investigated the cognitive process that takes place in people's mindsets, and in essays 2 and 3, we found support for our findings in the cognitive structure that is inhibited in consumers' mental representations.

### **5.2 Theoretical Implications**

This dissertation has led to improved theoretical insights into how communicating organizations can combine abstract and concrete messages to influence the decision-making process. Our research adds to a recent stream of research that shows that certain tasks lead consumers to certain stages in the decision-making process while bypassing the stages that normally precede them. For example, participating in price determination instead of fixed-price offers (Chandran and Morwitz 2005) or initial purchases (Dhar, Huber, and Khan 2007) can move the consumer from a deliberative to an implemental mindset. Xu and Wyer (2008) show that stimulating people to make any type of comparative judgment gives rise to a comparative mindset in subsequent situations while bypassing the preceding mindsets. We show that even messages can bring consumers to different stages of the decision-making process. We extend this research field with our findings.

To the best of our knowledge, our use of response-time measurements to investigate mental representations and to explain the strength of concrete messages is unique and sheds new light on the limited impact of abstract messages even in adjacent product categories. These findings contradict the predictions of alignability theory and construal level theory.

### 5.3 Managerial Implications

The growing importance of e-commerce and the resulting growth in the diffusion of persuasion and decision support have increased the importance of re-investigating the impact of different types of messages on the decision-making process. A second consequence of the growing importance of e-commerce, and especially social media, is the growing role of word-of-mouth discussions. In consumer-to-consumer interactions in social networks, it is important that consumers explain not only what they bought but also *why* they bought it. This issue is particularly important in social issues, such as the obesity debate, but the issue is also relevant to all product segments that are subject to the growing importance of social media. Goal activation is important for communicating *why* one chooses certain products. The abovementioned developments increase the importance of having up-to-date insights on the impact of communication.

In essay 1, we conclude that it depends on the situation (more specifically, on the intentions of the communicating organization) which type of message is most effective. There are still organizations who only focus on selling, which means that specific multiple-product messages are sufficient. However, the abovementioned developments pinpoint the growing importance of joint goal activation and choice activation. Although a benefit message enhanced by a concrete single product suggestion is effective, a benefit message alone and a benefit message enhanced by a multiple product suggestion are not effective if one wants to generate goal activation and corresponding target behavior. An analysis of some leading websites shows that several retailers still concentrate on choice activation by communicating specific multiple-product messages on the introductory pages of their websites (e.g., Safeway, Wal-Mart, eBay and Amazon). This induces consumers to adopt a comparative mindset while bypassing the goal-oriented mindset. Other companies concentrate on goal activation by communicating abstract benefit messages on the introductory pages of their websites (e.g., Dell). A company that communicates a benefit

message enhanced by a concrete single product suggestion on the introductory page of its website, and thus profits of best of both worlds, is Apple.

In essay 2, we focus on the single-product message, which is becoming increasingly important, as described in essay 1. We investigate the impact of abstract single-product messages (benefit claims) versus concrete single-product messages (attribute claims) on consumer decision making. Brand owners invest in package designs and perform market research to determine which product claims on packages are most effective. Decisions are often made without consulting underlying marketing theories because these theories are too complex and time-consuming to study or because these theories simply do not exist. Managers can benefit from our findings, which are highly practicable. To initiate goal activation and product acceptance, concrete single-product messages appear to be most effective at the point of purchase. In essay 3 we find that even the assumption that abstract messages are more generic and thus might have a greater impact on decision making in adjacent product categories, which was expected on the basis of alignability theory and construal level theory, does not hold.

It is interesting to investigate whether managers' commercial instincts and their market research induce them to make decisions that are in accordance with the findings of this dissertation. In the case of discrepancies, the managerial value of this dissertation is evident. A scan of the market at the point of purchase in the fast-moving consumer goods sector leads to examples of abstract communications ("improved taste") and concrete communications ("0% fat"). We recommend that managers take a critical look at the positioning of their new products, when an abstract benefit claim is used at the point of purchase. The use of an abstract benefit claim suggests that the recommender cannot underpin these abstract statements with concrete or relevant attributes. If there are relevant attributes, we forecast that at the point of purchase, these claims will score better than the abstract claims.

### **5.4 Limitations and Avenues for Future Research**

The application domain of this dissertation is marketing and communication in healthcare and food. In essays 1 and 2, we focus on consumer decision making with respect to healthy food. Decision-making processes with respect to food usually have a short time span. Although we chose a product with a longer time span (health insurance products) in our third essay, our research primarily focuses on decision making with respect to low-

involvement products. Further research is needed to determine whether our findings also hold in other more high-involvement product categories.

The number of products in the multiple-product message that we used in essay 1 was randomly chosen. We assume that the results would not change significantly if four or six specific products are chosen instead of five. However, future researchers may wish to test this assumption.

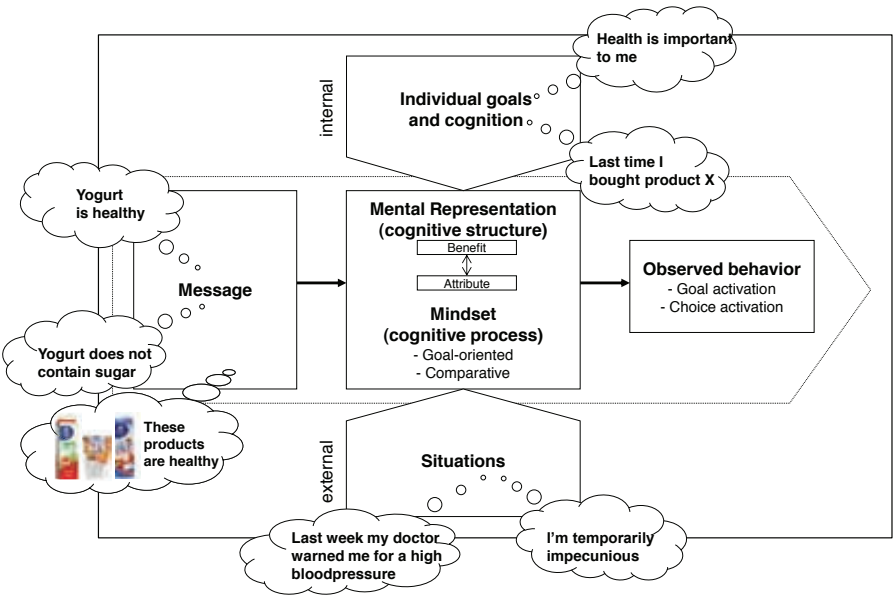
In experiment 1A of essay 2, we found that showing a concrete attribute message led to higher product acceptance than showing an abstract benefit message. We checked for the attractiveness of the message and did not find any significant differences between the two types of messages. However, the fact that the believability of the messages was not tested beforehand can be seen as a limitation of this research. The impact of abstract versus concrete messages may be influenced by the believability of those messages. According to the economics of information theory (e.g., Ford, Smith, and Swasy 1990; Nelson 1974; Smith 1990), consumers tend to be more skeptical of subjective (e.g., “healthy”) claims than of objective (e.g., “no cholesterol”) claims. Nevertheless, the abstract term “health” is mentioned as an important issue for the respondents in the survey conducted for experiment 2B of essay 2.

An interesting line for future research is an alternate way for concretization. We distinguished between abstract and concrete messages on the basis of product descriptions. Another way to distinguish abstract messages from concrete messages is personalization. Specifically, abstract messages are non-personal messages, and concrete messages are personal messages that are tailored to the specific characteristics of the individual.



APPENDIX

Appendix A: Examples in the Proposed Decision-making Process



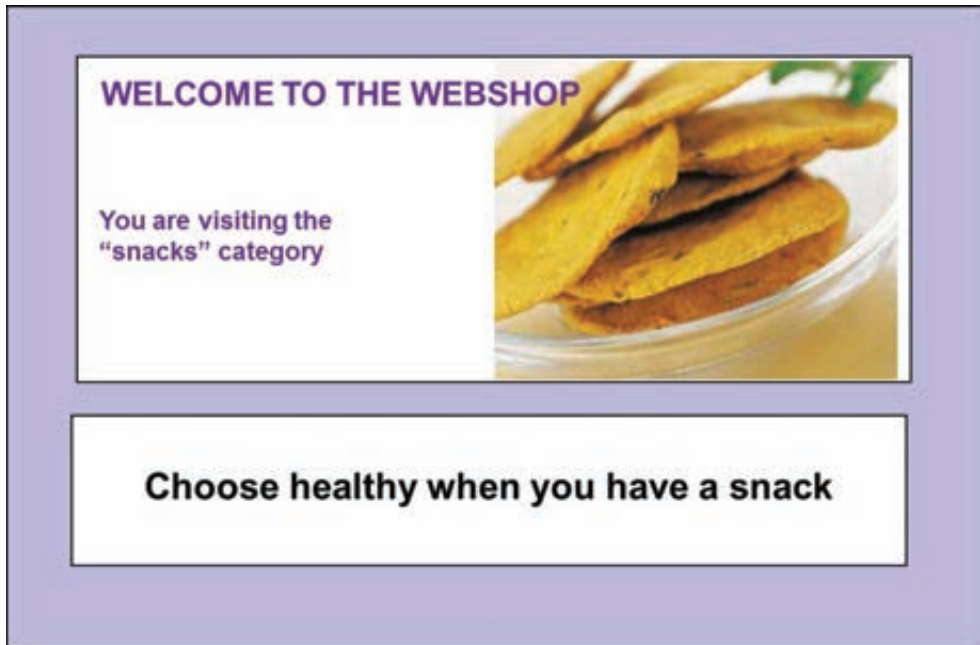


## Appendix B: Pretest (Essay 1)

To make sure that the assortment composition does not impact goal activation we conducted a preliminary experiment in the “yogurt” category. In this experiment we used a  $2$  (assortment composition: indulgence assortment versus healthy assortment)  $\times 2$  (situation: day to day situation versus health situation) between subject design. In this experiment 249 students from a large university in the Netherlands participated, and was executed in a behavioral lab. The respondents were financially rewarded for their assistance. One respondent was excluded from the dataset because he did not fill in the whole questionnaire.

The results showed that the activation of health as a goal is not influenced by the assortment composition,  $F(1, 246) = 4.36$ ,  $p = .28$ . We did a validation check by measuring the impact of situation on health activation. We found this impact is highly significant,  $F(1, 246) = 51.98$ ,  $p < .001$ . The assortment compositions were based on the results of a former pretest, in which we asked 49 respondents to rank several existing yogurt products in the Dutch market on perceived healthiness. Products were ranked on a five-point Likert scale (1 = unhealthy, 5 = healthy). We selected three products [ $M_{\text{Danone Activia}} = 4.12$  (sd = .75),  $M_{\text{Campina Optimel}} = 3.94$  (sd = .72) and  $M_{\text{Danone Vitalinea}} = 4.29$  (sd = .58)] that were perceived as significantly more healthy than three other products [ $M_{\text{Friesche Vlag Stracciatella Yoghurt}} = 1.76$  (sd = .78),  $M_{\text{Almhof Roomyoghurt}} = 2.42$  (sd = 1.05) and  $M_{\text{Mona Boordevol Hangop}} = 2.40$  (sd = .94). The least healthy product of the healthy category and the least unhealthy product of the unhealthy category differed significantly on the healthiness-scale,  $t(1, 47) = -8.52$ ,  $p < .001$ .

Appendix C. Website Manipulations Used to Measure Choice Behavior\*  
(Essay 1; Experiment 1)



Version 1: An abstract benefit message

**WELCOME TO THE WEBSHOP**

You are visiting the  
"snacks" category



**Rated as  
healthy ...**





**This product has a label,  
which means that it**

- has a low fat level
- has a low level of sugar and salt
- is high in fiber

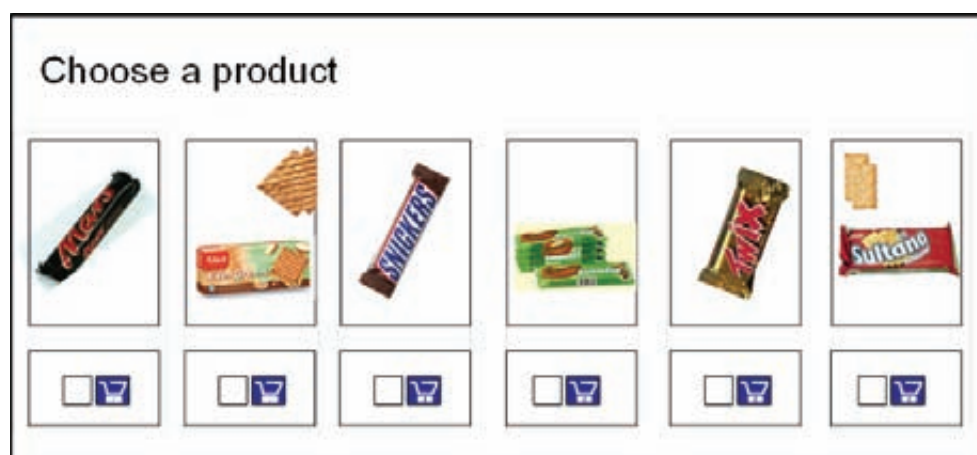
**This product is healthy.**

Version 2: An abstract benefit + single-product message



Version 3: An abstract benefit + multiple-product message

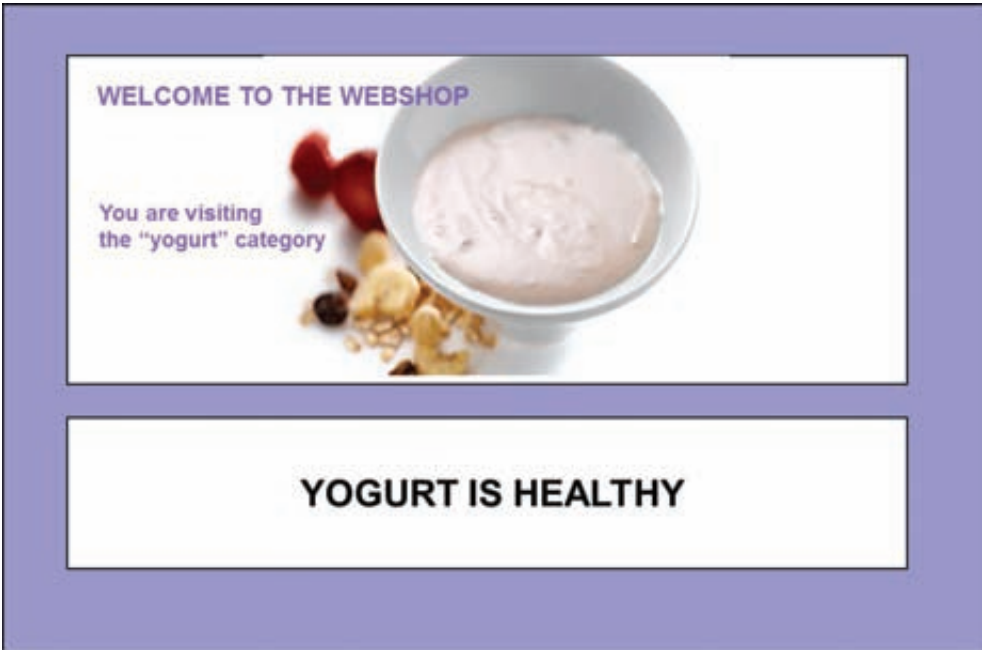
\*Translated from Dutch



## A choice set

\*Translated from Dutch

Appendix D. Website Manipulations Used to Measure Goal Activation\*  
(Essay 1; Experiment 2)



