

**What is Normal to Do?**  
**Social Norms as Determinants of**  
**Consumer Decision Making**

Vladimir Melnyk

## **Thesis committee**

### **Thesis supervisor**

Prof. dr. ir. J. C. M. van Trijp  
Professor of Marketing and Consumer Behaviour  
Wageningen University

### **Thesis co-supervisor**

Dr. H. W. I. van Herpen  
Assistant professor, Marketing and Consumer Behaviour Group  
Wageningen University

### **Other members**

Prof. dr. G. Antonides, Wageningen University, the Netherlands  
Prof. dr. S. Dewitte, Catholic University of Leuven, Belgium  
Prof. dr. B. Fennis, University of Groningen, the Netherlands  
Prof. dr. D. A. Stapel, Tilburg University, the Netherlands

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**WHAT IS NORMAL TO DO?**  
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**Thesis**

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*To my parents Olga and Leonid and my sister Valentina*



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# Preface & Acknowledgement

It is amazing how quickly times passes by! Even more amazing are the surprises that life brings to us. When I look back through the years, I realize how many great things have happened, because several events have surprisingly coincided. Leave one out and the results would have been completely different...

I came to Wageningen for the first time in March 1998 to take part at the conference “Options for Closed Water Systems”, which was held in the WICC congress center. Once in the evening I walked through downtown, trying to imagine how a student's life is in such a pretty town would be. That day, if somebody told me that in just six years, the image I had while walking through the streets, would relate to me, I would have never believed it. In November 2004 I came to Wageningen, and I fell in love with this town at first... or, well — counting 1998 — second sight. Wageningen has become my home town for the next several great years and it still remains in my heart. This is a town that gives me a feeling of a warm hug every time I come there... a town that brought so many interesting events, life lessons – both painful and happy, and great people that I cannot imagine my life without.

But all these would have never happened without a series of events and coincidences, which occurred thanks to my supervisor from Tilburg Prof. Rik Pieters, who inspired me with the interest in Consumer Behaviour. He told me about a PhD project in Wageningen, and he introduced me to Erica and Hans. Thank you Rik!

Since then I have been working on my PhD project, the result of which I gladly present today. I would like to express my gratitude to my promoter Prof. Hans van Trijp, who could bring structure into the most chaotic things and show a way even out of the most complicated labyrinths. It was always amazing to see, how after an hour of a passionate discussions, Hans just took a pen and draw an elegant scheme

of how every item we discussed are related, and put it on the middle of the desk: “Vladimir, I guess you meant something like this”. – “Mmmm, yes, Hans! This is what I meant indeed”. Thank you Hans! Without you and without your support this PhD would not be possible!

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The “PhD period” of life is long and difficult, but it is not limited to the research and definitely it goes further beyond the walls of the office, even if this office

is so big, bright and pleasant, as mine was. I thank to God for the people I met during my PhD period, whose support I felt during all these years.

One of the first persons I met in Wageningen was Prof. Meulenberg, who became my friend. Only later I found that he was a founding father of marketing science in the Netherlands. Prof. Meulenberg was the one who introduced me to the cultural life in Wageningen. With great pleasure, I remember the concerts that we visited together and discussions on thousands of topics that we had. Irrespective of whether we talked about science, art, history, philosophy or theology — it was always great pleasure to have a conversation with Prof. Meulenberg. Each time they were live and ultimately true discussions without even a shadow of insincerity; this felt most intensive before the parting of Prof. Meulenberg. Once we discussed music, and it appeared that Toccata and Fugue “Dorian” is a favorite piece of Bach for both of us. I think, this masterpiece of a genius composer, excellently performed by Prof. Meulenberg, is the best description of the acquaintance with Prof. Meulenberg, which I was honored to have.

I am grateful to all my colleagues from the Marketing and Consumer Behaviour group for their support. In particular I would like to thank Margreet – truly the best office mate I could only think of. Thank you Margreet for the harmony that was always present in our office making it comfortable and peaceful, for the great conversations we had and for many things I learned from you! Amber, thank you for always knowing everything and for your great pieces of advice. Janneke, thank you for your support that I always felt. Jantine, thank you for being always very kind, for your help, and for the pleasant tea times we had together. Menno, thank you for your trust and the cross-cultural lessons that you gave me, and for being such a great example of constant self-development. Eric, thank you for your assistance and for the great concerts that became one of the symbols of Wageningen for me. Ivo and Erno, thank you for your help and advice. Dear Liesbeth and Ellen, thank you for your support and amazing ability to always create a very cozy family atmosphere at MCB! I would like to thank Dr. Marcel Kornelis for the opportunity to participate in the external project with the Ministry of Agriculture, Nature and Food Quality of the Netherlands. I am also grateful to my student assistants, especially to Dorian Kreetz and Tjalle Weekenborg – it was a real pleasure to work with you.

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I thank God for the friends that I met during these years, who made Wageningen one of the brightest periods of my life. Dearest Oxanaatje, I have no words to express how happy I am that you are in my life. Thank you for the “contrived coincidence”, for the freedom you inspired me with, for your confidence in me, for your great wisdom, for these sharp and spirited debates we often had, and for the absolutely precious time we always had together! Dearest Ewout, thank you, that when we met years ago, you did not let me kick you out of the class. And thank you for being able to look through my "wall" of distance, and for finally destroying it. Thank you for the perfect understanding between us, and for our true conversations without border-lines. Thank you for your trust and confidence in me! I am glad you are in my life. Dear Olga and Victoria, I am glad for the coincidence that made me acquainted with you. Thank you for the great support I always received from you, for your ability to share my joy, and of course for the unforgettable poetical evenings and joyful time we always had together. Dear Edwin and Willem, I am very grateful for your openness and sincerity and for your help beyond any agendas, for opening to me the world of Johannes-Passion by Bach and for great concerts that we visited together. Dear Olia and Yura, thank you for your comfort and perfect understanding that always brought strength and optimism. Father Sergey, thank you for great and inspiring conversations and for your true support. Chris, I am glad that another chain of events brought me to meeting you, and I am grateful for your amazing ability of bringing peace and eliminate any stress even in the most stressful situations.

Wageningen brought me the feeling of home and this would not be possible without the people, who created such a pleasant atmosphere. Dear Victor and Berna, you are definitely the best landlords! Thank you for your support that I always experienced, and for making the feeling of home I had in your house all these years. Ana, Valery and Jerome thank you for being the best housemates, which made the house always very cozy, and pleasant to come back to.

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Vladimir





# Chapter 1

## Social Norms in Life and Science

*This chapter discusses the importance of social norms in everyday life and their place in current science. It also introduces the definition of social norms, theoretical foundations and objectives of this dissertation, and presents its outline.*

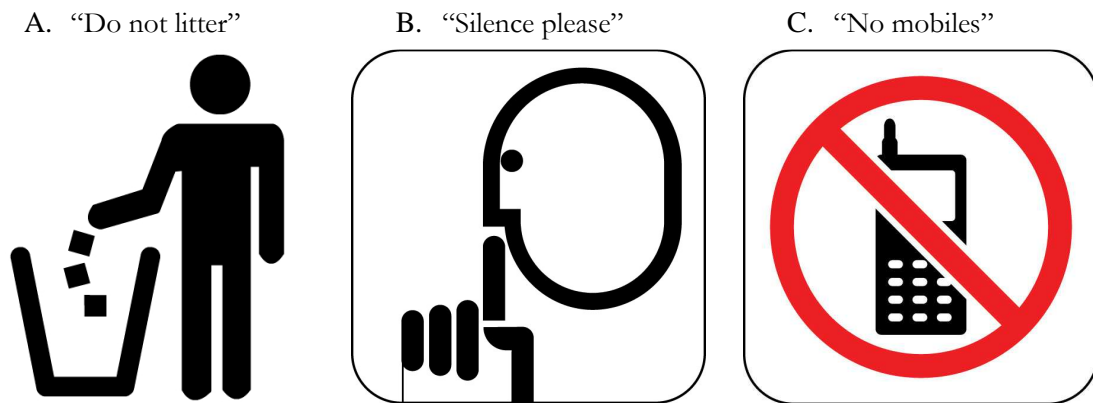
## 1.1. Social norms in everyday life

Much of consumers' behavior is driven by individual motives and goals. However, these motives and goals are constrained to a large extent by the context in which the behavior occurs. This is because context sets and/or makes salient social norms about how to behave in that particular situation. Social norms are an integral part of the life of each consumer, and it is hard to imagine the existence of society and the interactions between its members without the existence of social norms. Most people, even the most asocial and rebellious, have a tendency to follow social norms (Solomon, 2002). Birenbaum and Sagarin (1976) give an example of a burglar, who follows many norms as most members of society do: standing on acceptable distance from another person while talking to him, covering his mouth while yawning, showing his unhappiness at funerals, etc.

We constantly face social norms in our life. Social norms are rooted in the values of society or of a social group, and it is generally assumed that social norms start to be internalized during primary socialization and maturation in adulthood (Schwartz & Howard, 1981). Social norms can appear as general ethical and behavioral rules, or as specific requirements, expectations and suggestions existing in social groups. Perhaps the first association with "social norms" that appears in the mind of a European person is the Ten Commandments (Exodus 20:2-17): a set of normative prescriptions of all Abrahamic religions that has profoundly influenced cultures of European nations. The Ten Commandments are a list of prescribed and proscribed behaviors, and can be conceived of as an enumeration of social norms (Michael Hechter & Opp, 2001) that have become deeply ingrained in European culture.

Social norms can appear in different execution formats, both verbally and non-verbally. For example, the pictorials reproduced in Figure 1.1 are examples of non-verbally expressed social norms. The very same social norms could also be conveyed in a verbal format, such as, "do not litter", "silence please", and "no mobile phones" respectively. Social norms can come from different sources, for example, as suggestions from members of the social group to which one belongs (e.g., via word-of-mouth or via representing a typical behavior of group members) or as suggestion from authority figures (e.g., suggestions from experts about what to buy). The format and the context of social norms can affect their influence on consumer decision making. However, in spite of this variety in their appearance, all social norms have in common that they are indicators of "appropriate behaviors" and "correct choices"

that regulate behavior and can influence such diverse decisions as whether to leave a tip in a restaurant and how much, what to wear for an event, whether to subscribe to a fitness club, which classes to attend, how many cookies to eat, and whether to participate in network communities (Berkowitz, 2005; Pliner & Mann, 2004; Dholakia, Bagozzi, & Pearo, 2004).



**Figure 1.1.** *Examples of non-verbal social norms*

The ability of social norms to influence consumers' preferences and behaviors was noticed by policy makers and marketers and therefore it is no surprise that social norms became a primary tool for changing socially significant behaviors. For example, social norms are used in tobacco-free campaigns (e.g., "Most (70%) of Montana teens are tobacco free", <http://www.mostofus.org>), and traffic safety campaigns (e.g., Most Montanans (3 out of 4) wear seatbelts, [http://www.mostofus.org/wp-content/uploads/2010/03/most-montanans\\_3-out-of-4\\_wear-seatbelts\\_most-of-us.jpg](http://www.mostofus.org/wp-content/uploads/2010/03/most-montanans_3-out-of-4_wear-seatbelts_most-of-us.jpg)). They were also used to reduce anti-social behaviors, such as excessive alcohol consumption (Neighbors, Larimer, & Lewis, 2004), drug use (Donaldson, Graham, & Hansen, 1994), gambling (Larimer & Neighbors, 2003), littering (<http://dontmesswithtexas.org>), or to enhance pro-social behaviors such as reducing energy consumption (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007), and increasing tax compliance (Wenzel, 2004). The websites of the National Social Norms Resource Center ([www.socialnorm.org](http://www.socialnorm.org)), Social Marketing Institute (<http://www.social-marketing.org/success.html>), Most of Us (<http://www.mostofus.org>) and the Higher Education Center ([www.edc.org/hec](http://www.edc.org/hec)) contain numerous examples of successful social norms campaigns and their execution formats in presenting the actual norms.

In addition to promoting socially desirable behaviors, social norms are sometimes used for commercial purposes. For example, the Talk'n'Save phone

company advertises that “7 out of 10 students” who are in Israel for the year use their phones, followed with “Don’t you see yourself in the picture? You should!” (<http://talksave.blogspot.com/2010/07/7-out-of-10-students-in-israel-use.html>). In another example, Suzuki Insurance Company implements social norms in their campaign “9 out of 10 riders save money with Suzuki Insurance” (<http://www.suzuki-bikeinsurance.co.uk/SuzukiInsuranceBenefits.aspx>).

All listed examples refer to so-called social norms marketing that has emerged as an alternative to more traditional approaches (e.g., information campaigns, fear appeal messages) designed to reduce undesirable conduct (Schultz et al., 2007). Social norms marketing is based on the idea that consumer behavior is to a large extent influenced by perceptions of what is “normal” or “typical” in a social context. In particular, consumers are more likely to follow a behavior when they perceive such behavior to be in accordance with the norms of their group (Thorbjørnsen, Pedersen, & Nysveen, 2007). Because of its success, social norms marketing was listed by the *The New York Times Magazine* as one of the most significant ideas of 2001 (Frauenfelder, 2001).

## **1.2. Social norms in research**

Social norms have received considerable attention in academic research, revealing substantial power of social norms to affect the behavior of individuals and even of whole nations. Indeed, a large body of research suggests that social norms regulate such diverse phenomena as queuing (MacCormick, 1998), fertility (Simons, 1999), cooperation (Axelrod, 1985), crime (Sampson, Raudenbush, & Earls, 1997), government effectiveness (Putnam, Leonardi, & Nanetti, 1994), and social order (Hechter & Kanazawa, 1993). The following works give a detailed overview of the current state of research on social norms: Bicchieri (2005), Hechter and Opp (2005), Terry and Hogg (2000) and Goldstein and Cialdini (2009).

Social norms were explored in different fields with a different focus. Some fields (e.g., anthropology, politics, law, ethics) investigate social norms on the aggregate level of nations: their traditions, customs, etiquette and even legislative, religious and political systems and practices (Fikentscher, 2009; Ensminger & Knight, 1997; Etzioni, 2000). In particular, ethics focuses on the origins and the process of the formation of specific norms (e.g., norms of equality, reciprocity, and revenge) in different societies, tries to explain why certain behavior is perceived as ethical or unethical in some cultures, and investigates the consequences of social norms on

societies (Elster, 1990; Bicchieri, 1990; Margolis, 1990). Law focuses on specific consequences of norms, in particular on how they can shape and enforce legislation (E. A. Posner, 2000). Some authors include law in the concept of social norms (e.g., Ensminger & Knight, 1997), however the majority of researchers differentiate between formal legal rules and social norms (e.g., Cooter, 2000; Ellickson, 1998; R. A. Posner, 1997). Later we will explain the difference between social norms and law.

Our research follows research traditions in such fields as consumer behavior, social psychology, and communication research, in that we will investigate the effect of social norms at the level of decision making of individuals (Cialdini & Trost, 1998). Several prominent theories, such as the theory of reasoned action (Fishbein & Ajzen, 1975) and the theory of planned behavior (Ajzen, 1991) include a normative component as a predictor of behavioral intentions. The theory of reasoned action (TRA) was designed to predict volitional behaviors, and the theory of planned behavior (TPB) builds upon TRA to predict behaviors in situations where individuals do not have complete control over their actions. Both theories have been successfully applied across a wide range of behaviors (e.g., dieting, sport activity, birth control), and include social norms via the normative belief construct. Normative belief refers to perceived behavioral expectations of important reference groups (e.g., friends, parents, colleagues) to perform or not to perform certain behavior. The combination of normative beliefs and motivation to comply with each of these reference groups determine the subjective norm as perceived by an individual.

Hence, initially TRA and TPB both operationalized social norms as inferences from others about what “normal behavior” is. Importantly such normative expectations can be conveyed in two different ways. First, through highlighting social rules on what should be done, and, second, through information about what are typical behaviors of relevant others in similar situations (i.e., descriptive norms). Traditional empirical applications of TPB emphasized the prescriptive format of social norms. However, later the authors of the TPB also acknowledged the effect of the exemplary nature of behavior observed from others and later versions of the TPB model combine subjective norm with descriptive norm into one construct (Ajzen & Fishbein, 2005). However, follow-up studies failed to confirm that the two types of norms constitute a uni-dimensional construct and have tended to emphasize the difference between these two social norm components (e.g., Cialdini, Reno, & Kallgren, 1990; Ravis & Sheeran, 2003; Conner & Armitage, 1998).

Outside the domains of TRA and TPB empirical studies have investigated questions such as: how social norms can be activated (Joly, Stapel, & Lindenberg,

2008), their influence across times and different environments (Reno, Cialdini, & Kallgren, 1993), interaction between social norms and personal opinions (Wiekens & Stapel, 2008), how social norms can increase consumer loyalty (Lee, Murphy, & Neale, 2009) and how they can they influence purchase (Mahon, Cowan, & McCarthy, 2006).

### 1.2.1 Definition of social norms

The word “norm” comes from the Latin word “norma”, which literally means a “carpenter’s square” (Merriam-Webster, 2008), that is, an L-shaped tool used by carpenters for measuring and making square works according to a standard “right angle” (ninety-degree angle). In other words, it is a pattern, which sets a certain standard for carpenters in their work. In the context of social psychology, a norm is a certain guide or a benchmark for people, which is used to assess the correspondence (i.e., the “normality”) of their own behaviors, attitudes and thoughts to this norm. The word “social” indicates that norms come from and are conveyed by a social group.

Given that social norms received attention from different scientific disciplines, consensus on a uniform definition of social norms is not easily reached as was already noticed early (Gibbs, 1965; Shaffer, 1983). One of the first definitions of social norms describes them on a very abstract level, as mores, laws and folkways (Sumner, 1906). Later on, social norms were described as rules, which prescribe or proscribe certain behaviors (Morris, 1956). The definition has become even more specific nowadays, as indicated in the definition of Stangor (2004, p. 20): “a way of thinking, feeling or behaving, that is perceived by group members as appropriate (or normal)”. To complicate matters further, social norms can be considered as explicit behavioral expectations of others (Bicchieri, 1990), as a “pattern held in mind” (Johnson, 1961, p.8), or as a behavioral pattern of others (Blamey, 1998). A comprehensive and actionable definition of social norms should incorporate all of these aspects, as well as distinguish social norms from related concepts.

Social norms bear similarities with other phenomena, such as *personal norms*, *legal norms*, *customs* and *habits*, and the classical definition of Muzafer Sherif (1936) illustrates such confusion: “social norms are jointly negotiated rules for social behavior: customs, traditions, standards, rules, values, fashions and all other criteria of conduct, which are standardized as a consequence of the contact of individuals” (p. 3). To work from a clear definition of social norms and distinguish them from other

phenomena we define social norms as *informal socially shared and relatively stable guides of behavior or attitude, which are enforced by social sanctions, such as social approval or disapproval (either real or perceived), and can be specified to a group or society.*

This definition of a social norm emphasizes several of its important properties. First, the *informal* character of a norm implies that one has a certain freedom to follow or violate the norm, because social norms “guide and/or constrain social behavior without the force of law” (Cialdini & Trost, 1998, p.152). The nonobligatory character of social norms differentiates these from legal norms or laws, that is, any rule which is explicit and formal, applies to all members of society, and has strict sanctions for violation.

Having an informal character, social norms are driven by *social sanctions and rewards*, providing a “social poof” for consumers’ attitudes and behavior (Prislin & Wood, 2005). The social character of enforcements is an essential component of social norms (Horne, 2001). According to Eric Posner (1997), one of leading scholars of social norms, “social norm is a rule that is neither promulgated by an official source, such as a court or a legislature, nor enforced by the threat of legal sanctions, yet is regularly complied with [...]. The rules of etiquette, including norms of proper dress and table manners; the rules of grammar; and customary law in prepolitical societies and private associations are all examples of social norms” (p. 365). The dress code for a specific event or an appeal on citizens to support domestic producers (e.g., the “Be American! Buy American”<sup>1</sup> campaign in the US; Frank, 1991) are examples of social norms. In both cases norms are supported by informal social sanctions (e.g., approval or disapproval of group members), and one is not obliged to follow the norms. Both are socially shared guides, because they apply to a certain group (members of the event or citizens of the country), and they reflect the behavioral standards that are accepted in the group (dress properly and be a patriot).

Second, social norms are *socially shared*, which means that there should exist a certain target group to which a norm spreads (Pepitone, 1976; Cialdini & Trost, 1998). The group relevance of social norms differentiates them from personal norms, where persons are subjected to self-created personal limitations, which they consciously and voluntarily decide to follow. Unlike social norms that spread upon a certain social group, a personal norm has compulsory power only for the individual who created that norm.

Third, social norms are relatively *stable* guides of behavior, which means that to become a norm a social phenomenon at least should exist (or be perceived as such) in

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<sup>1</sup> See examples <http://www.zazzle.com/buy+american+bumperstickers>

a social group for some time (Arce M., 1994). Otherwise, spreading of the norm across group members and associations with possible sanctions and rewards could not be realized.

**Table 1.** *Distinctive features of social norms and similar phenomena*

	Social Norms	Legal Norms (Law)	Custom	Personal Norm	Habit
Formality	Informal	Formal	Mostly informal	Informal	Informal
The scope of influence	Social group	Society	Society	Individual	Individual
Stability	Stable	Stable	Stable	Stable or Unstable	Stable
Sanctions and rewards	Social	Legal	None	Personal	None

Fourth, social norms are usually “enforced by sanctions, which are either rewards for carrying out actions regarded as correct or punishment for carrying out those actions regarded as incorrect” (Coleman, 1990, 242). The presence of sanctions differentiates social norms from habits, which are a form of goal-directed regular and automatic behavior, which do not require conscious planning (Aarts & Dijksterhuis, 2000), and require minimal attention and deliberate control (Ouellette & Wood, 1998). Switching on the TV in the evening or cutting vegetables in a certain way are examples of habits. Unlike social norms, habits do not assume any sanctions or rewards (either social or personal). Presence of sanctions also differentiates social norms from customs, which are “habits of society”. A custom is “a way of behaving, which is usual or traditional in a particular society or in particular circumstances” (Merriam-Webster, 2008). The Japanese holiday “Hanami” which refers to a “flower viewing” of cherry blossoms, when people come to flowering trees and meditate in front of them (Sosnoski, 1996), is an example of a national custom. Table 1.1 represents the differences in features between social norms and other phenomena.

### 1.2.2. *Two types of social norms*

As mentioned previously, social norms may manifest themselves as expressed expectations of others or as actual behavior of others. This difference refers to the distinction between *injunctive norms*, which prescribe or proscribe certain behavior in particular situations, and *descriptive norms*, which describe the behavior of the majority



in particular situations (Cialdini et al., 1990). Both norms assist consumers to determine what is correct and incorrect behavior in specific settings, and both norm types motivate human actions, because “people tend to do what is socially approved as well as what is popular” (Cialdini, 2003, p. 105). Recent research has emphasized the importance of distinguishing between injunctive and descriptive norms as a key feature to understanding the influence of social norms (Lapinski & Rimal, 2005; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008), and in the following chapters we will elaborate on fundamental differences between injunctive and descriptive social norms. From previous studies it is not clear whether the different norms types exert a different effect on consumer decision making, and if so to what extent norm format and the context in which the social norm is being encountered moderate the effect. Therefore throughout the dissertation we will focus on the distinction between injunctive and descriptive social norms to understand how and under what conditions they affect consumer decision making.

### **1.3. Outline and main contributions of the dissertation**

#### *1.3.1. Problem statement*

Despite a large body of research on social norms, empirical findings about their effect on consumer decision making are far from consistent. We expect that this inconsistency is, first, due to different effects of the two (i.e., injunctive and descriptive) types of social norms on consumer decision making, and, second, due to moderating effects of important contextual factors. Therefore, the main goal of this dissertation is to investigate the effect of the two types of social norms on key elements of consumer decision making, namely attitude, intentions and actual behavior in different contexts. From a managerial point of view the dissertation aims to provide guidance for the effective use of social norms in marketing campaigns. Thus, the main question of this dissertation is the following:

What are the executional and contextual aspects that affect the influence of injunctive and descriptive social norms on consumer decision making?

The central question will be answered through the following research questions:

1. Do injunctive and descriptive norms differ in their effect on each step of consumer decision making: attitude, behavioral intentions and behavior? If so, how?
2. Are injunctive and descriptive norms differently processed by consumers?

If so, how?

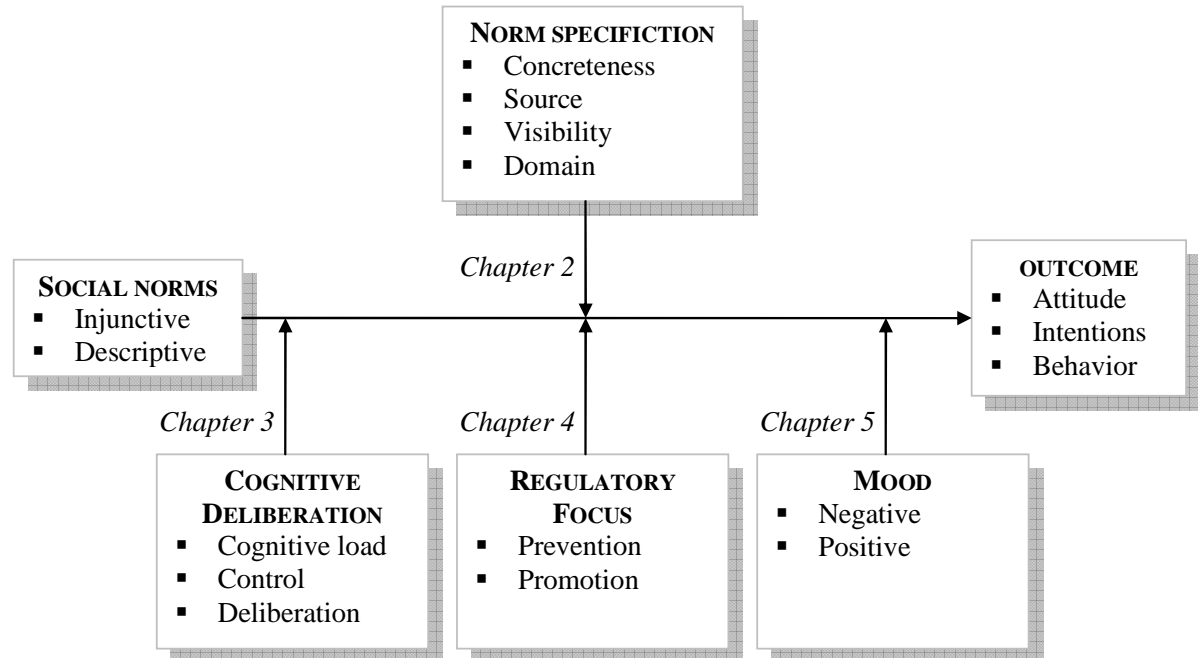
3. Do injunctive and descriptive norms differ in their influence on consumer decision making in different contexts, depending on activated goals?
4. Do injunctive and descriptive norms differ in their influence on consumer decision making when processed in different moods?

### *1.3.2. Outline*

The dissertation investigates the research questions across four research projects, described respectively in chapters 2, 3, 4, and 5. The framework of the dissertation is presented in Figure 1.2.

By conducting a meta-analysis, including more than 200 studies, in Chapter 2 we integrate the existing empirical knowledge about injunctive and descriptive social norms and their influence on attitudes, intentions and behavior in different consumption domains and identify factors that affect the influence of social norms. We show that injunctive and descriptive norms differently influence attitudes, intentions and behavior. In particular, injunctive norms have a stronger influence on attitudes than descriptive norms, but a weaker influence on behavior. Additionally, the effect of both norms is influenced by the execution format in which they are being presented. In later chapters we want to investigate how the influence of each norm depends on the context. In particular, in Chapter 3 we take an experimental approach to investigate how each norm type is being processed under different levels of cognitive deliberation, and what the consequences are for the norm's effect on attitudes and behavioral intentions. We show that cognitive deliberation decreases the influence of injunctive norms and increases the influence of descriptive norms on attitudes and intentions due to the type of thoughts that result from the deliberation process. Specific thoughts can be triggered by focal goals activated in the decision making process and in Chapter 4 we investigate the differential effect of regulatory focus for both descriptive and injunctive norms. We show that the effect of descriptive norms on attitudes and intentions is weaker when prevention goals are salient and stronger when promotion goals are salient, whereas injunctive norms are not affected by regulatory focus. Thoughts and goals of consumers can be influenced by their mood. Therefore, in Chapter 5 we investigate the effect of mood (positive and negative) on the influence that both descriptive and injunctive norms have on consumers' attitudes, behavioral intentions and actual behavior. We show that mood (positive versus negative) differently affects the influence of injunctive and descriptive

social norms on consumer attitudes, intentions and actual behavior. In particular, the influence of injunctive norms is greater under positive than negative mood, and the influence of descriptive norms is greater under negative than positive mood. Finally, Chapter 6 presents the overall conclusions and general discussion of this dissertation.



**Figure 1.2.** *Framework of the dissertation*



# Chapter 2

## Determinants of the Influence of Social Norms on Consumer Behavior: A Meta-Analysis

*Although prior research has shown that social norms influence consumer behavior, little is known about when their effect is strong or weak. This meta-analysis (659 effect sizes) shows how the specification of social norms determines their effect on attitudes, behavioral intentions, and behavior. It includes both experimental and correlational studies from a broad spectrum of consumer behavior domains. We argue that descriptive norms (what most others do) directly influence behavior as a heuristic, whereas injunctive norms (what others approve of) may activate attitudes. In line with this, results show that descriptive norms have a stronger influence on behavior than injunctive norms, but a weaker influence on attitudes. Additionally, effects on behavior are stronger when norms come from close and concrete sources (vs. authority figures or abstract others), and when behavior is public (vs. private), showing the importance of social context for the influence that social norms have. The domain in which social norms are studied is also important. In the domain of social responsibility, norms have a relatively weak influence on attitudes but a relatively large influence on behavior.*

## 2.1. Introduction

Consumers often take the expectations and behavior of others into account when they decide what is appropriate behavior (Cialdini, Reno, & Kallgren, 1990). These expectations and behaviors of others establish social norms, and influence decisions such as whether to subscribe to a fitness club, which classes to attend, how many cookies to eat, and whether to participate in network communities (Berkowitz, 2005; Pliner & Mann, 2004; Dholakia, Bagozzi, & Pearo, 2004). Advertising campaigns can draw on this potential of social norms to drive consumer behavior. For example, the slogan “Most (70%) of Montana teens are tobacco free” was successfully used in tobacco-free campaigns in 1999-2001 (<http://www.mostofus.org>). Policy makers and marketers would thus benefit from a good understanding of the effectiveness of social norms in influencing consumer behavior.

Despite a large body of research on social norms, empirical findings about their effect on behavioral intentions and behavior are far from consistent. For example, Sheeran, Abraham, and Orbell (1999), in their meta-analysis of the willingness to use condoms (121 studies out of which 21 include social norms) find that subjective norms are weak predictors of intentions ( $r = .26$ ), whereas Ravis and Sheeran (2003) in their meta-analysis of the theory of planned behavior (21 studies) find a more substantial correlation ( $r = .44$ ). What accounts for this variability in effect sizes across studies? The domain (e.g., condom use versus more general behaviors) may matter, as well as methodological differences between studies. Additionally, the present meta-analysis assumes that the specification of social norms may at least partly explain this variability. Hence, its objective is to examine which aspects of social norms determine their influence on consumer attitudes, intentions, and behavior, while accounting for differences in domain and methodology between studies.

