



FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

INVESTIGATING THE EFFECTIVENESS OF HEALTH CAMPAIGNS

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“The greatest thing you'll ever learn is just to love and be loved in return”

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CHAPTER I: INTRODUCTION

In this introductory chapter, we outline the research domains to which this dissertation would like to contribute and also provide an overview of the different chapters.

CHAPTER I: INTRODUCTION

When you ask people what they value most in life, a top answer would be “a good health”. This is something of all times. Just think of special occasions when we toast to each other’s “good health”, already an ancient ritual in many parts of the world (Heath, 1995). However, our view on health has drastically changed over time. In the twentieth century, new research domains, such as *health psychology*, emerged which recognized the significant role of psychological factors in people’s health status. In previous times, biological factors were mainly focused upon. Now, a good health was no longer considered as solely the result of external factors, beyond our control, but of internal factors as well, such as of beliefs, attitudes and behaviors (Conner and Norman, 2007; Ogden, 2007).

Consequently, there was a shift in public health policies from exclusively curative to more preventive. This also led to the concept of *health promotion* (Feinstein, 2005). The World Health Organization (WHO) defined health promotion in 1986 as “the process of enabling people to increase control over, and to improve, their health” (WHO, 1986). In this context, policymakers set up communication campaigns, for example, against the use of tobacco or alcohol, to educate the public and motivate them to adopt a healthier lifestyle. Today, such health campaigns are still important policy instruments (WHO, 2009).

Companies also noticed this particular *health trend* in society. Especially those in the food industry considered this to be an opportunity to differentiate themselves from competition and to offer more value to consumers (Lord, Eastlack, and Stanton, 1987). The Kellogg Company was one of the first companies to launch a commercial health campaign; in 1984, an ad campaign for its All-Bran cereals stressed the beneficial effect of their fiber content on the prevention of colon cancer (Ippolito and Mathios, 1991).

Although academic research is not unanimous about the exact evolution of the use of nutrition and health claims in food ads over time (Klassen, Wauer, and Cassel, 1990/1991; Lord et al., 1987, 1988; Parker, 2003), recent content analyses show that (a) over a time period of at least 20 years, health and nutrition claims have been increasingly used and that (b) today, they are almost as prevalent as taste claims, which dominated food ads in the past (Kim, Cheong, and Zheng, 2009; Zwier, 2009). Just think of the latest food innovations, such as Belvita snacks, Kellogg’s Special K mini breaks, Chiquita fruit shakes and so on, and it is quite clear that marketers currently allocate substantial budgets to position their food offers as “good for health”.

Although global life expectancy at birth has drastically increased over the years (i.e., from 47 years old in 1950-1955 to 65 years in 2000-2005) and is still expected to go up (e.g., to 75 years old in 2045-2050) (United Nations, 2005), there are also still millions of people who keep on smoking, do not exercise, do not eat healthy, have unprotected sex and so on, and as a result, risk their own health and life (the Joint United Nations Programme on HIV/AIDS [UNAIDS], 2008; World Health Organization [WHO], 2002; WHO, 2010). In particular, such behaviors contribute to *non-communicable* diseases, such as heart diseases and cancers, which are the leading causes of death in Western countries today (WHO, 2008). So, in spite of the many health promotion interventions, both by governments and companies, there is still work to be done. This also leads us to the central research question of this dissertation: “What improves the effectiveness of health campaigns?”

1. PREDICTING HEALTH BEHAVIORS

When investigating the effectiveness of health campaigns, one first needs to gain a better understanding of the behaviors that influence health as well as of the factors that determine whether or not such *health behaviors* are performed in practice. Academics from different research areas already tackled this issue. Health psychologists in particular studied the influence of factors intrinsic to the individual (Conner and Norman, 2007; Ogden, 2007). These are also the focus of this dissertation.

1.1. Health Behaviors

In general, one could define health behaviors as those behaviors “that are related to the health status of the individual” (Ogden, 2007, p. 14). In previous times, the most important goal of health behaviors was “not to get sick”. Such *disease preventive behaviors* have been further divided into (a) preventive health behaviors (i.e., primary prevention: prevent the onset of a disease), (b) detective health behaviors (i.e., secondary prevention: detect the disease), and (c) curative health behaviors (i.e., tertiary prevention: treat the disease) (Ogden, 2007; Rothman and Salovey, 1997).

Throughout the twentieth century, health has been more broadly defined. For example, in 1948, the World Health Organization (WHO) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). So, this implies (a) a broader view on health as such (i.e., not only in terms of physical health, but in terms of mental and social well-being as well) and (b) a stronger emphasis on

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the positive aspects of health (Stroebe, 2000). So, health behaviors were no longer focused on disease prevention only, but on *health promotion* as well.