Version 1: An abstract benefit message

**WELCOME TO THE WEBSHOP**

You are visiting  
the "yogurt" category



**Rated as  
healthy ...**





**This product has a label,  
which means that it**

- has a low fat level
- has a low level of sugar / salt
- is high in fiber

**This product is healthy.**

Version 2: An abstract benefit + single-product message

<p><b>WELCOME TO THE WEBSHOP</b></p> <p>You are visiting the "yogurt" category</p> 			<p><b>Rated as healthy ...</b></p> 	
				
 <p>This product has a label, which means that it</p> <ul style="list-style-type: none"> <li>• has a low fat level</li> <li>• has a low level of sugar and salt</li> <li>• is high in fiber</li> </ul> <p>This product is healthy.</p>	 <p>This product has a label, which means that it</p> <ul style="list-style-type: none"> <li>• has a low fat level</li> <li>• has a low level of sugar and salt</li> <li>• is high in fiber</li> </ul> <p>This product is healthy.</p>	 <p>This product has a label, which means that it</p> <ul style="list-style-type: none"> <li>• has a low fat level</li> <li>• has a low level of sugar and salt</li> <li>• is high in fiber</li> </ul> <p>This product is healthy.</p>	 <p>This product has a label, which means that it</p> <ul style="list-style-type: none"> <li>• has a low fat level</li> <li>• has a low level of sugar and salt</li> <li>• is high in fiber</li> </ul> <p>This product is healthy.</p>	 <p>This product has a label, which means that it</p> <ul style="list-style-type: none"> <li>• has a low fat level</li> <li>• has a low level of sugar and salt</li> <li>• is high in fiber</li> </ul> <p>This product is healthy.</p>

Version 3: An abstract benefit + multiple-product message

\*Translated from Dutch

## Summary (English)

With the growth of online shopping, a new era of market communication is administered. Internet as a combined communication- and sales-channel has blurred the borders between persuasive communications to activate goals (i.e., abstract messages that are traditionally communicated via advertisements, commercials and billboards) and concrete recommendations to activate choices (i.e., concrete messages that are traditionally communicated by promotions on the shop floor). The blurring borders between persuasive communications and concrete recommendations call for new research to gain insight in the interplay between abstract and concrete product messages.

In the first essay we investigate the differential impact of abstract benefit messages and concrete product examples on goal activation and choice behavior. In the second essay we further unravel the cognitive structure in consumers' minds that underlies the behavior we observed in essay 1. In essay 3 we broaden the applicability of our findings, by investigating the impact of abstract benefit messages versus concrete product messages on consumer behavior outside the focal product category mentioned in the messages. Our findings are based on consumer data gathered in lab-experiments and from a panel survey. All of our essays discuss applications to health related products.

The contribution of essay 1 is twofold. Our first contribution is that we provide insight into how message content impacts the steps that consumers encounter when making purchasing decisions. The focus of a person's thoughts can be manipulated by showing certain messages. Our second contribution is that we provide insight into the interplay between abstract and concrete product communications. Abstract benefit messages are effective at activating goals, whereas multiple-product messages are not. However, goal activation does not appear to be a guarantee of effective product choice. Abstract benefit messages are not effective at generating product choices in line with the recommender's expectations, whereas multiple-product messages are. In contrast, single-product messages are effective at activating goals, and they lead to effective product choice. Because the single-product message appears to provide the best of both worlds, this type of message is further investigated in essay 2. Essay 2 provides insight in the impact of an abstract single-product message (benefit claim) versus a concrete single-product message (attribute claim) on goal activation and product acceptance. The first finding of this essay states that



abstract benefit messages are effective at goal activation, whereas concrete attribute messages are effective at both goal activation and product acceptance. The second finding provides insight into the underlying reason for the first finding. An investigation of the mental representation showed an asymmetrical cognitive structure between benefits and attributes. Essay 3 shows some interesting findings with respect to the impact of abstract benefit messages and concrete product messages on goal activation and choice activation in adjacent product categories (i.e., different but related to the product category to which the product mentioned in the message belongs). In accord with alignability theory and construal level theory, one might expect abstract messages to have a greater impact on the decision-making process in adjacent categories than concrete messages compared with their impact within the specific product category. However, essay 3 shows that the assumption that abstract messages might have a greater impact on decision making in adjacent product categories does not hold. This can be explained by the asymmetrical relationship between abstract benefits and concrete products which undermines the role of benefit messages in the evaluation and choice of adjacent products.

In summary, this dissertation shows some interesting theoretical findings about the relative impact of abstract versus concrete product messages. It is also of particular interest to commercial companies and public policy makers, because it provides suggestions on how to steer consumer decision-making processes with product messages to promote healthier consumer choices.

## Samenvatting (Nederlands)

De toename van online winkelen heeft geleid tot een nieuw marktcommunicatie-tijdperk. Internet, als gecombineerd communicatie- en verkoopkanaal, heeft de grenzen vervaagd tussen enerzijds communicatieboodschappen gericht op het activeren van doelen (d.i. abstracte boodschappen die oorspronkelijk werden gecommuniceerd via advertenties, commercials en billboards) en anderzijds concrete aanbevelingen gericht op het activeren van keuzes (d.i. concrete boodschappen die oorspronkelijk werden gecommuniceerd via promoties op de winkelvloer). De vervagende grenzen tussen abstracte persuasieve boodschappen en concrete aanbevelingen vragen om nieuw onderzoek teneinde inzicht te verkrijgen in het samenspel van abstracte en concrete product boodschappen.

In het eerste essay onderzoeken we de invloed van abstracte benefit-boodschappen<sup>3</sup>, al dan niet verrijkt met concrete productvoorbeelden, op het activeren van doelen door consumenten en het keuzegedrag van consumenten. In het tweede essay gaan we dieper in op de structuur in de cognitie van consumenten die ten grondslag ligt aan het gedrag dat we in essay 1 observeren. In essay 3 verbreden we de toepasbaarheid van onze bevindingen door de invloed van abstracte versus concrete boodschappen op het consumentengedrag te onderzoeken met betrekking tot producten die buiten de in de communicatieboodschappen genoemde productcategorie liggen. De consumentendata waarop onze bevindingen zijn gebaseerd, zijn verzameld in lab-experimenten en in een panel interview. In alle essays ligt de focus op gezondheidsgerelateerde producten.

De bijdrage van essay 1 is tweeledig. Ten eerste verschaffen we inzicht in hoe de inhoud van een boodschap van invloed is op de stappen die consumenten doorlopen als ze aankoopbeslissingen nemen. Bepaalde boodschappen kunnen ertoe leiden dat consumenten een stap in het besluitvormingsproces overslaan. Ten tweede verschaffen we inzicht in de relatieve invloed van abstracte en concrete boodschappen op de activering van doelen en op de productkeuzes die consumenten maken. Abstracte benefit-boodschappen zijn effectief in het activeren van doelen, terwijl boodschappen die verrijkt zijn met meerdere concrete producten dat niet zijn. Echter, doel-activering is geen garantie voor een effectieve productkeuze. Abstracte benefit-boodschappen zijn niet effectief in het

---

<sup>3</sup> Benefits zijn in de toekomst verwachte voordelen, bijvoorbeeld n.a.v. gebruik van een bepaald merk, productcategorie of product.

genereren van productkeuzes die overeenkomen met de intentie van de aanbevelende partij, terwijl boodschappen verrijkt met meerdere concrete producten wel effectief zijn in het genereren van dergelijke productkeuzes. Echter, boodschappen verrijkt met één concreet product zijn effectief in het activeren van doelen en leiden tot een effectieve productkeuze. Omdat een boodschap verrijkt met één concreet product het beste van beide werelden biedt, wordt dit type boodschap verder onderzocht in essay 2. Essay 2 verschaft inzicht in de invloed van een abstracte boodschap over één specifiek product (benefit claim) versus een concrete boodschap over één specifiek product (attribuut claim) op de activering van doelen door consumenten en hun acceptatie van producten. De eerste bevinding van dit essay is dat benefit-boodschappen alleen effectief zijn in het activeren van doelen, terwijl attribuut-boodschappen zowel effectief zijn in het activeren van doelen als het genereren van productacceptatie. De tweede bevinding is dat er een asymmetrische relatie bestaat tussen benefits en attributen. Dit betekent dat mensen gemakkelijker een link leggen van een attribuut naar een benefit dan andersom. Hiermee biedt de tweede bevinding inzicht in de onderliggende reden voor de eerste bevinding. Essay 3 toont een aantal interessante bevindingen met betrekking tot de invloed van abstracte benefit-boodschappen en concrete product-boodschappen op de activering van doelen en keuzes in aangrenzende productcategorieën (d.i. grenzend aan de categorie waartoe het in de boodschap genoemde product behoort). In lijn met “alignability theory” en “construal level theory” is te verwachten dat abstracte boodschappen in aangrenzende productcategorieën meer invloed hebben op het besluitvormingsproces dan concrete boodschappen, in vergelijking met hun relatieve impact binnen de betreffende productcategorie (d.i. de categorie waartoe het product behoort dat in de communicatieboodschap is genoemd). Echter, in essay 3 vinden we dat de bovengenoemde aanname niet klopt. Dit kan worden verklaard door de asymmetrische relatie tussen abstracte benefits en concrete producten, hetgeen de invloed van benefit-boodschappen op de evaluatie en keuze van aangrenzende producten ondermijnt.

Samenvattend kan worden gesteld dat dit proefschrift een aantal interessante theoretische bevindingen toont over de relatieve invloed van abstracte versus concrete productboodschappen. Daarnaast zijn de bevindingen interessant voor commerciële managers en politieke beleidsmakers, omdat het suggesties verschaft omtrent hoe besluitvormingsprocessen van consumenten kunnen worden gestuurd met productboodschappen teneinde gezondere keuzes te bewerkstelligen.

## References

- Aaker, J.L. and A. Lee (2001), "'I' Seek Pleasures and 'We' Avoid Pains: The Role of Self Regulatory Goals in Information Processing and Persuasion," *Journal of Consumer Research*, 28(1), 33-49.
- Aarts, H., A. Dijksterhuis, and P. De Vries (2001), "On the Psychology of Drinking: Being Thirsty and Perceptually Ready," *British Journal of Psychology*, 92(4), 631-642.
- Alter, A.L. and D.M. Oppenheimer (2009), "Uniting the Tribes of Fluency to Form a Metacognitive Nation", *Personality and Social Psychology Review*, 13(3), 219-235.
- Anderson, J.R. (1983), "A Spreading Activation Theory of Memory," *Journal of Verbal Learning and Verbal Behavior*, 22(3), 261-295.
- Andrews, J.C., R.G. Netemeyer, and S. Burton (1998), "Consumer Generalization of Nutrient Content Claims in Advertising," *Journal of Marketing*, 62(4), 62-75.
- Anisfeld, M. and M. Knapp (1968), "Association, Synonymity and Directionality in False Recognition," *Journal of experimental psychology*, 77(2), 171-179.
- Balasubramanian, S.K. and C. Cole (2002), "Consumers' Search and Use of Nutrition Information: The Challenge and Promise of the Nutrition Labeling and Education Act," *Journal of Marketing*, 66(3), 112-127.
- Bar-Anan, Y., N. Liberman, and Y. Trope (2006), "The Association Between Psychological Distance and Construal Level: Evidence From an Implicit Association Test," *Journal of Experimental Psychology*, 135(4), 609-622.
- Bargh J.A. and T.L. Chartrand (2000), "Studying the Mind in the Middle: A Practical Guide to Priming and Automaticity Research," in *Handbook of Research methods in social psychology*, eds. H. Reis and C. Judd, NewYork: Cambridge University Press, 253-285.

## References

---

Barsalou, L. and D. Sewell (1985), "Contrasting the Representation of Scripts and Categories," *Journal of Memory and Language*, 24(6), 646-665.

Bertrand, M., D. Karlan, S. Mullainathan, E. Shafir, and J. Zinman (2010), "What's Advertising Content Worth? Evidence from a Consumer Credit Marketing Field Experiment," *The Quarterly Journal of Economics*, 125(1), 263-306.

Brainerd, C.J. and V.F. Reyna (1990), "Gist is the Grist: Fuzzy-Trace Theory and the New Intuitionism," *Developmental Review*, 10(1), 3-47.

Broniarczyk S.M. and J.W. Alba (1994), "The role of Consumer's Intuitions in Inference making," *Journal of Consumer Research*, 21(3), 393-407.

Chandon, P. and B. Wansink (2007), "The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-Dish Consumption Intentions," *Journal of Consumer Research*, 34(3), 301-314.

Chandran, S. and V.G. Morwitz (2005), "Effects of Participative Pricing on Consumers' Cognitions and Actions: A Goal Theoretic Perspective," *Journal of Consumer Research*, 32(2), 249-259.

Collins, A.M. and E.F. Loftus (1975), "A Spreading Activation Theory of Semantic Processing," *Psychological Review*, 82(6), 407-428.

Court, D., D. Elzinga, S. Mulder, and O.J. Vetvik (2009), "The Consumer Decision Journey," *McKinsey Quarterly*, 3.

De Jong, J.D., A. Van den Brink-Muinen, A., and P.P. Groenewegen (2008), "The Dutch Health Insurance Reform: Switching between Insurers. A Comparison between the General Population and the Chronically Ill and Disabled," *BMC Health Services Research*, 8(58), DOI: 10.1186/1472-6963-8-58.

Dhar, R., J. Huber, and U. Khan (2007), "The Shopping Momentum Effect," *Journal of Marketing Research*, 44(3), 370-378.