One aspect is whether norms are specified in a descriptive or prescriptive (i.e., injunctive) way, which has been shown to affect the influence of norms on consumer behavior (Cialdini et al., 1990). By aggregating across prior studies we can determine the effectiveness of both specifications, and also whether the effects differ between dependent variables, that is, whether descriptive versus injunctive norms are more strongly associated with attitudes, and which are more strongly associated with behavior. A second aspect is whether the norms are specified in concrete or abstract terms. After all, concrete information is generally easier to process, more engaging

and more memorable than abstract information (Sadoski, Goetz, & Rodriguez, 2000) and could therefore be more persuasive. In addition to these aspects of the norms themselves, this meta-analysis investigates aspects related to the social context. Norms are, first and foremost, social phenomena. Who communicates a norm (the source) can determine the extent of its influence as well as how likely others are to notice adherence to the norm. Norms may be more relevant, and hence more influential, when coming from persons with whom the consumer can easily identify. Furthermore, because public behavior is more easily noticed and corrected by others, norms relating to public behavior may be more influential than norms relating to private behavior.

This meta-analysis examines the influence of these aspects on the strength of associations between social norms on the one hand and attitudes, behavioral intentions, and behavior on the other hand. In doing so, the present meta-analysis builds on and extends previous research, and in particular previous meta-analyses that included social norms, in two important directions. First, this is the first meta-analysis to exclusively focus on social norms and to systematically examine how various aspects of norm specification moderate their influence. Whereas prior meta-analyses estimated the overall effect size of social norms in general attitude-behavior models (e.g., Sheppard, Hartwick, & Warshaw, 1988; Ouellette & Wood, 1998), we examine when social norms have a stronger or weaker effect using several aspects that have been mentioned in prior research but, surprisingly, have received little empirical attention so far. Thus, where prior meta-analyses have provided important insights about the overall effect of social norms in comparison with other potential determinants of behavioral intentions or behavior, we extend this important work by focusing on aspects that can increase or decrease the influence of social norms. Second, our study examines the influence of social norms across a broad spectrum of consumer behavior domains, whereas prior meta-analyses focused on a specific domain such as condom use and/or on a specific theoretical framework such as the theory of reasoned action (e.g., Albarracín et al., 2001; Sheeran & Taylor, 1999). Our study examines consumer behavior in a broad sense, including decisions about such diverse topics as physical exercise, recycling, donations, contraceptive use, and class enrollment. It includes decisions about products, services and activities, but excludes interpersonal judgments. This allows us to test whether the effect of social norms differs across domains.

The next section defines social norms and discusses aspects of norm specification. The method section provides details of database development and

coding. Next, we discuss results showing which aspects ensure that norms are influential. We end with theoretical implications of our findings, implications for marketers and policy makers on how to effectively use social norms in campaigns, and directions for future research on social norms.

## 2.2 Social Norms

Social norms are “rules and standards that are understood by members of a group, and that guide and/or constrain social behavior without the force of laws” (Cialdini & Trost, 1998, p. 152). These rules and standards include the expectations of valued others and standards that develop from observations of others’ behavior. Social norms are thus informal, socially shared, and relatively stable guides of behavior or attitude. Their informal, nonobligatory, character implies the presence of social reinforcements, such as approval or disapproval, and distinguishes social norms from laws. Additionally, social norms are shared within a group, which differentiates them from personal norms based on a consumer’s own internalized values or expectations for behavior, and ensures that they are generally stable over time (Jones, 2006).

Several prominent theories, such as the theory of reasoned action (Fishbein & Ajzen, 1975) and the theory of planned behavior (Ajzen, 1991), include attitudes and norms as separate predictors of behavioral intention. Yet, according to recent insights, normative beliefs can influence attitudes (Terry, Hogg, & White, 2000). In their original work, Fishbein and Ajzen (1975) already acknowledged that “[normative] beliefs [...] may influence the attitude towards the behavior” (p. 304), and the association between attitudes and norms is typically strong (Albarracín et al., 2001, Sheeran & Taylor, 1999). There is also empirical evidence to suggest that norms influence attitudes. The influence of social norms on attitudes is considerably stronger than the effect of attitude towards the act on social norms (Shimp & Kavas, 1984), and several studies have shown that the inclusion of an effect of social norms on attitudes in structural equation models improves model fit (Oliver & Bearden, 1985; Vallerand, Pelletier, Deshaies, Cuerrier, & Mongeau, 1992). Social norms may thus influence attitudes, in addition to their influence on intentions and behavior, and our study will examine all these relationships. The strength of this influence, we argue, depends on how social norms are specified, and the next sections discuss relevant aspects.



### *2.2.1. Injunctive and Descriptive Norms*

Social norms can be specified in an injunctive or descriptive manner (Cialdini et al., 1990). Injunctive norms prescribe a behavior, and refer to what people should do in a given situation. A request to follow a dress code is an example of an injunctive social norm. Descriptive norms describe the typical behavior of others, which provides “social proof” of what is likely to be effective behavior and sets behavioral standards from which people may not want to deviate (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). For example, information about the number of others who refrain from smoking constitutes a descriptive norm.

Although prior research has not examined whether injunctive or descriptive norms are more strongly related to attitudes, we believe the relation between injunctive norms and attitudes is stronger than the relation between descriptive norms and attitudes. Because injunctive norms tend to focus consumers on what others approve or disapprove of in their social group (Reno, Cialdini, & Kallgren, 1993), they may activate typical attitudes and feelings associated with being a group member (Terry, Hogg, & McKimmie, 2000). We speculate that a descriptive formulation of the norm may not lead to the same effects. In support of this reasoning, descriptive norms have been shown to be easily forgotten over time or with changes of situations (Reno et al., 1993), which suggests that consumers may simply follow the social norm implied by the behavior of others without giving this much thought. Thus, a descriptive norm may be less likely to activate or influence attitudes.

Effects on behavior are likely to be different. Descriptive norms specify the behavior of others, and consumers often follow this behavior automatically and unwittingly (Aarts & Dijksterhuis, 2003; Cialdini & Goldstein, 2004; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008), implying that descriptive norms may serve as heuristics or decisional shortcuts for behavior. Consumers copy the behavior of others in order to feel in sync with their group members and to avoid being out of step (Ramanathan & McGill, 2007). We conjecture that injunctive norms may have a weaker effect on behavior than descriptive norms, because their prescriptive nature can provoke resistance. The specification of a norm as injunctive (“people should”) threatens the consumers’ freedom more strongly than a descriptive specification of the same norm (“most people do”), and could therefore lead to more reactance (Brehm, 1966; Mann & Hill, 1984).

In sum, we expect that descriptive norms have a stronger influence on behavior than injunctive norms, as consumers follow descriptive norms more automatically. In contrast, injunctive norms should be related to attitudes more

strongly than descriptive norms do. We have no explicit predictions regarding the association of descriptive versus injunctive norms with behavioral intentions, but will explore this empirically.

### *2.2.2. Specification of Behavior, Consequences, and Target Person*

The effectiveness of social norms in guiding consumer behavior may also depend on whether consumers know what exactly is expected. Concretely specified norms clearly distinguish between what is appropriate and inappropriate for specific individuals in specific situations, whereas abstract norms allow for a wide range of behavioral options, and may thus allow consumers to violate a norm without fear of punishment (Shaffer, 1983). Additionally, consumers are generally more persuaded by detailed and specific descriptions of expected behavior than by more abstract descriptions, possibly because they can more easily process the information and imagine themselves performing the behavior (Gollwitzer & Brandstatter, 1997; O'Keefe, 1997). Prior research has thus argued that social norms that clearly specify the expected behavior and the situation in which this behavior is appropriate should have a stronger influence than norms that do not specify this (Feldman, 1984), although empirical research into this topic is lacking.

Similar effects may be expected from the specification of potential sanctions when failing to comply, or of potential rewards when complying with the social norm. After all, the specification of such concrete consequences provides consumers with arguments to follow the norm (Jones, 2006). Additionally, more personalized normative messages, which specifically address the consumer, may be more effective than non-personalized messages, because it is less easy for a consumer to disregard such a normative message as irrelevant or only applicable to others (Shaffer, 1983). Thus, concrete specifications of (a) expected behavior, (b) sanctions, (c) rewards, and (d) the target person to which the norm applies, are expected to increase the influence of social norms.

### *2.2.3. Source of the Norm*

From a social identity perspective, norms are linked to specific social groups, and the norms of more relevant groups should be more influential (Terry, Hogg, & White, 2000). Thus, the influence of social norms may depend on which social group or person is specified as the source of the norm. Consumers may be more likely to

follow social norms that come from people that they are close to, such as their mother or father, partner, or intimate friends, than social norms that come from more distant or unspecified sources. The thought of specific persons that they are close to may activate information about their relationship with them and about expected relational outcomes (e.g., disappointment, praise), and this can make it more difficult to disobey a norm. Psychologically close others may also have a strong influence because they usually share similar values, opinions, and attitudes (Stangor, 2004). Hence, influencing attempts are generally more successful when these originate from a source that consumers perceive as similar to themselves (O'Keefe, 2002). In contrast, more distant others, especially when these are unspecified, may have less control and influence. We thus predict that norms from persons close to the consumer will have a stronger influence on attitudes, intentions, and behavior, than norms from either unspecified sources or from sources that are more distant to the consumer.

#### *2.2.4. Public versus Private Behavior*

Consumers are often concerned with how others perceive them, and are more likely to conform to the expectations of others when these others can observe them directly (Baumeister, 1982). For social sanctions or rewards to occur, it is also crucial that others are aware of the behavior. Consumers thus have a tendency to act more responsible when they can be identified, and to violate norms when they can not (Diener, Fraser, Beaman, & Kelem, 1976). For example, consumers are more likely to follow a social norm of cooperativeness when they think that group members can observe their individual choices (Neidert & Linder, 1990). We therefore expect that social norms will have a stronger influence on behavior for public than for private behaviors. Because attitudes and intentions are not observable, we do not expect an effect there.

#### *2.2.5. Study Characteristics*

In addition to investigating these aspects of social norm specification, we will also test the influence of several study characteristics. Characteristics that are typically included in meta-analyses are the gender and age of participants in the studies. For both, it is a-priori not obvious what, if any, their effect would be. Only few studies have examined gender differences related to the influence of social norms and, in the

context of sexual behavior Fisher (2009) concludes that “it appears premature to draw definite conclusions” with respect to the responsiveness to social norms for males versus females in the reporting of sexual behavior (p. 571). With respect to age, older people may generally be less susceptible to social influence as they have gained more independence with age, but they also may be more sensitive to social influence when they experience uncertainty (Pasupathi, 1999). We will thus explore the possible effect of age and gender differences between studies.

Another study difference is related to the country in which the data has been collected. In countries with more collectivistic as opposed to individualistic cultures, following social norms may be more ingrained into people’s life. Generally we would thus expect that in studies conducted in countries with a high level of collectivism the influence of social norms would be higher than in studies conducted in countries with a low level of collectivism (i.e., with a more individualistic culture) (Chen, Wasti, & Triandis, 2007).

Additionally, we will check whether the effect of social norms differs across different study domains. Because our meta-analysis includes studies from many different domains related to consumer behavior, it would be prudent to establish whether there are differences between these domains. Although we do not have strong a-priori predictions for which domains contain more influential social norms, it seems likely that social norms are primarily enforced in domains in which other people may be negatively affected if a person does not adhere to the norm (e.g., socially responsible behavior such as not littering) and thus may be more influential there than in domains where such negative affects are less prominent (e.g., exercising and dieting, leisure time activities). Our study will explore this possibility.

Methodological factors will also be included. In particular, whether the study manipulated social norms in an experimental setup or used correlational measures from a cross-sectional questionnaire will be examined. This provides insights into the extent to which correlational measures provide similar information about the size of the effect of social norms as the causal effects obtained in experiments. Additionally, the meta-analysis will control for potential biases in estimates for studies in which effect sizes needed to be estimated from test statistics or where specific effect sizes (i.e., partial correlations, as will be discussed later) were not provided. Additionally, we will explore possible interactions between independent variables, to examine whether, for instance, certain types of norm specifications are more influential in some domains than in others, or whether a concrete specification would be more (or less) influential for a descriptive than an injunctive norm.

## 2.3. Method

### 2.3.1. Identification of the Sample

To identify relevant publications about social norms in the time period up to January 2007, we used the following search strategy. First, references were retrieved from the electronic databases Web of Science, Psych Info, Online Contents National, and Google Scholar. Second, we examined studies from 17 prior meta-analyses that included a general effect of social norm. Note that these prior meta-analyses focused on a specific domain such as condom use (Sheeran & Taylor, 1999) or HIV-prevention (e.g., Albarracín et al., 2005, Durantini, Albarracín, Mitchell, Earl, & Gillette, 2006), on a specific theoretical framework (theory of reasoned action and /or theory of planned behavior; e.g., Albarracín et al., 2001; Armitage & Connor 2001; Ravis & Sheeran, 2003; Sheppard et al., 1988), or both (e.g., Sheeran & Taylor, 1999). Importantly, all these prior meta-analyses examined and provided important insights about the overall effect of social norms in a broader context of attitude-behavior models. None of the prior meta-analyses systematically examined when social norms have a strong influence and when they have a weak influence, which is the goal of the present meta-analysis. Third, we checked the websites of the *National Social Norms Resource Center*, the *Social Science Research Network*, and *The Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention* for relevant studies. Fourth, we posted a request for working papers and unpublished manuscripts on the electronic list server ELMAR. Finally, all cross-references from relevant papers were examined for inclusion.

### 2.3.2. Selection Criteria

The database included studies that (1) contain the necessary information to obtain the bivariate statistical relationship between social norm and attitude, behavioral intention, and/or behavior, (2) do not lump different norms together as one construct, or examine the joint effect of conflicting norms, (3) measure effects at the individual level. Furthermore, we excluded studies that examine interpersonal relations and judgments, because these activate different neurological processes than judgments about material objects or services (Yoon, Gutchess, Feinberg, & Polk, 2006). We also excluded studies where the autonomy of decision making is impaired, in particular, where participants are sick and may depend on others in their decisions regarding, for example, medical treatment (Meyers, 2004), where participants make

decisions as part of their job and thus may be influenced by company policies, and where participants are addicted because this makes their decision-making ability questionable (Leshner, 1997). Finally, studies of illegal behaviors were excluded, because legal sanctions may overshadow or change the influence of social norms. When forming the database, we included all estimates that were reported in a study to avoid loss of information and prevent a systematic bias, which could occur when picking one of the estimates.

### *2.3.3. Computation of Effect Sizes and Model*

To compare the results of different studies we needed to calculate a common effect size statistic. Most papers reported the Pearson correlation coefficient. For studies that did not report correlations, we converted  $t$ -ratios,  $F$ -ratios and  $\chi^2$ -statistics to correlation coefficients following the formulas provided by Lipsey and Wilson (2001). Next, we converted the effect sizes to normally distributed  $\zeta$ -scores, using Fisher's  $r$ -to- $\zeta$  transformation (Hedges & Olkin, 1985).

To conduct the meta-analysis we used an extension of the most commonly used approach, developed by Rosenthal and Rubin (Rosenthal, 1991), which combines the standard normal metrics ( $\zeta$ -scores) to produce weighted means. Effect sizes were weighted by the variance of each study's effect estimator. In this way the effect sizes obtained from larger studies and studies with less random variation receive a greater weight than those obtained from smaller studies. We extended this approach following the procedure of Bijmolt and Pieters (2001) to also include and account for multiple measures from individual studies. In particular, to preserve as much information as possible, we included separate effect sizes for subsamples (e.g., different age or gender groups), different behaviors (e.g., eating and sporting), and different sources (e.g., friends and colleagues), when this information was available. This implies that we obtained multiple measures from individual studies for a significant part of our sample. These measures are not independent. To account for within-study error correlations between effect sizes, we applied hierarchical linear models using restricted iterative generalized least-squares (RIGLS) in the program MLwiN (Rasbash, Steele, Browne, & Posser, 2004). We estimated random study-level intercepts and fixed effects for the moderator effects. This approach is preferable in meta-analyses such as ours when many individual studies contain more than one measure (Bijmolt & Pieters, 2001) and is commonly used in recent meta-analyses (e.g., Krasnikov & Jayachandran, 2008; Kremer, Bijmolt, Leeftang, & Wieringa, 2008).

We estimated models for the association between (a) social norms and attitudes, (b) social norms and behavioral intentions, and (c) social norms and behavior. Because attitudes are both strongly correlated with norms (Albarracín, Fishbein, & Middlestadt, 1998; Sheeran & Taylor, 1999) and have a strong influence on intentions, the total correlation between norms and intentions may contain some of the effect of attitudes and thus overestimate the effect of social norms. To account for this, we also calculated partial correlations between norms and intentions, controlling for attitudes, and converted these to  $z$ -scores. The resulting effect sizes are conceptually comparable and configured in the same statistical form across all studies. We estimated an additional model for intentions using these new effect sizes. Following a similar rationale, we also estimated a model based on the partial correlations between norms and behavior, again controlling for attitudes. We included a dummy variable in these models to identify studies in which the necessary statistics to calculate partial correlation were not reported and hence the total correlation was used.

Whereas total correlations may *overestimate* the effect of social norms, because separate effects of attitudes may be partly incorporated in this measure, partial correlations may *underestimate* the effect, because indirect effects of social norms through attitudes are not included. Recent research has argued that attitudes are influenced by social norms (Oliver & Bearden, 1985; Terry, Hogg, & White, 2000; Vallerand et al., 1992), but the partial correlations remove this indirect effect of social norms on intentions and behavior. Because the present study investigates moderators of the effect rather than estimates the absolute strength of the effect, we are not so much interested in defining the ‘true’ effect of social norms, which will probably lie somewhere in between the effects estimated by the total and the partial correlations. Instead, we examine which aspects of social norm specification determine the influence of social norms, both when controlling for attitudes and when not.

#### 2.3.4. Coding of the Studies

Two independent judges calculated all effect sizes and coded all independent variables. Interrater agreement was good (the percentage of agreement varied between 95% and 100%), and disagreements were resolved through discussion. Type of norm was coded as injunctive when the norm contained a suggestion or expectation of what ought to be done (e.g., “you should...” or “my friends want me to...”, often referred to as normative beliefs) and as descriptive when the norm reflected what others do, or

what they would do (e.g., “I think my friends drink more than 5 bottles of beer per week”). Behavior was coded as concrete when the behavioral act, situation, or time of its performance was specified (e.g., “eat 2 pieces of fruit per day”, “exercise at least 3 times a week”), and otherwise as abstract (e.g., “eat healthy food”, “take regular physical activity”). Similarly, when sanctions, that is, negative consequences of not following the norm (e.g., “my friends think I should use a condom during sexual intercourse, because it prevents disease acquisition”) or rewards, that is, positive consequences of following the norm (e.g., “my mother thinks I should eat fruit every day, because it is healthy for me”) were specified these were coded as present and otherwise as absent. Furthermore, a norm was coded as personalized, when it was directed towards a specific individual (e.g., “my friends think I should not drink too much”), and otherwise as impersonalized (e.g., “my friends think that students should not drink too much”). The source of social norms was coded as (a) specified and close when only close sources were mentioned (e.g., family members, close friends), (b) distant when more distant sources were mentioned (e.g., doctor, priest, official representatives), or (c) unspecified when sources were not mentioned (e.g., others, people from my environment, people important to me). Behavior was coded as either public, when it was observable by others, or as private.

Several study characteristics were coded as well. Gender was coded as the percentage of males in the sample, and age as the mean age of the participants. Studies were coded as coming from collectivistic cultures (Africa and Asia) or from individualistic cultures (USA, Canada, Australia, Europe), in line with the individualism scores of Hofstede (2001). In addition, domain was coded into: (a) “healthy lifestyle”, containing physical exercising, healthy eating, dieting, weight loss, health care, (b) “social responsibility”, containing environmental friendly behaviors, recycling, littering, donations, (c) “sex related”, containing condom use, contraceptive use, decisions to have sex, (d) “other”, containing the consumption of food and drinks (if not related to weight loss), class enrollment, leisure time activities. Methodological variables were whether the type of study was an experiment or a survey, whether the effect size was coded from reported correlations or calculated from test statistics, and (for intentions and behavior) whether partial correlations could be obtained, which was possible in 56% and 66% of the effect sizes for intentions and behavior, respectively. Table 2.1 provides details on the occurrence of the categories.



2.3.5. Sample Description

The sample consisted of 179 papers published between 1969 and 2007 in 74 journals and 1 unpublished manuscript. These sources comprised 200 studies, producing 659 effect sizes. The total sum of all samples equaled 81,078 individual respondents with study sample size ranging from 25 to 4 329 ( $M = 370$ ), and the studies originated from 22 different countries. Table 2.2 details the papers in the database.

**Table 2.1.** *Description of the Database*

Variable		Number and percentage of effect sizes					
		Attitude (N=202)		Intention (N=303)		Behavior (N=154)	
Norm type	Descriptive	31	15 %	43	14 %	47	30 %
	Injunctive	171	85 %	260	86 %	107	70 %
Behavior	Specified	147	27 %	189	62 %	109	71 %
	Unspecified	55	73 %	114	38 %	45	29 %
Sanction	Specified	19	91 %	32	11 %	17	11 %
	Unspecified	183	9 %	271	89 %	137	89 %
Reward	Specified	45	22 %	63	21 %	49	32 %
	Unspecified	157	78 %	240	79 %	105	68 %
Target person	Specified	178	12 %	269	11 %	135	88 %
	Unspecified	24	88 %	34	89 %	19	12 %
Source	Close	80	40 %	111	37 %	66	4 %
	Distant	17	8 %	23	55 %	22	14 %
	Unspecified	105	52 %	169	8 %	66	43 %
Behavior	Public	80	40 %	130	57 %	39	25 %
	Private	122	60 %	173	43 %	115	75 %
Study domain	Healthy lifestyle	86	42 %	125	41 %	50	32 %
	Social responsibility	32	16 %	51	17 %	22	14 %
	Sex related	52	25 %	61	20 %	58	38 %
	Other domains	32	15 %	66	22 %	24	16 %
Culture	Individualistic	187	93 %	288	95 %	138	90 %
	Collectivistic	15	7 %	15	5 %	16	10 %
Study type	Experiment	2	1%	9	3%	16	11%
	Survey	200	99%	294	97%	138	89%
Correlation type	Partial	-	-	171	56 %	101	66 %
	Total	-	-	132	44 %	53	34 %

## 2.4. Results

### 2.4.1. Preliminary Analyses

As a first preliminary analysis, we calculated the mean effect size for each of the dependent variables, that is, for the relations between social norms and attitudes, social norms and behavioral intentions, and social norms and behavior. All mean effect sizes were significant and positive, as expected (all  $p < .001$ ). After converting the  $z$ -scores back to correlation coefficients, we found an overall correlation of .34 between social norms and attitudes. In line with prior research, social norms and attitudes were thus indeed substantially correlated, albeit a little weaker than previously reported (between  $r = .39$  and  $r = .44$ ; Albarracín et al., 2001; Sheeran & Taylor, 1999; Rivas & Sheeran, 2003). The correlation between social norms and intentions ( $r = .37$ ) was in line with the findings of these prior meta-analyses. Furthermore, the correlation between social norms and behavior ( $r = .23$ ) was intermediate between previously reported correlations as well (ranging from  $r = .09$ , Hausenblas, Carron, & Mack, 1997, to  $r = .37$ , Sheeran & Taylor, 1999). As expected, partial correlations controlling for attitudes were also significant and lower than the total correlations ( $r = .17$  for social norms and intentions;  $r = .15$  for social norms and behavior).

Next, we conducted homogeneity tests to examine whether there was sufficient dispersion in effect sizes (Hedges & Olkin, 1985). An insignificant result for this test would indicate that the dispersion in effect sizes around their mean value is not greater than what would be expected from sampling error alone. The three tests relating to attitudes, behavioral intentions, and behavior were all significant ( $Q$ 's  $> 2575$ ;  $ps < .001$ ), indicating considerable dispersion in the effect of social norms on these variables. It is thus appropriate to consider moderators, which is the aim of this meta-analysis.

Finally, before including the independent variables in the analyses, we checked the associations between the different independent variables using Cramer's V, which ranges between 0 and 1 (Field, 2009). When variables would be highly associated, this could indicate potential multicollinearity issues in our later analyses. Fortunately, most of the associations did not reach significance, and all were low to moderate in size, ranging from .002 to .33.

**Table 2.2.** *Studies Included in the Meta-Analysis on the Effects of Social Norms*

Author	Year	Journal	Volume (Issue), pages	Dom.	SN	Effect sizes				N pages
						Attitude #	Intention #	Behavior #	M	
Abrams et al.	1999	Int J Inter Cult Rel	23 (2), 319-338	O	I	1	.32	1	.43	71
Agnew	1998	Psychol Health	13, 271-287	Sex	I			2	.90	63
Ajzen & Fishbein	1969	J Exp Soc Psychol	5, 400-416	O	I			7	.59	100
Albarracin et al.	2003	Pers Soc Psychol B	29 (7), 834-845	O	D			1	-.23	1
Albarracin et al.	1998	J Appl Soc Psychol	28 (8), 657-674	Sex	I, D					5
Anderssen & Wold	1992	Res Q Exercise Sport	63 (4), 341-348	HL	D					3
Andrews et al.	2004	J Marketing	68, 110-123	O	D			1	.47	1
Astrom & Rise	1996	Community Dent Oral	24, 72-78	HL	I					1
Astrom & Rise	2001	Psychol Health	16, 223-237	HL	I, D	2	.30	2	.16	2
Baker et al.	2003	Health Psychol	22 (2), 189-198	HL	I	8	.34	1	.32	
Bamberg	2002	J Econ Psychol	23, 573-587	SR	I	1	.44	1	.26	1
Bamberg	2003	J Environ Psychol	23, 21-23	SR	I	1	.60	1	.47	1
Bamberg et al.	2003	Basic Appl Soc Psych	25 (3), 175-187	SR	I	2	.51	2	.41	
Bandawe & Foster	1996	AIDS Care	8 (2), 223-232	Sex	I			2	.03	
Beale & Mansead	1991	J Appl Soc Psychol	21 (5), 409-431	HL	I	1	.20	1	.11	
Bebetsov et al.	2002	Psychol Rep	91, 485-495	HL	I	1	.19	1	.05	
Bell et al.	1996			SR	I	1	.02	1	.04	1
Berg et al.	2000	Appetite	34, 5-19	HL	I, D	10	.45	10	.32	10
Biswas et al.	2000	J Public Policy Mark	19 (1), 93-105	SR	I					2
Boldero et al.	1999	J Appl Soc Psychol	29 (10), 2143-2163	Sex	I	1	.78	1	.28	1
Booth et al.	2000	Prev Med	31, 15-22	HL	I					3
Bratt	1999	Environ Behav	31 (5), 630-656	SR	I					4
Brenes et al.	1998	J Appl Soc Psychol	28 (24), 2274-2290	HL	I	1	.41	1	.09	1
Brug & Nooijer	2006	J Nutrit Educat Behav	38, 73-81	O	I	1	.14	1	.26	1
Brug et al.	2006	J Nutrit Educat Behav	38, 73-81	HL	I	1	.30	1	.26	1
Bruijn et al.	2005	Prev Med	40, 658-667	SR	I			2	.27	2
Burnkrant & Page	1988	J Exp Soc Psychol	24, 66-87	SR	I			4	.15	
Buunk & Bakker, st.1	1995	J Ses Res	32 (4), 313-318	Sex	I, D	2	.78	2	.32	
Buunk & Bakker, st.2	1995	J Ses Res	33 (4), 313-318	Sex	I, D	2	.38	2	.23	
Buunk et al.	1998	AIDS Educ Prev	10 (2), 149-172	Sex	I, D			4	.49	
Callero et al.	1987	Soc Psychol Quart	50 (3), 247-256	SR	I					1
Carvajal et al.	1999	Health Psychol	18 (5), 443-452	Sex	I	1	.50			
Chan	1998	J Environ Manage	52, 317-325	SR	D	1	.46	1	.11	1
Chan & Fishbein	1993	J Appl Soc Psychol	23 (18), 1455-1470	Sex	I	1	.32	1	.22	
Chatzisarantis & Biddle	1998	Eur J Soc Psychol	28, 303-322	HL	I	1	.37	1	.01	1
Chatzisarantis & Hagger	2005	J Sport Exercise Psy	27, 470-487	HL	I	1	.02	1	-.13	1
Christian & Abrams, st.1	2004	Basic Appl Soc Psych	26 (2&3), 169-182	O	I	1	.29	1	.07	
Christian & Abrams, st.2	2004	Basic Appl Soc Psych	26 (2&3), 169-182	O	I	1	.01	1	.07	
Cialdini et al., st.1	1990	J Pers Soc Psychol	58 (6), 1015-1026	SR	D					1
Cialdini et al., st.2	1990	J Pers Soc Psychol	58 (6), 1015-1026	SR	D					1
Cialdini et al., st.3	1990	J Pers Soc Psychol	58 (6), 1015-1026	SR	D					1
Conner et al.	2003	Brit J Soc Psychol	42, 75-94	HL	I	2	.36	2	.24	2
Conner et al.	1996	Brit J Health Psych	1, 315-325	HL	I, D			2	.51	

**Table 2.2.** *Studies Included in the Meta-Analysis on the Effects of Social Norms (continuation)*

Courneya	1995 Health Psychol	14 (1), 80-87	HL	I	1	.58	1	.29		97	
Courneya et al.	2000 Am J Health Behav	24 (4), 300-308	HL	I	1	.11	1	.05		1557	
Courneya et al.	2001 Brit J Health Psych	6, 135-150	HL	I	1	.07	1	.07		1557	
Diaz-Loving et al.	1999 Appl Psychol-Int Rev	48 (2), 139-151	Sex	I	4	.21				1203	
Donavan & Singh	1999 Psychol Rep	84, 831-836	HL	I	4	.07		4	.32	98	
Dzhewaltowski et al.	1990 J Sport Exercise Psy	12, 388-405	HL	I	1	.48	1	.30		254	
East, st.1	1993 J Econ Psychol	14, 337-375	O	I			1	.60		59	
East, st.2	1993 J Econ Psychol	14, 337-375	O	I			1	.37		59	
East, st.3	1993 J Econ Psychol	14, 337-375	O	I			1	.66		59	
Empelen van et al.	2001 Health Educ Res	16 (3), 293-305	Sex	I, D	4	.25	4	.14		103	
Estabrooks & Carron	1998 J Aging Health	10 (4), 441-457	HL	I	1	.32	1	.00	1	-.13	157
Fekadu & Kraft	2002 J Health Psychol	7 (1), 33-43	Sex	I, D	2	.35	2	.32		354	
Fishbein et al.	1995 J Appl Soc Psychol	25 (1), 1-20	Sex	I, D					2	.49	513
Fisher	1984 J Appl Soc Psychol	14 (2), 104-123	Sex	I			1	.79		96	
French et al.	2005 J Appl Soc Psychol	35 (9), 1824-1848	HL	I	1	.62	1	.47		213	
Gibbons et al.	2004 Pers Soc Psychol B	30 (8), 1048-1061	O	D			2	.15	2	.09	746
Giles & Cairns	1995 Brit J Soc Psychol	34, 173-188	SR	I	1	.12	1	.19	1	.23	141
Goby	2006 Cyberpsychology Beh	9 (4), 423-431	O	I			3	.20		1250	
Godin & Gionet	1991 Ergonomics	34 (9), 1221-1230	HL	I	1	-.18	1	.03		444	
Godin & Shephard	1986 Psychol Rep	58, 991-1000	HL	I	1	.42	1	.19	1	-.03	90
Godin et al.	1997 Health Educ Res	12 (3), 289-300	Sex	I	1	.51	1	.22	1	.15	152
Godin et al., st.1	1993 J Behav Med	16 (1), 81-102	HL	I	1	.16	1	.02	1	.01	347
Godin et al., st.2	1993 J Behav Med	16 (1), 81-102	HL	I	1	.57	1	.16	1	-.20	136
Godin, Vezina & Leclerc	1989 Public Health Rep	104 (2), 188-195	HL	I	1	.15	1	-.10		98	
Grogan, Bell & Conner	1997 Appetite	28, 19-31	HL	I			2	.22		129	
Grube et al., st.1	1986 Brit J Soc Psychol	25, 81-93	O	I, D	4	.29	4	.16	4	.15	752
Grube et al., st.2	1986 Brit J Soc Psychol	25, 81-93	O	I, D	4	.10	4	.21	4	.15	147
Hagger & Armitage	2004 J Appl Biobehav Res	9 (1), 45-64	HL	I	1	.35	1	.20		1198	
Hagger et al.	2003 J Educ Psychol	95 (4), 784-795	HL	I	1	.00	1	-.03		295	
Hagger et al.	2001 Psychol Health	16, 391-407	HL	I	1	.06	1	.02	1	.09	386
Hagger et al.	2002 Brit J Health Psych	7, 283-297	HL	I	1	.31	1	.21		1088	
Hagger et al.	2006 Pers Soc Psychol B	32 (2), 131-148	HL	I	1	.39	1	.31	1	-.16	511
Hamid & Cheng	1995 Environ Behav	27 (5), 679-698	SR	I		.41	1	.20	1	.06	107
Hansman & Scholz	2003 Environ Behav	35 (6), 752-762	SR	I					1	.55	4329
Harland et al.	1999 J Appl Soc Psychol	29 (12), 2505-2528	SR	I	5	.22	5	.20		1290	
Heath & Gifford	2002 J Appl Soc Psychol	32 (10), 2154-2189	SR	I, D	2	.50	2	.31	2	.09	387
Hillhouse et al.	1997 J Behav Med	20 (4), 365-378	HL	I	3	.63	3	.11		131	
Hrubes et al.	2001 Leisure Sci	23, 165-178	O	I			1	1.42		311	
Hübner & Kaiser	2006 Eur Psychol	11 (2), 99-109	SR	I	2	.43	2	-.01		613	
Hynie et al.	1997 Pers Soc Psychol B	32 (8), 1072-1084	Sex	I	1	.78	1	.37		143	
Jaccard & Davidson	1972 J Appl Soc Psychol	2 (3), 228-235	Sex	I			2	.84		57	
Jackson et al.	2003 J Sport Sci	21, 119-133	HL	I	1	.33	1	.13	1	-.35	200
Jemmott et al.	1992 Ethnicity Disease	2, 371-380	Sex	I	1	.42	5	.47		155	
Jemott & Jemmot	1991 Nurs Res	40 (4), 228-234	Sex	I	1	.48	1	.42	1	-.12	103
Johnston et al.	2004 J Appl Soc Psychol	34 (12), 2524-2549	Var.	I			32	.49		287	
Kaiser	2006 Pers Individ Differ	41, 71-81	SR	I	2	.74	2	.22		1394	
Kaiser & Gutscher	2003 J Appl Soc Psychol	33 (3), 586-603	SR	I, D	2	.47	2	.27		823	

**Table 2.2.** *Studies Included in the Meta-Analysis on the Effects of Social Norms (continuation)*

Kallgren et al., st.1	2000 Pers Soc Psychol B	26 (8), 1002-1012	SR	I				1	.15	296	
Kallgren et al., st.2	2000 Pers Soc Psychol B	26 (8), 1002-1012	SR	I				1	.23	149	
Kallgren et al., st.3	2000 Pers Soc Psychol B	26 (8), 1002-1012	SR	I				1	.30	80	
Karahanna	1999 Mis Qeart	32 (2), 183-213	O	D		2	.24			230	
Kassem & Lee	2004 J Behav Med	27 (3), 273-296	HL	I		1	.45			564	
Kassem et al.	2003 Health Educ Res	18 (3), 278-291	O	I			.45			707	
Kerner & Grossman	1998 Percept Motor Skill	87, 1139-1154	HL	I		1	.37	1	-.30	73	
Kerner & Kurrant	2003 Percept Motor Skill	97, 1175-1183	HL	I	1	.32	1	.24	1	-.01	129
Kim, Reicks & Sjoberg	2003 J Nutrit Educat Behav	35, 294-301	HL	I	1	.54	1	.12	1	.13	162
Kolvereid	1996 Entrepren Theor Pract	21, 47-57	O	I	1	.31	1	.61		128	
Krauss et al., st.1	1978 J Exp Soc Psychol	14, 109-122	SR	D				1	.17	1765	
Krauss et al., st.2	1978 J Exp Soc Psychol	14, 109-122	SR	D				1	.26	60	
Krauss et al., st.3	1978 J Exp Soc Psychol	14, 109-122	SR	D				1	.05	1052	
Krauss et al., st.4	1978 J Exp Soc Psychol	14, 109-122	SR	I				1	.11	255	
Krauss et al., st.5	1978 J Exp Soc Psychol	14, 109-122	SR	D				1	.30	35	
Kruger et al.	2000 J Bus Venturing	15, 411-432	O	I	1	.30	1	.19		97	
Larimer & Turner	2004 Psychol Addict Behav	18 (3), 203-212	O	I, D				2	.34	580	
Laudenslager et al.	2004 Percept Motor Skill	98, 1162-1170	SR	I			3	.27		307	
Lavoi & Godin	1991 Health Educ Res	6 (3), 313-316	Sex	I			1	.68		69	
Lemmers et al.	2005 Transfusion	45, 945-955	SR	I	1	.13	1	.36		284	
Lien et al.	2002 Am J Health Promot	16 (4), 189-197	HL	I	2	.22	2	.40		1406	
Lynne et al.	1995 J Econ Psychol	16, 581-598	SR	I	1	.40				40	
Mahon et al.	2006 Food Qual Prefer	17, 474-481	O	I	2	.49	2	.06	2	.13	1004
Mannetti et al.	2004 J Environ Psychol	24, 227-236	SR	I	1	.28	1	.24		230	
Martin et al.	1999 Prev Med	29, 37-44	HL	I			3	.30		150	
Masalu & Astrom	2003 Am J Health Behav	27 (1), 15-24	HL	I	1	.30	1	.38		981	
McCarty	1981 J Appl Soc Psychol	11 (3), 192-211	Sex	I, D	1	.34	7	.51		909	
Minton and Rose	1997 J Bus Res	40, 37-48	SR	I				1	.43	144	
Mummery et al.	2000 Res Q Exercise Sport	71 (2), 116-124	HL	I	1	.42				677	
Nejad et al.	2004 J Appl Soc Psychol	35 (10), 2099-2131	HL	I, D			2	.23	2	.07	256
Norman & Conner, st.1	2005 J Sport Exercise Psy	27, 488-504	HL	I	1	.24	1	.03	1	-.09	125
Norman & Conner, st.2	2005 J Sport Exercise Psy	27, 488-504	HL	D	1	.38	1	.13	1	.14	102
Okun et al.	2003 Am J Health Behav	27 (5), 493-507	HL	I, D	2	.26	2	.14		363	
Okun et al.	2002 Am J Health Behav	26 (4), 296-305	HL	I, D	4	.20	4	.08	4	.12	530
Oygaard & Rise	1996 Health Educ Res	11 (4), 453-461	HL	I	1	.31	1	.09		527	
Paisley et al.	1995 Nurs Res	15 (12), 1755-1766	HL	I			10	.53		390	
Pechmann & Knight	2002 J Concum Re	29, 5-19	O	D			1	.02		710	
Pendegrast et al.	1992 J Adolescent Health	13, 133-139	Sex	I			1	.50	1	.10	105
Pliner & Mann	2004 Appetite	42, 227-237	O	D				1	.33	72	
Pomazal & Jaccard	1976 J Pers Soc Psychol	33 (3), 317-326	SR	I	1	.24	1	.11	1	-.06	270
Pouta & Rekola	2001 Soc Natur Resour	14, 93-106	SR	I	2	.30				263	
Povey et al.	2000 Psychol Health	14, 991-1006	HL	I, D	2	.26	2	.10	2	-.05	234
Prislin	1993 Psychology	30 (3/4), 51-58	O	I	1	.63	1	.30	1	-.08	51
Rah et al.	2004 J Nutrit Educat Behav	36, 238-244	HL	I			1	.39		205	
Rannie & Craig	1997 Public Health Nurs	14 (1), 51-57	Sex	I			2	.43		60	
Reinecke et al.	1996 J Appl Soc Psychol	26 (9), 749-772	Sex	I	1	.23	1	.23	1	.00	650
Reingen, st.1	1982 J Appl Psychol	67 (1), 110-118	SR	D				1	.24	120	
Reingen, st.2	1982 J Appl Psychol	67 (1), 110-118	SR	D				1	.08	60	
Resnicow et al.	1997 Health Psychol	16 (3), 272-276	HL	I				1	.09	1398	

**Table 2.2.** *Studies Included in the Meta-Analysis on the Effects of Social Norms (continuation)*

Reynolds et al.	1990 Prev Med	19, 541-551	HL	D						2	.33	457
Rhodes & Courneya	2005 Psychol Sport Exercise	6, 349-361	HL	I	1	.26	1	.15	1	.06	585	
Rhodes et al.	2006 Brit J Health Psych	11, 119-137	HL	I, D	2	.20	2	.10	2	.03	220	
Rhodes et al.	2002 J Sport Exercise Psy	24, 120-132	HL	I	2	.13	1	.27			303	
Rhodes et al.	2005 Pers Indiv Differ	38, 251-265	HL	I	1	.22	1	.27			298	
Richard et al.	1998 J Appl Soc Psychol	28 (15), 1411-1428	Sex	I					1	.89	451	
Richard et al.	1995 Brit J Soc Psychol	24, 9-21	Sex	I				2	.17		584	
Richard et al.	1996 Basic Appl Soc Psych	18 (2), 111-129	Var	I	3	.25	3	.15			506	
Rimal & Real	2003 Commun Theor	13 (2), 184-203	O	I, D					2	.11	353	
Rimal & Real	2005 Commun Res	32 (2), 389-414	O	I, D				2	.29		1352	
Rise	1992 J Community Appl Soc	2, 185-197	Sex	I	1	.23	1	.57	1	.18	1172	
Rivis & Sheeran	2003 Psychol Health	18 (5), 567-583	HL	I, D	2	.32	2	.30	2	.10	225	
Robinson & Smith	2002 J Nutrit Educat Behav	34, 316-325	SR	I	1	.52	1	.21			550	
Ryan	1982 J Concum Re	9, 263-278	O	I	1	.69	1	.57			80	
Ryn & Vinokur	1992 Am J Commun Psych	20 (5), 577-597	O	I	1	.51					927	
Ryn et al.	1996 J Appl Soc Psychol	26 (10), 871-883	HL	I	2	.48	2	.24	2	.01	270	
Sacco & Rickman	1996 AIDS Educ Prev	8 (5), 430-443	Sex	I					1	.32	267	
Sallis et al.	1989 Prev Med	18, 20-34	HL	I					1	.14	1789	
Schaalma et al.	1993 Health Educ Res	8 (2), 255-269	Sex	I, D	2	.41					1018	
Schifter & Ajzen	1985 J Pers Soc Psychol	49 (3), 843-851	HL	I	2	.42	2	.27	1	-.07	83	
Sheeran & Abraham	2003 Pers Soc Psychol B	29 (2), 205-215	HL	I	1	.35	1	-.01	1	.01	185	
Sheeran & Orbell, st.1	1999 J Appl Soc Psychol	29 (10), 2107-2142	O	I, D	2	.47	2	.29			200	
Sheeran & Orbell, st.2	1999 J Appl Soc Psychol	29 (10), 2107-2142	O	I, D	2	.37	2	.36			111	
Sheeran & Orbell, st.3	1999 J Appl Soc Psychol	29 (10), 2107-2142	O	I, D	2	.35	2	.34	2	.31	181	
Smith & Biddle	1999 J Sport Sci	17, 269-281	HL	I	1	.33	1	.31	1	-.05	96	
Smith & Stasson	2000 J Appl Soc Psychol	30 (3), 443-462	Sex	D				2	.35		124	
Sparks & Shepherd	1992 Soc Psychol Quart	55 (4), 388-399	SR	I	1	.39	1	.19			261	
Sparks & Shepherd, st.1	2002 Ethics Behav	12 (4), 299-321	HL	I	2	.59	2	.17			61	
Sparks & Shepherd, st.2	2002 Ethics Behav	12 (4), 299-321	HL	I	2	.62	2	.41			100	
Sparks et al.	1992 Eur J Soc Psychol	22, 55-71	O	I				2	.10		173	
Stutzman & Green, st.1	1982 J Soc Psychol	117, 183-200	SR	I	4	.28	4	.22			67	
Stutzman & Green, st.2	1982 J Soc Psychol	117, 183-201	SR	I	4	.28	4	.30			331	
Sutton et al.	1999 Health Psychol	18 (1), 72-81	Sex	I	1	.27	1	.48			509	
Tarkiainen & Sundqvist	2005 Brit Food J	107 (11), 808-822	HL	I	2	.37	2	.10	2	.17	200	
Terry & Hogg, st.1	1996 Pers Soc Psychol B	22 (8), 776-793	HL	I	1	.41	1	-.02	1	-.01	133	
Terry & Hogg, st.2	1996 Pers Soc Psychol B	22 (8), 776-793	HL	I	1	.52	1	.37	1	-.03	95	
Terry et al.	1999 Brit J Soc Psychol	38, 225-244	SR	I	2	.51	2	.26	2	.01	143	
Theodorakis	1994 Sport Psychol	8, 149-165	HL	I	1	.28	1	.08	1	.04	395	
Theodorakis et al.	1991 Percept Motor Skill	72, 51-58	HL	I	1	.09	1	.22	1	-.05	56	
Thøgersen & Ölander	2006 J Appl Soc Psychol	36 (7), 1758-1780	SR	I	1	.35	1	.42	1	-.05	154	
Tonglet et al.	2003 Resour Conserv Recy	41, 191-214	SR	I	1	.46	1	.05			191	
Towler & Shepherd	1992 Food Qual Prefer	3, 37-45	O	I				1	.29		288	

**Table 2.2.** *Studies Included in the Meta-Analysis on the Effects of Social Norms (continuation)*

Trafimow	1994 J Appl Soc Psychol	24 (24), 2151-2163	Sex	I		1	.45				28
Trafimow	1996 J Appl Soc Psychol	26 (24), 2167-2188	O	I	3	.24	3	-.08			89
Trafinow, st.1	2000 Psychol Health	15, 383-393	Sex	I	1	.66	1	.64			48
Trafinow, st.2	2000 Psychol Health	15, 383-393	Sex	I	1	.89	1	.40			81
Verbeke & Vackier	2005 Appetite	44, 67-82	O	I			1	.41	1	.14	429
Verplanken et al.	1998 Brit J Soc Psychol	37, 111-128	SR	I	1	.41	1	.20			200
Villarruel et al.	2004 Nurs Res	53 (3), 172-181	Sex	I			1	.81			200
Vondras & Madey	2004 Int J Aging Hum Dev	59 (3), 205-234	HL	I	1	-.04	1	.21			141
Vries et al.	1995 J Appl Soc Psychol	25 (3), 237-257	O	I, D	2	.40	2	.30			401
Walsh et al.	2005 Psychol Health	20 (6), 729-741	HL	I	1	.51	1	.47	1	-.09	80
Wambach	1997 Res Nurs Health	20, 51-59	O	I		.44	1	.15			135
Warburton & Terry	2000 Basic Appl Soc Psych	22 (3), 245-257	SR	I			2	.45	1	.08	296
Warshaw	1980 J Marketing Res	17, 153-172	O	I	1	.54	1	.33			78
Werner & Makela	1998 J Environ Psychol	18, 373-386	SR	D	1	.29			1	.26	117
White et al.	1994 J Appl Soc Psychol	24 (24), 2164-2192	Sex	I			1	.81			211
Wilson et al.	1975 J Concum Re	1, 39-48	O	I	1	.65	1	.56			162
Wilson et al.	1992 Psychol Health	7, 99-114	Sex	I			6	.39			532
Wulfert & Wan	1993 Health Psychol	12 (5), 346-353	Sex	D	1	.09			1	.53	212
Yordy & Lent	1993 J Sport Exercise Psy	15, 363-374	HL	I	1	.52	1	.10	1	.02	284
Youngblood et al.	1984 Acad Manage J	27 (3), 576-590	SR	D					1	.34	400
Zuckerman & Reis	1978 J Pers Soc Psychol	36 (5), 498-510	SR	I	1	.17	1	.27	1	-.06	189

*Note.* Effect sizes are Fisher transformed correlations, with number of effect sizes and mean reported for each study. Partial correlations are reported when these could be calculated, and are provided in italics. Journal titles are abbreviated according to the ISI journal title abbreviation list, which is available via <http://apps.isiknowledge.com>.

Dom. = study domain, with HL = healthy lifestyle, SR = social responsible behaviors, Sex = sex related behaviors, O = other behaviors.

SN = type of social norm, with I = injunctive norm and D = descriptive norm.

N = number of respondents.

#### 2.4.2. Main Results

We estimated separate models for the relations between social norms and attitudes, behavioral intentions, and behavior, the latter two using both total correlations and partial correlations accounting for attitudes. Several of the study and methodological variables that we examined as potential covariates were not significant, and we excluded these from the model. For instance, the dummy for studies that come from experiments (vs. surveys) was not significant in any of the models (all  $\chi^2 < .967$ ,  $ps > .334$ ). In other words, the effects of social norms obtained from experimental studies in which social norms were manipulated did not

significantly differ from the effects obtained from surveys. This implies that the causal relations obtained in experiments appear similar to the estimates from surveys. Individual inclusion of each of the other excluded variables also confirmed the non-significant effects for gender (all  $\eta^2 < 0.71$ ,  $ps > .478$ ) and age of participants (all  $\eta^2 < 1.43$ ,  $ps > .153$ ), culture (all  $\eta^2 < 0.98$ ,  $ps > .326$ ), and whether correlations were calculated from test statistics (all  $\eta^2 < 1.76$ ,  $ps > .079$ ) in all of our models. We also explored potential interaction effects between our independent variables by including them one-by-one into our models, and these effects were all insignificant (no  $ps < .05$ ). Table 2.3 presents estimates of the model with all remaining variables.

**Table 2.3.** *Determinants of the Influence of Social Norms on Attitudes, Intentions, and Behavior*

Variable	Total correlations			Partial correlations	
	Attitude (N=202)	Intention (N=301)	Behavior (N=154)	Intention (N=303)	Behavior (N=154)
Intercept	.446***	.491***	.317***	.089***	.155***
Injunctive norm <sup>1</sup>	.074*	.023	-.072*	-.032	-.081**
Concrete specification					
Behavior <sup>2</sup>	-.024	-.009	-.025	-.030	-.026
Sanction <sup>3</sup>	-.041	-.012	.050	-.035	.050
Reward <sup>4</sup>	.004	-.082*	.025	-.019	.035
Target person <sup>5</sup>	-.031	.007	-.024	-.024	.010
Source <sup>6</sup>					
Distant	-.056	-.052	-.137**	.058	-.098*
Unspecified	-.020	-.081**	-.089*	-.013	-.040
Public behavior <sup>7</sup>	.022	-.053	.064*	-.039	.062*
Study domain <sup>8</sup>					
Healthy lifestyle	-.121**	-.010	.054	.081*	.030
Social responsibility	-.146**	-.053	.100*	.061	.093*
Sex related	-.115*	-.100*	.014	.040	-.012
Total correlation used <sup>9</sup>				.386***	.130***

*Note:* Two effect sizes for behavioral intention were only reported as partial correlations, and thus only included in the model for partial correlations.

*b* reported for independent variables; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Dummy coding was used, with as respective reference categories: <sup>1</sup> descriptive norm, <sup>2</sup> abstract behavior, <sup>3</sup> absence of sanctions, <sup>4</sup> absence of rewards, <sup>5</sup> non-personalization, <sup>6</sup> specific and close source, <sup>7</sup> private behavior, <sup>8</sup> “other” domain, and <sup>9</sup> use of partial correlations.



As predicted, injunctive norms, which may activate existing attitudes and feelings better, had a stronger effect on attitudes than descriptive norms ( $b = .07$ ;  $\chi = 2.06$ ;  $p = .039$ ). Injunctive versus descriptive specification did not influence the effect on behavioral intentions ( $b = .02$ ;  $\chi = 0.72$ ;  $p = .472$  for total correlations and  $b = -.03$ ;  $\chi = 0.82$ ;  $p = .412$  for partial correlations). In further support of our predictions, injunctive norms had a weaker effect on behavior than descriptive norms ( $b = -.07$ ;  $\chi = 2.18$ ;  $p = .029$ ), also when accounting for the covariation between social norms and attitudes ( $b = -.08$ ;  $\chi = 2.61$ ;  $p = .009$ ). In other words, descriptive norms are more effective in inducing behavior than are injunctive norms, whereas injunctive norms are more likely to activate norm-consistent attitudes.

We predicted that the concrete specification of the expected behavior, the consequences of (not) following the norm, and the target person to whom the norm applies, would increase the influence of social norms. The data, however, did not reveal significant effects of these variables, with one exception only. The presence of rewards had a negative influence on intentions ( $b = -.08$ ;  $\chi = 2.41$ ;  $p = .016$ ), which was not in line with our predictions. The effect disappeared in the model using partial correlations ( $b = -.02$ ;  $\chi = 0.46$ ;  $p = .643$ ). There is thus some indication that specifying rewards for following a social norm may decrease consumers' intentions to perform the behavior. This corresponds to cognitive evaluation theory, which argues that providing extrinsic rewards for intrinsically interesting activities can undermine the intrinsic motivation and self-reported interest of consumers (Deci, Koestner, & Ryan, 1999). Rewards may have this effect because they can be experienced as controlling. Interestingly, our results showed a decrease in behavioral intentions, which may be evidence of a decrease in intrinsic motivation, but no increase in behavior when the reward was present. This suggests that specifying rewards is not an effective way to enhance the influence of social norms. Overall, we thus find little effect of how concrete the norm itself is specified. The social context (who conveys the norm and can adherence to the norm be observed), to which we turn next, appears to be of more importance.

For norm source, in line with our predictions, consumers were more likely to behave in accordance with a social norm when this norm was communicated by a close source (the reference category) and less likely to follow the norm when it was communicated by more distant sources ( $b = -.14$ ;  $\chi = 2.92$ ;  $p = .003$  for total correlations and  $b = -.10$ ;  $\chi = 2.22$ ;  $p = .026$  for partial correlations), or when the source was unspecified ( $b = -.09$ ;  $\chi = 2.48$ ;  $p = .013$  for total correlations), although this latter effect was not significant in the model using partial correlations ( $b = -.04$ ;

$\zeta = 1.21$ ;  $p = .226$ ). Similarly, consumers expressed stronger intentions to follow a norm when it was communicated by a close source than when the source was unspecified ( $b = -.08$ ;  $\zeta = 3.00$ ;  $p = .002$  for total correlations). The source of the social norm thus affected the intentions and behavior of consumers, but not their attitudes. This suggests that it may not be similarity with the source that drives this effect (in which case we would have expected an effect on attitudes) but perhaps the activation of relational outcomes makes it more difficult to disobey the norm.

Social context also matters in terms of whether others can observe the behavior. In support of our prediction, norms that communicate public (vs. private) behavior had a stronger influence on behavior ( $b = .06$ ;  $\zeta = 2.07$ ;  $p = .038$  for total correlations and  $b = .06$ ;  $\zeta = 2.07$ ;  $p = .038$  for partial correlations), but not on attitudes and behavioral intentions (all  $\zeta$ s  $< 1.86$ ,  $p$ s  $> .063$ ). Consumers are more likely to behave in accordance with a norm when others can observe them.

### 2.4.3. Results for Study Characteristics

The effect of social norms was not universal across different domains of consumer behavior. Social norms and *attitudes* were most strongly related in the “other” category, that is, for such behaviors as the regular consumption of food and drinks, class enrollment, and leisure time activities. Social norms and attitudes were more weakly related in the social responsibility domain, and follow-up analyses using this domain as the reference category showed that the norm-attitude relation was significantly stronger in both the domain of healthy lifestyle ( $b = .03$ ;  $\zeta = 0.52$ ;  $p = .025$ ) and the “other” domain ( $b = .15$ ;  $\zeta = 2.61$ ;  $p = .009$ ), and that there was no significant difference with the sex related domain ( $b = .031$ ;  $\zeta = 0.53$ ;  $p = .596$ ). Interestingly, the strongest effects of social norms on *behavior* were found in the social responsibility domain, compared to which effects were significantly weaker in the sex domain ( $b = -.09$ ;  $\zeta = 1.68$ ;  $p = .092$  for total correlations and  $b = -.11$ ;  $\zeta = 2.06$ ;  $p = .039$  for partial correlations) and the “other” domain ( $b = -.10$ ;  $\zeta = 2.00$ ;  $p = .045$  for total correlations and  $b = -.09$ ;  $\zeta = 2.20$ ;  $p = .028$  for partial correlations). These social responsible behaviors such as saving energy, donating money to worthy causes, and recycling are beneficial for society. Individual benefits are more limited, and it is therefore not surprising that the correlation between social norms and attitudes is weaker in this domain than in other domains. Furthermore, to prevent consumers from free-riding on the social responsible behavior of others, they need to think of society and of others than themselves. The result that the correlation between social

norms and behavior is especially strong in the domain of social responsibility is thus illustrative of the function of social norms.

Finally, results for the models for partial correlations showed a significant dummy for studies where partial correlations could not be estimated. Effect sizes obtained from total correlations were larger than effect sizes obtained from partial correlations for both behavioral intentions ( $b = .39$ ;  $z = 9.42$ ;  $p < .001$ ) and behavior ( $b = .13$ ;  $z = 3.42$ ;  $p < .001$ ). This implies that indeed a substantial part of the effect of social norms on intentions and behavior can be accounted for by the covariation between attitudes and social norms.

## 2.5. Conclusion and Discussion

This meta-analysis shows that social norms are strongly related to behavior, and can be an effective tool to influence consumer decision making. Our meta-analysis shows that the effects of social norm obtained from surveys do not significantly differ from those obtained in experimental settings, where norms were manipulated. This suggests that the effect sizes represent not mere correlations but causality as well, consistent with the argumentation and empirical evidence provided in previous research.

The meta-analysis also shows that the norm aspects matter. First of all, the injunctive versus descriptive specification of the norm affects its influence on both attitudes and behavior, and, as we predicted, this effect differs. A descriptive formulation of the norm ensures a stronger influence on behavior, whereas an injunctive formulation ensures a stronger influence on attitudes. This generalizes prior work showing that descriptive norms are more effective in changing behavior (Nolan et al. 2009), and also extends it in an important way. Contrary to the idea that descriptive norms are more effective in general, our meta-analysis shows that injunctive norms are better in activating attitudes. This implies that consumers internalize injunctive norms more easily. Thus, injunctive norms may be more appropriate for activating and perhaps also changing consumers' attitudes, and for focusing them on the social group they are part of and on the norms that apply therein. Descriptive norms, in contrast, lead to more automatic behavioral responses. On the one hand, this implies that descriptive norms can activate the requested behavior much more strongly than injunctive norms can. Yet, on the other hand, because descriptive norms depend on the behavior of others and are internalized to a lower extent, the requested behavior may just as easily vanish when some people do

not comply.

The influence of social norms also depends on their source as norms that are communicated by close others tend to have a stronger influence on behavior than norms communicated by distant or unspecified others. Social norm campaigns may thus benefit from either referring to or directly targeting people that are close to the consumers whom these campaigns want to influence. Norm source affects consumer intentions and behavior, but not attitudes, suggesting that perhaps consumers are mainly concerned about their appearance to close others. This concern is also apparent from the results for public versus private behavior, which show that social norms have a stronger influence on behaviors that can be observed. Making otherwise unobservable behavior more public may thus strengthen the effect of social norms, and this may be one of the driving forces behind cancer bracelets, or ribbons and other products handed out to donators.

An unexpected finding was the lack of significant effects for the concrete specification of a social norm. A concrete specification of the expected behavior, sanctions, rewards, or the target person generally does not increase the influence of social norms. This is surprising, given prior findings that consumers are more likely to act when the expected behavior is detailed and specific (O'Keefe, 1997; Gollwitzer & Brandstatter, 1997). Possibly, social norms are so ingrained in group culture that a concrete specification of the expected behavior is not necessary to elicit the expected response. Likewise, consequences of following (or not following) social norms often include social acceptance (exclusion), obtaining approval (being frowned upon), and other social mechanisms that generally remain implicit and are tacitly understood. Making consequences explicit does not strengthen the effect of social norms, which seems to indicate that such social mechanisms may work just as well when left unspoken.

The current study has examined the influence of social norms across a wide range of domains. This allows us to examine differences across these domains, and provides important insights into the workings of social norms. Compared with decisions related to healthy lifestyle, social responsibility, or sex, everyday consumption decisions (e.g., choices between food, drinks, and leisure time activities) show a strong association between social norms and attitudes. These decisions may be made more habitually, and social norms may be less explicit, more lenient, and therefore more in line with the consumers' own attitudes here. Another noticeable difference across domains is the relatively strong effect that social norms have on social responsible behaviors. These are behaviors where societal benefits are involved,

and where social norms should drive human behavior to prevent free-riding problems. Our meta-analysis shows that social norms indeed are relatively influential for consumer behavior in this domain, which is reassuring.

Two important theoretical implications can be derived from our meta-analysis. First, the meta-analysis reveals a strong association between social norms and attitudes, and one possible extension to theoretical models that include normative components is to examine this relationship. It has been posited that social norms influence attitudes (Terry, Hogg, & White, 2000), and our study shows that the strength of this influence depends on the specification of norm aspects. Second, consumers respond differently to injunctive versus descriptive norms, and, more importantly, an injunctive specification of a norm leads to stronger effects on attitudes but weaker effects on behavior than a descriptive formulation. This implies that an investigation of the influence of social norms which examines only attitudes or only behavior does not provide a complete picture of the effect of social norms. To truly understand the influence of social norms, attitudes and behavior both need to be examined.