- Edell J.A. and R. Staelin (1983), "The Information Processing of Pictures in Print Advertisements," *Journal of Consumer Research*, 10(1), 45-61.
- Edelman, D.C. (2010), "Branding in The Digital Age; You're Spending Your Money In All the Wrong Places," *Harvard Business Review*, 88(12), 62-69.
- Escalas, J.E. and M.F. Luce (2003), "Process versus Outcome Thought Focus and Advertising," *Journal of Consumer Psychology*, 13(3), 246-254.
- Escalas, J.E. and M.F. Luce (2004), "Understanding the Effects of Process-Focused versus Outcome-Focused Thought in Response to Advertising," *Journal of Consumer Research*, 31(2), 274-285.
- Ferraro, R., J.R. Bettman, and T.L. Chartrand (2009), "The Power of Strangers: The Effect of Incidental Consumer Brand Encounters on Brand Choice," *Journal of Consumer Research*, 35(5), 729-741.
- Finkelstein, S.R. and A. Fishbach (2010), "When Healthy Food Makes You Hungry," *Journal of Consumer Research*, 37(3), 357-367.
- Ford, G.T., D.B. Smith, and J.L. Swasy (1990), "Consumer Skepticism of Advertising Claims: Testing Hypotheses from Economics of Information," *Journal of Consumer Research*, 16(4), 433-441.
- Goldsmith K. and R. Dhar (2008), "The Role of Abstract and Concrete Mindsets on the Purchase of Adjacent Products," in *Advances in Consumer Research*, eds. A.Y. Lee and D. Soman, Duluth, MN: Association for Consumer Research, 35, 26-30.
- Gollwitzer, P.M. (1990), "Action phases and mind-sets," in *Handbook of motivation and cognition*, eds. E.T. Higgins and R.M. Sorrentino, New York: Guilford Press, 2, 53-92.
- Gollwitzer, P.M., H. Heckhausen, and B. Steller (1990), "Deliberative and Implemental Mind-sets: Cognitive tuning toward congruous thoughts and information," *Journal of Personality and Social Psychology*, 59(6), 1119-1127.

## References

---

Hamann, S.B. (1990), "Level-of-Processing Effects in Conceptually Driven Implicit Tasks," *Journal of Experimental Psychology: Learning, Memory and Cognition*, 16(6), 970-977.

Häubl, G. and K.B. Murray (2001), "Recommending or Persuading? The Impact of a Shopping Agent's Algorithm on User Behavior," in *Third ACM Conference on Electronic Commerce*, Tampa, Florida, EC'01, 163-170.

Herr, P.M., P.H. Farquhar, and R.H. Fazio (1996), "Impact of Dominance and Relatedness on Brand Extensions," *Journal of Consumer Psychology*, 5(2), 135-160.

Holmes, T.P. and W.L. Adamowicz (2003), "Attribute-based methods," in *A Primer on Nonmarket Valuation*, eds. P.A. Champ, K. Boyle and T.C. Brown, Kluwer Academic Publishers, Dordrecht, 171-219.

Janiszewski, C. (1993), "Preattentive Mere Exposure Effects," *Journal of Consumer Research*, 20(3), 376-392.

Janiszewski, C. and E. Chandon (2007), "Transfer-Appropriate Processing, Response Fluency, and the Mere Measurement Effect," *Journal of Marketing Research*, 44(2), 309-323.

Johnson, M.D. (1984), "Consumer Choice Strategies for Comparing Noncomparable Alternatives," *Journal of Consumer Research*, 11(3), 741-753.

Johnson, E.J., G. Häubl, and A. Keinan (2007), "Aspects of Endowment: A Query Theory of Value Construction," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 33(3), 461-474.

Kahneman, D. and A. Tversky (1979), "Prospect Theory: An analysis of decision under risk," *Econometrica*, 47(2), 263-291.

Keller, K.L. (2003), "Brand Synthesis: The Multidimensionality of Brand Knowledge," *Journal of Consumer Research*, 29(4), 595-600.

- Kozup, J.C., E.H. Creyer and S. Burton (2003), "Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluations of Packaged Food Products and Restaurant Menu Items," *Journal of Marketing*, 67(2), 19-34.
- Labroo, A.A., R. Dhar and N. Schwarz (2008), "Of Frog Wines and Frowning Watches: Semantic Priming, Perceptual Fluency and Brand Evaluation," *Journal of Consumer Research*, 34(6), 819-831.
- Labroo, A.A. and A.Y. Lee (2006), "Between Two Brands: A Goal Fluency Account of Brand Evaluation," *Journal of Marketing Research*, 43(3), 374-385.
- Lambrecht, A. and C. Tucker (2011), "The Right Words at the Right Time," DOI: 10.1111/j.1467-8616.2011.00782.x.
- Lavidge, R.J. and G.A. Steiner (1961), "A Model For Predictive Measurements of Advertising Effectiveness," *Journal of Marketing*, 25(6), 59-62.
- Lee, L. and D. Ariely (2006), "Shopping Goals, Goal Concreteness, and Conditional Promotions," *Journal of Consumer Research*, 33(1), 60-70.
- Lee, A.Y. and A.A. Labroo (2004), "The Effect of Conceptual and Perceptual Fluency on Brand Evaluation," *Journal of Marketing Research*, 41(2), 151-165.
- Lei, J., N. Dawar, and J. Lemmink (2008), "Negative Spillover in Brand Portfolios: Exploring the Antecedents of Asymmetric Effects," *Journal of Marketing*, 72(3), 111-123.
- Liberman, N. and Y. Trope (1998), "The Role of Feasibility and Desirability Considerations in Near and Distant Future Decisions: A Test of Temporal Construal Theory," *Journal of Personality and Social Psychology*, 75(1), 5-18.
- Mackenzie, S.B. (1986), "The Role of Attention in Mediating the Effect of Advertising on Attribute Importance," *Journal of Consumer Research*, 13(2), 174-195.



## References

---

- Malkoc, S.A., G. Zauberaman, and J.R. Bettman (2010), "Unstuck From the Concrete: Carryover Effects of Abstract Mindsets in Intertemporal Preferences," *Organizational Behavior and Human Decision Processes*, 113(2), 112-126.
- McFadden, D. (1986), "The Choice Theory Approach to Market Research," *Marketing Science*, 5(4), 275-297.
- Meyvis, T., K. Goldsmith and R. Dhar (2009), "Beyond Survival of the Fittest: The Influence of Consumers' Mindset on Brand Extension Evaluations," *Social Science Research Network*, working paper series.
- Miniard P.W., S. Bhatla, K.R. Lord, P.R. Dickson and H.R. Unnava (1991), "Picture-Based Persuasion Processes and the Moderating Role of Involvement," *Journal of Consumer Research*, 18(1), 92-107.
- Mitchell A.A. (1986), "The Effect of Verbal and Visual Components of Advertisements on Brand Attitudes and Attitude Toward the Advertisement," *Journal of Consumer Research*, 13(1), 12-24.
- Moorman, C. (1990), "The Effects of Stimulus and Consumer Characteristics on the Utilization of Nutrition Information," *Journal of Consumer Research*, 17(3), 362-374.
- Moorman, C. and E. Matulich (1993), "A Model of Consumers' Preventive Health Behaviors: The Role of Health Motivation and Health Ability," *Journal of Consumer Research*, 20(2), 208-228.
- Moskowitz, G. B. (2002), "Preconscious Effects of Temporary Goals on Attention," *Journal of Experimental Social Psychology*, 38(4), 397-404.
- Nelson, P. (1974), "Advertising as Information," *Journal of Political Economy*, 82(4), 729-754.

- Payne, J.W. (1976), "Task Complexity and Contingent Processing in Decision making: An Information Search and Protocol Analysis," *Organizational behavior and human performance*, 16(2), 366-387.
- Payne, J.W. (1982), "Contingent Decision Behavior," *Psychological Bulletin*, 92(2), 382-402.
- Payne, J.W., J.R. Bettman, and E.J. Johnson (1988), "Adaptive Strategy Selection in Decision Making," *Journal of Experimental Psychology: Learning, Memory and Cognition*, 14(3), 534-552.
- Payne, J.W., J.R. Bettman, and E.J. Johnson (1993), *The Adaptive Decision maker*, Cambridge: Cambridge University Press.
- Petrova, P.K. and R.B. Cialdini (2005), "Fluency of Consumption Imagery and the Backfire Effects of Imagery Appeals," *Journal of Consumer Research*, 32(3), 442-452.
- Pieters R. and M. Wedel (2004), "Attention Capture and Transfer in Advertising: Brand, Pictorial, and Text-Size Effects," *Journal of Marketing*, 68(2), 36-50.
- Reyna, V. F. (1981), "The animated word: Modification of meaning by context," *Dissertation Abstracts International*, 42, 3852B [Ann Arbor, MI: 82-031531].
- Reyna, V.F. and C.J. Brainerd (1990), "Fuzzy Processing in Transitivity Development," *Annals of Operations Research*, 23(1), 37-63.
- Roe, B., A.S. Levy and B.M. Derby (1999), "The Impact of Health Claims on Consumer Search and Product Evaluation Outcomes: Results from FDA Experimental Data," *Journal of Public Policy and Marketing*, 18(1), 89-105.
- Russo, J.E., R. Staelin, C.A. Nolan, G.J. Russell, and B.L. Metcalfe (1986), "Nutrition Information in the Supermarket," *Journal of Consumer Research*, 13(1), 48-70.

## References

---

- Schultz, D.E. (1996), "The Inevitability of Integrated Communications," *Journal of Business Research*, 37(3), 139-146.
- Shah, J.Y. and A.W. Kruglanski (2003), "When Opportunity Knocks: Bottom-Up Priming of Goals by Means and Its Effects On Self-Regulation," *Journal of Personality and Social Psychology*, 84(6), 1109-1122.
- Shocker, A.D., M. Ben-Akiva, B. Boccara, and P. Nedungadi (1991), "Consideration Set Influences on Consumer Decision-Making and Choice: Issues, Models and Suggestions," *Marketing Letters*, 2(3), 181-197.
- Shocker, A.D. and V. Srinivasan (1979), "Multiattribute Approaches for Product Concept Evaluation and Generation: A Critical Approach," *Journal of Marketing Research*, 16(2), 159-180.
- Smith, D.B. (1990), "The Economics of information: An Empirical Approach to Nelson's Search-Experience Framework," *Journal of Public Policy & Marketing*, 9(1), 111-128.
- Ter Hofstede, F., J.B.E.M. Steenkamp, and M. Wedel (1999), "International Market Segmentation Based on Consumer-Product Relations," *Journal of Marketing Research*, 36(1), 1-17.
- Thompson, C.J. (1997), "Interpreting Consumers: A Hermeneutical Framework for Deriving Marketing Insights from the Texts of Consumers' Consumption Stories," *Journal of Marketing Research*, 34(4), 438-455.
- Trope, Y. and N. Liberman (2003), "Temporal Construal," *Psychological Review*, 110(3), 403-421.
- Trope, Y. and N. Liberman (2010), "Construal-Level Theory of Psychological Distance," *Psychological Review*, 117(2), 440-463.

- Trusov, M., R.E. Bucklin, and K. Pauwels (2009), "Effects of Word-of-Mouth Versus Traditional Marketing: Findings from an Internet Social Networking Site," *Journal of Marketing*, 73(5), 90-102.
- Tsai, C.I. and A.L. McGill (2011), "No Pain, No Gain? How Fluency and Construal Level Affect Consumer Confidence," *Journal of Consumer Research*, 37(5), 807-821.
- Tulving, E. and D.L. Schacter (1990), "Priming and Human Memory Systems," *Science*, 247(4940), 301-306.
- Tverski, A. and D. Kahneman (1973), "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology*, 5(2), 207-232.
- Unnava, H.R. and R. Burnkrant (1991), "An Imagery-Processing View of The Role of Pictures in Print Advertisements," *Journal of Marketing Research*, 28(2), 226-31.
- Vakratsas, D. and T. Ambler (1999), "How Advertising Works: What do we really know?" *Journal of Marketing*, 63(1), 26-43.
- Vallacher, R.R. and D.M. Wegner (1989), "Levels of Personal Agency: Individual Variation in Action Identification," *Journal of Personality and Social Psychology*, 57(4), 660-671.
- Van Osselaer, S.M.J., S. Ramanathan, M.C. Campbell, J.B. Cohen, J.K. Dale, P.M. Herr, C. Janiszewski, A.W. Kruglanski, A.Y. Lee, S.J. Read, J.E. Russo, and N.T. Tavassoli (2005), "Choice based on goals," *Marketing Letters*, 16(3-4), 335-346.
- Wakslak, C. and Y. Trope (2009), "The Effect of Construal Level on Subjective Probability Estimates," *Psychological Science*, 20(1), 52-58.
- Wansink, B. and P. Chandon (2006), "Can "Low-Fat" Nutrition Labels Lead to Obesity?" *Journal of Marketing Research*, 43(4), 605-617.

## References

---

- Wansink, B., S.T. Sonka, and C.M. Hasler (2004), "Front Label Health Claims: When Less is More," *Food Policy*, 29(6), 659-667.
- Weber, E.U. and E.J. Johnson (2006), "Constructing Preferences from Memory," in *The Construction of Preference*, eds. S. Lichtenstein and P. Slovic, New York, NY: Cambridge University Press, 397-410.
- Weber, E.U., E.J. Johnson, K.F. Milch, H. Chang, J.C. Brodscholl, and D.G. Goldstein (2007), "Assymetric Discounting in Intertemporal Choice: A Query-Theory Account," *Psychological Science*, 18(6), 516-523.
- Whittlesea, B.W.A. (1993), "Illusions of Familiarity," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 19(6), 1235-1253.
- Winkielman, P., N. Schwarz, T. Fazendeiro, and R. Reber (2003), "The Hedonic Marking of Processing Fluency: Implications for Evaluative Judgment," in *The Psychology of Evaluation: Affective Processes in Cognition and Emotion*, eds. J. Musch and K.C. Klauer, Mahwah, NJ: Lawrence Erlbaum Associates, Inc., 189-217.
- Xu, A.J. and R.S. Wyer (2007), "The Effect of Mind-Sets on Consumer Decision Strategies," *Journal of Consumer Research*, 34(4), 556-566.
- Xu, A.J. and R.S. Wyer (2008), "The Comparative Mind-set; From Animal Comparison to Increased Purchase Intentions," *Psychological Science*, 19(9), 859-864.

## About the Author



Mirjam van Ginkel – Bieshaar (Dordrecht, November 10<sup>th</sup>, 1971) received her doctoral degree in Economics in 1996 from the Erasmus University Rotterdam. She fulfilled different marketing jobs in a leading international fast moving consumer goods company in the Netherlands, and since 2005 she worked as an interim manager in the fast moving consumer goods sector.