A meta-analysis can only examine the influence of aspects that have been frequently reported in prior studies. There are social norm aspects that would be intriguing to examine, but that we could not include in the present meta-analysis, because these were either rarely reported in enough detail or hardly varied in the prior studies that we identified. These constitute possible directions for future research. Group size, that is, the number of others who provide the social norm, is one of these. Do social norms have a weaker or stronger influence on consumer behavior when these norms are shared between more individuals? The effect of group size is not obvious, because larger groups may entail an increase in pressure from multiple people (perhaps enhancing the influence of especially descriptive norms), whereas smaller groups may be more cohesive and have a more stringent social control of (especially injunctive) norms. Another potentially interesting aspect to consider is the dominant motive that consumers have when they encounter a social norm. For instance, recent work has shown that descriptive norms are more effective when consumers are motivated by fear and less effective when consumers are motivated by romantic desire (Griskevicius et al., 2009). These and other aspects remain promising directions for future research.

Summarizing, social norms that specify the expectations of others (i.e., injunctive norms) influence attitudes more, whereas social norms that specify the behavior of others (i.e., descriptive norms) influence behavior more. In addition,

social norms that are communicated by people close to the consumer (rather than by distant or unspecified others) and social norms that regulate public behavior (rather than private behavior) have a stronger influence on behavior. Our meta-analysis has thus demonstrated how the specification of social norm aspects influences the effect of these norms in consumer behavior.

# Chapter 3

## To Think or Not to Think: The Effect of Cognitive Deliberation on the Influence of Injunctive versus Descriptive Social Norms

*Consumers can process information containing social norms at different cognitive deliberation levels. This paper investigates the effect of cognitive deliberation for both descriptive and injunctive norms. The experimental study examines the consequences for attitudes and behavioral intentions of these two norm formulations under different levels of deliberation. Results show that (a) cognitive load limits the influence of both norm formulations, and (b) cognitive deliberation increases the effect of descriptive and decreases the effect of injunctive norms. The positive and negative thoughts made salient by the information are shown to lead to these consequences.*

### 3.1. Introduction

Marketers have realized the potential of social norms to influence consumers' attitudes and preferences. They use norms actively and frequently in so-called social norm campaigns (Cialdini et al., 2006, Berkowitz, 2005). Social norms marketing is based on the idea that consumer behavior is to a large extent influenced by perceptions of what is "normal" or "typical" in a social context. In particular, consumers are more likely to follow a behavior when they perceive such behavior to be in accordance with the norms of their group (Thorbjørnsen, Pedersen, & Nysveen, 2007). Thus, social norms can provide a powerful instrument to influence consumers' attitudes, intentions, and product choice. Therefore it is not surprising that social norm marketing was listed by the *The New York Times Magazine* as one of the most significant ideas of 2001 (Frauenfelder, 2001).

Research on social norms has mostly examined norms in the context of reducing negative behaviors such as smoking or alcohol consumption, or changing general behavioral patterns such as exercising more or participating in an environmental conservation program (Berkowitz, 2005; Goldstein, Cialdini, & Griskevicius, 2008). Although research focusing on social norms aimed at increasing the purchase of specific products or services is scarce, the few studies that have examined this have shown that social norms are important predictors for consumer behavior. For example, for young adults, social norms imposed by peers have been shown to increase customer loyalty to their mobile phone service provider (Lee, Murphy, & Neale, 2009) and social norms also play a role in the purchase and consumption of ready meals (Mahon, Cowan, and McCarthy, 2006). In practice too, marketing campaigns use social norms to stimulate purchase behavior. The Talk'n'Save phone company advertises that "7 out of 10 students" who are in Israel for the year use their phones, followed with "Don't you see yourself in the picture? You should!" (<http://talknsave.blogspot.com/2010/07/7-out-of-10-students-in-israel-use.html>). Given that campaigns using social norms have had mixed success and many of these are ineffective (e.g. Clapp, Lange, Russell, Shillington, & Voas, 2003), it is crucial for marketers to understand under which conditions the effect of social norms can increase desired behavior or can backfire, and research examining such conditions is therefore needed.

Consumers can process norm information at different levels of cognitive deliberation. Sometimes their thinking is inhibited by, for example, time pressure or fatigue, while at other times consumers may freely and actively think about social



norms. As the depth of deliberation is often seen as key to attitude change (Greenwald, 1968; Petty, Haugtvedt, & Smith, 1995), it is likely that this will also affect the influence of social norms.

Differences in amount of cognitive deliberation are central to dual-process models, which are based on the idea that information can be processed either heuristically (via a peripheral route) or deliberately (via a central route) (Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986). Thinking about information as opposed to more superficial perception can increase the influence that this information has (e.g., Petty & Wegener, 1999). Because social norms provide relevant information about the behavior or expectations of others, one would expect that norms have a higher influence when consumers process them deliberately than when they do not. More specifically, when consumers deliberate on social norms, they are likely to think about social connections with others (Terry, Hogg, & White, 2000), which can increase the tendency to follow social norms. Indeed, it has been posited that active cognitive deliberation should increase the influence of social norms (Fazio, 1990), because deliberation on a social norm message would increase the salience of reasons to follow the norm and lead to stronger attitudes (Chaiken et al., 1989). However, existing empirical evidence is scarce and has failed to confirm this expectation (Terry, Hogg, & McKimmie, 2000). This paper shows that one possible explanation for the absence of convincing empirical evidence of the efficacy of social norms in marketing is that cognitive deliberation influences different formulations of social norms in a different way, depending on whether these emphasize normative or informational influence.

Social norms can be formulated in two distinct ways: (1) through giving information about the behavior of other people, and (2) through highlighting social rules (Lapinski & Rimal, 2005; Reno, Cialdini, & Kallgren, 1993). These two formulations of social norms, that is, descriptive (what most people do) and injunctive (what ought to be done) formulations (Cialdini, Reno, & Kallgren, 1990), independently influence consumer behavior (Grube, Morgan, & McGree, 1986; Reno et al., 1993). As an example of descriptive norms, the amount of food chosen by another consumer can set a norm on how much to take for later consumers (McFerran, Dahl, Fitzsimons, & Morales, 2010; Pliner & Mann, 2004). Descriptive norms are generally supported by the belief of consumers that others act in an effective way, and therefore in a process of deliberation consumers are likely to come up with arguments in favor of the behavioral patterns observed in others.

In contrast, injunctive norms contain an explicit request of what one should

do. These norms do not convey information about behavioral effectiveness, and therefore can stimulate both thoughts in favor and against the behavior. For example, consumers may perceive an injunctive norm as a limitation of their freedom to choose and while deliberating on this injunctive social norm, they are more likely to come up with reasons which would help to overcome this request (Mann & Hill, 1984). Thus the effect of increased cognitive deliberation would be different, and even opposite for the two norm formulations, enforcing descriptive norms, but weakening injunctive norms. Importantly, these effects should only occur for consumers who believe the normative message, because consumers who do not believe it are likely to ignore it altogether (Austin & Dong, 1994; Gotlieb & Sarel, 1991).

Despite the existing research on social norms (for a review see Lapinski & Rimal, 2005) and on the role of cognitive deliberation in persuasion (see Smith & DeCoster, 2000) little is known about the effect of cognitive deliberation on social norm messages, and whether this influence differs between injunctive and descriptive norms. The effect of cognitive deliberation on different norm formulations is particularly interesting because it can highlight and explain a fundamental difference between injunctive and descriptive norms. This study thus provides an understanding about how and why social norms influence decision making, and focuses on the role of cognitive deliberation (i.e., thinking about norms).

## **3.2. Thinking about social norms**

### *3.2.1. Cognitive Deliberation*

The cognitive process in which consumers evaluate information plays a crucial role in attitude formation and attitude change (Eisend, 2007). Cognitive deliberation on received information leads consumers to come up with multiple thoughts (Petty et al., 1995). The cognitive response model (Greenwald, 1968) states that the thoughts that a message provokes, rather than the message itself, are ultimately responsible for attitude change. Consumers thus generate cognitive responses to the received information and these responses predict later attitudes.

A large number of studies show that persuasion is influenced by the amount of thinking that occurs in response to received information (Eagly & Chaiken, 1993; Killeya & Johnson, 1998). More specifically, it is recognized that “attitude change is a function of the number and valence of thoughts that come to mind when elaborating

is high” (Petty & Briñol, 2008, p. 55). Consumers who process a message with more cognitive deliberation (compared to little or no cognitive deliberation) show a more persistent attitude change (Sengupta, Goodstein, & Boninger, 1997). Thinking on a message can result in more influence of the message, and can lead to attitudes that are more stable and more predictive for behavior (Tesser, Martin, & Mendolia, 1995). In contrast, when the opportunity to process a persuasive message is limited, consumer decisions are likely to be influenced less by this message and more by accessible information consumers may have or by automatically activated attitudes (Terry et al., 2000). Therefore, consumers who do not have the opportunity to process a social norm message are less likely to follow the norm, compared to consumers who can freely process the message.

**H1:** *Cognitive load decreases the influence of social norm information.*

### 3.2.2. *Cognitive Deliberation and Norm Formulation*

Thinking about injunctive versus descriptive norms can lead to different types of thoughts due to differences in the sources of motivation each refers to. Descriptive norms describe the behavior of a relevant peer group. These norms do not contain explicit requests, but refer to informational influence, that is, “an influence to accept information obtained from another as evidence about reality” (Deutsch & Gerard, 1955, p. 629). Consumers tend to believe that others possess better knowledge than themselves (Cialdini et al., 1990) and that those others behave in the most effective way in a given situation (Reno et al., 1993). Thus descriptive norms inform consumers about which behavior is likely to be effective, and provide a behavioral standard from which consumers may not want to deviate (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Therefore, descriptive norms are likely to stimulate consumers to think favorably about the suggested behavior. Cognitive deliberation upon descriptive norms may bring attitudes and behavioral intentions in line with the social norm, because consumers actively construct thoughts about the social proof provided by the behavior of others and consider the benefits that this behavior entails. In other words, deliberation on descriptive norms may result in focusing consumers on positive thoughts favorable to the advocated behavior and, perhaps, ignoring or suppressing thoughts against this behavior.

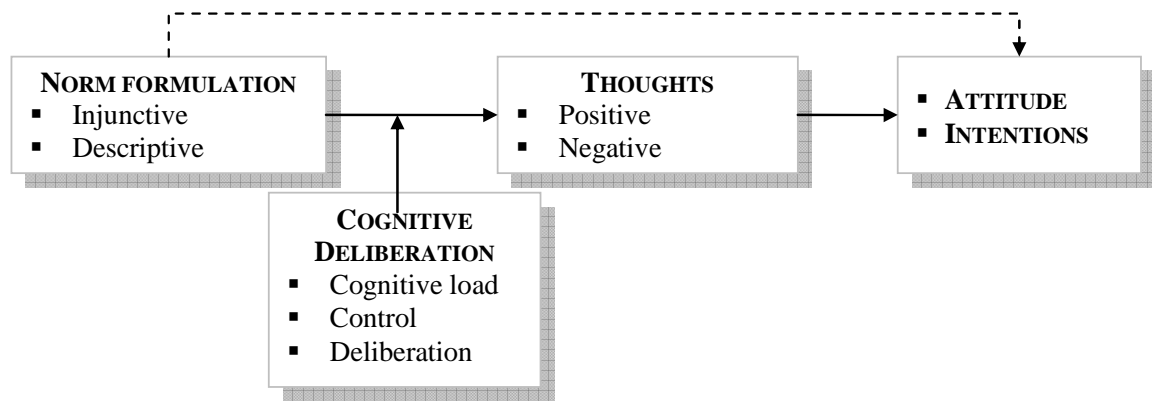
Injunctive norms prescribe a behavior and, unlike descriptive norms, contain an explicit request. Injunctive norms refer to normative influence, that is, “the

influence to conform to the positive expectations of others” (Deutsch & Gerard, 1955, p. 629), primarily driven by desires of consumers to obtain rewards or avoid punishments that others may impose on them for following or not following the norm (Prislin & Wood, 2005). These norms are based on consumers’ beliefs about what others expect them to do in a given situation and therefore consumers tend to focus on sources of external motivation rather than on the behavior itself (Cialdini & Goldstein, 2004). Unlike descriptive norms, injunctive norms do not enhance information about whether the required behavior is effective or beneficial, and therefore injunctive norms may not necessarily stimulate thoughts in favor of the suggested behavior. In addition, injunctive norms may evoke resistance, which is a desire to counteract someone else’s attempt to limit one’s freedom of thinking, feeling and acting (Silvia, 2006). Ultimately, resisting a persuasion attempt may increase arguments supporting alternative behaviors, criticism of the suggested message, and avoidance of the suggested behavior or attitude (Clee & Wicklund, 1980). Resisting persuasion may lead consumers to focus on thoughts against the required behavior and ignoring or suppressing thoughts in its favor (Tormala & Petty, 2004). Cognitive deliberation on injunctive norms may increase these effects, whereas cognitive load decreases them. After all, when consumers are under cognitive load, they are less likely to perceive a persuasive message as manipulative (Wentzel, Tomczak, & Herrmann, 2010), and therefore are less likely to resist it.

Thus, whereas deliberation is likely to focus consumers on thoughts that are positively inclined towards the advocated behavior for descriptive norms, deliberation may evoke both positive and negative thoughts for injunctive norms, and may lead consumers to focus on positive thoughts less than on negative thoughts. Because the character of thoughts caused by persuasive information determines the final attitude of consumers (Knowles & Riner, 2007), cognitive deliberation is expected to increase the influence of descriptive norms and decrease the influence of injunctive norms on attitudes and behavioral intentions. Figure 3.1 provides an illustration of the conceptual framework.

**H2:** *Cognitive deliberation increases the influence of descriptive norms and decreases the influence of injunctive norms on attitudes and behavioral intentions.*

**H3:** *The effect of cognitive deliberation on social norms influence is mediated by the number of positive and negative thoughts.*



**Figure 3.1.** *Conceptual Framework*

### 3.2.3. *Believing the Message*

Whether consumers believe or do not believe the information provided in a message is crucially important for attitude formation towards this message (Wang, 2006). People tend to base the believability of messages most on how realistic the message content appears to be (Austin & Dong, 1994). Thus it matters whether consumers believe the message they face, especially because the effectiveness of social norm campaigns has been shown to depend on whether consumers believe or do not believe the normative message (Polonec, Major, & Atwood, 2006). When a message is not trusted or lacks credibility, it most likely will be discounted and will not be persuasive.

**H4:** *Effects of norm formulation and cognitive deliberation will only occur for consumers who believe the message.*

## 3.3. Experiment

### 3.3.1. *Participants and Design*

One thousand and eighteen participants took part in the experiment, which had a three factor design; more specifically the design was a 2 (norm formulation: injunctive vs. descriptive)  $\times$  3 (cognitive deliberation level: cognitive load vs. control vs. cognitive deliberation) experimental between subject design and a two level measured factor (belief in the content of the message: non-believers vs. believers). Participants were recruited from the CentER data panel, which is representative of the Dutch population in terms of age and gender. The age of participants ranged from 18 to 82 years ( $M = 50.5$ ,  $SD = 15.5$ ). Eight participants were excluded from the

sample. Six of them were excluded because they did not receive a valid version of the experiment due to a technical error. Two participants were excluded because they indicated that their responses were not to be taken seriously. Therefore, data from 1010 participants (552 men and 458 women) were analyzed.

### *3.3.2. Procedure*

The experiment was self-administered. Participants were invited through an e-mail, which provided an internet link to a randomly assigned condition. They could participate at their convenience while data collection was active during two weeks in April 2007. Participants were instructed to read a short newspaper article on screen, which presented results of a fictitious survey about environmentally-friendly processed potatoes. Subsequently, they were asked to answer a number of questions. At the end of the experiment participants were asked to leave their comments, were debriefed, thanked and received credits from the marketing agency towards a gift certificate for their contribution. The procedure lasted about 17 minutes.

### *3.3.3. Experimental Factors*

*Norm formulation.* Formulation of the social norm was manipulated in a fictitious short newspaper article, entitled ‘Study among Dutch consumers (see Appendix 3.1): “Yes, I always buy environmentally-friendly processed potatoes”’ for the conditions with a descriptive norm and ‘Study among Dutch consumers: “Everybody should buy environmentally-friendly processed potatoes”’ for the conditions with an injunctive norm. The text of the newspaper article in the descriptive norm condition further read:

#### **The Hague, April 2007, from our reporter**

Recently the Ministry of Agriculture investigated the purchase of potatoes in a survey across the Netherlands. The investigators were interested not just in consumer preferences for different sorts of potatoes, but also in the purchase behavior for environmentally-friendly processed potatoes with “Eko” or “Organic” labels. “Eko” and “Organic” are certified labels of which the criteria relate to a limited use of chemical pesticides and fertilizers. The results of the large-scale survey have shown that most Dutch citizens have a preference for these environmentally-friendly processed potatoes. “It was

remarkable how united the participants were”, a department's spokesperson says: “Yes, I always buy environmentally-friendly processed potatoes”, indicated more than 64% of the respondents.

In the injunctive norm condition, the last two lines read: “The results of the large-scale survey have shown that most Dutch citizens have the same, positive, opinion about these environmentally-friendly processed potatoes. “It was remarkable how united the participants were”, a department’s spokesperson says: “Everybody should buy environmentally-friendly processed potatoes”, indicated more than 64% of the respondents.”

*Manipulation of cognitive deliberation level.* Participants in the cognitive load condition were instructed to count how many times the whole-word “the” was used in the newspaper article, thus preventing deliberation on the message and social norm content (cf. Ferrari & Dovidio, 2001; Jacoby, 1998). This was achieved by giving the following instruction: “The following is a test of your analytical language skills. You will see a newspaper article on the screen. Read this article, while counting how often the word “the” occur in the text. Please give your answer as soon as possible.” Participants in the control condition were provided with the newspaper text without any instructions that might influence their cognitive deliberation level: “You will see a newspaper article on the screen. Please read the article.” In the cognitive deliberation condition participants were asked to carefully read the newspaper article and think about its content: “You will see an article on the screen. Please read the article very carefully! Afterwards you will be asked to write down your thoughts about the topic of the article.”

To strengthen the manipulation of cognitive deliberation, the order of the questions after the article differed. For participants in the cognitive deliberation condition, an open question about their thoughts immediately followed the article to induce deliberation on its content. For all other participants, this question was asked at the end of the experiment.

*Belief in the content of the message.* The participants were asked to indicate whether they found the information, presented in the article, believable: “I think the percentage of 64% presented in the newspaper article is realistic” rated on 7-point scale ranging from 1 (completely disagree) to 7 (completely agree). This measure was recoded into a 2 level factor through a median split with participants scoring in the bottom half labeled as non believers and those in the top half as believers (Mdn = 3;  $N$  non-believers = 536; Mean for non-believers = 2.04, SD = .80;  $N$  believers = 474; Mean for believers = 4.66, SD = .91).

### 3.3.4. Measures

Attitudes were measured with three items (Cronbach  $\alpha = .94$ ), which were adapted from Keller (1991) and rated on 7-point scales ranging from 1 (completely disagree) to 7 (completely agree). Items were as follows: *“I think it is important to buy environmental-friendly processed potatoes”*; *“I am positive about buying environmental-friendly processed potatoes”*; *“Environmental-friendly processed potatoes are something for me.”* Behavioral intentions were measured on the same 7-point scale with three items, which were adapted from Oliver, Rust, and Varki (1997) (Cronbach  $\alpha = .97$ ): *“I plan to buy environmentally-friendly processed potatoes”*; *“I want to start buying environmentally-friendly processed potatoes”*; *“I am definitely going to buy environmentally-friendly processed potatoes in the future.”*

To test the types of thoughts that the different social norms activate, an open question was added, asking participants to list all the thoughts that they had in separate boxes. The question was adopted from Brannon and Brock (2001): *“Please organize your thoughts about environmentally-friendly processed potatoes. Type the first thought in the box below and press “Enter”. The next box will appear to record your next thought. When you are done writing down your thoughts, please press “End” to continue with the next questions.”* The information entered in each box was considered as a single, separate thought. These thoughts were coded as positive (when the thought supported environmentally-friendly processed potatoes), negative (when the thought was against environmentally-friendly processed potatoes) or neutral (when the thought mentioned environmentally-friendly processed potatoes but was neither in favor nor against it). Thoughts that did not refer to the object of the article (environmentally-friendly potatoes) were discarded.

### 3.3.5. Statistical Analyses

The effects of the three factors norm formulation, cognitive deliberation level, and belief as well as their interactions on attitude and intention were analyzed using ANOVA. As it is expected that effects of norm formulation and cognitive deliberation level would only be present for believers and not for nonbelievers, main effects of norm formulation and cognitive deliberation level were estimated, as well as their interaction, separately for believers and non-believers using simple effect ANOVAs (Page, Braver, & MacKinnon, 2003). The analysis was performed separately for attitudes and behavioral intentions with three categorical variables as



independents: norm formulation (injunctive, descriptive), cognitive deliberation level (cognitive load, control, cognitive deliberation), and belief (believers, non believers). For non-believers an effect of deliberation or of norm formulation is not expected, but for believers, an interaction effect between cognitive deliberation level and norm formulation is expected on both attitudes and intentions.

In addition, it is expected that the thought process, and in particular the number of positive and negative thoughts that consumers have, underlies this interaction effect. To test whether a different effect of cognitive deliberation level for injunctive and descriptive norms is indeed caused by a difference in the number of positive and negative thoughts, a mediated moderation analysis was conducted, following Muller, Judd, and Yzerbyt (2005). In this case, the relation between norm formulation and the number of (positive and negative) thoughts should be moderated by the level of cognitive deliberation level. The relation between thoughts and attitudes is not expected to be further moderated by deliberation level. Mediated moderation is established when four conditions hold: (1) cognitive deliberation level should moderate the effect of norm formulation on attitudes, (2) cognitive deliberation level should moderate the effect of norm formulation on both number of positive thoughts and number of negative thoughts, (3) positive and negative thoughts should both significantly predict attitudes, and finally, (4) the moderation of the residual effect of norm formulation on attitudes in (3) should be reduced (“partial” mediated moderation) in magnitude or may become nonsignificant (“full” mediated moderation). A similar procedure will be followed to establish mediated moderation for effects on intentions.

### 3.4. Results

#### 3.4.1. Attitudes

A simple effects ANOVA showed a significant positive main effect of belief in message content on attitudes,  $F(1, 998) = 55.86, p < .001$ . Participants who believed the message indicated more positive attitudes towards buying environmentally-friendly processed potatoes ( $M = 5.09$ ) than participants who did not believe the message ( $M = 4.42$ ).

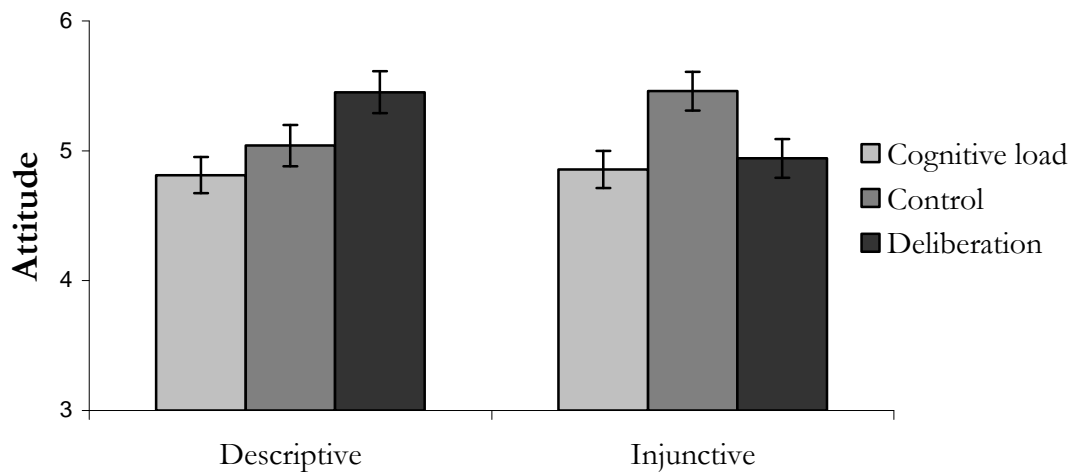
Conditional on *believers*, results showed a significant main effect of deliberation level,  $F(2, 998) = 4.24, p = .01$ . Hypothesis 1 predicted that the influence of normative information is lower under cognitive load and higher when consumers have an opportunity to process the message. Consistent with this expectation,

pairwise comparisons (LSD) showed that the influence of norm on attitude was significantly lower for participants who were cognitively loaded ( $M = 4.83$ ) than for participants in the control condition ( $M = 5.21, p < .01$ ) or for participants who were instructed to deliberate ( $M = 5.19, p = .015$ ). Furthermore, results indeed showed the expected interaction between norm formulation and cognitive deliberation level,  $F(2, 998) = 4.02, p = .02$ , and follow-up tests supported the expectations. In particular, pairwise comparisons (LSD) showed that there were significant differences in attitudes in different deliberation conditions for both norm formulations. Participants who were asked to deliberate on the descriptive norm showed more positive attitudes towards the advocated behavior ( $M = 5.45$ ) than participants in the control condition ( $M = 5.04, p = .05$ ) or those under cognitive load ( $M = 4.81, p < .01$ ). In contrast, attitudes of participants, who were asked to deliberate on the injunctive norm ( $M = 4.94$ ) were significantly lower than in the control condition ( $M = 5.46, p = .01$ ) and were not significantly different from the attitudes in the cognitive load condition ( $M = 4.85, p = .65$ ). This supports the hypothesis that deliberation increases the influence of descriptive norms on attitudes and decreases the influence of injunctive norms (hypothesis 2). Means and standard deviations of attitudes are summarized in Table 3.1. The relevant interactions are shown in Figure 3.2.

**Table 3.1.** Means (SD) of Attitude and Intentions

	Descriptive norm			Injunctive norm		
	Cogn. Load	Control	Deliberation	Cogn. Load	Control	Deliberation
Attitude						
Believers	4.81 <sup>a</sup> (1.53)	5.04 <sup>a</sup> (1.22)	5.45 <sup>b</sup> (1.32)	4.86 <sup>a</sup> (1.18)	5.46 <sup>b</sup> (1.38)	4.94 <sup>a</sup> (1.31)
Non-believers	4.38 (1.48)	4.53 (1.56)	4.20 (1.53)	4.63 (1.25)	4.45 (1.36)	4.36 (1.58)
Intentions						
Believers	4.28 <sup>a</sup> (1.70)	4.49 <sup>a</sup> (1.39)	5.13 <sup>b</sup> (1.53)	4.37 <sup>a</sup> (1.45)	5.05 <sup>b</sup> (1.62)	4.50 <sup>a</sup> (1.45)
Non-believers	3.81 (1.52)	3.86 (1.67)	3.59 (1.69)	3.98 (1.50)	3.50 (1.64)	3.62 (1.69)
Sample size						
Believers	89	66	68	88	82	81
Non-believers	86	97	102	82	83	86

*Note:* All measured on 7-point scale (1=very negative; 7=very positive). Means with different superscripts differ within each norm formulation within each dependent variable at  $p < .05$  for LSD significant difference comparison.



**Figure 3.2.** Means of Attitudes Towards the Advocated Behavior (+SE, - SE) for Believers

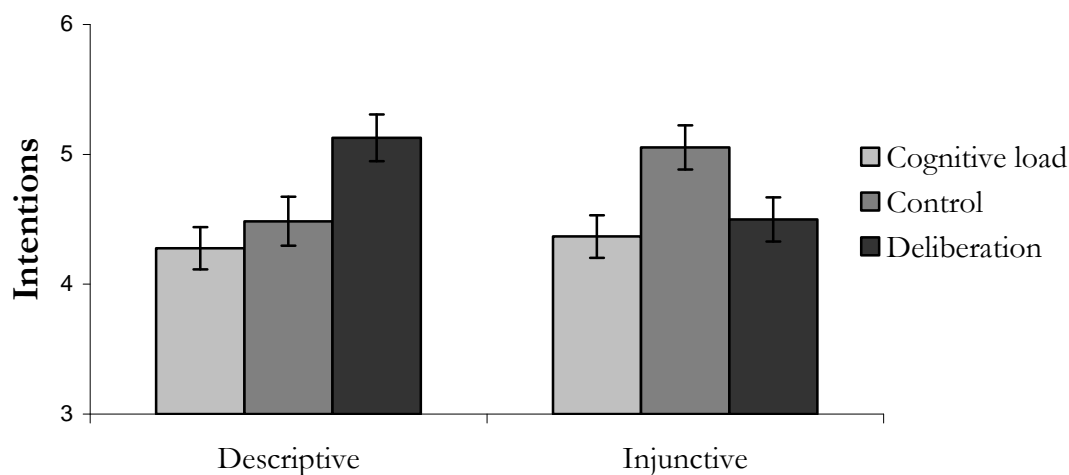
Consistent with hypothesis 4, which posits that effects of norm formulation and cognitive deliberation level only occur for consumers who believe the message content, the results showed that conditional on *non-believers*, there were no significant main effects of norm formulation,  $F(1, 998) = .78, p = .37$ , or cognitive deliberation level,  $F(2, 998) = 1.48, p = .23$ , or their interaction,  $F(2, 998) = 0.60, p = .55$ . This suggests that participants who do not believe the normative message may ignore this message altogether.

### 3.4.2. Intentions

The results obtained for behavioral intentions were similar to those for attitudes. Participants who believed the message showed higher intentions to follow the advocated behavior ( $M = 3.72$ ) than those who did not believe it ( $M = 4.64$ ),  $F(1, 998) = 81.77, p < .001$ .

Conditional on *believers*, results showed that participants who were cognitively loaded were less willing to follow the advocated behavior ( $M = 4.32$ ) than those in the control condition ( $M = 4.79$ ) or those who were asked to deliberate ( $M = 4.79$ ),  $F(2, 998) = 4.84, p = .01$ , which is consistent with hypothesis 1 (Figure 3.3). Consistent with hypothesis 2 and similar to the results for attitudes, the interaction between norm formulation and cognitive deliberation level was significant,  $F(2, 998) = 5.31, p = .01$ . Pairwise comparisons (LSD) showed that there were significant differences in behavioral intentions in different cognitive deliberation level conditions for both

norm formulations. Participants who were asked to deliberate on the descriptive norm showed more willingness to follow the advocated behavior ( $M = 5.13$ ) than those in the control condition ( $M = 4.48$ ,  $p = .02$ ) or participants who were cognitively loaded ( $M = 4.27$ ,  $p < .01$ ). In contrast, behavioral intentions of participants who were asked to deliberate on the injunctive norm ( $M = 4.49$ ) were significantly lower than intentions of participants in the control condition ( $M = 5.05$ ,  $p = .02$ ) and were not significantly different from the intentions of participants in the cognitive load condition ( $M = 4.37$ ,  $p = .57$ ).



**Figure 3.3.** *Intentions to Follow the Advocated Behavior (+SE, - SE) for Believers*

For *non-believers*, there were no significant main effects of norm formulation,  $F(1, 998) = .14$ ,  $p = .71$ , or cognitive deliberation level,  $F(2, 998) = 1.54$ ,  $p = .21$ , or their interaction,  $F(2, 998) = 1.35$ ,  $p = .27$ , suggesting that participants who do not believe the normative message most likely ignore this message, which again supports the expectations (hypothesis 4).

### 3.4.3. Total Number of Thoughts

On average, participants reported 1.43 thoughts ( $SD = 1.16$ ). The total number of reported thoughts did not depend on whether participants believed the message,  $F(1, 998) = 1.86$ ,  $p = .17$ . Although participants in the deliberation condition may be expected to come up with more thoughts (Petty et al., 1995), results did not support this ( $F(2, 998) = .64$ ,  $p = .43$  for believers and  $F(2, 998) = .56$ ,  $p = .57$  for non-believers). Both conditional on believers and on non-believers, the results

showed no significant main effects of norm formulation,  $F(1, 998) = .07, p = .79$  and  $F(1, 998) < .01, p = .96$  respectively, and no significant interaction between norm formulation and level of deliberation,  $F(2, 998) = 1.23, p = .29$  and  $F(2, 998) = 2.19, p = .11$  respectively. The question to write down thoughts apparently triggered participants to provide a similar number of thoughts, regardless of deliberation condition. This does not necessarily imply that the reported thoughts themselves were similar. The level of deliberation may have influenced the *valence* of thoughts, that is, positive and negative thoughts used to influence attitude and intention. Thus even when the total number of reported thoughts did not differ significantly, the amount of positive or negative thoughts with respect to the topic of the normative message may still depend on the level of deliberation during message processing. Means and standard deviations of thoughts are summarized in Table 3.2.

**Table 2.** Means (SD) of Numbers of Thoughts

	Descriptive norm			Injunctive norm		
	Cogn. Load	Control	Deliberation	Cogn. Load	Control	Deliberation
Total thoughts						
Believers	2.26 (1.30)	1.84 (1.14)	1.84 (0.90)	1.82 (0.99)	2.14 (1.11)	1.94 (0.97)
Non-believers	1.39 (1.08)	1.52 (1.17)	1.49 (1.13)	1.70 (1.49)	1.31 (1.21)	1.42 (1.15)
Positive thoughts						
Believers	1.10 <sup>a</sup> (1.20)	1.09 <sup>a</sup> (1.12)	1.35 <sup>a</sup> (0.93)	0.91 <sup>a</sup> (0.94)	1.30 <sup>b</sup> (1.12)	0.94 <sup>a</sup> (0.84)
Non-believers	0.66 (0.85)	0.69 (0.87)	0.78 (0.98)	0.98 (1.26)	0.60 (0.99)	0.74 (0.89)
Negative thoughts						
Believers	0.54 <sup>a</sup> (0.72)	0.30 <sup>b</sup> (0.50)	0.09 <sup>c</sup> (0.32)	0.42 <sup>a</sup> (0.60)	0.29 <sup>a</sup> (0.49)	0.34 <sup>a</sup> (0.55)
Non-believers	0.73 (0.96)	0.83 (0.97)	0.72 (0.87)	0.73 (1.05)	0.71 (0.80)	0.66 (0.92)
Sample size						
Believers	89	66	68	88	82	81
Non-believers	86	97	102	82	83	86

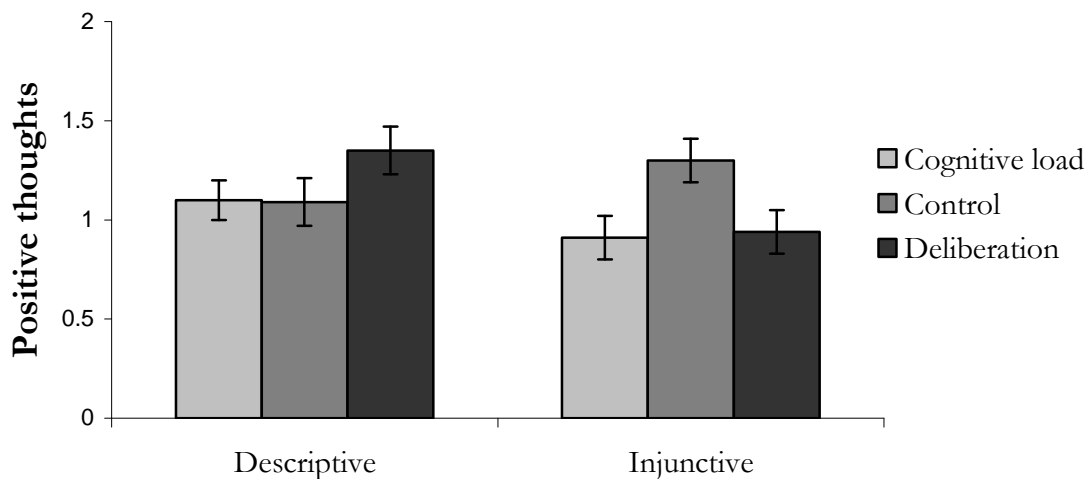
*Note:* Means with different superscripts differ within each norm formulation within each dependent variable at  $p < .05$  for LSD significant difference comparison.

#### 3.4.4. Positive Thoughts

Participants reported on average 0.89 ( $SD = 1.03$ ) positive thoughts related to the topic of the experiment. Examples of such positive thoughts are “Taste better than regular potatoes” and “It is better for your health.” Participants who believed the message reported more positive thoughts related to the topic of the experiment ( $M = 1.05$ ) than those who did not believe it ( $M = 0.74$ ),  $F(1, 998) = 24.43, p < .001$ .

Conditional on *believers*, deliberation on descriptive norms was expected to increase the number of positive thoughts towards the advocated behavior, but decrease the number of positive thoughts for injunctive norms. Results indeed showed a significant interaction effect between norm formulation and cognitive deliberation level,  $F(2, 998) = 3.29, p = .04$ , while the main effects of norm formulation,  $F(1, 998) = 1.91, p = .16$ , and cognitive deliberation level,  $F(2, 998) = 1.35, p = .26$ , were not significant. Pairwise comparisons (LSD) showed that this interaction effect was due to differences in the injunctive norm condition. Participants who were asked to deliberate on the injunctive norm had significantly fewer positive thoughts ( $M = 0.91$ ) than participants in the control condition ( $M = 1.30, p = .01$ ), but there was no significant difference with participants in the cognitive load condition ( $M = 0.94, p = .83$ ). In the descriptive norm condition, the number of positive thoughts for participants who were asked to deliberate on the norm ( $M = 1.35$ ) did not differ from the number for participants under cognitive load ( $M = 1.10, p = .21$ ) or those in the control condition ( $M = 1.09, p = .12$ ). It thus appeared that cognitive deliberation did not increase the number of positive thoughts for descriptive norms, but rather decreased the number of positive thoughts for injunctive norms (see Figure 3.4).

Conditional on *non-believers*, results did not reveal significant main effects of norm formulation,  $F(1, 998) < .57, p = .45$ , or cognitive deliberation level,  $F(2, 998) = 1.38, p = .25$ , or their interaction,  $F(1, 998) = 2.07, p = .13$ . This suggests that the thoughts of participants who do not believe the normative message are not influenced by either norm formulation or level of cognitive deliberation. In other words, non-believers most likely ignore the message, which is consistent with hypothesis 4 and the findings obtained for attitudes and intentions.



**Figure 3.4.** *Number of Positive Thoughts (+SE, -SE) for Believers*

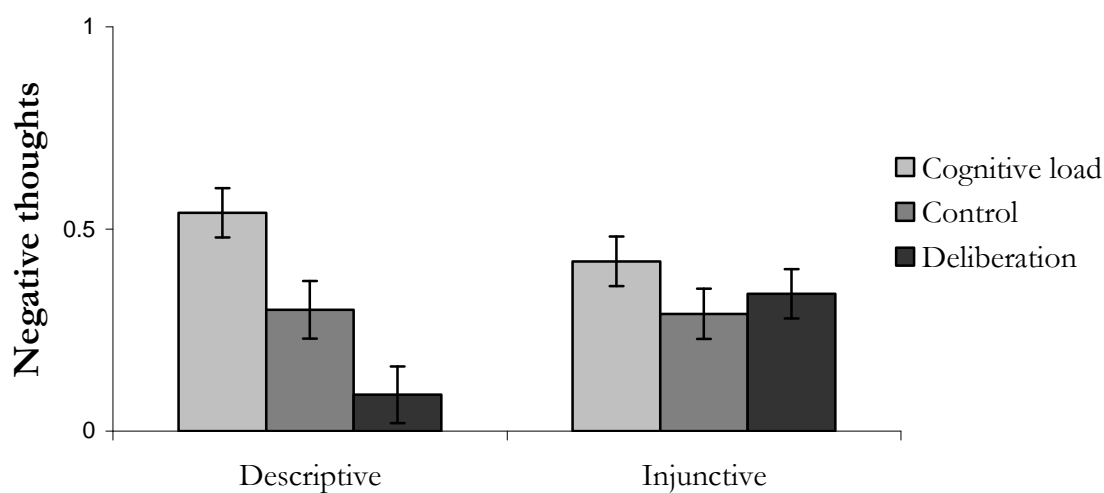
#### 3.4.5. Negative Thoughts

Participants reported on average 0.54 ( $SD = 0.81$ ) negative thoughts related to the topic of the experiment. Examples of such negative thoughts are “I think this will be at the expense of the taste of the potato” and “It is entirely useless to have environmentally-friendly processed potatoes.” Participants who believed the message reported fewer negative thoughts ( $M = 0.32$ ) than those who did not believe it ( $M = 0.73$ ),  $F(1, 998) = 70.34$ ,  $p < .001$ .

Conditional on *believers*, it was expected that deliberation on descriptive norms would decrease the number of negative thoughts towards the advocated behavior, whereas for injunctive norms deliberation would increase the number of negative thoughts towards this behavior. The analysis showed that there was a main effect of cognitive deliberation level on number of negative thoughts,  $F(2, 998) = 8.58$ ,  $p < .001$ . Pairwise comparisons (LSD) showed that participants under cognitive load tended to come up with significantly more negative thoughts ( $M = 0.48$ ) in comparison with the control condition ( $M = 0.29$ ,  $p = .005$ ) or the deliberation condition ( $M = 0.22$ ,  $p < .001$ ). The main effect of norm formulation was not significant,  $F(1, 998) = 0.48$ ,  $p = .48$ . Consistent with expectations, the results indeed showed a significant interaction effect between norm formulation and cognitive deliberation level,  $F(2, 998) = 3.76$ ,  $p = .02$ . Pairwise comparisons (LSD) showed that participants who were asked to deliberate on descriptive norms had the lowest number of negative thoughts ( $M = 0.09$ ) in comparison with control condition

( $M = 0.30$ ,  $p < .05$ ) or cognitive load condition ( $M = 0.54$ ,  $p < .001$ ). This is again consistent with the expectations that deliberation on descriptive norms will focus consumers on thoughts in favor of the advocated behavior, at the expense of negative thoughts. For injunctive norms, the number of negative thoughts did not significantly differ across cognitive deliberation levels (see Figure 3.5).

Conditional on *non-believers*, results did not reveal significant main effects of norm formulation,  $F(1, 998) < .54$ ,  $p = .46$ , or cognitive deliberation level,  $F(2, 998) = .37$ ,  $p = .69$ , or their interaction,  $F(1, 998) = .19$ ,  $p = .83$ . Similarly to the results obtained for the number of positive thoughts, as well as for attitudes and behavior, the number of negative thoughts of participants who do not believe the normative message is not influenced by this message.



**Figure 3.5.** *Number of Negative Thoughts (+SE, -SE) for Believers*

#### 3.4.6. *The Mediating Role of Positive and Negative Thoughts*

As positive and negative thoughts are influenced by norm formulation, cognitive deliberation level and their interaction, these thoughts may act as mediators of the effects of norm formulation and cognitive deliberation level towards attitude and intention for believers. To examine this, mediated moderation analyses were done based on the three models described in the section on statistical analyses.

To establish mediated moderation, four conditions should hold. As shown before, for believers, the interaction between norm formulation and cognitive deliberation level had an effect on attitudes, thus meeting the first condition for mediated moderation. Additionally prior analyses showed that this interaction



between norm formulation and cognitive deliberation level had a significant effect on the number of positive thoughts and on the number of negative thoughts that participants came up with, and the second condition for mediated moderation was also met. Furthermore, in line with the third condition, the number of positive thoughts increased attitudes,  $F(1, 438) = 86.02, p < .001$ , while the number of negative thought decreased attitudes,  $F(1, 438) = 41.74, p < .001$ . When both positive and negative thoughts were included in the model explaining attitudes, the interaction between norm formulation and cognitive deliberation level was no longer significant,  $F(2, 438) = 1.23, p = .29$ . This indicates that the interaction between norm formulation and cognitive deliberation level is fully mediated through positive and negative thoughts, supporting hypothesis 3.

Mediated moderation analyses for intentions showed similar results as those for attitudes. As shown before, for believers, the interaction between norm formulation and cognitive deliberation level had an effect on behavioral intentions as well as on the number of positive thoughts, and on the number of negative thoughts that participants came up with. Additionally, for believers the number of positive and negative thoughts affected intention,  $F(1, 438) = 74.72, p < .001$  and  $F(1, 438) = 46.46, p < .001$  respectively. Again, the interaction between norm formulation and cognitive deliberation level on intentions was no longer significant once the numbers of positive and negative thoughts were entered into the equation,  $F(2, 438) = 2.16, p = .12$ , accounting for full mediation, and supporting hypothesis 3.

In summary, cognitive deliberation appears to suppress certain thoughts. The type of thoughts that are suppressed depends on norm formulation. In particular, for descriptive norms deliberation mainly suppresses negative thoughts. In contrast, for injunctive norms positive thoughts are reported less often. This difference in thoughts drives the main result from the experiment, which is that cognitive deliberation on descriptive norms increases the influence of these norms on attitudes and intentions, whereas deliberation on injunctive norms decreases this influence.

### **3.5. Conclusion and Discussion**

Social norms are an effective tool in marketing and, as the results show, marketing messages using social norms can stimulate the purchase of specific products. The level of cognitive deliberation with which norms are being processed affects the influence of social norms on both attitudes and purchase intentions. Generally, when consumers have limited cognitive capacity to process a normative

message (e.g., when they are cognitively loaded) their attitudes and intentions will be less in favor of the advocated behavior, compared to when they can process the message without cognitive limitations. Furthermore, the effect of cognitive deliberation depends on the formulation of the norm in the message.

Cognitive deliberation on a descriptive norm makes attitudes and intentions more congruent with the normative message, while cognitive deliberation on injunctive norms has a negative effect on attitudes and intentions in favor of the advocated behavior. These findings suggest that when the likelihood of cognitive deliberation is high, descriptive norms are more effective, whereas when deliberation is unlikely injunctive norms are more appropriate. This shows that social norms should be carefully chosen and studied depending on the context in which the information supported by the norm is processed by the consumer.

Additionally, the believability of the social norm conveyed is crucial for its ability to influence consumer decision making. If consumers do not believe the social norm conveyed in a message they are unlikely to process it and therefore the effect of the norm (if present at all) will be limited.

This study has several managerial implications. Given that cognitive deliberation differentially affects the influence of injunctive compared to descriptive social norms, the wording of normative messages, the context in which such a message is received by the consumer, as well as the channels of communication should be carefully managed. Marketing campaigns need to consider the context and channels in which social norms are communicated, as this can affect the motivation, ability, and/or opportunity of consumers to process the information, and thereby whether they are likely to deliberate on the message. In contexts that are more likely to stimulate cognitive deliberation on the part of the consumer, marketing managers are advised to use descriptive norms. Specific communication channels (e.g., special interest magazines) or product categories (e.g., with high consumer involvement) may be more likely to evoke elaborate processing and may be more suited for descriptive than injunctive norms. In contrast, messages using injunctive norms should be simple and straightforward to avoid cognitive deliberation upon this message. These norms are best conveyed to the target audience through communicational channels that are likely to evoke, or allow for only limited cognitive deliberation (e.g., billboards on highways).

Marketing managers who want to stimulate new product trial using injunctive norms (“you should try...”) should realize that such messages are more effective when consumers’ thought capacity is limited. In contrast, marketing tactics that rely

on a description of the behavior of others may benefit from prompts that induce deliberation. For instance, the Israeli phone company Talk'n'Save uses the slogan "More than 70 % of American students coming to Israel to study will be using Talk'n'Save phones". Enhancing such a slogan with a prompt to stimulate deliberation may increase its effectiveness. In fact, this is exactly what another slogan of the same company does: "7 out of 10 students in Israel use Talk'n'Save – why not you?".

Currently the combination of norm type and level of cognitive deliberation is not systematically managed in the design of marketing campaigns. This is illustrated by the following example of messages implementing descriptive norms in the same anti-smoking campaigns at Evanston Township High School show ([www.socialnorms.org](http://www.socialnorms.org)): "*Most of us (8 out of 10) choose not to smoke cigarettes*", and "*I only kiss people whose breath doesn't stink... I only eat in the non-smoking section at restaurants... I take a deep breath when I'm nervous... I don't smoke. Just like 88% of ETHS students.*" Both slogans are used in the same anti-smoking campaign, and do not take account of the most optimal combination of elaboration and norm type. The results of the current study suggest that, in combination with a descriptive norm, the second message should be more effective than the first one, because it invites readers to think more about its content (i.e., induces higher elaboration).

There are important theoretical implications to these findings as well. Previously it was shown that, in general, the influence of injunctive social norms is more robust across time and different situations compared to descriptive norms (Cialdini, Reno, & Kallgren, 1993), and thus injunctive norms (compared to descriptive norms) should have a stronger influence on consumers' decision making. The results of the current study qualify this by showing that in the specific situation when consumers deliberate on the message that the norm conveys, the influence of injunctive norms is weaker than that of descriptive norms. Note should however be taken not to increase cognitive load to extreme levels for injunctive norms either, as the current research has shown that consumers who are cognitively loaded in the process of reading a social norm message are less susceptible to social norm influence in general.

This study also provides some explanation for why cognitive deliberation modifies the effect of the different types of norms on attitude. The effect is not due to the *number* of thoughts, but is fully mediated by the difference in *valence* of the thoughts that each norm formulation triggers. In particular, the increased influence of descriptive norms as a result of cognitive deliberation is caused by a drop in thoughts

against the advocated behavior, which is consistent with a presumed tendency of consumers to focus on why others perform a behavior (leading to thoughts in favor of the behavior). At the same time, the reduced influence of injunctive norms under cognitive deliberation is caused by a reduction of thoughts in favor of the advocated behavior. In combination with the line of reasoning that cognitive deliberation can produce thinking that is biased either in favor of or against (e.g., when reactance is instilled) an advocated position (Petty & Briñol, 2008), the opposite thoughts elicited by the different norms account for the moderating effect of elaboration on their influence.

Future research may shed light on how and to what extent this differential effect of social norm types can be generalized to other factors deciding which of the dual processes – elaborate or peripheral – take precedence (cf., Petty & Wegener, 1999). For example, future research could test if consumers who are cognitively depleted prior to reading the message (compared to cognitively loaded while reading the message) exhibit a similar effect for social norms.

Additionally, there are a few open questions that remain as a result of the experimental design. First of all, the advocated behaviors in this study were aimed at creating a positive (approach) goal towards buying specific products (environmentally-friendly processed potatoes). Regulatory focus theory (Higgins, 1998), however, shows an asymmetry between achievement and avoidance goals, and the interaction effects between norm type and deliberation for approach goals cannot a priori be generalized to avoidance goals (e.g., avoid buying genetically modified potatoes). While this is a theoretical limitation that should be addressed in future research, for practical purpose the current research holds promise as most marketing aims at the promotion of achievement goals.

Secondly, the current study demonstrates that the number of total thoughts that consumers list does not depend of the level of cognitive deliberation. This counterintuitive finding can be explained by the fact that the question to fill out boxes of thoughts may have made the task of thought listing socially desirable, which therefore makes the total number of listed thoughts not a very useful measure. That the results nevertheless showed more relevant positive and negative thoughts in the deliberation condition suggests that participants in the deliberation condition had relevant thoughts to weigh arguments for and against the product salient at the moment of considering their attitude and intention.

A word of caution in relation to identifying non-believers of communication messages. While people believing the message, or not, were treated as randomly

distributed, it is possible that prior attitudes influence whether people believe a message, with people holding a positive attitude being more likely to believe positive information on the topic (Eiser, Miles, & Frewer, 2002). In this study, the exclusion of non-believers may thus have placed participants with a relatively negative attitude about organic products in the non-believer group (as supported by the difference in means of attitude and intention between believers and non-believers). For the results of this research, this probably implies that the effect size was underestimated, because participants who are already positive have little room for upwards change. That the analysis nevertheless revealed the results is reassuring.

Finally, the research investigates changes in attitude and intention under the influence of social norms and different levels of cognitive deliberation. While many theories (e.g., Ajzen, 1991) posit that attitudes and behavioral intentions are proximal causes to behavior, in reality this link may be weak (Schwenk & Moser, 2009). Therefore further research is needed to investigate the influence of the interaction between social norms and cognitive deliberation on behavior.

Summarizing, cognitive deliberation on norms that are formulated as the behavior of others (i.e., descriptive norms) increases the influence of these norms, whereas deliberation on norms that are formulated as expectations of others (i.e., injunctive norms) decreases the influence of these norms on consumers' attitudes and intentions. Such changes in consumer decision making are due to changes in the valence of thoughts that each norm formulation (descriptive or injunctive) triggers. This study thus provides a process of how cognitive deliberation changes the influence of descriptive and injunctive social norms.

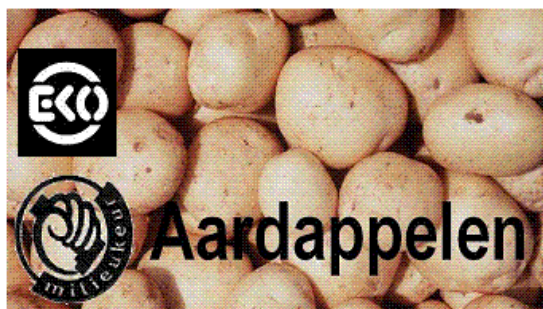
*Manipulation text for the descriptive norm condition*

Onderzoek onder Nederlanders:

**“Ja, ik koop altijd  
milieuvriendelijk geteelde aardappelen”**

Den Haag, april 2007,  
van onze verslaggever

Onlangs heeft het ministerie van LNV een onderzoek gedaan naar de aankoop van aardappelen, waaraan mensen uit het hele land hebben meegedaan. Naast het achterhalen van een voorkeur voor verschillende aardappelen, waren de onderzoekers geïnteresseerd in de aankoop van milieuvriendelijk geteelde aardappelen met Eko of Milieukeur keurmerken. Eko en Milieukeur zijn keurmerken waarvan de criteria betrekking heb-



ben op een beperkt gebruik van chemische beschermingsmiddelen en meststoffen.

Uit het grootschalige onderzoek is gebleken dat de meeste Nederlanders een voorkeur hebben voor deze milieuvriendelijk geteelde aardappelen. "Het

was opvallend hoe eensgezind de deelnemers waren", zegt een woordvoerder van het ministerie. "Ja, ik koop altijd milieuvriendelijk geteelde aardappelen", zei meer dan 64% van de ondervraagden.

# Chapter 4

## The Effect of Regulatory Focus on Social Norm Influence

*Consumers face social norms in a variety of situations and contexts where different goals can be dominant. This research shows the differential effect of regulatory focus for both descriptive and injunctive norms, which occurs because different formulations of social norms are compatible to promotion or prevention focus. More specifically, descriptive norms are oriented towards benefits and thus have a better fit with a promotion than prevention focus, while this is not the case for injunctive norms. Two experiments examine the consequences for attitudes and behavioral intentions of the two norm formulations under prevention and promotion focus. Experiment 1 investigates regulatory focus when it is primed before the normative message. Experiment 2 investigates regulatory focus that is ingrained in the normative message itself. Results of both experiments show that the effect of descriptive norms is lower when prevention goals are salient than when promotion goals are salient. Unlike descriptive norms, injunctive norms are not affected by regulatory focus.*

## 4.1. Introduction

People are social beings. This means that individuals rarely make their decisions in complete isolation, but instead are likely to be influenced by their social environment. Social psychology has studied such social influences, for example by studying how behavior is influenced by mimicking others and by adhering to relevant social norms (Dalton, Chartrand, & Finkel, 2010). This way, individuals take the expectations and behavior of others into consideration when they decide what is appropriate. Social norms thus profoundly influence preferences and behavior, and are crucial in many situations. Therefore, it is not surprising that social norms have fascinated psychologists for decades (Sherif, 1936; Shaffer, 1983; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007).

Social norms are likely to guide relevant decisions in product choice as in any other behavior. Thus decision whether to buy sustainable (e.g., fair trade) products, healthy or luxury goods are likely to be influenced by social norms. Although social norms can provide a powerful instrument to influence consumers' attitudes, intentions, and product choice, the marketing literature has surprisingly few papers on the topic. For example, in a recent meta-analysis on the influence of social norms on behavior (Melnik, Van Herpen, & Van Trijp, 2010) only 10 out of 208 papers, were from marketing journals.

Although research focusing on social norms aimed at increasing the purchase of specific products or services is scarce, marketing studies on social norms show their importance to predict for consumer behavior. This has been shown for the adoption of new products (Homburg, Wieseke, & Kuehnl, 2010), and customer loyalty to mobile phone service providers (R. Lee, Murphy, & Neale, 2009). In practice, social norms are frequently used to promote behaviors with social benefits (e.g., anti drunk-driving, antismoking, condom use.). Sustainable products (e.g., fair trade products) are also among those for which societal benefits are also important, because sustainability emphasizes social rather than physical product attributes. Social norms could be used in this context to increase the purchase and use of sustainable products. In this paper we will focus on sustainable products as a relevant case to study the influence of social norms on product choice.

To make optimal use of social norms, it is crucial for marketers to understand under which conditions the effect of social norms can increase the desired behavior or can backfire, and more specifically how to use different social norms in different situations. Recent research has emphasized the importance of distinguishing between



descriptive and prescriptive (i.e., injunctive) social norm formulations (Deutsch & Gerard, 1955; Cialdini & Trost, 1998), as it is “crucial to discriminate between the *is* (descriptive) and the *ought* (injunctive) meaning of social norms, because each refers to a separate source of human motivation” (Cialdini, Reno, & Kallgren, 1990, p. 1015). Namely, social norms influence consumer’s choice by activating different types of motivational goals. For example, these goals can be “being part of the group” (with descriptive norms) or “avoiding punishment” (with injunctive norms). Therefore, the effectiveness of communicating essentially the same social norm can differ depending on this social norm’s formulation.

At the same time, following social norms depends on the accessibility of goals being dominant or made salient at the moment (Cialdini & Goldstein, 2004). Social norms can influence behavior in different situations and contexts. For example, health related norms (e.g., antismoking norms) can appear both when consumers aim to achieve a healthy lifestyle and when they aim to prevent harm to their health. Consumers can thus have different situational dominant mindsets (i.e., “self-regulatory focuses”), each triggering its own needs and goals.

Consumer’s choice is influenced by their self-regulatory focuses (Avnet & Higgins, 2006; Werth & Foerster, 2007), which can be situationally activated, when people are stimulated to think about their hopes and aspirations in contrast with their potential losses and duties (Freitas & Higgins, 2002). Higgins (1997) has proposed two separate focuses of mindsets. The first one, promotion focus, is aimed at achieving gains, and regulates needs and goals related to the aspiration and accomplishment of desired ideals. The second one, prevention focus, is aimed at the avoidance of negative events (i.e., losses), and regulates needs and goals related to responsibility, safety and self-protection. These two focuses prime different routes of motivation of products choice, and may determine the effectiveness of social norms. The influence of norms on actual behavior may depend on its congruence with the consumer’s self-regulatory focus.

However, despite that the general congruence between human goals and regulatory focuses is a prominent topic in current marketing and social psychology literature (Kruglanski, 2006; Wänke, 2009), no research has addressed the issue of the compatibility or fit between social norms formulation and self-regulatory focus. Although not yet studied, there is reason to consider such fit because depending on which regulatory focus is activated at the moment of facing social norms, consumers can be more responsive to either of the norm’s formulations. Descriptive norms provide social proof that indicates possible beneficial behaviors (Cialdini, 2006;

Schultz et al., 2007), and therefore, these norms relate to the achievement of goals. In contrast, injunctive norms provide a request, and following this request is a way to avoid negative consequences (e.g., social disapproval or punishment) (Cialdini et al., 1990). Therefore, injunctive norms relate to prevention focus. The aim of this paper is to investigate the effect of compatibility between injunctive versus descriptive social norms on the one hand, and promotion versus prevention regulatory focus on the other hand to determine which formulation of social norms is the most effective under prevention and promotion focus.

## 4.2. Social norms in different mindsets

### 4.2.1. *Social norm formulation*

Social norms can be formulated as descriptive or injunctive norms (Cialdini et al., 1990). Descriptive norms describe the typical behavior of others, and set behavioral standards from which people may not want to deviate (Schultz et al., 2007). For example, information about the number of others who refrain from smoking constitutes a descriptive norm. Injunctive norms prescribe a behavior, and refer to what people should do in a given situation. The request “please, do no smoke” is an example of an injunctive social norm.

In line with previous research we expect that injunctive norms will have a greater influence on attitudes than descriptive norms (Melnyk, et al., 2009; Ravis & Sheeran, 2003; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). This is because descriptive norms, compared to injunctive norms, are more linked to specific circumstances (Reno et al., 1993), and being easily forgotten with time, they are less likely to influence attitudes. Whereas injunctive norms convey information on what is approved or disapproved by others and can inform consumers on what the appropriate attitudes should be (Terry, Hogg, & White, 2000). Thus, we expect that:

**H1.** *Injunctive norms have a greater influence on consumers’ attitudes than descriptive norms.*

### 4.2.2. *Regulatory focus*

According to regulatory focus theory (Higgins, 1997), consumers with an activated promotion focus regulate their attention, perceptions and behavior towards approaching gains and improving their current situation, whereas consumers with a

prevention focus regulate their attention, perceptions and behavior towards avoiding losses and keeping their current situation from getting worse. Thus regulatory focus can change not only consumers' preferences and behavior, but also the way they process information. Promotion focus activates an emphasis on positive outcomes and benefits, in contrast to the emphasis on negative outcomes and losses caused by a prevention focus (e.g., Higgins & Tykocinski, 1992; Shah, Higgins, & Friedman, 1998).

In particular, promotion focus makes people think more about aspects related to aspirations and advancements, whereas prevention focus makes them think more about pragmatic aspects related to security and self protection. For instance, Safer (1998) found that participants with an activated promotion focus were inclined to choose a car featuring luxury attributes (e.g., plush seats) over ones featuring more pragmatic attributes (e.g., antilock brakes). Whereas when prevention focus was activated participants were inclined to choose a car featuring on pragmatic attributes. This difference between promotion and prevention mindset suggests that in a promotion condition consumers will be more inclined to choose options linked to aspirations in the products (i.e., societal benefit) than in a prevention condition. Instead of being merely functional, sustainable attributes are considered to relate to value based aspirations of consumers (Walker & Dorsa, 2001), which they would prefer in a promotion focus. Therefore, in the context of sustainable products we hypothesize that:

**H2.** *Consumers' attitudes and intentions towards sustainable products are greater under promotion focus than under prevention focus.*

#### *4.2.3. Regulatory focus and norm formulation*

At any moment in time consumers can receive information that aligns or does not align with their regulatory focus. In particular, information that fits (vs. does not fit) regulatory focus is processed more fluently (A. Y. Lee & Aaker, 2004), feels more right (Camacho, Higgins, & Luger, 2003), and has a greater influence on actual behavior (Daryanto, de Ruyter, Wetzels, & Patterson, 2010). When consumers perceive that information is fluent to process, it can increase their willingness to follow this information, and enhance the favorability of their attitudes towards the products this information promotes.