Since 2007 she participates in the Mature Talent Program of the Erasmus University Rotterdam to do a PhD. Her research interests include consumer

behavior and specifically healthy decision making. She presented her work at international conferences, such as the Association of Consumer Research Conference in Jacksonville, the Conference of the Society for Judgment and Decision making in St. Louis and the Transformative Consumer Research Conference in Villanova. Her work has been published in the Journal of Public Policy and Marketing.



ERASMUS RESEARCH INSTITUTE OF MANAGEMENT (ERIM)

***ERIM PH.D. SERIES***  
***RESEARCH IN MANAGEMENT***

ERIM Electronic Series Portal: <http://hdl.handle.net/1765/1>

Acciaro, M., *Bundling Strategies in Global Supply Chains*, Promotor: Prof.dr. H.E. Haralambides, EPS-2010-197-LIS, ISBN: 978-90-5892-240-3, <http://hdl.handle.net/1765/19742>

Agatz, N.A.H., *Demand Management in E-Fulfillment*, Promotor: Prof.dr.ir. J.A.E.E. van Nunen, EPS-2009-163-LIS, ISBN: 978-90-5892-200-7, <http://hdl.handle.net/1765/15425>

Alexiev, A., *Exploratory Innovation: The Role of Organizational and Top Management Team Social Capital*, Promotors: Prof.dr. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2010-208-STR, ISBN: 978-90-5892-249-6, <http://hdl.handle.net/1765/20632>

Althuizen, N.A.P., *Analogical Reasoning as a Decision Support Principle for Weakly Structured Marketing Problems*, Promotor: Prof.dr.ir. B. Wierenga, EPS-2006-095-MKT, ISBN: 90-5892-129-8, <http://hdl.handle.net/1765/8190>

Alvarez, H.L., *Distributed Collaborative Learning Communities Enabled by Information Communication Technology*, Promotor: Prof.dr. K. Kumar, EPS-2006-080-LIS, ISBN: 90-5892-112-3, <http://hdl.handle.net/1765/7830>

Appelman, J.H., *Governance of Global Interorganizational Tourism Networks: Changing Forms of Co-ordination between the Travel Agency and Aviation Sector*, Promotors: Prof.dr. F.M. Go & Prof.dr. B. Nooteboom, EPS-2004-036-MKT, ISBN: 90-5892-060-7, <http://hdl.handle.net/1765/1199>

Asperen, E. van, *Essays on Port, Container, and Bulk Chemical Logistics Optimization*, Promotor: Prof.dr.ir. R. Dekker, EPS-2009-181-LIS, ISBN: 978-90-5892-222-9, <http://hdl.handle.net/1765/17626>

Assem, M.J. van den, *Deal or No Deal? Decision Making under Risk in a Large-Stake TV Game Show and Related Experiments*, Promotor: Prof.dr. J. Spronk, EPS-2008-138-F&A, ISBN: 978-90-5892-173-4, <http://hdl.handle.net/1765/13566>



Baquero, G., *On Hedge Fund Performance, Capital Flows and Investor Psychology*, Promotor: Prof.dr. M.J.C.M. Verbeek, EPS-2006-094-F&A, ISBN: 90-5892-131-X, <http://hdl.handle.net/1765/8192>

Benning, T.M., *A Consumer Perspective on Flexibility in Health Care: Priority Access Pricing and Customized Care*, Promotor: Prof.dr.ir. B.G.C. Dellaert, EPS-2011-241-MKT, ISBN: 978-90-5892-280-9, <http://hdl.handle.net/1765/23670>

Berens, G., *Corporate Branding: The Development of Corporate Associations and their Influence on Stakeholder Reactions*, Promotor: Prof.dr. C.B.M. van Riel, EPS-2004-039-ORG, ISBN: 90-5892-065-8, <http://hdl.handle.net/1765/1273>

Berghe, D.A.F. van den, *Working Across Borders: Multinational Enterprises and the Internationalization of Employment*, Promotors: Prof.dr. R.J.M. van Tulder & Prof.dr. E.J.J. Schenk, EPS-2003-029-ORG, ISBN: 90-5892-05-34, <http://hdl.handle.net/1765/1041>

Berghman, L.A., *Strategic Innovation Capacity: A Mixed Method Study on Deliberate Strategic Learning Mechanisms*, Promotor: Prof.dr. P. Mattysens, EPS-2006-087-MKT, ISBN: 90-5892-120-4, <http://hdl.handle.net/1765/7991>

Bezemer, P.J., *Diffusion of Corporate Governance Beliefs: Board Independence and the Emergence of a Shareholder Value Orientation in the Netherlands*, Promotors: Prof.dr.ing. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2009-192-STR, ISBN: 978-90-5892-232-8, <http://hdl.handle.net/1765/18458>

Bijman, W.J.J., *Essays on Agricultural Co-operatives: Governance Structure in Fruit and Vegetable Chains*, Promotor: Prof.dr. G.W.J. Hendrikse, EPS-2002-015-ORG, ISBN: 90-5892-024-0, <http://hdl.handle.net/1765/867>

Binken, J.L.G., *System Markets: Indirect Network Effects in Action, or Inaction?*, Promotor: Prof.dr. S. Stremersch, EPS-2010-213-MKT, ISBN: 978-90-5892-260-1, <http://hdl.handle.net/1765/21186>

Blitz, D.C., *Benchmarking Benchmarks*, Promotors: Prof.dr. A.G.Z. Kemna & Prof.dr. W.F.C. Verschoor, EPS-2011-225-F&A, ISBN: 978-90-5892-268-7, <http://hdl.handle.net/1765/22624>

Bispo, A., *Labour Market Segmentation: An investigation into the Dutch hospitality industry*, Promotors: Prof.dr. G.H.M. Evers & Prof.dr. A.R. Thurik, EPS-2007-108-ORG, ISBN: 90-5892-136-9, <http://hdl.handle.net/1765/10283>

Blindenbach-Driessen, F., *Innovation Management in Project-Based Firms*, Promotor: Prof.dr. S.L. van de Velde, EPS-2006-082-LIS, ISBN: 90-5892-110-7, <http://hdl.handle.net/1765/7828>

Boer, C.A., *Distributed Simulation in Industry*, Promotors: Prof.dr. A. de Bruin & Prof.dr.ir. A. Verbraeck, EPS-2005-065-LIS, ISBN: 90-5892-093-3, <http://hdl.handle.net/1765/6925>

Boer, N.I., *Knowledge Sharing within Organizations: A situated and Relational Perspective*, Promotor: Prof.dr. K. Kumar, EPS-2005-060-LIS, ISBN: 90-5892-086-0, <http://hdl.handle.net/1765/6770>

Boer-Sorbán, K., *Agent-Based Simulation of Financial Markets: A modular, Continuous-Time Approach*, Promotor: Prof.dr. A. de Bruin, EPS-2008-119-LIS, ISBN: 90-5892-155-0, <http://hdl.handle.net/1765/10870>

Boon, C.T., *HRM and Fit: Survival of the Fittest!?*, Promotors: Prof.dr. J. Paauwe & Prof.dr. D.N. den Hartog, EPS-2008-129-ORG, ISBN: 978-90-5892-162-8, <http://hdl.handle.net/1765/12606>

Borst, W.A.M., *Understanding Crowdsourcing: Effects of Motivation and Rewards on Participation and Performance in Voluntary Online Activities*, Promotors: Prof.dr.ir. J.C.M. van den Ende & Prof.dr.ir. H.W.G.M. van Heck, EPS-2010-221-LIS, ISBN: 978-90-5892-262-5, <http://hdl.handle.net/1765/21914>

Braun, E., *City Marketing: Towards an Integrated Approach*, Promotor: Prof.dr. L. van den Berg, EPS-2008-142-MKT, ISBN: 978-90-5892-180-2, <http://hdl.handle.net/1765/13694>

Brito, M.P. de, *Managing Reverse Logistics or Reversing Logistics Management?* Promotors: Prof.dr.ir. R. Dekker & Prof.dr. M. B. M. de Koster, EPS-2004-035-LIS, ISBN: 90-5892-058-5, <http://hdl.handle.net/1765/1132>

Brohm, R., *Polycentric Order in Organizations: A Dialogue between Michael Polanyi and IT-Consultants on Knowledge, Morality, and Organization*, Promotors: Prof.dr. G. W. J. Hendrikse & Prof.dr. H. K. Letiche, EPS-2005-063-ORG, ISBN: 90-5892-095-X, <http://hdl.handle.net/1765/6911>

Brumme, W.-H., *Manufacturing Capability Switching in the High-Tech Electronics Technology Life Cycle*, Promotors: Prof.dr.ir. J.A.E.E. van Nunen & Prof.dr.ir. L.N. Van Wassenhove, EPS-2008-126-LIS, ISBN: 978-90-5892-150-5, <http://hdl.handle.net/1765/12103>

Budiono, D.P., *The Analysis of Mutual Fund Performance: Evidence from U.S. Equity Mutual Funds*, Promotor: Prof.dr. M.J.C.M. Verbeek, EPS-2010-185-F&A, ISBN: 978-90-5892-224-3, <http://hdl.handle.net/1765/18126>

Burger, M.J., *Structure and Cooptition in Urban Networks*, Promotors: Prof.dr. G.A. van der Knaap & Prof.dr. H.R. Commandeur, EPS-2011-243-ORG, ISBN: 978-90-5892-288-5, <http://hdl.handle.net/1765/26178>

Burgers, J.H., *Managing Corporate Venturing: Multilevel Studies on Project Autonomy, Integration, Knowledge Relatedness, and Phases in the New Business Development Process*, Promoters: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2008-136-STR, ISBN: 978-90-5892-174-1, <http://hdl.handle.net/1765/13484>

Camacho, N.M., *Health and Marketing: Essays on Physician and Patient Decision-making*, Promotor: Prof.dr. S. Stremersch, EPS-2011-237-MKT, ISBN: 978-90-5892-284-7, <http://hdl.handle.net/1765/23604>

Campbell, R.A.J., *Rethinking Risk in International Financial Markets*, Promotor: Prof.dr. C.G. Koedijk, EPS-2001-005-F&A, ISBN: 90-5892-008-9, <http://hdl.handle.net/1765/306>

Carvalho de Mesquita Ferreira, L., *Attention Mosaics: Studies of Organizational Attention*, Promoters: Prof.dr. P.M.A.R. Heugens & Prof.dr. J. van Oosterhout, EPS-2010-205-ORG, ISBN: 978-90-5892-242-7, <http://hdl.handle.net/1765/19882>

Chen, C.-M., *Evaluation and Design of Supply Chain Operations Using DEA*, Promotor: Prof.dr. J.A.E.E. van Nunen, EPS-2009-172-LIS, ISBN: 978-90-5892-209-0, <http://hdl.handle.net/1765/16181>

Chen, H., *Individual Mobile Communication Services and Tariffs*, Promotor: Prof.dr. L.F.J.M. Pau, EPS-2008-123-LIS, ISBN: 90-5892-158-1, <http://hdl.handle.net/1765/11141>

Chen, Y., *Labour Flexibility in China's Companies: An Empirical Study*, Promoters: Prof.dr. A. Buitendam & Prof.dr. B. Krug, EPS-2001-006-ORG, ISBN: 90-5892-012-7, <http://hdl.handle.net/1765/307>

Damen, F.J.A., *Taking the Lead: The Role of Affect in Leadership Effectiveness*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2007-107-ORG, <http://hdl.handle.net/1765/10282>

Daniševská, P., *Empirical Studies on Financial Intermediation and Corporate Policies*, Promotor: Prof.dr. C.G. Koedijk, EPS-2004-044-F&A, ISBN: 90-5892-070-4, <http://hdl.handle.net/1765/1518>

Defilippi Angeldonis, E.F., *Access Regulation for Naturally Monopolistic Port Terminals: Lessons from Regulated Network Industries*, Promotor: Prof.dr. H.E. Haralambides, EPS-2010-204-LIS, ISBN: 978-90-5892-245-8, <http://hdl.handle.net/1765/19881>

Delporte-Vermeiren, D.J.E., *Improving the Flexibility and Profitability of ICT-enabled Business Networks: An Assessment Method and Tool*, Promoters: Prof. mr. dr. P.H.M. Vervest & Prof.dr.ir. H.W.G.M. van Heck, EPS-2003-020-LIS, ISBN: 90-5892-040-2, <http://hdl.handle.net/1765/359>

Derwall, J.M.M., *The Economic Virtues of SRI and CSR*, Promotor: Prof.dr. C.G. Koedijk, EPS-2007-101-F&A, ISBN: 90-5892-132-8, <http://hdl.handle.net/1765/8986>

Desmet, P.T.M., *In Money we Trust? Trust Repair and the Psychology of Financial Compensations*, Promotors: Prof.dr. D. De Cremer & Prof.dr. E. van Dijk, EPS-2011-232-ORG, ISBN: 978-90-5892-274-8, <http://hdl.handle.net/1765/23268>

Diepen, M. van, *Dynamics and Competition in Charitable Giving*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2009-159-MKT, ISBN: 978-90-5892-188-8, <http://hdl.handle.net/1765/14526>

Dietvorst, R.C., *Neural Mechanisms Underlying Social Intelligence and Their Relationship with the Performance of Sales Managers*, Promotor: Prof.dr. W.J.M.I. Verbeke, EPS-2010-215-MKT, ISBN: 978-90-5892-257-1, <http://hdl.handle.net/1765/21188>

Dietz, H.M.S., *Managing (Sales)People towards Performance: HR Strategy, Leadership & Teamwork*, Promotor: Prof.dr. G.W.J. Hendrikse, EPS-2009-168-ORG, ISBN: 978-90-5892-210-6, <http://hdl.handle.net/1765/16081>

Dijksterhuis, M., *Organizational Dynamics of Cognition and Action in the Changing Dutch and US Banking Industries*, Promotors: Prof.dr.ir. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2003-026-STR, ISBN: 90-5892-048-8, <http://hdl.handle.net/1765/1037>

Duca, E., *The Impact of Investor Demand on Security Offerings*, Promotor: Prof.dr. A. de Jong, EPS-2011-240-F&A, ISBN: 978-90-5892-286-1, <http://hdl.handle.net/1765/26041>

Eck, N.J. van, *Methodological Advances in Bibliometric Mapping of Science*, Promotors: Prof.dr.ir. R. Dekker, EPS-2011-247-LIS, ISBN: 978-90-5892-291-5, <http://hdl.handle.net/1765/26509>

Eijk, A.R. van der, *Behind Networks: Knowledge Transfer, Favor Exchange and Performance*, Promotors: Prof.dr. S.L. van de Velde & Prof.dr.drs. W.A. Dolfsma, EPS-2009-161-LIS, ISBN: 978-90-5892-190-1, <http://hdl.handle.net/1765/14613>