Depending on which regulatory focus is highlighted at the moment of facing a social norm, a certain norm formulation (descriptive or injunctive) can fit more (less)

with the regulatory focus and thus can have a greater (smaller) influence on consumer decision making. This is due to fundamental differences between the two norm formulations.

Descriptive norms describe the behavior of most relevant others, thus, provide “social proof” of what is likely to be effective behavior (Cialdini et al., 1990, Prislin & Wood, 2005). This norm refers to “influence to accept information obtained from another as evidence about reality” (Deutsch & Gerard, 1955, p. 629), and motivates consumers by providing evidence about the benefits that following others are most likely to bring (Cialdini, 2006). Observing others’ behavior informs consumers of which action would lead to benefits and does it with less costs than self-learning (Bandura, 1977). A descriptive norm, therefore, is perceived as a way to obtain benefits and accomplish desired ideals, even when such perception is non-conscious (Cialdini, 2006; Cavalli-Sforza & Feldman, 1981). This makes descriptive norms fit with goals and desires, which are salient under promotion focus.

Injunctive norms, in contrast, prescribe a behavior, and refer to what people should do in a given situation. This norm formulation refers to “the influence to conform to the positive expectations of others” (Deutsch & Gerard, 1955, p. 629). It is based on perceived sanctions associated with conformity or violation (Cialdini & Trost, 1998), and is primarily driven by a desire of consumers to fulfill their obligations, obey authority, or avoid punishment (Lapinski & Rimal, 2005; Hornsey, Majkut, Terry, & McKimmie, 2003). These characteristics of injunctive norms provide them a fit with the avoidance goals activated by prevention focus.

In summary, descriptive norms, being oriented towards achieving benefits, are more likely to fit with promotion focus, whereas injunctive norms, being oriented towards avoiding sanctions, are likely to fit with prevention focus. The fit (or misfit) between regulatory focus and norm formulation should increase (decrease) the influence of social norms on consumer decision making. We hypothesize that:

**H3.** *Descriptive norms have a greater influence on attitudes and intentions under promotion (vs. prevention) focus.*

**H4.** *Injunctive norms have a greater influence on attitudes and intentions under prevention (vs. promotion) focus.*

Two experiments will test how regulatory focus affects the impact of descriptive and injunctive social norms on consumer decision making, by priming regulatory focus before the normative message is provided (experiment 1) and implementing regulatory focus in the normative message itself (experiment 2).

### 4.3. Experiment 1

The aim of the first experiment is to examine how preconditioned (primed) regulatory focus moderates the impact of social norms on consumer attitudes and purchase intentions.

#### 4.3.1. Participants and design

One hundred and ten undergraduate students from Wageningen university who buy coffee took part in the experiment, which had a 2 (norm formulation: descriptive vs. injunctive)  $\times$  2 (primed regulatory focus: prevention vs. promotion) between subject design. Ten participants were excluded from the sample based on the following reasons: one participant indicated that he did not read the information on the screen, related to the task; one participant did not complete the regulatory focus inducing task; two participants discussed their answers with each other; three participants indicated that they did not give serious answers; three participants had spent too little time reading the norm inducing text (3 *SD* below log transformed mean of time). Thus, the resulting sample consists of 100 participants (53 females and 47 males), ranging in age from 17 to 28 years ( $M = 20.2$ ,  $SD = 2.1$ ).

#### 4.3.2. Experimental factors

*Regulatory focus.* To manipulate regulatory focus the procedure used by Lockwood, Jordan and Kunda (2002) was adopted. Participants first received the following instruction: “*This is a pilot study on academic strategies to help one of our colleagues. Your answers are anonymous and strictly confidential. Please write down one or several positive situations that you would like to achieve (“negative situations you would like to avoid” – for prevention focus condition) within the next few weeks (e.g., a certain outcome from your study or personal life). Next, describe the strategies that you could use to successfully promote this goal (“prevent those negative situations” – for prevention condition)*”.

*Norm formulation.* Formulation of the social norm was manipulated by showing participants a fictitious webpage (see Appendix 4.1) with information about Fair Trade Coffee, entitled “*Wageningen students buy Fair Trade coffee*” for conditions with a descriptive norm and “*Wageningen students should buy Fair Trade coffee*” for conditions

with an injunctive norm. The text presented on the web page in the descriptive norm condition further read:

### **Wageningen students buy Fair Trade coffee**

The average Dutch student drinks 7 kilos of coffee (about 200 liters) a year. With such amounts of coffee, it is good to know whether the coffee is produced in a responsible way or not. Recently, 'Milieu Centraal' conducted a study about coffee purchases among Dutch students. The researchers were interested in the purchase of Fair Trade coffee. The results show that the interest of Wageningen University students in Fair Trade coffee is larger than that of students of other Universities. *"It was remarkable to see how unified the answers were"*, says a spokesperson of 'Milieu Centraal', *"A great number of Wageningen students purchase Fair Trade coffee on a regular base"*.

In the injunctive norm condition, the last two lines read: *"It was remarkable to see how unified the answers were"*, says a spokesperson of 'Milieu Centraal', *"Everybody should buy Fair trade coffee" replied a great number of Wageningen students"*.

#### *4.3.3. Procedure*

Participants were invited via e-mail or with flyers to take part in a series of studies about student grocery preferences. They were first instructed to fill in a short form, with the stated purpose of investigating student academic strategies. In this part the regulatory focus was induced. Participants were randomly assigned to either promotion or prevention condition. Upon completing this form, they were asked to proceed with the next study conducted on computer, stated to investigate student grocery preferences. In particular, participants received the following instruction: "Please, look at the new design of the 'All About Food' website<sup>2</sup>. It belongs to a non-commercial, non-governmental organization 'Milieu Centraal', which is known for its reliable and impartial studies in the food domain. Please, carefully read the information on the web page, and give your personal opinion about whether you think the webpage contains useful information". In this part the norm formulation was manipulated, and participants were randomly assigned to either the descriptive or the injunctive norm formulation condition. Next, participants were asked to answer

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<sup>2</sup> The website was developed and evaluated as one of the possibilities to increase sustainable consumption in the Netherlands within the TransForum project (Veldkamp et al., 2009)

questions that measured their attitudes, purchase intentions and past purchase behavior. Upon completing the study participants were asked to give their comments, were debriefed, thanked and rewarded with 3 Euros for the participation. The procedure lasted about 12 minutes.

#### 4.3.4. Measures

*Attitudes* were measured with four items (Cronbach  $\alpha = .79$ ), adopted from Rhodes and Courneya (2003), and rated on 7-point scales ranging from 1 (completely disagree) to 7 (completely agree): “Fair trade coffee is something for me”, “Buying fair trade coffee is pleasurable”, “Buying fair trade coffee gives me good feeling”, “Buying fair trade coffee is inspiring”.

*Behavioral intentions* were measured with three items (Cronbach  $\alpha = .91$ ), adopted from Ajzen (2001), and rated on 7-point scales ranging from 1 (completely disagree) to 7 (completely agree): “I plan to buy fair trade coffee”, “I am going to choose fair trade coffee”, “In the future I am going to buy fair trade coffee”,

*Past behavior* of participants was assessed by asking them to indicate their frequency of buying fair trade coffee, also rated on a 7-point scales ranging from 1 (never) to 7 (always). Past behavior can be a good predictor of both further actions and attitudes, because the frequency with which a behavior has been performed in the past can be used as an indicator of habit strength and thus influence consumers’ intentions and future behavior, but also can reflect the amount of reasons a person holds to perform the behavior (Ouellette & Wood, 1998).

#### 4.3.5. Results

The effects of the two experimental factors (regulatory focus and norm formulation) as well as their interactions on attitude and intention to buy fair trade coffee were analyzed using ANOVA’s. The influence of past behavior of participants, namely, the frequency of buying fair trade coffee was also analyzed.

*Attitude towards fair trade coffee.* As expected, results showed that the more frequently consumers buy fair trade coffee, the higher their attitudes towards this product,  $F(1, 95) = 22.06, p < .001, b = 0.25, \eta^2 = .19$ . Results also showed a significant main effect of norm formulation,  $F(1, 95) = 8.04, p = .006, \eta^2 = .08$ , following hypothesis 1 which predicted that injunctive norms have a greater influence

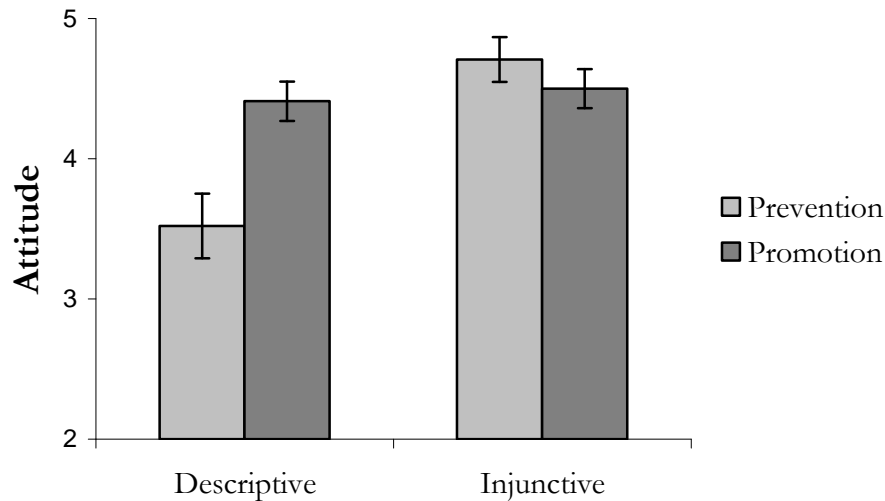
on consumers' attitudes than descriptive norms. Consistent with this hypothesis, attitudes towards fair trade coffee for participants who saw injunctive norms ( $M = 4.58$ ) were more positive than for those who saw descriptive norms ( $M = 3.96$ ). Results also showed a main effect of regulatory focus,  $F(1, 95) = 4.43$ ,  $p = .038$ ,  $\eta^2 = .05$ , following hypothesis 2 which predicted that consumers' attitudes towards sustainable products are more positive under promotion focus than under prevention focus. Consistent with this expectation, participants who were primed with promotion focus had more positive attitudes towards fair trade coffee ( $M = 4.49$ ) than those who were primed with prevention focus ( $M = 4.05$ ). The results showed a significant interaction between regulatory focus and norm formulation,  $F(1, 95) = 3.96$ ,  $p = .049$ ,  $\eta^2 = .04$ , following hypotheses 3 and 4 which predicted that descriptive norms should have a greater influence on attitudes under promotion focus and injunctive norms should have a greater influence on attitudes under prevention focus. Consistent with hypothesis 3, the influence of descriptive norms on attitudes is indeed higher under promotion focus ( $M = 4.40$ ) than under prevention focus ( $M = 3.52$ ;  $F(1, 48) = 8.22$ ,  $p = .006$ ,  $\eta^2 = .02$ ). However, the effect of injunctive norms did not significantly differ under promotion versus prevention focus,  $F(1, 46) = 0.02$ ,  $p = .96$ ,  $\eta^2 < .01$ , thus hypothesis 4 is not supported. Means and standard deviations of attitudes are summarized in Table 4.1. The relevant interactions are shown in Figure 4.1.

**Table 4.1.** *Experiment 1. Means (SD) of Attitude and Intentions for Fair Trade Coffee*

	Descriptive norm		Injunctive norm	
	Prevention focus ( $n = 19$ )	Promotion focus ( $n = 32$ )	Prevention focus ( $n = 24$ )	Promotion focus ( $n = 25$ )
Attitudes	3.52 <sup>a</sup> (1.26)	4.40 <sup>b</sup> (1.11)	4.56 <sup>a</sup> (1.16)	4.49 <sup>a</sup> (1.16)
Intentions	2.98 <sup>a</sup> (1.55)	4.04 <sup>b</sup> (1.31)	4.07 <sup>a</sup> (1.17)	4.03 <sup>a</sup> (1.72)

*Note:* All measured on 7-point scale (1=very negative; 7=very positive). Means with different superscripts differ within each norm between prevention versus promotion regulatory focus for each dependent variable at  $p < .05$ .

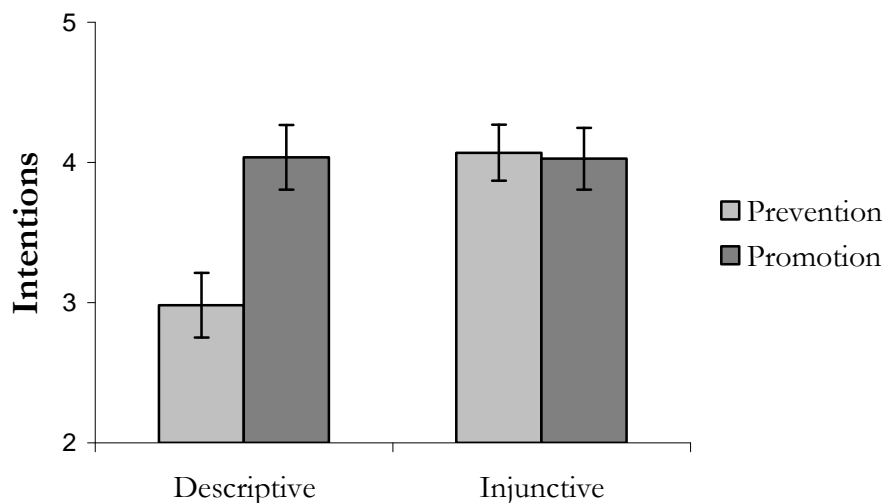




**Figure 4.1.** *Experiment 1. Attitudes Towards Fair Trade Coffee (+SE, - SE)*

*Intentions to buy fair trade coffee.* As expected, and similar to attitudes, results showed that the more frequently participants bought fair trade coffee, the more willing they were to buy fair trade coffee in the future,  $F(1, 95) = 57.75, p < .001, b = 0.43, \eta^2 = .38$ . Although findings for norm formulation resembled the pattern shown for attitudes: higher intentions for injunctive norms ( $M = 3.89$ ) than for descriptive norms ( $M = 3.51$ ), this difference is not statistically significant,  $F(1, 95) = 2.63, p = .10, \eta^2 < .01$ , indicating that when it comes to actual intentions the difference between the influence of the two norm formulations is not as pronounced as it is with attitudes. Results showed a significant main effect of regulatory focus,  $F(1, 95) = 6.53, p = .01, \eta^2 = .06$ , following hypothesis 2, which predicted that consumers' would have greater intentions to buy sustainable products under promotion focus than under prevention focus. Consistent with this expectation, participants who were primed with promotion focus showed greater intentions to buy fair trade coffee ( $M = 3.99$ ) than participants primed with prevention focus ( $M = 3.40$ ). In hypotheses 3 and 4 we predicted that descriptive norms should have a greater influence on intentions under promotion focus and injunctive norms should have greater influence on intentions under prevention focus. The results indeed showed the expected significant interaction between norm formulation and regulatory focus,  $F(1, 95) = 3.86, p = .05, \eta^2 = .04$ . Consistent with hypothesis 3, the influence of descriptive norms on intentions was greater under promotion focus ( $M = 4.04$ ) than under prevention focus ( $M = 2.98; F(1, 48) = 11.12, p = .002, \eta^2 = .02$ ). In line with the results for attitudes, the effect of injunctive norm did not significantly differ

under promotion versus prevention focus,  $F(1, 46) = 0.12$ ,  $p = .729$ ,  $\eta^2 < .01$ , thus hypothesis 4 was not supported. Means and standard deviations of intentions are summarized in Table 4.1. The relevant interactions are shown in Figure 4.2.



**Figure 4.2.** *Experiment 1. Intentions to Buy Fair Trade Coffee (+SE, - SE)*

#### 4.3.6. Discussion

Consistent with our expectations, primed regulatory focus influences consumers' attitudes and intentions towards sustainable products. In particular, different normative messages appeal to people in different regulatory mindsets. Promotion focus increases the effect of descriptive norms on consumers' attitudes and intentions, but does not change the influence of injunctive norms. Possible reasons for this asymmetry will be discussed in general discussion.

### 4.4. Experiment 2

The second experiment replicates and extends the results from experiment 1. Whereas in the first experiment we primed regulatory focus, experiment 2 examines whether regulatory focus ingrained in the text of a normative message can moderate the impact of social norms on consumer attitudes and intentions. This would be easier to apply for marketers, policy makers and other communicators who typically rely on the message content to direct people's behavior.

#### 4.4.1. *Participants and design*

One hundred and eleven undergraduate students from Wageningen University who regularly buy milk or buttermilk took part in the experiment, which had a 2 (norm formulation: descriptive vs. injunctive)  $\times$  2 (ingrained regulatory focus: prevention vs. promotion) between subject design. Participants who indicated that they had taken part in the similar experiment about fair trade coffee did not participate in the experiment. In total 3 participants were excluded from the sample, based on the following reasons. One participant indicated that he knew the purpose of the experiment, and two participants indicated that they did not give serious answers. Thus, the resulting sample consisted of 109 participants (66 females and 43 males), ranging in age from 17 to 28 years ( $M = 21.5$ ,  $SD = 2.6$ ).

#### 4.4.2. *Experimental factors*

*Regulatory focus* and *norm formulation* were both manipulated by showing participants a fictitious webpage with information about organic milk (see Appendix 4.2). The titles of the text depended on the norm formulation condition, which was given in the first part of the title, namely, “*Wageningen students buy organic milk...*” for the conditions with a descriptive norm and “*Wageningen students should buy organic milk...*” for the conditions with an injunctive norm. Each title ended either with a preventive statement “*...to prevent harm to the environment*” or with a promotion statement “*...for a better environment*”. The text presented on the web page in the condition with a descriptive norm and a prevention focus further read:

**Wageningen students buy organic milk to prevent harm to the environment**

The average Dutch student drinks 47 liters of milk (or buttermilk) a year. With such amounts of milk, it is good to know whether the milk is produced in a responsible way or not. Recently, ‘Milieu Centraal’ conducted a study about milk purchases by Dutch students. The researchers were interested in the purchase of organic milk. The results show that the interest of Wageningen University students in organic milk is larger than that of students of other Universities. “*It was remarkable to see how unified the answers were*”, says a spokesperson of ‘Milieu Centraal’, “*A great number of Wageningen students purchase*

*organic milk on a regular basis to prevent harm to the environment [for a better environment]”.*

In the injunctive norm condition, the last two lines read: *“It was remarkable to see how unified the answers were”*, says a spokesperson of ‘Milieu Centraal’, *“All Wageningen University students should buy organic milk to prevent harm to the environment [for a better environment]” replied a great number of Wageningen students”.*

#### 4.4.3. Procedure

Except that in this experiment regulatory focus was not primed (as in experiment 1) but integrated in the text, the procedure was identical to that of experiment 1. The experiment took about 8 minutes, and participants were rewarded with 2 Euros.

#### 4.4.4. Measures

To measure attitudes (Cronbach  $\alpha = .76$ ), behavioral intentions (Cronbach  $\alpha = .92$ ), and past behavior we used the same scales as in experiment 1, adjusted for milk.

#### 4.4.5. Results

The effects of regulatory focus and norm formulation, as well as their interaction, on attitude and intention to buy organic milk were analyzed using ANOVA. As in the previous experiment, the past behavior of the participants, namely, the frequency of buying organic milk was included in the model.

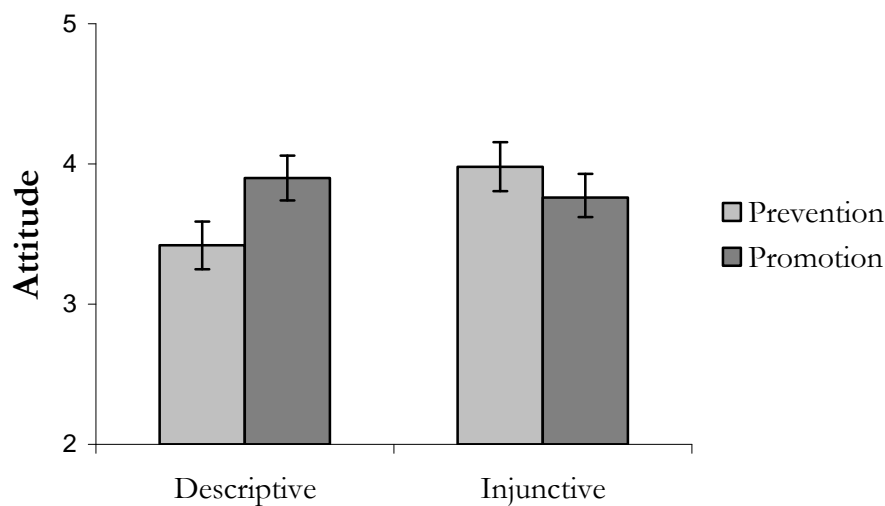
*Attitude towards organic milk.* As expected, results showed that the more frequently consumers buy organic milk, the higher their attitudes towards it,  $F(1, 104) = 54.09, p < .001, b = 0.36, \eta^2 = .34$ . Hypotheses 1 and 2 were not supported as the main effects of norm formulation,  $F(1, 104) = 1.23, p = .22, \eta^2 = .02$ , and regulatory focus,  $F(1, 104) = .54, p = .463, \eta^2 = .01$ , were not significant. The results showed a significant interaction between regulatory focus and norm formulation,  $F(1, 104) = 3.187, p = .050, \eta^2 = .04$  on attitude. Consistent with hypothesis 3, the influence of descriptive norms on attitudes was indeed greater under promotion focus ( $M = 3.89$ ) than under prevention focus ( $M = 3.42$ ),  $F(1, 50) = 4.99, p = .030$ ,

$\eta^2 = .09$ . However, the effect of injunctive norm did not significantly differ under promotion versus prevention focus,  $F(1, 50) = 0.56, p = .456, \eta^2 = .01$ , thus again hypothesis 4 was not supported, and the results replicated those of the first experiment. Means and standard deviations of attitudes are summarized in Table 4.2. The relevant interactions are shown in Figure 4.3.

**Table 4.2.** *Experiment 2. Means (SD) of Attitude and Intentions for Organic Milk*

	Descriptive norm		Injunctive norm	
	Prevention focus ( <i>n</i> = 26)	Promotion focus ( <i>n</i> = 27)	Prevention focus ( <i>n</i> = 29)	Promotion focus ( <i>n</i> = 27)
Attitudes	3.42 <sup>a</sup> (1.03)	3.89 <sup>b</sup> (1.07)	3.99 <sup>a</sup> (1.32)	3.77 <sup>a</sup> (0.93)
Intentions	2.58 <sup>a</sup> (1.40)	3.57 <sup>b</sup> (1.77)	3.48 <sup>a</sup> (1.25)	3.46 <sup>a</sup> (1.46)

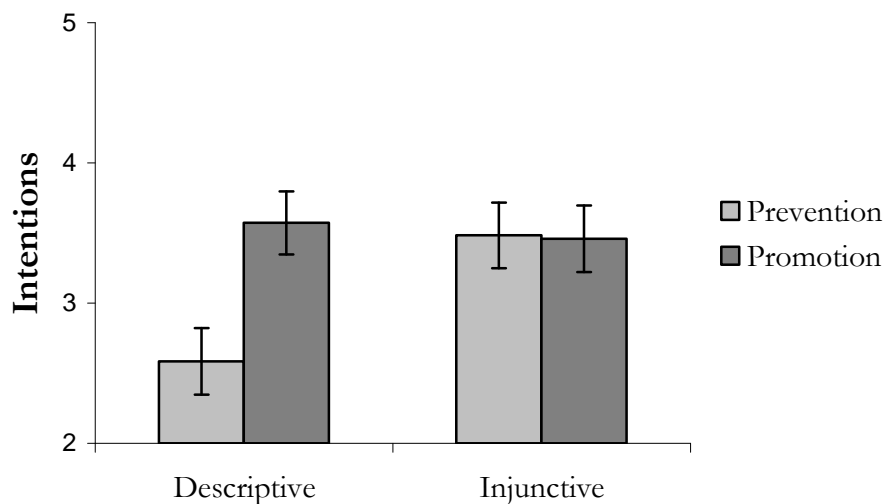
*Note:* All measured on 7-point scale (1=very negative; 7=very positive). Means with different superscripts differ within each norm between prevention versus promotion regulatory focus for each dependent variable at  $p < .05$ .



**Figure 4.3.** *Experiment 2. Attitudes Towards Organic Milk (+SE, - SE)*

*Intentions to buy organic milk.* As expected, results showed that the more frequently participants bought organic milk, the more willing they were to buy organic milk in the future,  $F(1, 104) = 53.31, p < .001, b = 0.48, \eta^2 = .34$ . The main effect of

norm formulation was not significant,  $F(1, 104) = 2.78, p = .098, \eta^2 = .03$ . Results showed a significant main effect of regulatory focus,  $F(1, 104) = 4.28, p = .041, \eta^2 = .04$ . Consistent with hypothesis 2, participants who saw a text with a promotion statement had a higher intention to buy organic milk ( $M = 3.52$ ) than those who saw a prevention statement ( $M = 3.03$ ). Additionally, the results showed a significant interaction between norm formulation and regulatory focus,  $F(1, 104) = 4.64, p = .034, \eta^2 = .04$ . Following hypothesis 3, the influence of descriptive norms on intentions was indeed greater under promotion focus ( $M = 3.57$ ) than under prevention focus ( $M = 2.58; F(1, 50) = 7.39, p = .009; \eta^2 = .13$ ). However, the effect of injunctive norm did not significantly differ under promotion versus prevention focus,  $F(1, 53) = 0.12, p = .730, \eta^2 < .01$ , thus hypothesis 4 was not supported. Means and standard deviations of intentions are summarized in Table 4.2. The relevant interactions are shown in Figure 4.4.



**Figure 4.4.** *Experiment 2. Intentions to Buy Organic Milk (+SE, -SE)*

#### 4.4.6. Discussion

The central hypotheses about the interaction between norm formulation and regulatory focus were replicated in the second experiment. Similarly to primed regulatory focus, different reasons provided in normative messages (“to prevent harm to the environment” vs. “for a better environment”) are more congruent with different regulatory focuses. In particular, we found that descriptive norms have a greater influence with promotion compared to preventions focus, whereas the influence of injunctive norm did not depend on the fit with regulatory focus. The

main effects of norm formulation and regulatory focus on intentions from experiment 1 were also replicated. Whereas in experiment 1 significant main effects of norm formulation and regulatory focus were also shown for attitudes, these effects were not significant in experiment 2. For intentions both experiments showed a significant main effect of regulatory focus, but not of norm formulation. In particular, experiment 2 revealed that consumers are more willing to buy sustainable, aspiration, products when they face a promotion oriented (compared to prevention oriented) reason to buy it.

#### **4.5. Conclusion and Discussion**

The results of these two experiments increase our understanding of the influence of social norms on decision making by showing how regulatory focus of consumers can affect the influence of social norms on both attitudes and purchase intentions. The effect of descriptive norms depends on regulatory focus. In particular, descriptive norms better fit with promotion than prevention focus, whereas this is not the case for injunctive norms, which are not influenced by regulatory focus. This shows that social norm formulation should be carefully chosen depending on the context in which the information is provided to consumers.

Our research investigates changes in attitude and intention under the influence of social norms and regulatory focus and shows that injunctive norms (compared to descriptive norms) on average have a greater influence on consumer attitudes than descriptive norms. These results are in line with previous research arguing that descriptive norms operate as a heuristic for behavior (Cialdini, Kallgren, & Reno, 1991), because observing behavior of others saves individuals time and energy and identifies which behavior is probably most appropriate (Cialdini & Trost, 1998). Furthermore, some caution is in place as although attitudes and behavioral intentions are generally proximal causes to behavior, this link can be rather weak (Schwenk & Moser, 2009), especially for sustainable behavior (Young, Hwang, McDonald, & Oates, 2010). Therefore further research is needed to investigate the influence of the interaction between social norms and regulatory focus on behavior.

The current research has several theoretical implications. Regulatory focus can influence the perception of social norms by consumers. Descriptive norms are shown to fit better with a promotion focus, whereas injunctive norms appear to be independent of regulatory focus. This asymmetry in the effect of regulatory focus on descriptive and injunctive norms is shown in two studies with different operationalizations of regulatory focus and different products, indicating the

robustness of the effect. This suggests that there is a fundamental difference between descriptive and injunctive norms, which is consistent with previous research demonstrating that injunctive and descriptive norms lead to significantly different behavior patterns in the same setting (Reno et al., 1993). In particular, Reno and colleagues have shown that injunctive norms suppress littering independent of whether the environment where the norm is activated and the environment in which people can litter is different or the same, whereas the influence of descriptive norms is less general. This may be due to fundamental differences between these two types of norms similar to those suggested by Cialdini (2006), who argued that descriptive norms are more specific and often serve as a heuristic for beneficial behavior. Injunctive norms, on the other hand, are more rationally processed and may convey two types of goals: gaining peer approval by following the expectations of others and avoiding peer disapproval for not following an explicit social demand. This could potentially explain why regulatory focus does not affect the influence of injunctive norms in our study: injunctive norms can fit with both a prevention focus (to avoid disapproval) and a promotion focus (to gain approval).

This study has several managerial implications. This research supports the generally larger effect of injunctive over descriptive norms for attitudes (Melnyk, Van Herpen, & Van Trijp, 2009). However, as Melnyk et al. (2009) find that descriptive norms have a stronger influence on behavior compared to injunctive norms, descriptive norms may still be the norm of choice for marketers. The current paper shows that descriptive norms are most successful when a goal approach focus rather than a loss avoidance focus is present. The research also shows that the wording of a normative message can activate a gain or loss avoidance focus. A marketer should therefore carefully design the wording of normative messages, the context in which such a message is received by consumers, as well as the channels of communication. Messages which are focused on problem avoidance (e.g., [www.obesityinamerica.org](http://www.obesityinamerica.org)) may not be very well suited for descriptive norms and should use injunctive norms as a default. Messages using descriptive norms, such as campaigns based on communicating a favorable statistic of the majority of others that perform a behavior (Berkowitz, 2005), should be conveyed in the context of achieving goals. For example, the Israeli phone company Talk'n'Save uses the slogan *"More than 70 % of American students coming to Israel to study will be using Talk'n'Save phones"*. Conveying such a slogan in the context of achieving benefits (e.g., "to get an excellent connection") compared to the avoidance of losses (e.g., "to avoid being disconnected") may increase its effectiveness.



Descriptive norms are often used in social campaigns (e.g., [www.mostofus.org](http://www.mostofus.org)), and communication managers can use the current research to enhance the efficacy of these campaigns by ensuring that the norm is used in a promotion context. For example, anti-smoking campaigns at Evanston Township High School used a descriptive norm (<http://www.socialnorms.org/CaseStudies/evanston.php>): *“ETHS students: 8 out of 10 don’t smoke cigarettes”*, accompanied with positive healthy and desirable behaviors such as “dancing”, “playing sports” and “hanging out with friends” to be approached instead of smoking. This should have a greater influence on consumer decision making than when the avoidance of negative consequences (e.g., yellow teeth) would have been used. After all, our study has demonstrated that descriptive norms have a stronger influence on consumers’ attitudes and intentions under promotion focus than under prevention focus.

*Manipulation text for the descriptive norm condition in experiment 1*

Productiewijze - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address  Go

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# MeerOverEten

home

TREKWOORDEN  ZOEKEN

## Meer over...

- IN DE KEUKEN
- PRODUCTINFORMATIE
- GEZONDHEID
- MILIEU
- DIERENWELZIJN
- PRODUCTIEWIJZE
- EERLIJKE HANDEL

## Doelgroepen

- 1 Kinderen
- 2 Jongeren
- 3 Gezinnen
- 4 Senioren

## "Wageningse studenten kopen Fair Trade koffie"

De gemiddelde Nederlandse student drinkt zeven kilo koffie (ongeveer 200 liter) per jaar. Met zulke hoeveelheden is het prettig om te weten of de koffie op een verantwoorde manier wordt geproduceerd. Onlangs heeft Milieu Centraal een onderzoek gedaan naar de aankoop van koffie door Nederlandse studenten, waaraan studenten uit het hele land hebben meegedaan. De onderzoekers waren geïnteresseerd in de aankoop van Fair Trade koffie. De resultaten lieten zien dat de belangstelling van Wageningse studenten voor Fair Trade koffie groter is dan die van overige Nederlandse studenten. "*Het was opvallend hoe eensgezind de antwoorden waren*", zegt een woordvoerder van Milieu centraal, "*Een groot aantal Wageningse studenten koopt al regelmatig Fair Trade koffie*". ([uitslag van het onderzoek](#))

Voor meer informatie over hoe u Fair Trade koffie kunt herkennen en informatie over landen waar de Nederlandse koffie vandaan komt, kunt u [hier klikken](#).



## Extra:

**Mimi koopt eerlijk!**  
Eten zonder illegale arbeid



Meer >>>

## Links:

**Gezond eten:**

- Eerlijke recepten
- Slank koken
- Lijnen
- Minder calorieën
- Goed voor de lijn
- Een beter cholesterool
- Maaltijdenvangers
- Vitaminen
- Mineralen
- Vegetarisch koken

My Computer

## Appendix 4.2.

*Manipulation text for the descriptive norm condition in experiment 2*

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home

TREFWOORDEN  ZOEKEN

Over ons | Contact | Attending | MY MIMI

### “Wageningse studenten kopen biologische melk, voor een beter milieu”

De gemiddelde Nederlandse student drinkt 47 liter melk (of karnemelk) per jaar. Met zulke hoeveelheden is het prettig om te weten of de melk op een verantwoorde manier wordt geproduceerd. Onlangs heeft Milieu Centraal een onderzoek gedaan naar de aankoop van melk door Nederlandse studenten, waaraan studenten uit het hele land hebben meegedaan. De onderzoekers waren geïnteresseerd in de aankoop van biologische melk. De resultaten lieten zien dat de belangstelling van Wageningse studenten voor biologische melk groter is dan die van overige Nederlandse studenten. *“Het was opvallend hoe eensgezind de antwoorden waren”,* zegt een woordvoerder van Milieu centraal, *“Een groot aantal Wageningse studenten koopt al regelmatig biologische melk. Ze zeggen dit te doen omdat ze het milieu willen verbeteren”.* ([uitslag van het onderzoek](#))

Voor meer informatie over hoe u biologische melk kunt herkennen en informatie over de productiewijze van biologische melk op Nederlandse melkveebedrijven, kunt u [hier klikken](#).

**Meer over...**

- IN DE KEUKEN
- PRODUCTINFORMATIE
- GEZONDHEID
- MILIEU
- DIERENWELZIJN
- PRODUCTIEWIJZE
- EERLIJKE HANDEL

**Doelgroepen**

- › Kinderen
- › Jongeren
- › Gezinnen
- › Senioren

**Extra:**

**Mimi koopt eerlijk!**  
Eten zonder illegale arbeid

**Meer >>>**

**Links:**

**Gezond eten:**

- Eerlijke recepten
- Slank koken
- Lijnen
- Minder calorieën
- Goed voor de lijn
- Een beter cholesterool
- Maaltijdvervangers
- Vitaminen
- Mineralen
- Vegetarisch koken



# Chapter 5

## Tell Me What to Do When I am in a Good Mood, Show Me What to Do When I am in a Bad Mood: Mood as a Moderator of Social Norm's Influence

*Consumers are exposed to social norm information when they are in a good and when they are in a bad mood. This study investigates the effect of mood (positive and negative) on the influence that both descriptive and injunctive norms have on consumers' attitudes, behavioral intentions and actual behavior. Results of an experiment with norms advocating sustainable products shows a fundamental difference between injunctive and descriptive norms. In particular, the influence of injunctive norms on attitudes, intentions and behavior is greater under positive than negative mood, and the influence of descriptive norms on attitudes (but not intentions or behavior) is greater under negative than positive mood.*

## 5.1. Introduction

Mood has a profound influence on consumer decision making (Gardner, 1985). It plays an important role in the way consumers learn, interpret, and remember information (Forgas, 1989) and can interfere with people's ability to process persuasive messages (Mackie & Worth, 1989). The impact of mood on the effectiveness of persuasive messages is considerable (Bless, Bohner, Schwarz, & Strack, 1990). Thus it is not a coincidence that the role of mood is one of the central topics in the fields of consumer behavior (Cohen, Pham, & Andrade, 2008) and social psychology (Schimmack & Crites, 2005).

Social norms are an influential driver of consumers' preferences in different domains of everyday life (Cialdini et al., 2006; Melnyk, Van Herpen, & Van Trijp, 2009). Social norms can be communicated as the typical behavior of others (e.g., "most of my colleagues buy organic vegetables"). These are so called descriptive norms; they describe what most others do in a given situation (Cialdini, Reno, & Kallgren, 1990). Alternatively, norms can be communicated as expectations of others to perform, or not to perform, a behavior (e.g., "my colleagues expect me to buy organic vegetables"). These are so called injunctive norms; they prescribe certain behavior in a given situation (Cialdini et al., 1990). Social norm messages are extensively used in marketing campaigns, as well as in political and social campaigns, and their use can be accompanied by efforts to change consumers' mood state (e.g., when using fair fear appeals or romantic stories). Importantly, the influence of social norms may depend on the mood that consumers experience while exposed to them.

Despite a large body of research on social norms (see Goldstein & Cialdini, 2009) and on the role of mood in consumer behavior (see Gardner, 1985) little is known about the effect of mood on social norms' influence. Although prior research has not examined whether the two types of social norm formulation have a different influence under good and bad mood, this paper argues and will show that there is a relation between mood and norm formulation based on the mood-protection and the self-protection mechanisms. When in positive mood, individuals want to protect their positive mood, and they want to repair their mood when they are in negative mood. These mechanisms result in consumers differently processing received normative information. In general, in positive mood consumers have a tendency to be more compliant with requests, and are less likely to experience reactance and invest cognitive resources (Mann & Hill, 1984). In positive moods conditions, this would enhance the effect of injunctive norms but not of descriptive norms. On the other

hand, in a negative mood consumers are less compliant with direct requests, more likely to experience reactance and tend to cognitively deliberate on received information (Mann & Hill, 1984). Such situations should reduce the effect of injunctive norms, but not necessarily of descriptive norms. Thus, we expect that injunctive norms have more influence on consumers' decision making and actual behavior under positive mood compared to negative mood, whereas the influence of descriptive norms is greater under negative mood. This study thus provides an understanding about the ability of mood to change the influence of descriptive and injunctive social norms.

## 5.2. Facing social norms in different moods

### 5.2.1. *The role of mood*

Mood influences many aspects of consumer behavior. Mood state biases consumers' judgments of products and services in the direction of the mood (Gardner, 1985; Miniard, Bhatla, & Sirdeshmukh, 1992). For example, consumers in a positive mood, compared to negative mood, evaluate objects more favorably (Forgas, 1995), and express more favorable judgments about life satisfaction (Schwarz & Clore, 1983). Consumers in a good mood not only express more positive judgments and declare "good intentions" consistent with group expectations, that is, are more favorable to socially supported actions, but consumers actually tend to follow group endorsed behavior more. In particular, a large number of studies show that consumers in a positive mood (compared to negative mood) tend to cooperate more and behave more sociably (Isen, 1987), participate in surveys more willingly (Isen, Shalke, Clark, & Karp, 1978), assist others (Isen & Levin, 1972), help strangers with money (Baron, 1997), donate blood, and help co-workers in their job (Carlson, Charlin, & Miller, 1988). In addition to this "feel good, do good" effect, the mood at the time of making a decision can influence consumers' preferences (Dube & Schmitt, 1991). Given that social norms usually convey a pattern of behavior that is socially supported we therefore expect that, in general, consumers in a positive mood are more likely to follow social norms.

**H1:** *In positive mood (compared to negative mood) consumers have more favorable attitudes, behavioral intentions and behavior towards products promoted by social norms.*

### 5.2.2. *Mood and social norms*

The effect of social norms on consumers' decision making depends not only on mood, but also on the formulation of the social norm. Social norms can be formulated in two distinct ways: (1) through giving information about the behavior of other people, and (2) through highlighting social rules (Reno, Cialdini, & Kallgren, 1993; Lapinski & Rimal, 2005). These are two formulations of social norms, that is, descriptive (what most people do) and injunctive (what ought to be done) formulations (Cialdini et al., 1990). Different reasons drive conformity to injunctive versus descriptive norms, and consumers process the information that each norm conveys differently (Prislin & Wood, 2005).

Each norm formulation can be differently affected by mood due to the way in which consumers process the specific social norm information under positive and negative mood. That is, individuals are motivated to maintain the mood when they are already in positive mood, but engage in mood repair when they are in negative mood (Hirt & McCrea, 2000). The mood-protection mechanism leads consumers to show more compliance with requests in a positive mood compared to negative mood (Forgas, 1998). After all, not conforming to such an expectation or a request from others can lead to conflicts with those others (Stangor, 2004; Turner, 1991), and therefore can decrease the mood.

Importantly, because of mood-protection and mood-repair mechanisms, positive and negative moods can result in different effects on cognition (Isen, Johnson, Mertz, & Robinson, 1985). With the mood-protection mechanism, when in positive mood individuals avoid investing cognitive effort unless doing so promises to enhance their positive mood (Wegener, Smith, & Petty, 1995). Indeed positive mood was shown to reduce consumers' motivation to systematically process both content information and contextual cues (Bohner, Crow, Erb, & Schwarz, 1992). Therefore positive mood is typically associated with more superficial processing of received information. Unlike the mood-protection mechanism of positive mood, the mood-repair mechanism of negative mood stimulates individuals to invest their cognitive efforts to find ways of improving their mood (Hirt & McCrea, 2000). Therefore negative mood is associated with more cognitive elaboration of the received information (Clore, Schwarz, & Conway, 1994).

This difference in the amount of cognitive deliberation under positive and negative mood can lead to different perceptions of injunctive compared to descriptive social norms. Previous studies show that injunctive norms have a lower influence on



consumer decision making, when consumers cognitively deliberate upon messages that communicate injunctive norms (Melnyk, Van Herpen, Fischer, & Van Trijp, 2010). This is because injunctive norms, conveying an explicit and straightforward message, can be perceived by consumers as a limitation to their freedom and can therefore trigger them to counter argue in favor of overcoming the request (Mann & Hill, 1984). However, in positive mood the mood-protection mechanism should decrease the likelihood of thoughts against such a request (Batra & Stayman, 1990). In fact, moods may bias the selection, encoding, or retrieval of thoughts and ideas in a situation, biasing people toward mood-congruent information (Schaller & Cialdini, 1990). Therefore we expect a higher responsiveness towards injunctive norms in positive mood compared to negative mood.

**H2:** *Injunctive norms have a greater influence on attitudes, behavioral intentions and behavior under positive than under negative mood.*

However, for descriptive norms we do not expect that negative mood decreases their influence, because due to the mood-repair mechanism consumers are more likely to cognitively deliberate upon social norm messages (Clore et al., 1994), and this can actually increase the influence of descriptive norms on consumer decision making (Melnyk et al., 2010). Furthermore, the mood-repair mechanism stimulates consumers not only to scrutinize the information they receive, but also stimulates them to think about solutions to improve their mood. Descriptive norms can present such a solution, by conveying information of what most others do. In such a way, descriptive norms provide “social proof” of what is likely to be effective behavior (Reno et al., 1993; Cialdini, 2006) and indicate possible beneficial behaviors (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). In fact, this perception of descriptive norms can make them more influential under negative compared to positive mood. For example, it was shown that when people experience negative feelings (compared to positive feelings), and do not feel comfortable, they are more likely to follow attitudinal patterns of others (Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006). Furthermore, Griskevicius et al., (2009) showed that a descriptive social norm message with a social proof appeal (“most popular”), was persuasive when people experienced negative feelings (fear), but was counter persuasive when people experienced pleasant feelings (romantic desire). Therefore for descriptive norms we hypothesize:

**H3:** *Descriptive norms have a greater influence on attitudes, behavioral intentions and behavior under negative than under positive mood.*

### 5.3. Experiment

#### 5.3.1. Participants and Design

One hundred and forty two participants took part in the experiment, which had a two factor design. More specifically the design was a 2 (mood induction: negative vs. positive)  $\times$  3 (norm formulation: descriptive vs. injunctive vs. no norm) experimental between subjects design. One participant was excluded, because she did not complete the mood manipulation task. Thus the resulting sample consists of 141 participants (74 females and 67 males). The age of participants ranged from 16 to 33 years ( $M = 21.1$ ,  $SD = 3.7$ ).

#### 5.3.2. Experimental Factors

*Mood manipulation.* To manipulate the mood of the participants we used a procedure that has been used in several studies and has been shown to be effective in eliciting the desired mood (Arnold & Reynolds, 2009; McFarland, Buehler, von Ruti, Nguyen, & Alvaro, 2007; Strack, Schwarz, & Gschneidinger, 1985). Participants were asked to recall either a negative life event that created a strong and unpleasant feeling that darkened the time (negative mood condition), or a positive event that created a strong and pleasant feeling that illuminated the time (positive mood condition). They were told that their descriptions of their “life event” will help to understand the life of students and provide the basis for the development of a life-event survey. The vividness of the experience was enhanced with several additional requests, asking participants to visualize themselves in that situation, try to experience all of the feelings they had in that time, and write down all the individual feelings they experienced. Participants were also told that they could stop their participation in the research at any moment.

*Norm formulation.* Formulation of the social norm was manipulated by a short statement on the background of a neutral picture with chocolate (see Appendix 5.1). “Did you know that nowadays most WUR students buy fair trade chocolate?” (for descriptive norm condition), “Did you know that nowadays most WUR students think you should buy fair trade chocolate?” (for injunctive norm condition), and “Did you know that nowadays there is a possibility to buy fair trade chocolate in any supermarket?” (for no norm condition).

### 5.3.3. Procedure

Participants were invited through an e-mail or with flyers to participate in a series of studies, conducted in a computer room. The first study was entitled the “Life events study”, with the stated purpose to investigate the vividness of student memory and their ability to recall things. In this part mood was induced followed by a manipulation check. Upon completing the first study participants were asked to precede with the next study, entitled “Students’ grocery preference study”, with the stated purpose to investigate the dynamics of student preference about grocery products “from a randomly chosen grocery domain”. Fair trade chocolate was chosen as the target product. Participants were instructed to look at a poster showing a picture of chocolate accompanied by a short text to further evaluate it. In this part, norm formulation was manipulated, after which participants were asked questions to measure their attitudes and purchase intentions. At the very end participants were asked to leave their comments, thanked for participation and received the following message, which offered them an opportunity to make a donation to a well-known fair trade organization:

“You just participated in a study about fair trade chocolate. There is an organization “Oxfam-Novib”, which collects money for improving the life and infrastructure of people. Among other things it helps people who work at cacao fields and plants, and makes sure these people receive fair treatment for their work. “Oxfam-Novib” supports more than 850 organizations in 60 countries worldwide. For example, there are organizations of farmers and fishermen, but there are also educational institutions, female organizations, trade unions, and organizations that support the fair treatment of workers and human rights.

If you want to, there is a possibility to make a donation to this organization from the money you receive for your participation in this research. The donation is anonymous and confidential. You will receive the amount of 3 Euros in 20 cent coins.

Because we are obliged by the financial department to keep track of the total flow of contributed money, we would like to ask you to write down the amount of money you would like to contribute. If the amount is zero, please indicate it as well. You can write the amount on the paper with the yellow stripe located next to your computer.”

Next, the participants were invited to the research coordinator, received 3 Euros, and could put their donations in a special box, which had the “Oxfam-Novib” design. The total procedure lasted about 11 minutes. At the end of the data collection all participants were debriefed by e-mail. All the donated money was transferred to the “Oxfam-Novib” organization after the experiment concluded.

#### 5.3.4. Measures

*Attitudes* were measured with three items (Cronbach  $\alpha = .87$ ), which were adapted from Lee and Aaker (2004), and rated on 100-point scales operated by sliders ranging from 1 (completely disagree) to 100 (completely agree). All the items started with the statements “*My attitude towards organic fair trade chocolate is...*” (Negative – Positive, Unfavorable – Favorable, Bad – Good).

*Behavioral intentions* were measured on the same 100-point scale with two items, which were adapted from Ajzen, (2001) (Cronbach  $\alpha = .83$ ): “Next time you need to buy chocolate, how likely is that you would buy fair trade chocolate?” (very unlikely - very likely); “I plan to buy organic fair trade chocolate in near future” (completely disagree - completely agree).

*Behavior* was measured by the self-indicated amounts of money that participants donated for the “Oxfam-Novib” fair trade organization. The total amount of donation matched the self-indicated amount.

### 5.4. Results

The effects of the two categorical variables mood and norm formulation as well as their interaction on attitude towards fair trade chocolate, purchase intention and actual donations to the fair trade organization were analyzed using ANOVAs.

*Attitude towards fair trade chocolate.* Results showed a significant main effect of mood,  $F(1, 135) = 18.25, p < .001, \eta^2 = .119$ . In hypothesis 1 we predicted that positive mood (compared to negative mood) increases the influence of social norm information on consumers’ attitudes. Consistent with our expectations, participants in a positive mood had more favorable attitudes towards fair trade chocolate ( $M = 71.86$ ) than those in a negative mood ( $M = 61.58$ ). Results also showed a significant main effect of norm formulation,  $F(2, 135) = 5.62, p < .001, \eta^2 = .077$ , and further analyses (LSD) revealed that attitudes towards fair trade chocolate were lower when it was promoted by the message without any norm ( $M = 61.26$ )

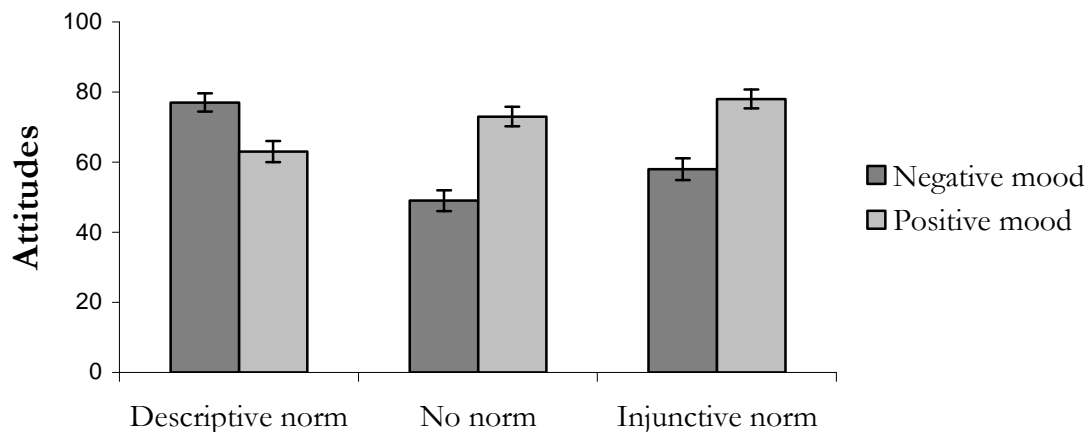
compared to the messages containing either the descriptive ( $M = 70.70$ ;  $p = .002$ ) or injunctive norm ( $M = 68.20$ ;  $p = .021$ ). This shows that including a social norm in a persuasive message can increase the influence of the message on consumers' attitudes.

In hypotheses 2 and 3 we predicted that the influence of injunctive norms is greater under positive than under negative mood (H2), whereas the influence of descriptive norms on attitudes is greater under negative than under positive mood (H3). Consistent with our expectations, results showed a significant interaction effect between norm formulation and mood,  $F(2, 135) = 24.94$ ,  $p < .001$ ,  $\eta^2 = .270$ . Further analyses (LSD) revealed that for injunctive norms, attitudes were more favorable for participants who were in positive mood ( $M = 78.19$ ) than those in negative mood ( $M = 58.22$ ;  $F(1, 43) = 26.72$ ,  $p < .001$ ). For descriptive norms, attitudes towards fair trade chocolate were more favorable for participants who were in negative mood ( $M = 77.43$ ) than those who were in positive mood ( $M = 63.97$ ;  $F(1, 46) = 8.35$ ,  $p = .006$ ). Participants in the no norm condition had more favorable attitudes towards fair trade chocolate in positive mood ( $M = 73.44$ ) than in negative mood ( $M = 49.09$ ;  $F(1, 46) = 39.14$ ,  $p < .001$ ), showing a main effect of mood and supporting hypothesis 1. Means and standard deviations of attitudes are summarized in Table 5.1. The relevant interactions are shown in Figure 5.1.

**Table 5.1.** Means (SD) of Attitude and Intentions for Fair Trade Coffee and Donations to "Oxfam-Novib"

	Descriptive norm		No norm		Injunctive norm	
	Negative ( $N = 27$ )	Positive ( $N = 21$ )	Negative ( $N = 22$ )	Positive ( $N = 26$ )	Negative ( $N = 20$ )	Positive ( $N = 25$ )
Attitudes	77.43 <sup>a</sup> (12.38)	63.96 <sup>b</sup> (19.74)	49.01 <sup>a</sup> (8.22)	73.44 <sup>b</sup> (16.58)	58.21 <sup>a</sup> (14.32)	78.19 <sup>b</sup> (11.60)
Intentions	48.87 <sup>a</sup> (22.11)	45.36 <sup>a</sup> (27.26)	28.38 <sup>a</sup> (16.51)	48.19 <sup>b</sup> (24.16)	42.25 <sup>a</sup> (21.70)	56.86 <sup>b</sup> (18.71)
Donations	1.46 <sup>a</sup> (1.13)	1.00 <sup>a</sup> (1.02)	0.91 <sup>a</sup> (1.00)	1.19 <sup>a</sup> (1.01)	0.78 <sup>a</sup> (0.97)	1.53 <sup>b</sup> (1.02)

*Note:* Attitudes and Intentions are measured on 100-point scales. Donation is measured in Euros. Means with different superscripts differ within each norm formulation condition between negative versus positive mood for each dependent variable at  $p < .05$ .

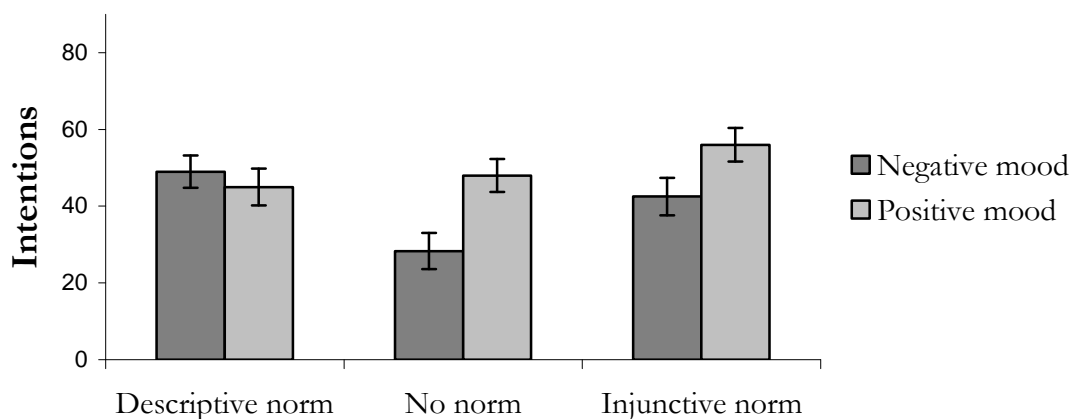


**Figure 5.1.** *Attitudes towards Fair Trade Chocolate (+SE, - SE)*

*Intentions to buy fair trade chocolate.* Results showed a significant main effect of mood,  $F(1, 135) = 7.56, p = .007, \eta^2 = .053$ . In hypothesis 1 we predicted that positive mood (compared to negative mood) increases the influence of social norm information on consumers' intentions. Consistent with our expectations and similar to the results for attitudes, participants in positive mood were more willing to buy fair trade chocolate ( $M = 50.14$ ) than those in negative mood ( $M = 39.84$ ). Results also showed a significant main effect of norm formulation,  $F(2, 135) = 3.36, p = .038, \eta^2 = .047$ , and further analyses revealed that those participants who saw the message without any norm expressed less willingness to buy fair trade chocolate ( $M = 38.28$ ) in comparison with participants who saw the message with either injunctive ( $M = 49.56; p = .016$ ) or descriptive norm ( $M = 47.11; p = .050$ ).

In hypotheses 2 and 3 we predicted that the influence of injunctive norms is greater under positive than under negative mood (H2), whereas the influence of descriptive norms on intentions is greater under negative than under positive mood (H3). Consistent with our expectations, results showed a significant interaction effect between norm formulation and mood,  $F(2, 135) = 3.62, p = .029, \eta^2 = .050$ . Further analyses revealed that for injunctive norms indeed participants indicated higher intentions in positive mood ( $M = 56.86$ ) than in negative mood ( $M = 42.25; F(1, 43) = 5.83; p = .020$ ), however the influence of descriptive norms did not depend on mood,  $F(1, 46) = .24; p = .624$ . Participants in the no norm condition also indicated more willingness to buy fair trade chocolate in positive mood ( $M = 48.19$ ) than those in negative mood ( $M = 28.38; F(1, 46) = 8.35; p = .002$ ). Hence hypothesis 2 but not 3 was supported. Whereas the influence of descriptive norms on intentions did not differ in positive versus negative mood, results showed that the presence of a

descriptive norm changed the influence of the message in comparison with the no norm condition. In particular, the difference between positive and negative mood that was present in the no norm condition disappeared when descriptive norms were used.



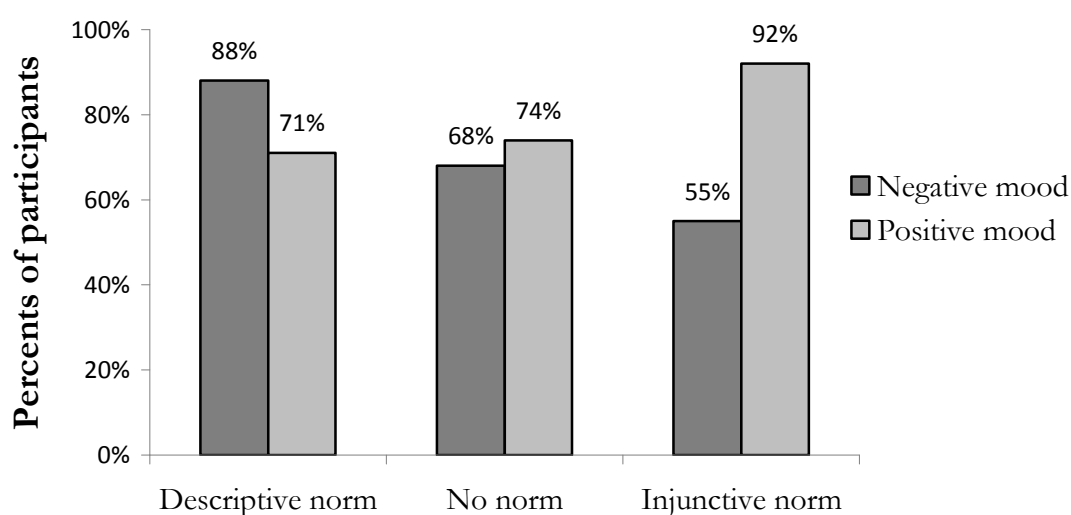
**Figure 5.2.** *Intentions to buy Fair Trade Chocolate (+SE, - SE)*

#### *Donation money*

To test the influence of mood, norm formulation and their interaction on donation behavior we, first, performed a Tobit regression analysis (Doyle, 1977; Long, 1997; do Vale, Pieters, & Zeelenberg, 2008), because donation behavior consist of two components, namely, making the donation and the amount of the donation. Tobit model deals with problems when dependent variables are bounded by lower limit. In case of donation it means that the variable containing the amount of donation is bounded with zero, because participants cannot donate a negative amounts of money independently how strong they are against donating the money. Thus, the variable takes on this limiting value for a substantial number of respondents. Consequently, the distribution of purchases usually exhibits a concentration of observations at the limiting value. Tobit model takes into account such distribution and tobit regression includes all participants in order to estimate the influence of mood, norm formulation and their interaction on the donation amount, accounting for the fact that some participants did not make a donation. The result of the regression showed that the main effects of mood,  $\beta = .07$ ,  $p = .12$ , and norm formulation,  $\beta = -.03$ ,  $p = .49$ , were not significant. As expected, the interaction effect between mood and norm formulation was marginally significant,  $\beta = .10$ ,  $p = .05$ . As predicted by hypotheses 2 and 3, the amount of donation was the highest for participants who saw an injunctive norm and were in a positive mood.

To establish whether the choice to donate (independently on how strong or weak the desire or aversion for donation is) is influenced by the interaction, we run a separate probit analysis on the likelihood of making the donation (yes-no) for all participants. Probit resolves the statistical difficulties inherent in ordinary linear regression. Since the discrete response probabilities are a function of the independent variables, maximum likelihood estimates of the variable coefficients can be obtained. Hence, the conditional expectation of any response in the probit model is directly related to the estimated probability that the particular decision in question will be made (to make a donation or not). In addition, to assess whether the amount of donation that people make is influenced by the interaction, we will run an ANOVA on the amount of donation only for those participants who actually made a donation.

*Willingness to donate to fair trade organization "Oxfam-Novib".* One hundred ten participants (78%) donated money for the fair trade organization. A probit regression showed that the main effects of mood,  $Wald(1) = 3.23$ ,  $p = .198$ , and of norm formulation,  $Wald(2) = 1.76$ ,  $p = .185$ , were not significant. As expected, the interaction between norm formulation and mood was significant,  $Wald(2) = 8.96$ ,  $p = .011$ . In particular, participants were less willing to donate money in response to injunctive norms when they were in negative mood compared to positive mood,  $b = -2.24$ ,  $Wald(1) = 6.74$ ,  $p = .009$ . Mood did not significantly affect the influence of descriptive norms on the willingness to make a donation,  $b = 1.16$ ,  $Wald(1) = 2.24$ ,  $p = .136$ .