Elstak, M.N., *Flipping the Identity Coin: The Comparative Effect of Perceived, Projected and Desired Organizational Identity on Organizational Identification and Desired Behavior*, Promotor: Prof.dr. C.B.M. van Riel, EPS-2008-117-ORG, ISBN: 90-5892-148-2, <http://hdl.handle.net/1765/10723>

Erken, H.P.G., *Productivity, R&D and Entrepreneurship*, Promotor: Prof.dr. A.R. Thurik, EPS-2008-147-ORG, ISBN: 978-90-5892-179-6, <http://hdl.handle.net/1765/14004>

Essen, M. van, *An Institution-Based View of Ownership*, Promotos: Prof.dr. J. van Oosterhout & Prof.dr. G.M.H. Mertens, EPS-2011-226-ORG, ISBN: 978-90-5892-269-4, <http://hdl.handle.net/1765/22643>

Fenema, P.C. van, *Coordination and Control of Globally Distributed Software Projects*, Promotor: Prof.dr. K. Kumar, EPS-2002-019-LIS, ISBN: 90-5892-030-5, <http://hdl.handle.net/1765/360>

Feng, L., *Motivation, Coordination and Cognition in Cooperatives*, Promotor: Prof.dr. G.W.J. Hendrikse, EPS-2010-220-ORG, ISBN: 90-5892-261-8, <http://hdl.handle.net/1765/21680>

Fleischmann, M., *Quantitative Models for Reverse Logistics*, Promotors: Prof.dr.ir. J.A.E.E. van Nunen & Prof.dr.ir. R. Dekker, EPS-2000-002-LIS, ISBN: 35-4041-711-7, <http://hdl.handle.net/1765/1044>

Flier, B., *Strategic Renewal of European Financial Incumbents: Coevolution of Environmental Selection, Institutional Effects, and Managerial Intentionality*, Promotors: Prof.dr.ir. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2003-033-STR, ISBN: 90-5892-055-0, <http://hdl.handle.net/1765/1071>

Fok, D., *Advanced Econometric Marketing Models*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2003-027-MKT, ISBN: 90-5892-049-6, <http://hdl.handle.net/1765/1035>

Ganzaroli, A., *Creating Trust between Local and Global Systems*, Promotors: Prof.dr. K. Kumar & Prof.dr. R.M. Lee, EPS-2002-018-LIS, ISBN: 90-5892-031-3, <http://hdl.handle.net/1765/361>

Gertsen, H.F.M., *Riding a Tiger without Being Eaten: How Companies and Analysts Tame Financial Restatements and Influence Corporate Reputation*, Promotor: Prof.dr. C.B.M. van Riel, EPS-2009-171-ORG, ISBN: 90-5892-214-4, <http://hdl.handle.net/1765/16098>

Gilsing, V.A., *Exploration, Exploitation and Co-evolution in Innovation Networks*, Promotors: Prof.dr. B. Nooteboom & Prof.dr. J.P.M. Groenewegen, EPS-2003-032-ORG, ISBN: 90-5892-054-2, <http://hdl.handle.net/1765/1040>

Gijsbers, G.W., *Agricultural Innovation in Asia: Drivers, Paradigms and Performance*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2009-156-ORG, ISBN: 978-90-5892-191-8, <http://hdl.handle.net/1765/14524>

Gong, Y., *Stochastic Modelling and Analysis of Warehouse Operations*, Promotors: Prof.dr. M.B.M. de Koster & Prof.dr. S.L. van de Velde, EPS-2009-180-LIS, ISBN: 978-90-5892-219-9, <http://hdl.handle.net/1765/16724>

Govers, R., *Virtual Tourism Destination Image: Glocal Identities Constructed, Perceived and Experienced*, Promotors: Prof.dr. F.M. Go & Prof.dr. K. Kumar, EPS-2005-069-MKT, ISBN: 90-5892-107-7, <http://hdl.handle.net/1765/6981>

Graaf, G. de, *Tractable Morality: Customer Discourses of Bankers, Veterinarians and Charity Workers*, Promoters: Prof.dr. F. Leijnse & Prof.dr. T. van Willigenburg, EPS-2003-031-ORG, ISBN: 90-5892-051-8, <http://hdl.handle.net/1765/1038>

Greeven, M.J., *Innovation in an Uncertain Institutional Environment: Private Software Entrepreneurs in Hangzhou, China*, Promotor: Prof.dr. B. Krug, EPS-2009-164-ORG, ISBN: 978-90-5892-202-1, <http://hdl.handle.net/1765/15426>

Groot, E.A. de, *Essays on Economic Cycles*, Promoters: Prof.dr. Ph.H.B.F. Franses & Prof.dr. H.R. Commandeur, EPS-2006-091-MKT, ISBN: 90-5892-123-9, <http://hdl.handle.net/1765/8216>

Guenster, N.K., *Investment Strategies Based on Social Responsibility and Bubbles*, Promotor: Prof.dr. C.G. Koedijk, EPS-2008-175-F&A, ISBN: 978-90-5892-206-9, <http://hdl.handle.net/1765/16209>

Gutkowska, A.B., *Essays on the Dynamic Portfolio Choice*, Promotor: Prof.dr. A.C.F. Vorst, EPS-2006-085-F&A, ISBN: 90-5892-118-2, <http://hdl.handle.net/1765/7994>

Hagemeijer, R.E., *The Unmasking of the Other*, Promoters: Prof.dr. S.J. Magala & Prof.dr. H.K. Letiche, EPS-2005-068-ORG, ISBN: 90-5892-097-6, <http://hdl.handle.net/1765/6963>

Hakimi, N.A., *Leader Empowering Behaviour: The Leader's Perspective: Understanding the Motivation behind Leader Empowering Behaviour*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2010-184-ORG, <http://hdl.handle.net/1765/17701>

Halderen, M.D. van, *Organizational Identity Expressiveness and Perception Management: Principles for Expressing the Organizational Identity in Order to Manage the Perceptions and Behavioral Reactions of External Stakeholders*, Promotor: Prof.dr. S.B.M. van Riel, EPS-2008-122-ORG, ISBN: 90-5892-153-6, <http://hdl.handle.net/1765/10872>

Hartigh, E. den, *Increasing Returns and Firm Performance: An Empirical Study*, Promotor: Prof.dr. H.R. Commandeur, EPS-2005-067-STR, ISBN: 90-5892-098-4, <http://hdl.handle.net/1765/6939>

Hensmans, M., *A Republican Settlement Theory of the Firm: Applied to Retail Banks in England and the Netherlands (1830-2007)*, Promoters: Prof.dr. A. Jolink & Prof.dr. S.J. Magala, EPS-2010-193-ORG, ISBN 90-5892-235-9, <http://hdl.handle.net/1765/19494>

Hermans, J.M., *ICT in Information Services: Use and Deployment of the Dutch Securities Trade, 1860-1970*, Promotor: Prof.dr. drs. F.H.A. Janszen, EPS-2004-046-ORG, ISBN 90-5892-072-0, <http://hdl.handle.net/1765/1793>

Hernandez Mireles, C., *Marketing Modeling for New Products*, Promotor: Prof.dr. P.H. Franses, EPS-2010-202-MKT, ISBN 90-5892-237-3, <http://hdl.handle.net/1765/19878>

Hessels, S.J.A., *International Entrepreneurship: Value Creation Across National Borders*, Promotor: Prof.dr. A.R. Thurik, EPS-2008-144-ORG, ISBN: 978-90-5892-181-9, <http://hdl.handle.net/1765/13942>

Heugens, P.P.M.A.R., *Strategic Issues Management: Implications for Corporate Performance*, Promotors: Prof.dr.ir. F.A.J. van den Bosch & Prof.dr. C.B.M. van Riel, EPS-2001-007-STR, ISBN: 90-5892-009-9, <http://hdl.handle.net/1765/358>

Heuvel, W. van den, *The Economic Lot-Sizing Problem: New Results and Extensions*, Promotor: Prof.dr. A.P.L. Wagelmans, EPS-2006-093-LIS, ISBN: 90-5892-124-7, <http://hdl.handle.net/1765/1805>

Hoedemaekers, C.M.W., *Performance, Pinned down: A Lacanian Analysis of Subjectivity at Work*, Promotors: Prof.dr. S. Magala & Prof.dr. D.H. den Hartog, EPS-2008-121-ORG, ISBN: 90-5892-156-7, <http://hdl.handle.net/1765/10871>

Hoogendoorn, B., *Social Entrepreneurship in the Modern Economy: Warm Glow, Cold Feet*, Promotors: Prof.dr. H.P.G. Pennings & Prof.dr. A.R. Thurik, EPS-2011-246-STR, ISBN: 978-90-5892-289-2, <http://hdl.handle.net/1765/26447>

Hoogervorst, N., *On The Psychology of Displaying Ethical Leadership: A Behavioral Ethics Approach*, Promotors: Prof.dr. D. De Cremer & Dr. M. van Dijke, EPS-2011-244-ORG, ISBN: 978-90-5892-287-8, <http://hdl.handle.net/1765/26228>

Hooghiemstra, R., *The Construction of Reality: Cultural Differences in Self-serving Behaviour in Accounting Narratives*, Promotors: Prof.dr. L.G. van der Tas RA & Prof.dr. A.Th.H. Pruyn, EPS-2003-025-F&A, ISBN: 90-5892-047-X, <http://hdl.handle.net/1765/871>

Hu, Y., *Essays on the Governance of Agricultural Products: Cooperatives and Contract Farming*, Promotors: Prof.dr. G.W.J. Hendrkse & Prof.dr. B. Krug, EPS-2007-113-ORG, ISBN: 90-5892-145-1, <http://hdl.handle.net/1765/10535>

Huang, X., *An Analysis of Occupational Pension Provision: From Evaluation to Redesign*, Promotors: Prof.dr. M.J.C.M. Verbeek & Prof.dr. R.J. Mahieu, EPS-2010-196-F&A, ISBN: 90-5892-239-7, <http://hdl.handle.net/1765/19674>

Huij, J.J., *New Insights into Mutual Funds: Performance and Family Strategies*, Promotor: Prof.dr. M.C.J.M. Verbeek, EPS-2007-099-F&A, ISBN: 90-5892-134-4, <http://hdl.handle.net/1765/9398>

Huurman, C.I., *Dealing with Electricity Prices*, Promotor: Prof.dr. C.D. Koedijk, EPS-2007-098-F&A, ISBN: 90-5892-130-1, <http://hdl.handle.net/1765/9399>

Hytönen, K.A. *Context Effects in Valuation, Judgment and Choice*, Promotor: Prof.dr.ir. A. Smidts, EPS-2011-252-MKT, ISBN: 978-905892-295-3, <http://hdl.handle.net/1765/30668>

Iastrebova, K. *Manager's Information Overload: The Impact of Coping Strategies on Decision-Making Performance*, Promotor: Prof.dr. H.G. van Dissel, EPS-2006-077-LIS, ISBN: 90-5892-111-5, <http://hdl.handle.net/1765/7329>

Iwaarden, J.D. van, *Changing Quality Controls: The Effects of Increasing Product Variety and Shortening Product Life Cycles*, Promotors: Prof.dr. B.G. Dale & Prof.dr. A.R.T. Williams, EPS-2006-084-ORG, ISBN: 90-5892-117-4, <http://hdl.handle.net/1765/7992>

Jalil, M.N., *Customer Information Driven After Sales Service Management: Lessons from Spare Parts Logistics*, Promotor: Prof.dr. L.G. Kroon, EPS-2011-222-LIS, ISBN: 978-90-5892-264-9, <http://hdl.handle.net/1765/22156>

Jansen, J.J.P., *Ambidextrous Organizations*, Promotors: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2005-055-STR, ISBN: 90-5892-081-X, <http://hdl.handle.net/1765/6774>

Jaspers, F.P.H., *Organizing Systemic Innovation*, Promotor: Prof.dr.ir. J.C.M. van den Ende, EPS-2009-160-ORG, ISBN: 978-90-5892-197-), <http://hdl.handle.net/1765/14974>

Jennen, M.G.J., *Empirical Essays on Office Market Dynamics*, Promotors: Prof.dr. C.G. Koedijk & Prof.dr. D. Brounen, EPS-2008-140-F&A, ISBN: 978-90-5892-176-5, <http://hdl.handle.net/1765/13692>

Jiang, T., *Capital Structure Determinants and Governance Structure Variety in Franchising*, Promotors: Prof.dr. G. Hendrikse & Prof.dr. A. de Jong, EPS-2009-158-F&A, ISBN: 978-90-5892-199-4, <http://hdl.handle.net/1765/14975>

Jiao, T., *Essays in Financial Accounting*, Promotor: Prof.dr. G.M.H. Mertens, EPS-2009-176-F&A, ISBN: 978-90-5892-211-3, <http://hdl.handle.net/1765/16097>

Jong, C. de, *Dealing with Derivatives: Studies on the Role, Informational Content and Pricing of Financial Derivatives*, Promotor: Prof.dr. C.G. Koedijk, EPS-2003-023-F&A, ISBN: 90-5892-043-7, <http://hdl.handle.net/1765/1043>

Kaa, G. van, *Standard Battles for Complex Systems: Empirical Research on the Home Network*, Promotors: Prof.dr.ir. J. van den Ende & Prof.dr.ir. H.W.G.M. van Heck, EPS-2009-166-ORG, ISBN: 978-90-5892-205-2, <http://hdl.handle.net/1765/16011>

Kagie, M., *Advances in Online Shopping Interfaces: Product Catalog Maps and Recommender Systems*, Promotor: Prof.dr. P.J.F. Groenen, EPS-2010-195-MKT, ISBN: 978-90-5892-233-5, <http://hdl.handle.net/1765/19532>



Kappe, E.R., *The Effectiveness of Pharmaceutical Marketing*, Promotor: Prof.dr. S. Stremersch, EPS-2011-239-MKT, ISBN: 978-90-5892-283-0, <http://hdl.handle.net/1765/23610>

Karreman, B., *Financial Services and Emerging Markets*, Promotors: Prof.dr. G.A. van der Knaap & Prof.dr. H.P.G. Pennings, EPS-2011-223-ORG, ISBN: 978-90-5892-266-3, <http://hdl.handle.net/1765/22280>

Keizer, A.B., *The Changing Logic of Japanese Employment Practices: A Firm-Level Analysis of Four Industries*, Promotors: Prof.dr. J.A. Stam & Prof.dr. J.P.M. Groenewegen, EPS-2005-057-ORG, ISBN: 90-5892-087-9, <http://hdl.handle.net/1765/6667>