**Figure 5.3.** *Percentage of participants who made the donation in each condition*

*Amount of donations to fair trade organization "Oxfam-Novib".* On average participants donated half of 3 Euros they received ( $M = 1.5$  Euros). The main effect



of mood was not significant,  $F(1, 101) = .30, p = .86, \eta^2 = .001$ , and neither was the main effect of norm formulation,  $F(2, 101) = .21, p = .81, \eta^2 = .004$ , nor the interaction effect between norm formulation and mood,  $F(2, 101) = .55, p = .57, \eta^2 = .011$ .

The results of probit and ANOVA revealed that the interaction effect between mood and norm formulation influences the decision to make a donation, but not the amount of the donation.

#### 5.4. Conclusion and Discussion

This study contributes to our understanding of the influence of social norms on decision making by showing how mood affects the influence of descriptive compared to injunctive norm formulations on consumers' attitudes, purchase intentions, as well as on real behavior. There is a main effect of mood on attitudes and intentions (but not on behavior), that is, when consumers are in a negative mood their attitudes and intentions will be less in favor of the advocated behavior, compared to when they are in positive mood. Furthermore, and interestingly, the effect of norm formulation accompanying the message on attitudes, intentions and behavior depends on the mood consumers face with the message.

Facing a descriptive norm under negative mood (vs. positive mood) makes attitudes, (but not intentions or behavior) more congruent with the normative message. In contrast, injunctive norms have a greater influence on attitudes, intentions and behavior under positive than under negative mood. Hence, our findings suggest that descriptive norms are more effective when consumers see the normative message in negative mood compared to positive mood. On the other hand, the use of injunctive norms is more appropriate when consumers are likely to see a normative message under positive mood compared to negative mood, both in terms of attitudes, intentions and making a decision to perform the advocated behavior (i.e., probability of making a donation). This shows that social norms should be carefully chosen, and studied depending on the context in which the information supported by the norm is processed by the consumer.

Managerial implications of these results involve the context and wording of normative messages. If the context in which consumers will see the message is known (e.g., information in hospital - for negative mood and commercial time within tv comedy show - for positive mood), then managers should adjust the type of the norm used in the message. Alternatively, when it is necessary to deliver a specific type of

information (e.g., favorable statistics about majority) then the mood state should be manipulated through the norm and its context to ensure the correspondence between norm type and mood.

The study has theoretical implications as well. Previously, negative mood was shown to decrease consumer's evaluations of received information and persuasive messages (Miniard et al., 1992). This paper shows however that mood not only changes the responsiveness of consumers to social norms for attitudes and intentions, but it does so differently for the two norm formulations. In particular, the negative effect of bad mood on responsiveness to persuasive information can be reversed by using descriptive norm formulations rather than direct requests executed through injunctive norms.

The effect of normative messages on consumer decision making depends on whether consumers are in positive or negative mood. Further research may shed light on how and when this difference occurs. This could be tested by considering if the mood induced in the process of reading a message or after reading it (compared to primed mood) would have a similar influence of the effect of social norms.

Our study revealed the opposite effect of mood on injunctive compared to descriptive social norms for attitudes, intentions and likelihood to perform the advocated behavior. We suggest that this is due to mood-protection and mood-repair mechanisms, and the cognitive process that each mechanism activates. However we do not know whether consumers indeed start to elaborate on normative information when they are in bad mood and stop to elaborate when they are in good mood. Alternatively, consumers can elaborate in both cases, but do so differently in positive compared to negative mood. Therefore more research is needed to detail out the specific mechanism that underlie this opposite effect of mood on the two different social norms types. This could be tested by inducing cognitive load under negative mood, and if the effect is indeed due to the amount of deliberation, norms then should have the same effects irrespectively of the mood state. Furthermore, the type of thoughts triggered by each norm in each mood can be investigated.

Concluding, descriptive norms lead to more positive attitudes and intentions under negative (vs. positive) mood, whereas injunctive norms lead to more positive attitudes, intentions and behavior under positive (vs. negative) mood, and this latter effect translates to actual behavior.

Appendix 5.1.

*Manipulation text for the descriptive norm condition*



Wist je dat ?  
De meeste WUR studenten  
tegenwoordig fair trade chocolade kopen.





# Chapter 6

Conclusion and General Discussion

## 6.1. Introduction

Across one meta-analysis and four experimental studies, this dissertation shows that social norms have a considerable influence on each step of consumer decision making, and that there are important fundamental differences between injunctive and descriptive social norms in how and when they exert this influence. In particular, injunctive and descriptive norms have a differential effect on different outcome variables: attitudes, intentions and behavior (Chapter 2). The two norms are processed differently by consumers and each activates different types of thoughts (Chapter 3). Furthermore, contextual factors such as activated goals (Chapter 4) and the mood state in which the norms are received (Chapter 5) influence the effect of injunctive and descriptive norms differently. These findings show that the influence of social norms depends on their format and the context in which they occur. The managerial implication is that the wording of normative messages, the context in which such messages are received by the consumer, and the channels of communication should be carefully taken into account.

## 6.2. Specific features of social norms

The results of Chapter 2 show that descriptive norms have a stronger influence on behavior than injunctive norms, but a weaker influence on attitudes. Descriptive norms can influence behavior directly with limited effect on attitudes, which can result in immediate, but short-run changes in consumer behavior. Injunctive norms are less effective in changing consumer behavior directly, but have a stronger effect on attitudes. As such they can lead to internalization of social norms and hence may result in gradual, but more stable changes in consumer behavior.

Social norms that come from close and concrete others have a stronger influence on consumer decision making compared to norms that come from abstract “others” or authorities. Furthermore, the effectiveness of social norms depends on the domain in which it regulates consumer decision making. In particular, compared with decisions related to healthy lifestyle, social responsibility, or sex, everyday consumption decisions (e.g., choices between food, drinks, and leisure time activities) show a strong association between social norms and attitudes. These decisions may be made more habitually, and social norms may be less explicit, more lenient, and therefore more in line with the consumers’ own attitudes here. Another noticeable difference across domains is the relatively strong effect that social norms have on

socially responsible behaviors. These are behaviors where societal benefits are involved, and where social norms should drive human behavior to prevent free-riding problems. Because social norms are particularly relevant for socially responsible behaviors, the later chapters of this dissertation have examined the effect of social norms in the context of sustainable products. Furthermore, social norms have a stronger influence on consumer behavior when they regulate public behaviors, which can be observed by other people, compared to private behaviors.

In addition to the importance of source and application area and the differential effect of injunctive and descriptive norms on different outcome variables, Chapters 3-5 illustrate the importance of the context in which social norms are received by consumers. In particular, Chapter 3 shows that when consumers are cognitively loaded social norms have a limited effect on their attitudes and behavioral intentions, compared to situations in which consumers can process norms without cognitive limitations. Interestingly, cognitive deliberation has a different effect for injunctive and descriptive norms. Cognitive deliberation increases the effect of descriptive norms and decreases the effect of injunctive norms on consumer attitudes and behavioral intentions. It happens because each norm triggers different thoughts, and the effect is not due to the amount of thought per se, but rather to the valence of the thoughts that each norm triggers. When consumers deliberate on descriptive norms they come up with fewer thoughts against the advocated behavior, and when they deliberate on injunctive norms they come up with fewer thought in favor of the advocated behavior.

Specific thoughts can be triggered by focal goals activated in the decision making process and Chapter 4 shows that descriptive norms have a better fit with a promotion than prevention focus, while this is not the case for injunctive norms. In particular, descriptive norms have a stronger influence when consumers are primed with promotion focus and/or when promotion focus is ingrained into the social norm message compared to primed or ingrained prevention focus. Injunctive norms however are not affected by regulatory focus. The findings are interesting also because they show that the wording of the normative message can activate a gain or loss avoidance focus.

Finally, thoughts and goals can be influenced by mood. Chapter 5 reveals that mood (positive and negative) differently affects the influence of injunctive and descriptive social norms on consumer attitudes, intentions and actual behavior. The influence of injunctive norms on attitudes, behavioral intentions and behavior is stronger under positive compared to negative mood, whereas the influence of

descriptive norms on attitudes is stronger under negative compared to positive mood. The main findings of the dissertation are presented in Table 6.1.

**Table 6.1.** *Main findings of the dissertation*

	Main findings
Source of the norm	Concrete and close source is more effective than abstract or authority (for intentions and behavior)
Behavior visibility	Norms are more effective for visible behaviors
Application area	Norms are more effective for attitude towards everyday life consumption decisions, and for socially responsible behaviors.
Outcomes of the norms	
Attitudes	Injunctive norm is more effective <sup>3</sup>
Intentions	No significant difference
Behavior	Descriptive norm is more effective
Cognitive processing	
Cognitive deliberation	Descriptive norm is more effective (for attitude and intentions)
“Normal” processing	Injunctive norm is more effective (for attitude and intentions)
Goal	
Promotion focus	No significant difference (for attitude and intentions)
Prevention focus	Injunctive norm is more effective (for attitude and intentions)
Mood	
Positive mood	Injunctive norm is more effective (for attitude, intentions and behavior)
Negative mood	Descriptive norm is more effective (for attitude and behavior)

### 6.3. Theoretical implications

This thesis contains several important theoretical contributions. First, the results of the meta-analysis reveal a strong association between social norms and

<sup>3</sup> Additional analysis was conducted to compare injunctive versus descriptive norms in each condition.



attitudes, and one possible extension to theoretical models that include normative components (e.g., Theory of Planned Behavior) is to examine this relationship. Such a causal relation between social norms and attitudes has been posited in prior research but empirical tests are scarce (Terry, Hogg, & White, 2000), and Chapter 2 indicates that the strength of this effect depends on the type of social norm. Second, Chapters 3-5 show that consumers respond differently to injunctive versus descriptive norms, depending on the context in which each of the norms occurs. In particular, this influence depends on whether consumers deliberate on a normative message or not, whether they are oriented towards achieving positive or avoiding negative results, and whether they are in positive or negative mood when facing the normative message. This implies that when investigating the effect of social norms one should consider the context in which they occur. Third, all chapters of the dissertation show that the two norms are very different on how they affect the steps of consumer decision making, and how their influence depends on the context in which each norm occurs. Therefore, when investigating the effect of social norms on consumer decision making the two norm types cannot be lumped together and should be examined separately.

#### **6.4. Managerial implications**

Our findings have clear implications for managers and policy makers who already use or consider using social norms in their campaigns. These implications are relevant for managers who need to work with specific information (e.g., presenting a favorable statistic versus presenting specific requests) and need to increase the influence of this information, as well as for managers who have a specific context or domain (e.g., presenting information about the obesity problem) and need to choose the most effective formulation of a persuasive message using social norms.

Injunctive norms have a stronger effect on attitudes than descriptive norms, and descriptive norms have a stronger influence on behavior compared to injunctive norms. Therefore, for changing attitudes injunctive norms may be more effective, whereas for changing behavior descriptive norms are more appropriate. An interesting example of such use of norms is the Israeli phone company Talk'n'Save's slogan "More than 70 % of American students coming to Israel to study will be using Talk'n'Save phones". As an example of a descriptive norm this slogan should be effective in making American students, who come to Israel for study and consider choosing a mobile phone operator in a relatively short time (sometimes within the

same day of arrival), buy Talk'n'Save phones. However, when gradual but stable changes in consumer behavior are required, the use of injunctive norms is likely to be more appropriate. Injunctive norms influence consumer decision making via attitudes and are more effective when a gradual, but stable, change of consumer preferences is required. Therefore in domains such as promoting healthy lifestyle, injunctive norms may be more appropriate (e.g., "Teenagers should spend at least 4 hours in a gym per week").

The fact that social norms have a stronger influence when they come from close and concrete sources compared to authority figures and abstract sources suggests that in order to increase the influence of social norms their formulations should refer to concrete and specific sources (e.g., specific peer group) rather than to authorities or society in general. From this perspective the earlier mentioned example "Teenagers should spend at least 4 hours in a gym per week" (which doesn't indicate any specific source) can be enhanced by referring to close and concrete source (e.g., "Teenagers think that their peers should spend at least 4 hours in a gym per week").

Social norms have a stronger influence when they regulate visible behavior. This suggests that to increase the influence of social norms on consumer decision making the behavior that social norms regulate should be visible to others, or be perceived as such. This can be done by accompanying the normative message with the idea that people observe and notice what others do. For example, how much people drink per night, or which brand or telephone operator they use (e.g., "Everybody is curious which phone you have!" or "Your mates always compare the number of drinks that you and they have!").

The recommendations related to the context depend on the question managers want to answer. If the specific settings are given (e.g., need to place an ad on a billboard), then the question is which of the two norm types should be used. Alternatively, if a specific norm type is given, the question becomes under which conditions it will have a stronger influence.

When consumers deliberate on the message context, the effect of descriptive norms is stronger than the effect of injunctive norms compared to when they do not deliberate. Therefore, in contexts that are more likely to stimulate cognitive deliberation on the part of the consumer, marketing managers are advised to use descriptive norms. Specific communication channels (e.g., special interest magazines) or product categories (e.g., with high consumer involvement) may be more likely to evoke elaborate processing and may be more suited for descriptive than injunctive

norms. Whereas in settings that allow for only limited cognitive deliberation (e.g., billboards on highways) injunctive norms are more appropriate.

Alternatively, marketers who want to use descriptive norms should try to stimulate deliberation. An example of such use of descriptive norms comes from another slogan of Talk'n'Save "*7 out of 10 students in Israel use Talk'n'Save – why not you?*", where deliberation is stimulated by the question "why not you?". In contrast, when using injunctive norms managers should realize that such messages are more effective when consumers' cognitive capacity is limited. Such messages should be simple and straightforward without anything that may trigger cognitive deliberation. For example, the simple and straightforward normative message "You should recycle garbage!" is more appropriate than the same message accompanied by a question "guess why?".

Furthermore, when consumers are triggered to think about avoiding losses injunctive norms have a stronger influence on consumers attitudes and behavioral intentions than descriptive norms. However, when consumers think about achieving gains, injunctive and descriptive norms work equally well. Therefore, messages which are focused on problem avoidance (e.g., obesity, danger for health) may not be very well suited for descriptive norms and injunctive norms should be used as a default.

Alternatively, messages using descriptive norms, such as campaigns based on communicating a favorable statistic of the majority of others that perform a behavior (Berkowitz, 2005), should be conveyed in the context of achieving goals. Take again the example of Talk'n'Save with the slogan "*More than 70 % of American students coming to Israel to study will be using Talk'n'Save phones*". Conveying such a slogan in the context of achieving benefits (e.g., "to get an excellent connection") compared to the avoidance of losses (e.g., "to avoid being disconnected") may increase its effectiveness.

Finally, for consumers in negative mood descriptive norms have a stronger influence than injunctive norms, whereas in positive mood injunctive norms work better than descriptive norms. Therefore when it is necessary to deliver information that could potentially lead to negative mood (e.g., sad information) descriptive norms should be used. In contrast, when information is more likely to evoke positive mood, injunctive norms are more appropriate.

Alternatively, when descriptive norms are used their effect can be increased if they are displayed in a context that is likely to trigger negative mood. For example, normative messages that incorporate descriptive norms can be accompanied by information that can make consumers feel sad (e.g., appeal to donate money to environmental organization accompanied by information about polluted environment

and natural disasters). In contrast, the effect of injunctive norms is stronger under positive mood compared to negative mood. Therefore when incorporating injunctive norms into messages, such messages should be presented in a context that triggers positive mood (e.g., with pictures of smiling people on the background) or displayed in situations when consumers are more likely to be in positive mood (e.g., tv commercials within comedies).

### **6.5. Limitations and future research**

Our research has a number of limitations. First, across all the studies of the dissertation we focus on the distinctive and independent influence of injunctive and descriptive social norms. In real life these two norms may not be independent from each other. They may overlap: for example, while visiting a library one might notice that because most people are silent (descriptive norm), one is also required to behave in a similar way (injunctive norm). The two types of norms may also contradict each other. For example, a request “Do not litter!” (injunctive norm) in a highly littered place (descriptive norm) (Reno, Cialdini, & Kallgren, 1993). To investigate the outcome effect of overlapping or conflicting norms is an important avenue for future research.

Second, all our experimental studies are conducted with participants from a Western cultural background. It is possible that, for example, Eastern cultures show different response patterns to injunctive and/or descriptive social norms. In cultures with a more collectivistic (compared to individualistic) background there is stronger tendency to be “as everybody”, which may increase the influence of descriptive norms. Additionally, consumers from cultures with more emphasis on hierarchy and authorities may exhibit a stronger tendency to follow requests of authorities which should increase the influence of injunctive norms. In spite of the fact that in the meta-analysis culture was not shown to significantly affect the influence of social norms, it might be that in specific contextual settings Eastern cultures show different response patterns for injunctive and descriptive norms.

Third, in this dissertation, social norms referred to one specific group without comparing norms of this group with norms of other groups. However in real life, norms can be compared across different groups, to which consumers belong or not, and it is not obvious what would be the overall outcome of such comparisons. For example, what would happen if the same norm (e.g., recycling garbage) is shared by the associative group to which consumers belong and by a dissociative group, that is,

a group with whom consumers do not wish to be associated? Social identity theory (Tajfel, 1982) argues that normative behavior represents a way of generating positive distinctiveness and people should be motivated to conform to norms that make the in-group identity better than and different from an out-group. Hence, similarity between norms of associative and dissociative groups may decrease the influence of the norm, because it eliminates the distinctive feature of the own group that consumers belong to. But even more interesting, what would happen when the same norm is also shared by the aspirational group, to which consumers do not belong at the moment, but wish to belong and be associated with. Will consumers focus on a specific group and perceive norms of undesired groups as simply irrelevant? Or will the norms of different groups interact? More research is needed to investigate the effect of comparing social norms between different social groups.

In summary, the dissertation revealed fundamental differences between injunctive and descriptive social norms, and explained how the influence of social norms on consumer decision making is affected by their format and context. Overall, we hope that the current dissertation presents a stepping stone towards a deeper understanding of when and how social norms drive consumer decision making.



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# Summary

Social norms are major drivers of human behavior and crucial in consumer decision making. Consumers often take expectations and behavior of others into consideration when they decide what is appropriate and social norms thus profoundly influence their preferences and behavior (Cialdini, Reno, and Kallgren 1990). Although social norms can substantially impact consumer decision making, understanding of how the specification of the norm determines its impact is limited. Despite a large body of research on social norms, empirical findings about their effect in consumer decision making are not consistent (Schultz et al. 2007).

Social norms may manifest themselves as expressed expectations of others or as actual behavior of others. This difference refers to the distinction between injunctive norms, which prescribe or proscribe certain behavior in particular situations, and descriptive norms, which describe the behavior of the majority in particular situations (Cialdini et al., 1990). Both norms assist consumers to determine what is correct and incorrect behavior in specific settings, and both norm types motivate human actions, because “people tend to do what is socially approved as well as what is popular” (Cialdini, 2003, p. 105). The main goal of this dissertation is to investigate the effect of the two types of social norms on key elements of consumer decision making, namely attitude, intentions and actual behavior in different contexts. From a managerial point of view the dissertation aims to provide guidance for the effective use of social norms in marketing campaigns. Thus, the main question of this dissertation is the following: What are the executional and contextual aspects that affect the influence of injunctive and descriptive social norms on consumer decision making?

Chapter 2 presents a meta-analysis that integrates the existing empirical knowledge about injunctive and descriptive social norms and their influence on attitudes, intentions and behavior in different consumption domains. Furthermore several factors are identified that affect the influence of social norms. The meta-analysis shows that injunctive and descriptive norms differently influence attitudes, intentions and behavior. In particular, injunctive norms have a stronger influence on attitudes than descriptive norms, but a weaker influence on behavior. And the effect

of both norms is influenced by the execution format in which they are being presented.

Much of consumers' behavior is driven by individual motives and goals. However, these motives and goals are constrained to a large extent by the context in which the behavior occurs. This is because context sets and/or makes salient social norms about how to behave in that particular situation. Therefore later chapters investigate how the influence of each type of norm depends on the context. In particular, in Chapter 3 an experimental study is used to investigate how injunctive versus descriptive norms are processed under different levels of cognitive deliberation, and what the consequences are for the norm's effect on attitudes and behavioral intentions. It shows that cognitive deliberation decreases the influence of injunctive norms and increases the influence of descriptive norms on attitudes and intentions due to the type of thought resulting from the deliberation.

Thoughts can be triggered by the goals that are activated and in Chapter 4 the differential effect of regulatory focus for both descriptive and injunctive norms is investigated. It shows that the effect of descriptive norms on attitudes and intentions is weaker when prevention goals are salient and stronger when promotion goals are salient, whereas injunctive norms are not affected by regulatory focus. Thoughts and goals can also be influenced by the mood of individuals. Therefore, Chapter 5 investigates the effect of mood (positive or negative) on the influence that both descriptive and injunctive norms have on consumers' attitudes, behavioral intentions and actual behavior. It shows that mood (positive or negative) differently affects the influence of injunctive and descriptive social norms on consumer attitudes, intentions and actual behavior. In particular, the influence of injunctive norms on attitudes, intentions and behavior is greater under positive than negative mood, and the influence of descriptive norms on attitudes (but not intentions or behavior) is greater under negative than positive mood.

Finally, Chapter 6 presents implications for managers and policy makers who already use or consider using social norms in their campaigns. These implications are relevant for managers who need to work with specific information (e.g., presenting a favorable statistic versus presenting specific requests) and want to increase the influence of this information, as well as for managers who have a specific context or domain (e.g., presenting information about the obesity problem) and need to choose the most effective formulation of a persuasive message.

In conclusion, the dissertation revealed fundamental differences between injunctive and descriptive social norms, and explained how the influence of social norms on consumer decision making is affected by their format and context. Overall, the current dissertation hopefully presents a stepping stone towards a deeper understanding of when and how social norms drive consumer decision making.



# Samenvatting

Sociale normen zijn belangrijke drijvende krachten van menselijk gedrag en cruciaal in het besluitvormingsproces van consumenten. Consumenten nemen vaak verwachtingen en gedrag van anderen in overweging als zij beslissen wat gepast gedrag is. Sociale normen hebben zodoende een diepgaande invloed op hun eigen voorkeuren en gedrag (Cialdini, Reno, and Kallgren 1990). Hoewel sociale normen een substantiële invloed hebben op de besluitvorming van consumenten, is het begrip over hoe de specificatie van de norm bepalend is voor haar invloed beperkt. Ondanks een overvloed aan onderzoek naar sociale normen, zijn empirische resultaten met betrekking tot hun invloed op de besluitvorming van consumenten niet consistent (Schultz et al. 2007).

Sociale normen kunnen blijk geven van de tot uitdrukking gebrachte verwachtingen van anderen of het feitelijk gedrag van anderen. Dit verschil refereert aan het onderscheid tussen “gebiedende normen” (injunctive norms), die bepaald gedrag in specifieke situaties voorschrijven of verwerpen, en “beschrijvende normen” (descriptive norms), die het gedrag van de meerderheid in specifieke situaties beschrijven (Cialdini et al., 1990). Beide normen helpen consumenten om te bepalen wat correct en incorrect gedrag is in bepaalde situaties, en beide norm types motiveren menselijke acties, omdat “mensen zowel geneigd zijn te doen wat maatschappelijk aanvaardbaar als ook wat populair is” (Cialdini, 2003, p. 105). Het belangrijkste doel van dit proefschrift is om het effect te onderzoeken van de twee types normen op sleutelbegrippen in de besluitvorming van consumenten, namelijk attitudes, intenties en feitelijk gedrag in verschillende situaties. Vanuit een praktisch gezichtspunt tracht het proefschrift een leidraad te verschaffen voor een effectief gebruik van sociale normen in marketing campagnes. De belangrijkste vraag van dit proefschrift is dus: Wat zijn de eigenschappen en omgevingsfactoren die van invloed zijn op de invloed van gebiedende en beschrijvende normen op de besluitvorming van consumenten?

Door het verrichten van een meta-analyse in hoofdstuk 2 vindt een integratie plaats van de bestaande empirische kennis over gebiedende en beschrijvende normen en hun invloed op attitudes, intenties en gedrag in verschillende domeinen van

consumptie. Daarnaast worden factoren geïdentificeerd die de invloed van normen zouden kunnen beïnvloeden. Er wordt aangetoond dat gebiedende en beschrijvende normen een verschillende invloed hebben op attitudes, intenties en gedrag. In het bijzonder kan worden gesteld dat gebiedende normen een sterkere invloed hebben op attitudes dan beschrijvende normen, maar een zwakkere invloed op gedrag. Bovendien wordt het effect van beide norm types beïnvloed door de manier waarop ze worden gepresenteerd.

Consumentengedrag wordt voor een groot gedeelte bepaald door individuele motieven en doelstellingen. Deze motieven en doelstellingen zijn echter in grote mate ingeperkt door de omstandigheden waarin het gedrag zich voordoet. Dit is het geval omdat de omstandigheden aangeven welke normen van toepassing zijn in een bepaalde situatie. Om die reden wordt er in latere hoofdstukken onderzocht hoe de invloed van beide type normen afhangt van de omstandigheden. Meer specifiek wordt in hoofdstuk 3 met behulp van een experiment onderzocht hoe elke type norm wordt verwerkt onder verschillende niveaus van “cognitieve overweging” (cognitive deliberation), en wat de consequenties zijn voor het effect van de norm op attitudes en gedragsintenties. Het laat zien dat een hoge mate van cognitieve overweging de invloed van gebiedende normen vermindert en de invloed van beschrijvende normen doet toenemen, op attitudes en intenties. Dit komt door het type gedachte dat ontstaat door de mate van overweging.

Gedachtes kunnen veroorzaakt worden door doelstellingen die actief zijn en in hoofdstuk 4 wordt het effect onderzocht van “regulerende aandacht” (regulatory focus) voor zowel beschrijvende als gebiedende normen. Het blijkt dat het effect van beschrijvende normen op attitudes en intenties zwakker is als preventieve doelen actief zijn en sterker als promotionele doelen actief zijn, terwijl gebiedende normen niet worden beïnvloed door regulerende aandacht. Gedachtes en doelstellingen van consumenten kunnen ook worden beïnvloed door de stemming van individuen. Om die reden onderzoekt hoofdstuk 5 het effect van stemming (positief of negatief) op de invloed die zowel beschrijvende als gebiedende normen hebben op de attitudes, gedragsintenties en het feitelijk gedrag van consumenten. Het blijkt dat stemming (positief of negatief) een ander effect heeft op de invloed van gebiedende en beschrijvende normen op attitudes, intenties en feitelijk gedrag van consumenten. In het bijzonder blijkt dat de invloed van gebiedende normen op attitudes, intenties en gedrag sterker is bij een positieve dan bij een negatieve stemming, en dat de invloed van beschrijvende normen op attitudes (maar niet op intenties en gedrag) daarentegen sterker is bij een negatieve dan bij een positieve stemming.

Tot slot geeft hoofdstuk 6 een overzicht van de betekenis voor managers en beleidsmakers die reeds gebruik maken van sociale normen of overwegen deze in hun campagnes te gebruiken. Deze implicaties zijn relevant voor managers die werken met specifieke informatie (bijvoorbeeld de presentatie van een gunstig percentage versus het presenteren van een verzoek) en de invloed van deze informatie willen vergroten,

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als ook voor managers die met een specifieke situatie of domein geconfronteerd worden (bijvoorbeeld het presenteren van informatie over het obesitas probleem) en waarvoor het nodig is de meest effectieve formulering te kiezen voor een overtuigende boodschap.

Concluderend onthult dit proefschrift fundamentele verschillen tussen gebiedende en beschrijvende normen en verklaart het hoe de invloed van normen op het nemen van beslissingen door consumenten wordt beïnvloed door manier van presentatie en omstandigheden. Samenvattend draagt het voorliggende proefschrift hopelijk bij aan een beter begrip over wanneer en hoe sociale normen leiden tot het nemen van bepaalde beslissingen door consumenten.



## About the author

Vladimir Melnyk was born in Sumy (Ukraine) on 2<sup>nd</sup> of October 1980. He finished his secondary education at Sumy Grammar School in 1997, after which he started to study Business Economics at Sumy State University. In 2002 after completing his internship at the Department of Foreign Economic Relations of State Administration of Sumy Region and completing his master thesis on “Improving International Economic Potential of Sumy Region” he obtained a Master of Science degree in Business Economics. In the same year he started the master program on Economics at Consortium for Research and Continuing Education in Economics (CORIPE), Italy, for which in 2003 he obtained a Master of Science degree in Economics. In the same year Vladimir started the CentER research master program in Marketing at Tilburg University. After completing his master thesis on “Lying About Product Preferences: Discrepancies Between Actual and Expressed Preferences in Social Contexts”, he obtained a Master of Science degree in Marketing. In December 2004 he started with his PhD project at the Marketing and Consumer behavior group of Wageningen University. The research is focused on the possibilities to use social norms in shaping sustainable behavior of consumers. The results of this research are described in this thesis. During his PhD Vladimir was also involved in the project “In Debate About Food Quality” of the Ministry of Agriculture, Nature and Food Quality of the Netherlands. Currently Vladimir is a postdoctoral researcher at the department of Marketing and Supply Chain Management at Maastricht University.



**Annex to statement**  
**Vladimir Melnyk**  
**PhD candidate, Mansholt Graduate School of**  
**Social Sciences (MG3S)**  
**Completed Training and Supervision Plan**



<b>Description</b>	<b>Institute</b>	<b>Year</b>	<b>ECTS</b>
<b>Courses:</b>			
Mansholt introductory course	MG3S	2005	1.0
Psychological economics	UVT	2005	6.0
Behavioural economics	MG3S	2005	4.0
Advances in implicit motivation	KLI	2005	2.8
The art of writing	CENTA	2006	1.8
Academic writing II	CENTA	2006	2.0
Techniques for writing and presenting a scientific paper	WGS	2006	1.2
Meta-analytical research in economics	VUA	2006	1.0
Presentation skills	CENTA	2006	1.0
Quantitative research methodology	MG3S	2006	4.0
Experimental research	UVT	2006	6.0
Meta-Analysis. How to conduct a systematic review.	EUR	2006	1.0
Programming experience in Authorware	KLI	2006	1.0
Interpersonal processes: Reflective and impulsive determinants of behaviour	KLI	2006	2.8
Current methods for meta-analysis	IOPS	2006	1.0
Project & Time Management	WGS	2007	1.5
<b>Presentations at conferences and workshops:</b>			
Mansholt multidisciplinary seminar		2009	1.0
ACR Doctoral colloquium, Orlando, USA		2006	1.0
ACR conference, Orlando, USA		2006	1.0
EMAC Doctoral colloquium, Reykjavik, Iceland		2007	1.0
EMAC Conference, Reykjavik, Iceland		2007	1.0
EMAC Conference, Brighton, UK		2008	1.0
ACR Conference, Pittsburgh, USA		2009	1.0
Marketing Science, Cologne, Germany		2010	1.0
<b>Total (minimum 30 ECTS*)</b>			<b>46.1</b>

\*One ECTS on average is equivalent to 28 hours of course work

**Abbreviations**

MG3S stand for Mansholt Graduate School of Social Sciences  
UVT stands for Tilburg University  
KLI stands for Kurt Lewin Instituut  
VUA stands for Free University of Amsterdam  
EUR stands for Erasmus University Rotterdam  
CENTA stands for Languages Services Wageningen  
IOPS stands for Interuniversity Graduate School of Psychometrics and Sociometrics  
WGS stands for Wageningen Graduate Schools