Kijkuit, R.C., *Social Networks in the Front End: The Organizational Life of an Idea*, Promotor: Prof.dr. B. Nooteboom, EPS-2007-104-ORG, ISBN: 90-5892-137-6, <http://hdl.handle.net/1765/10074>

Kippers, J., *Empirical Studies on Cash Payments*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2004-043-F&A, ISBN: 90-5892-069-0, <http://hdl.handle.net/1765/1520>

Klein, M.H., *Poverty Alleviation through Sustainable Strategic Business Models: Essays on Poverty Alleviation as a Business Strategy*, Promotor: Prof.dr. H.R. Commandeur, EPS-2008-135-STR, ISBN: 978-90-5892-168-0, <http://hdl.handle.net/1765/13482>

Knapp, S., *The Econometrics of Maritime Safety: Recommendations to Enhance Safety at Sea*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2007-096-ORG, ISBN: 90-5892-127-1, <http://hdl.handle.net/1765/7913>

Kole, E., *On Crises, Crashes and Comovements*, Promotors: Prof.dr. C.G. Koedijk & Prof.dr. M.J.C.M. Verbeek, EPS-2006-083-F&A, ISBN: 90-5892-114-X, <http://hdl.handle.net/1765/7829>

Kooij-de Bode, J.M., *Distributed Information and Group Decision-Making: Effects of Diversity and Affect*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2007-115-ORG, <http://hdl.handle.net/1765/10722>

Koppius, O.R., *Information Architecture and Electronic Market Performance*, Promotors: Prof.dr. P.H.M. Vervest & Prof.dr.ir. H.W.G.M. van Heck, EPS-2002-013-LIS, ISBN: 90-5892-023-2, <http://hdl.handle.net/1765/921>

Kotlarsky, J., *Management of Globally Distributed Component-Based Software Development Projects*, Promotor: Prof.dr. K. Kumar, EPS-2005-059-LIS, ISBN: 90-5892-088-7, <http://hdl.handle.net/1765/6772>

Krauth, E.I., *Real-Time Planning Support: A Task-Technology Fit Perspective*, Promotors: Prof.dr. S.L. van de Velde & Prof.dr. J. van Hillegersberg, EPS-2008-155-LIS, ISBN: 978-90-5892-193-2, <http://hdl.handle.net/1765/14521>

Kuilman, J., *The Re-Emergence of Foreign Banks in Shanghai: An Ecological Analysis*, Promotor: Prof.dr. B. Krug, EPS-2005-066-ORG, ISBN: 90-5892-096-8, <http://hdl.handle.net/1765/6926>

Kwee, Z., *Investigating Three Key Principles of Sustained Strategic Renewal: A Longitudinal Study of Long-Lived Firms*, Promotors: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2009-174-STR, ISBN: 90-5892-212-0, <http://hdl.handle.net/1765/16207>

Lam, K.Y., *Reliability and Rankings*, Promotor: Prof.dr. P.H.B.F. Franses, EPS-2011-230-MKT, ISBN: 978-90-5892-272-4, <http://hdl.handle.net/1765/22977>

Lander, M.W., *Profits or Professionalism? On Designing Professional Service Firms*, Promotors: Prof.dr. J. van Oosterhout & Prof.dr. P.P.M.A.R. Heugens, EPS-2012-253-ORG, ISBN: 978-90-5892-294-6, <http://hdl.handle.net/1765/1>

Langen, P.W. de, *The Performance of Seaport Clusters: A Framework to Analyze Cluster Performance and an Application to the Seaport Clusters of Durban, Rotterdam and the Lower Mississippi*, Promotors: Prof.dr. B. Nooteboom & Prof. drs. H.W.H. Welters, EPS-2004-034-LIS, ISBN: 90-5892-056-9, <http://hdl.handle.net/1765/1133>

Langhe, B. de, *Contingencies: Learning Numerical and Emotional Associations in an Uncertain World*, Promotors: Prof.dr.ir. B. Wierenga & Prof.dr. S.M.J. van Osselaer, EPS-2011-236-MKT, ISBN: 978-90-5892-278-6, <http://hdl.handle.net/1765/23504>

Larco Martinelli, J.A., *Incorporating Worker-Specific Factors in Operations Management Models*, Promotors: Prof.dr.ir. J. Dul & Prof.dr. M.B.M. de Koster, EPS-2010-217-LIS, ISBN: 90-5892-263-2, <http://hdl.handle.net/1765/21527>

Le Anh, T., *Intelligent Control of Vehicle-Based Internal Transport Systems*, Promotors: Prof.dr. M.B.M. de Koster & Prof.dr.ir. R. Dekker, EPS-2005-051-LIS, ISBN: 90-5892-079-8, <http://hdl.handle.net/1765/6554>

Le-Duc, T., *Design and Control of Efficient Order Picking Processes*, Promotor: Prof.dr. M.B.M. de Koster, EPS-2005-064-LIS, ISBN: 90-5892-094-1, <http://hdl.handle.net/1765/6910>

Leeuwen, E.P. van, *Recovered-Resource Dependent Industries and the Strategic Renewal of Incumbent Firm: A Multi-Level Study of Recovered Resource Dependence Management and Strategic Renewal in the European Paper and Board Industry*, Promotors: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2007-109-STR, ISBN: 90-5892-140-6, <http://hdl.handle.net/1765/10183>

Lentink, R.M., *Algorithmic Decision Support for Shunt Planning*, Promotors: Prof.dr. L.G. Kroon & Prof.dr.ir. J.A.E.E. van Nunen, EPS-2006-073-LIS, ISBN: 90-5892-104-2, <http://hdl.handle.net/1765/7328>

Li, T., *Informedness and Customer-Centric Revenue Management*, Promotors: Prof.dr. P.H.M. Vervest & Prof.dr.ir. H.W.G.M. van Heck, EPS-2009-146-LIS, ISBN: 978-90-5892-195-6, <http://hdl.handle.net/1765/14525>

Liang, G., *New Competition: Foreign Direct Investment and Industrial Development in China*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2004-047-ORG, ISBN: 90-5892-073-9, <http://hdl.handle.net/1765/1795>

Liere, D.W. van, *Network Horizon and the Dynamics of Network Positions: A Multi-Method Multi-Level Longitudinal Study of Interfirm Networks*, Promotor: Prof.dr. P.H.M. Vervest, EPS-2007-105-LIS, ISBN: 90-5892-139-0, <http://hdl.handle.net/1765/10181>

Loef, J., *Incongruity between Ads and Consumer Expectations of Advertising*, Promotors: Prof.dr. W.F. van Raaij & Prof.dr. G. Antonides, EPS-2002-017-MKT, ISBN: 90-5892-028-3, <http://hdl.handle.net/1765/869>

Londoño, M. del Pilar, *Institutional Arrangements that Affect Free Trade Agreements: Economic Rationality Versus Interest Groups*, Promotors: Prof.dr. H.E. Haralambides & Prof.dr. J.F. Francois, EPS-2006-078-LIS, ISBN: 90-5892-108-5, <http://hdl.handle.net/1765/7578>

Lovric, M., *Behavioral Finance and Agent-Based Artificial Markets*, Promotors: Prof.dr. J. Spronk & Prof.dr.ir. U. Kaymak, EPS-2011-229-F&A, ISBN: 978-90-5892-258-8, <http://hdl.handle.net/1765/22814>

Maas, A.A., van der, *Strategy Implementation in a Small Island Context: An Integrative Framework*, Promotor: Prof.dr. H.G. van Dissel, EPS-2008-127-LIS, ISBN: 978-90-5892-160-4, <http://hdl.handle.net/1765/12278>

Maas, K.E.G., *Corporate Social Performance: From Output Measurement to Impact Measurement*, Promotor: Prof.dr. H.R. Commandeur, EPS-2009-182-STR, ISBN: 978-90-5892-225-0, <http://hdl.handle.net/1765/17627>

Maeseneire, W., de, *Essays on Firm Valuation and Value Appropriation*, Promotor: Prof.dr. J.T.J. Smit, EPS-2005-053-F&A, ISBN: 90-5892-082-8, <http://hdl.handle.net/1765/6768>

Mandele, L.M., van der, *Leadership and the Inflection Point: A Longitudinal Perspective*, Promotors: Prof.dr. H.W. Volberda & Prof.dr. H.R. Commandeur, EPS-2004-042-STR, ISBN: 90-5892-067-4, <http://hdl.handle.net/1765/1302>

Markwat, T.D., *Extreme Dependence in Asset Markets Around the Globe*, Promotor: Prof.dr. D.J.C. van Dijk, EPS-2011-227-F&A, ISBN: 978-90-5892-270-0, <http://hdl.handle.net/1765/22744>

Meer, J.R. van der, *Operational Control of Internal Transport*, Promotors: Prof.dr. M.B.M. de Koster & Prof.dr.ir. R. Dekker, EPS-2000-001-LIS, ISBN: 90-5892-004-6, <http://hdl.handle.net/1765/859>

Mentink, A., *Essays on Corporate Bonds*, Promotor: Prof.dr. A.C.F. Vorst, EPS-2005-070-F&A, ISBN: 90-5892-100-X, <http://hdl.handle.net/1765/7121>

Meuer, J., *Configurations of Inter-Firm Relations in Management Innovation: A Study in China's Biopharmaceutical Industry*, Promotor: Prof.dr. B. Krug, EPS-2011-228-ORG, ISBN: 978-90-5892-271-1, <http://hdl.handle.net/1765/22745>

Meyer, R.J.H., *Mapping the Mind of the Strategist: A Quantitative Methodology for Measuring the Strategic Beliefs of Executives*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2007-106-ORG, ISBN: 978-90-5892-141-3, <http://hdl.handle.net/1765/10182>

Miltenburg, P.R., *Effects of Modular Sourcing on Manufacturing Flexibility in the Automotive Industry: A Study among German OEMs*, Promotors: Prof.dr. J. Paauwe & Prof.dr. H.R. Commandeur, EPS-2003-030-ORG, ISBN: 90-5892-052-6, <http://hdl.handle.net/1765/1039>

Moerman, G.A., *Empirical Studies on Asset Pricing and Banking in the Euro Area*, Promotor: Prof.dr. C.G. Koedijk, EPS-2005-058-F&A, ISBN: 90-5892-090-9, <http://hdl.handle.net/1765/6666>

Moitra, D., *Globalization of R&D: Leveraging Offshoring for Innovative Capability and Organizational Flexibility*, Promotor: Prof.dr. K. Kumar, EPS-2008-150-LIS, ISBN: 978-90-5892-184-0, <http://hdl.handle.net/1765/14081>

Mol, M.M., *Outsourcing, Supplier-relations and Internationalisation: Global Source Strategy as a Chinese Puzzle*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2001-010-ORG, ISBN: 90-5892-014-3, <http://hdl.handle.net/1765/355>

Mom, T.J.M., *Managers' Exploration and Exploitation Activities: The Influence of Organizational Factors and Knowledge Inflows*, Promotors: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2006-079-STR, ISBN: 90-5892-116-6, <http://hdl.handle.net/1765>

Moonen, J.M., *Multi-Agent Systems for Transportation Planning and Coordination*, Promotors: Prof.dr. J. van Hillegersberg & Prof.dr. S.L. van de Velde, EPS-2009-177-LIS, ISBN: 978-90-5892-216-8, <http://hdl.handle.net/1765/16208>

Mulder, A., *Government Dilemmas in the Private Provision of Public Goods*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2004-045-ORG, ISBN: 90-5892-071-2, <http://hdl.handle.net/1765/1790>

Muller, A.R., *The Rise of Regionalism: Core Company Strategies Under The Second Wave of Integration*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2004-038-ORG, ISBN: 90-5892-062-3, <http://hdl.handle.net/1765/1272>

Nalbantov G.I., *Essays on Some Recent Penalization Methods with Applications in Finance and Marketing*, Promotor: Prof. dr P.J.F. Groenen, EPS-2008-132-F&A, ISBN: 978-90-5892-166-6, <http://hdl.handle.net/1765/13319>

Nederveen Pieterse, A., *Goal Orientation in Teams: The Role of Diversity*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2009-162-ORG, <http://hdl.handle.net/1765/15240>

Nguyen, T.T., *Capital Structure, Strategic Competition, and Governance*, Promotor: Prof.dr. A. de Jong, EPS-2008-148-F&A, ISBN: 90-5892-178-9, <http://hdl.handle.net/1765/14005>

Nielsen, L.K., *Rolling Stock Rescheduling in Passenger Railways: Applications in Short-term Planning and in Disruption Management*, Promotor: Prof.dr. L.G. Kroon, EPS-2011-224-LIS, ISBN: 978-90-5892-267-0, <http://hdl.handle.net/1765/22444>

Niessen, E.M.M.I., *Regulation, Governance and Adaptation: Governance Transformations in the Dutch and French Liberalizing Electricity Industries*, Promotors: Prof.dr. A. Jolink & Prof.dr. J.P.M. Groenewegen, EPS-2009-170-ORG, ISBN: 978-90-5892-208-3, <http://hdl.handle.net/1765/16096>

Nieuwenboer, N.A. den, *Seeing the Shadow of the Self*, Promotor: Prof.dr. S.P. Kaptein, EPS-2008-151-ORG, ISBN: 978-90-5892-182-6, <http://hdl.handle.net/1765/14223>

Nijdam, M.H., *Leader Firms: The Value of Companies for the Competitiveness of the Rotterdam Seaport Cluster*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2010-216-ORG, ISBN: 978-90-5892-256-4, <http://hdl.handle.net/1765/21405>

Ning, H., *Hierarchical Portfolio Management: Theory and Applications*, Promotor: Prof.dr. J. Spronk, EPS-2007-118-F&A, ISBN: 90-5892-152-9, <http://hdl.handle.net/1765/10868>

Noeverman, J., *Management Control Systems, Evaluative Style, and Behaviour: Exploring the Concept and Behavioural Consequences of Evaluative Style*, Promotors: Prof.dr. E.G.J. Vosselman & Prof.dr. A.R.T. Williams, EPS-2007-120-F&A, ISBN: 90-5892-151-2, <http://hdl.handle.net/1765/10869>

Noordegraaf-Eelens, L.H.J., *Contested Communication: A Critical Analysis of Central Bank Speech*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2010-209-MKT, ISBN: 978-90-5892-254-0, <http://hdl.handle.net/1765/21061>

Nuijten, I., *Servant Leadership: Paradox or Diamond in the Rough? A Multidimensional Measure and Empirical Evidence*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2009-183-ORG, <http://hdl.handle.net/1765/21405>

Oosterhout, J., van, *The Quest for Legitimacy: On Authority and Responsibility in Governance*, Promotors: Prof.dr. T. van Willigenburg & Prof.mr. H.R. van Gunsteren, EPS-2002-012-ORG, ISBN: 90-5892-022-4, <http://hdl.handle.net/1765/362>

Oosterhout, M., van, *Business Agility and Information Technology in Service Organizations*, Promotor: Prof.dr.ir. H.W.G.M. van Heck, EPS-2010-198-LIS, ISBN: 90-5092-236-6, <http://hdl.handle.net/1765/19805>

Oostrum, J.M., van, *Applying Mathematical Models to Surgical Patient Planning*, Promotor: Prof.dr. A.P.M. Wagelmans, EPS-2009-179-LIS, ISBN: 978-90-5892-217-5, <http://hdl.handle.net/1765/16728>

Osadchiy, S.E., *The Dynamics of Formal Organization: Essays on Bureaucracy and Formal Rules*, Promotor: Prof.dr. P.P.M.A.R. Heugens, EPS-2011-231-ORG, ISBN: 978-90-5892-273-1, <http://hdl.handle.net/1765/23250>

Otgaar, A.H.J., *Industrial Tourism: Where the Public Meets the Private*, Promotor: Prof.dr. L. van den Berg, EPS-2010-219-ORG, ISBN: 90-5892-259-5, <http://hdl.handle.net/1765/21585>

Ozdemir, M.N., *Project-level Governance, Monetary Incentives and Performance in Strategic R&D Alliances*, Promotor: Prof.dr.ir. J.C.M. van den Ende, EPS-2011-235-LIS, ISBN: 978-90-5892-282-3, <http://hdl.handle.net/1765/23550>

Paape, L., *Corporate Governance: The Impact on the Role, Position, and Scope of Services of the Internal Audit Function*, Promotors: Prof.dr. G.J. van der Pijl & Prof.dr. H. Commandeur, EPS-2007-111-MKT, ISBN: 90-5892-143-7, <http://hdl.handle.net/1765/10417>

Pak, K., *Revenue Management: New Features and Models*, Promotor: Prof.dr.ir. R. Dekker, EPS-2005-061-LIS, ISBN: 90-5892-092-5, <http://hdl.handle.net/1765/362/6771>

Pattikawa, L.H., *Innovation in the Pharmaceutical Industry: Evidence from Drug Introduction in the U.S.*, Promotors: Prof.dr. H.R. Commandeur, EPS-2007-102-MKT, ISBN: 90-5892-135-2, <http://hdl.handle.net/1765/9626>

Peers, Y., *Econometric Advances in Diffusion Models*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2011-251-MKT, ISBN: 978-90-5892-296-0, <http://hdl.handle.net/1765/30586>

Peeters, L.W.P., *Cyclic Railway Timetable Optimization*, Promotors: Prof.dr. L.G. Kroon & Prof.dr.ir. J.A.E.E. van Nunen, EPS-2003-022-LIS, ISBN: 90-5892-042-9, <http://hdl.handle.net/1765/429>

Pietersz, R., *Pricing Models for Bermudan-style Interest Rate Derivatives*, Promotors: Prof.dr. A.A.J. Pelsser & Prof.dr. A.C.F. Vorst, EPS-2005-071-F&A, ISBN: 90-5892-099-2, <http://hdl.handle.net/1765/7122>

Pince, C., *Advances in Inventory Management: Dynamic Models*, Promotor: Prof.dr.ir. R. Dekker, EPS-2010-199-LIS, ISBN: 978-90-5892-243-4, <http://hdl.handle.net/1765/19867>

Poel, A.M. van der, *Empirical Essays in Corporate Finance and Financial Reporting*, Promotors: Prof.dr. A. de Jong & Prof.dr. G.M.H. Mertens, EPS-2007-133-F&A, ISBN: 978-90-5892-165-9, <http://hdl.handle.net/1765/13320>

Popova, V., *Knowledge Discovery and Monotonicity*, Promotor: Prof.dr. A. de Bruin, EPS-2004-037-LIS, ISBN: 90-5892-061-5, <http://hdl.handle.net/1765/1201>

Porras Prado, M., *The Long and Short Side of Real Estate, Real Estate Stocks, and Equity*, Promotor: Prof.dr. M.J.C.M. Verbeek, EPS-2012-254-F&A, ISBN: 978-90-5892-298-4, <http://hdl.handle.net/1765/1>

Potthoff, D., *Railway Crew Rescheduling: Novel Approaches and Extensions*, Promotors: Prof.dr. A.P.M. Wagelmans & Prof.dr. L.G. Kroon, EPS-2010-210-LIS, ISBN: 90-5892-250-2, <http://hdl.handle.net/1765/21084>

Pouchkarev, I., *Performance Evaluation of Constrained Portfolios*, Promotors: Prof.dr. J. Spronk & Dr. W.G.P.M. Hallerbach, EPS-2005-052-F&A, ISBN: 90-5892-083-6, <http://hdl.handle.net/1765/6731>

Poruthiyil, P.V., *Steering Through: How Organizations Negotiate Permanent Uncertainty and Unresolvable Choices*, Promotors: Prof.dr. P.P.M.A.R. Heugens & Prof.dr. S. Magala, EPS-2011-245-ORG, ISBN: 978-90-5892-290-8, <http://hdl.handle.net/1765/26392>

Pourakbar, M., *End-of-Life Inventory Decisions of Service Parts*, Promotor: Prof.dr.ir. R. Dekker, EPS-2011-249-LIS, ISBN: 978-90-5892-297-7, <http://hdl.handle.net/1765/30584>

Prins, R., *Modeling Consumer Adoption and Usage of Value-Added Mobile Services*, Promotors: Prof.dr. Ph.H.B.F. Franses & Prof.dr. P.C. Verhoef, EPS-2008-128-MKT, ISBN: 978/90-5892-161-1, <http://hdl.handle.net/1765/12461>

Puvasasvari Ratnasingam, P., *Interorganizational Trust in Business to Business E-Commerce*, Promoters: Prof.dr. K. Kumar & Prof.dr. H.G. van Dissel, EPS-2001-009-LIS, ISBN: 90-5892-017-8, <http://hdl.handle.net/1765/356>

Quak, H.J., *Sustainability of Urban Freight Transport: Retail Distribution and Local Regulation in Cities*, Promotor: Prof.dr. M.B.M. de Koster, EPS-2008-124-LIS, ISBN: 978-90-5892-154-3, <http://hdl.handle.net/1765/11990>

Quariguasi Frota Neto, J., *Eco-efficient Supply Chains for Electrical and Electronic Products*, Promoters: Prof.dr.ir. J.A.E.E. van Nunen & Prof.dr.ir. H.W.G.M. van Heck, EPS-2008-152-LIS, ISBN: 978-90-5892-192-5, <http://hdl.handle.net/1765/14785>

Radkevitch, U.L., *Online Reverse Auction for Procurement of Services*, Promotor: Prof.dr.ir. H.W.G.M. van Heck, EPS-2008-137-LIS, ISBN: 978-90-5892-171-0, <http://hdl.handle.net/1765/13497>

Rijsenbilt, J.A., *CEO Narcissism; Measurement and Impact*, Promoters: Prof.dr. A.G.Z. Kemna & Prof.dr. H.R. Commandeur, EPS-2011-238-STR, ISBN: 978-90-5892-281-6, <http://hdl.handle.net/1765/23554>

Rinsum, M. van, *Performance Measurement and Managerial Time Orientation*, Promotor: Prof.dr. F.G.H. Hartmann, EPS-2006-088-F&A, ISBN: 90-5892-121-2, <http://hdl.handle.net/1765/7993>

Roelofsen, E.M., *The Role of Analyst Conference Calls in Capital Markets*, Promoters: Prof.dr. G.M.H. Mertens & Prof.dr. L.G. van der Tas RA, EPS-2010-190-F&A, ISBN: 978-90-5892-228-1, <http://hdl.handle.net/1765/18013>

Romero Morales, D., *Optimization Problems in Supply Chain Management*, Promoters: Prof.dr.ir. J.A.E.E. van Nunen & Dr. H.E. Romeijn, EPS-2000-003-LIS, ISBN: 90-9014078-6, <http://hdl.handle.net/1765/865>

Roodbergen, K.J., *Layout and Routing Methods for Warehouses*, Promoters: Prof.dr. M.B.M. de Koster & Prof.dr.ir. J.A.E.E. van Nunen, EPS-2001-004-LIS, ISBN: 90-5892-005-4, <http://hdl.handle.net/1765/861>

Rook, L., *Imitation in Creative Task Performance*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2008-125-ORG, <http://hdl.handle.net/1765/11555>

Rosmalen, J. van, *Segmentation and Dimension Reduction: Exploratory and Model-Based Approaches*, Promotor: Prof.dr. P.J.F. Groenen, EPS-2009-165-MKT, ISBN: 978-90-5892-201-4, <http://hdl.handle.net/1765/15536>



Roza, M.W., *The Relationship between Offshoring Strategies and Firm Performance: Impact of Innovation, Absorptive Capacity and Firm Size*, Promoters: Prof.dr. H.W. Volberda & Prof.dr.ing. F.A.J. van den Bosch, EPS-2011-214-STR, ISBN: 978-90-5892-265-6, <http://hdl.handle.net/1765/22155>

Rus, D., *The Dark Side of Leadership: Exploring the Psychology of Leader Self-serving Behavior*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2009-178-ORG, <http://hdl.handle.net/1765/16726>

Samii, R., *Leveraging Logistics Partnerships: Lessons from Humanitarian Organizations*, Promoters: Prof.dr.ir. J.A.E.E. van Nunen & Prof.dr.ir. L.N. Van Wassenhove, EPS-2008-153-LIS, ISBN: 978-90-5892-186-4, <http://hdl.handle.net/1765/14519>

Schaik, D. van, *M&A in Japan: An Analysis of Merger Waves and Hostile Takeovers*, Promoters: Prof.dr. J. Spronk & Prof.dr. J.P.M. Groenewegen, EPS-2008-141-F&A, ISBN: 978-90-5892-169-7, <http://hdl.handle.net/1765/13693>

Schauten, M.B.J., *Valuation, Capital Structure Decisions and the Cost of Capital*, Promoters: Prof.dr. J. Spronk & Prof.dr. D. van Dijk, EPS-2008-134-F&A, ISBN: 978-90-5892-172-7, <http://hdl.handle.net/1765/13480>

Schellekens, G.A.C., *Language Abstraction in Word of Mouth*, Promotor: Prof.dr.ir. A. Smidts, EPS-2010-218-MKT, ISBN: 978-90-5892-252-6, <http://hdl.handle.net/1765/21580>

Schramade, W.L.J., *Corporate Bonds Issuers*, Promotor: Prof.dr. A. De Jong, EPS-2006-092-F&A, ISBN: 90-5892-125-5, <http://hdl.handle.net/1765/8191>

Schweizer, T.S., *An Individual Psychology of Novelty-Seeking, Creativity and Innovation*, Promotor: Prof.dr. R.J.M. van Tulder, EPS-2004-048-ORG, ISBN: 90-5892-077-1, <http://hdl.handle.net/1765/1818>

Six, F.E., *Trust and Trouble: Building Interpersonal Trust Within Organizations*, Promoters: Prof.dr. B. Nooteboom & Prof.dr. A.M. Sorge, EPS-2004-040-ORG, ISBN: 90-5892-064-X, <http://hdl.handle.net/1765/1271>

Slager, A.M.H., *Banking across Borders*, Promoters: Prof.dr. R.J.M. van Tulder & Prof.dr. D.M.N. van Wensveen, EPS-2004-041-ORG, ISBN: 90-5892-066-6, <http://hdl.handle.net/1765/1301>

Sloot, L., *Understanding Consumer Reactions to Assortment Unavailability*, Promoters: Prof.dr. H.R. Commandeur, Prof.dr. E. Peelen & Prof.dr. P.C. Verhoef, EPS-2006-074-MKT, ISBN: 90-5892-102-6, <http://hdl.handle.net/1765/7438>

Smit, W., *Market Information Sharing in Channel Relationships: Its Nature, Antecedents and Consequences*, Promoters: Prof.dr.ir. G.H. van Bruggen & Prof.dr.ir. B. Wierenga, EPS-2006-076-MKT, ISBN: 90-5892-106-9, <http://hdl.handle.net/1765/7327>

Sonnenberg, M., *The Signalling Effect of HRM on Psychological Contracts of Employees: A Multi-level Perspective*, Promotor: Prof.dr. J. Paauwe, EPS-2006-086-ORG, ISBN: 90-5892-119-0, <http://hdl.handle.net/1765/7995>

Sotgiu, F., *Not All Promotions are Made Equal: From the Effects of a Price War to Cross-chain Cannibalization*, Promoters: Prof.dr. M.G. Dekimpe & Prof.dr.ir. B. Wierenga, EPS-2010-203-MKT, ISBN: 978-90-5892-238-0, <http://hdl.handle.net/1765/19714>

Speklé, R.F., *Beyond Generics: A closer Look at Hybrid and Hierarchical Governance*, Promotor: Prof.dr. M.A. van Hoepen RA, EPS-2001-008-F&A, ISBN: 90-5892-011-9, <http://hdl.handle.net/1765/357>

Srour, F.J., *Dissecting Drayage: An Examination of Structure, Information, and Control in Drayage Operations*, Promotor: Prof.dr. S.L. van de Velde, EPS-2010-186-LIS, <http://hdl.handle.net/1765/18231>

Stam, D.A., *Managing Dreams and Ambitions: A Psychological Analysis of Vision Communication*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2008-149-ORG, <http://hdl.handle.net/1765/14080>

Stienstra, M., *Strategic Renewal in Regulatory Environments: How Inter- and Intra-organisational Institutional Forces Influence European Energy Incumbent Firms*, Promoters: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2008-145-STR, ISBN: 978-90-5892-184-0, <http://hdl.handle.net/1765/13943>

Sweldens, S.T.L.R., *Evaluative Conditioning 2.0: Direct versus Associative Transfer of Affect to Brands*, Promotor: Prof.dr. S.M.J. van Osselaer, EPS-2009-167-MKT, ISBN: 978-90-5892-204-5, <http://hdl.handle.net/1765/16012>

Szkudlarek, B.A., *Spinning the Web of Reentry: [Re]connecting reentry training theory and practice*, Promotor: Prof.dr. S.J. Magala, EPS-2008-143-ORG, ISBN: 978-90-5892-177-2, <http://hdl.handle.net/1765/13695>

Tempelaar, M.P., *Organizing for Ambidexterity: Studies on the Pursuit of Exploration and Exploitation through Differentiation, Integration, Contextual and Individual Attributes*, Promoters: Prof.dr.ing. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2010-191-STR, ISBN: 978-90-5892-231-1, <http://hdl.handle.net/1765/18457>

Teunter, L.H., *Analysis of Sales Promotion Effects on Household Purchase Behavior*, Promoters: Prof.dr.ir. B. Wierenga & Prof.dr. T. Kloek, EPS-2002-016-MKT, ISBN: 90-5892-029-1, <http://hdl.handle.net/1765/868>

Tims, B., *Empirical Studies on Exchange Rate Puzzles and Volatility*, Promotor: Prof.dr. C.G. Koedijk, EPS-2006-089-F&A, ISBN: 90-5892-113-1, <http://hdl.handle.net/1765/8066>

Tiwari, V., *Transition Process and Performance in IT Outsourcing: Evidence from a Field Study and Laboratory Experiments*, Promotors: Prof.dr.ir. H.W.G.M. van Heck & Prof.dr. P.H.M. Vervest, EPS-2010-201-LIS, ISBN: 978-90-5892-241-0, <http://hdl.handle.net/1765/19868>

Tröster, C., *Nationality Heterogeneity and Interpersonal Relationships at Work*, Promotor: Prof.dr. D.L. van Knippenberg, EPS-2011-233-ORG, <http://hdl.handle.net/1765/23298>

Tuk, M.A., *Is Friendship Silent When Money Talks? How Consumers Respond to Word-of-Mouth Marketing*, Promotors: Prof.dr.ir. A. Smidts & Prof.dr. D.H.J. Wigboldus, EPS-2008-130-MKT, ISBN: 978-90-5892-164-2, <http://hdl.handle.net/1765/12702>

Tzioti, S., *Let Me Give You a Piece of Advice: Empirical Papers about Advice Taking in Marketing*, Promotors: Prof.dr. S.M.J. van Osselaer & Prof.dr.ir. B. Wierenga, EPS-2010-211-MKT, ISBN: 978-90-5892-251-9, <http://hdl.handle.net/1765/21149>

Vaccaro, I.G., *Management Innovation: Studies on the Role of Internal Change Agents*, Promotors: Prof.dr. F.A.J. van den Bosch & Prof.dr. H.W. Volberda, EPS-2010-212-STR, ISBN: 978-90-5892-253-3, <http://hdl.handle.net/1765/21150>

Valck, K. de, *Virtual Communities of Consumption: Networks of Consumer Knowledge and Companionship*, Promotors: Prof.dr.ir. G.H. van Bruggen & Prof.dr.ir. B. Wierenga, EPS-2005-050-MKT, ISBN: 90-5892-078-X, <http://hdl.handle.net/1765/6663>

Valk, W. van der, *Buyer-Seller Interaction Patterns During Ongoing Service Exchange*, Promotors: Prof.dr. J.Y.F. Wynstra & Prof.dr.ir. B. Axelsson, EPS-2007-116-MKT, ISBN: 90-5892-146-8, <http://hdl.handle.net/1765/10856>

Verheijen, H.J.J., *Vendor-Buyer Coordination in Supply Chains*, Promotor: Prof.dr.ir. J.A.E.E. van Nunen, EPS-2010-194-LIS, ISBN: 90-5892-234-2, <http://hdl.handle.net/1765/19594>

Verheul, I., *Is There a (Fe)male Approach? Understanding Gender Differences in Entrepreneurship*, Promotor: Prof.dr. A.R. Thurik, EPS-2005-054-ORG, ISBN: 90-5892-080-1, <http://hdl.handle.net/1765/2005>

Verwijmeren, P., *Empirical Essays on Debt, Equity, and Convertible Securities*, Promotors: Prof.dr. A. de Jong & Prof.dr. M.J.C.M. Verbeek, EPS-2009-154-F&A, ISBN: 978-90-5892-187-1, <http://hdl.handle.net/1765/14312>

Vis, I.F.A., *Planning and Control Concepts for Material Handling Systems*, Promotors: Prof.dr. M.B.M. de Koster & Prof.dr.ir. R. Dekker, EPS-2002-014-LIS, ISBN: 90-5892-021-6, <http://hdl.handle.net/1765/866>

Vlaar, P.W.L., *Making Sense of Formalization in Interorganizational Relationships: Beyond Coordination and Control*, Promotors: Prof.dr.ir. F.A.J. Van den Bosch & Prof.dr. H.W. Volberda, EPS-2006-075-STR, ISBN 90-5892-103-4, <http://hdl.handle.net/1765/7326>

Vlam, A.J., *Customer First? The Relationship between Advisors and Consumers of Financial Products*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2011-250-MKT, ISBN: 978-90-5892-293-9, <http://hdl.handle.net/1765/30585>

Vliet, P. van, *Downside Risk and Empirical Asset Pricing*, Promotor: Prof.dr. G.T. Post, EPS-2004-049-F&A, ISBN: 90-5892-07-55, <http://hdl.handle.net/1765/1819>

Vlist, P. van der, *Synchronizing the Retail Supply Chain*, Promotors: Prof.dr.ir. J.A.E.E. van Nunen & Prof.dr. A.G. de Kok, EPS-2007-110-LIS, ISBN: 90-5892-142-0, <http://hdl.handle.net/1765/10418>

Vries-van Ketel E. de, *How Assortment Variety Affects Assortment Attractiveness: A Consumer Perspective*, Promotors: Prof.dr. G.H. van Bruggen & Prof.dr.ir. A. Smidts, EPS-2006-072-MKT, ISBN: 90-5892-101-8, <http://hdl.handle.net/1765/7193>

Vromans, M.J.C.M., *Reliability of Railway Systems*, Promotors: Prof.dr. L.G. Kroon, Prof.dr.ir. R. Dekker & Prof.dr.ir. J.A.E.E. van Nunen, EPS-2005-062-LIS, ISBN: 90-5892-089-5, <http://hdl.handle.net/1765/6773>

Vroomen, B.L.K., *The Effects of the Internet, Recommendation Quality and Decision Strategies on Consumer Choice*, Promotor: Prof.dr. Ph.H.B.F. Franses, EPS-2006-090-MKT, ISBN: 90-5892-122-0, <http://hdl.handle.net/1765/8067>

Waal, T. de, *Processing of Erroneous and Unsafe Data*, Promotor: Prof.dr.ir. R. Dekker, EPS-2003-024-LIS, ISBN: 90-5892-045-3, <http://hdl.handle.net/1765/870>

Waard, E.J. de, *Engaging Environmental Turbulence: Organizational Determinants for Repetitive Quick and Adequate Responses*, Promotors: Prof.dr. H.W. Volberda & Prof.dr. J. Soeters, EPS-2010-189-STR, ISBN: 978-90-5892-229-8, <http://hdl.handle.net/1765/18012>

Wall, R.S., *Netscape: Cities and Global Corporate Networks*, Promotor: Prof.dr. G.A. van der Knaap, EPS-2009-169-ORG, ISBN: 978-90-5892-207-6, <http://hdl.handle.net/1765/16013>

Waltman, L., *Computational and Game-Theoretic Approaches for Modeling Bounded Rationality*, Promotors: Prof.dr.ir. R. Dekker & Prof.dr.ir. U. Kaymak, EPS-2011-248-LIS, ISBN: 978-90-5892-292-2, <http://hdl.handle.net/1765/26564>

Wang, Y., *Information Content of Mutual Fund Portfolio Disclosure*, Promotor: Prof.dr. M.J.C.M. Verbeek, EPS-2011-242-F&A, ISBN: 978-90-5892-285-4, <http://hdl.handle.net/1765/26066>

Watkins Fassler, K., *Macroeconomic Crisis and Firm Performance*, Promotors: Prof.dr. J. Spronk & Prof.dr. D.J. van Dijk, EPS-2007-103-F&A, ISBN: 90-5892-138-3, <http://hdl.handle.net/1765/10065>

Weerdt, N.P. van der, *Organizational Flexibility for Hypercompetitive Markets: Empirical Evidence of the Composition and Context Specificity of Dynamic Capabilities and Organization Design Parameters*, Promotor: Prof.dr. H.W. Volberda, EPS-2009-173-STR, ISBN: 978-90-5892-215-1, <http://hdl.handle.net/1765/16182>

Wennekers, A.R.M., *Entrepreneurship at Country Level: Economic and Non-Economic Determinants*, Promotor: Prof.dr. A.R. Thurik, EPS-2006-81-ORG, ISBN: 90-5892-115-8, <http://hdl.handle.net/1765/7982>

Wielemaker, M.W., *Managing Initiatives: A Synthesis of the Conditioning and Knowledge-Creating View*, Promotors: Prof.dr. H.W. Volberda & Prof.dr. C.W.F. Baden-Fuller, EPS-2003-28-STR, ISBN: 90-5892-050-X, <http://hdl.handle.net/1765/1042>

Wijk, R.A.J.L. van, *Organizing Knowledge in Internal Networks: A Multilevel Study*, Promotor: Prof.dr.ir. F.A.J. van den Bosch, EPS-2003-021-STR, ISBN: 90-5892-039-9, <http://hdl.handle.net/1765/347>

Wolters, M.J.J., *The Business of Modularity and the Modularity of Business*, Promotors: Prof. mr. dr. P.H.M. Vervest & Prof.dr.ir. H.W.G.M. van Heck, EPS-2002-011-LIS, ISBN: 90-5892-020-8, <http://hdl.handle.net/1765/920>

Wubben, M.J.J., *Social Functions of Emotions in Social Dilemmas*, Promotors: Prof.dr. D. De Cremer & Prof.dr. E. van Dijk, EPS-2009-187-ORG, <http://hdl.handle.net/1765/18228>

Xu, Y., *Empirical Essays on the Stock Returns, Risk Management, and Liquidity Creation of Banks*, Promotor: Prof.dr. M.J.C.M. Verbeek, EPS-2010-188-F&A, <http://hdl.handle.net/1765/18125>

Yang, J., *Towards the Restructuring and Co-ordination Mechanisms for the Architecture of Chinese Transport Logistics*, Promotor: Prof.dr. H.E. Harlambides, EPS-2009-157-LIS, ISBN: 978-90-5892-198-7, <http://hdl.handle.net/1765/14527>

Yu, M., *Enhancing Warehouse Performance by Efficient Order Picking*, Promotor: Prof.dr. M.B.M. de Koster, EPS-2008-139-LIS, ISBN: 978-90-5892-167-3, <http://hdl.handle.net/1765/13691>

Zhang, X., *Strategizing of Foreign Firms in China: An Institution-based Perspective*, Promotor: Prof.dr. B. Krug, EPS-2007-114-ORG, ISBN: 90-5892-147-5, <http://hdl.handle.net/1765/10721>

Zhang, X., *Scheduling with Time Lags*, Promotor: Prof.dr. S.L. van de Velde, EPS-2010-206-LIS, ISBN: 978-90-5892-244-1, <http://hdl.handle.net/1765/19928>

Zhou, H., *Knowledge, Entrepreneurship and Performance: Evidence from Country-level and Firm-level Studies*, Promotors: Prof.dr. A.R. Thurik & Prof.dr. L.M. Uhlaner, EPS-2010-207-ORG, ISBN: 90-5892-248-9, <http://hdl.handle.net/1765/20634>

Zhu, Z., *Essays on China's Tax System*, Promotors: Prof.dr. B. Krug & Prof.dr. G.W.J. Hendrikse, EPS-2007-112-ORG, ISBN: 90-5892-144-4, <http://hdl.handle.net/1765/10502>

Zwan, P.W. van der, *The Entrepreneurial Process: An International Analysis of Entry and Exit*, EPS-2011-234-ORG, ISBN: 978-90-5892-277-9, <http://hdl.handle.net/1765/23422>

Zwart, G.J. de, *Empirical Studies on Financial Markets: Private Equity, Corporate Bonds and Emerging Markets*, Promotors: Prof.dr. M.J.C.M. Verbeek & Prof.dr. D.J.C. van Dijk, EPS-2008-131-F&A, ISBN: 978-90-5892-163-5, <http://hdl.handle.net/1765/12703>

## THE IMPACT OF ABSTRACT VERSUS CONCRETE PRODUCT COMMUNICATIONS ON CONSUMER DECISION-MAKING PROCESSES

With the growth of online shopping, a new era of market communication is administered. Internet as a combined communication- and sales-channel has blurred the borders between persuasive communications to activate goals (i.e., abstract messages that are traditionally communicated via advertisements, commercials and billboards) and concrete recommendations to activate choices (i.e., concrete messages that are traditionally communicated by promotions on the shop floor). The blurring borders between persuasive communications and concrete recommendations call for new research to gain insight in the interplay between abstract and concrete product messages.

In the first essay we investigate the differential impact of abstract benefit messages and concrete product examples on goal activation and choice behavior. In the second essay we further unravel the cognitive structure in consumers' minds that underlies the behavior we observed in essay 1. In essay 3 we broaden the applicability of our findings, by investigating the impact of abstract benefit messages versus concrete product messages on consumer behavior outside the focal product category mentioned in the messages. Our findings are based on consumer data gathered in lab-experiments and from a panel survey. All of our essays discuss applications to health related products.

In summary, this dissertation shows some interesting theoretical findings about the relative impact of abstract versus concrete product messages. It is also of particular interest to commercial companies and public policy makers, because it provides suggestions on how to steer consumer decision-making processes with product messages to promote healthier consumer choices.

### ERiM

The Erasmus Research Institute of Management (ERiM) is the Research School (Onderzoekschool) in the field of management of the Erasmus University Rotterdam. The founding participants of ERiM are the Rotterdam School of Management (RSM), and the Erasmus School of Economics (ESE). ERiM was founded in 1999 and is officially accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW). The research undertaken by ERiM is focused on the management of the firm in its environment, its intra- and interfirm relations, and its business processes in their interdependent connections.

The objective of ERiM is to carry out first rate research in management, and to offer an advanced doctoral programme in Research in Management. Within ERiM, over three hundred senior researchers and PhD candidates are active in the different research programmes. From a variety of academic backgrounds and expertises, the ERiM community is united in striving for excellence and working at the forefront of creating new business knowledge.

## ERiM PhD Series

## Research in Management

Erasmus Research Institute of Management - ERiM  
Rotterdam School of Management (RSM)  
Erasmus School of Economics (ESE)  
Erasmus University Rotterdam (EUR)  
P.O. Box 1738, 3000 DR Rotterdam,  
The Netherlands

Tel. +31 10 408 11 82  
Fax +31 10 408 96 40  
E-mail [info@erim.eur.nl](mailto:info@erim.eur.nl)  
Internet [www.erim.eur.nl](http://www.erim.eur.nl)