Also important is the classification of health behaviors according to their role in health outcomes, that is, whether the performance of the behavior is harmful versus beneficial for health (McEachan, Lawton, and Conner, 2010). Harmful behaviors are typically referred to as *health risk behaviors*. Behaviors that are beneficial for health have been assigned different names, such as *health promoting behaviors* (e.g., Lawton, Conner, and McEachan, 2009) or *health protective behaviors* (e.g., Matarazzo, 1984 cited in: Ogden, 2007).

The above classifications already proved their usefulness in predicting and changing health behaviors (e.g., Rothman and Salovey, 1997). However, there is also a call in literature to come to a more profound understanding of the nature of health behaviors (Furnham, 1988; Hughner and Kleine, 2008; McEachan et al., 2010; Wang, Keh, Bolton, 2010): “[...] recently it has been suggested that it is not the function of the behaviour which is important, but rather the way in which people think about the behaviour, particularly in terms of perceived risk and their level of involvement with the issue at hand (e.g., Abhyankar, O’Connor, & Lawton, 2008; Rothman, Bartels, Wlaschin, & Salovey, 2006)” (McEachan et al., 2010, p. 349).

In the current dissertation, we focus on disease prevention in chapter II (i.e., HIV prevention) and more specifically, on health risk behaviors and (primary) preventive health behaviors in chapter III (i.e., stop smoking and protect the skin from UV radiation). In chapter IV and V, we study the effectiveness of promoting food products as healthy and as such, rather concentrate on health promotion. Although we focus on both types of health behaviors, it was not our aim to make a comparison between the two or to study the nature of health behaviors into great depth.

1.2. Predicting Health Behaviors: The Role of Cognition

Most research in health psychology studied the impact of cognitions on health behaviors. Such cognitive health models, also referred to as the *social cognition models*, typically assume that individual social behaviors, such as health behaviors, are driven by individuals’ perceptions of their social environment (Conner and Norman, 2007; Ogden, 2007). Some of the most well-known social cognition models are the Health Belief Model (e.g., Becker, 1974), the Protection Motivation Theory (Rogers, 1975, 1983), the Theory of Planned Behavior (Ajzen, 1991), and the Stage of Change Model (Prochaska and DiClemente, 1984).

Each social cognition model focuses on different cognitive appraisals and proposes different relations between these cognitions and health behaviors. In the first part of this

dissertation, we discuss the Protection Motivation Theory of Rogers (1975, 1983), also frequently cited in health communication and fear appeal research, and the Stage of Change Model (Prochaska and DiClemente, 1984), as one of the more recent theoretical movements in health research. More specifically, the Protection Motivation Theory (Rogers, 1983) proposes that performing a healthy behavior is the result of a favorable intention to perform this behavior (i.e., *protection motivation*), which, in turn, is the result of two cognitive appraisal processes, namely (a) a high threat appraisal based upon perceptions of high *vulnerability* to highly *severe* health risks, and (b) a high coping appraisal based upon perceptions of high *response* and *self-efficacy*. However, as opposed to all previous social cognition models that are static, Prochaska and DiClemente (1984) consider health behavioral change rather as a dynamic process over time, which occurs in several stages, and propose that different cognitions may be important at different stages of behavioral change.

The above social cognition models have each proven to significantly predict specific health behaviors, and as a result, can offer health practitioners valuable information about what to focus on in real interventions. However, these models also depart from the stringent assumption that individuals are rational beings, making rational decisions, based on elaborate cost-benefit analyses. This is not always in line with reality and not always valid in the context of health decision making (Conner and Norman, 2007; Ogden, 2007). Let us take a look at the example of smoking addiction: although convincing scientific research on the negative health effects of smoking has been published since the 1950s and has led to a significant decrease in the number of smokers in subsequent years, smoking addiction is still a major issue in many parts of the world (WHO, 2002)¹. To conclude, although cognitive factors could indeed help us to gain a better understanding of health behaviors and as such, lead to more effective health campaigns, they do not tell the whole story.

1.3. Predicting Health Behaviors: The Role of Affect

One of the major criticisms on the social cognition models is that they give only limited attention to other, important factors in people's decision making, such as affect. Returning to the example of smoking, it is likely that smokers do know smoking is bad for their health, but

¹ Considering Belgium, for example, one notices that in the period between 1982 and 1993, the relative number of daily smokers significantly decreased from 40% to 25%. However, in recent years, this percentage kept on fluctuating around 24% to 30% (Onderzoeks- en Informatiecentrum van de Verbruikers Organisaties [OIVO], 2004).

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that they keep on doing it, as it also relaxes them and, thus, offers them important emotional benefits.

In line with this, Richard, van der Pligt and De Vries were one of the first academics to recommend the inclusion of affective beliefs in the Theory of Planned Behavior (Ajzen, 1991) (Richard, De Vries, and van der Pligt, 1998; Richard, van der Pligt, and De Vries, 1995; van der Pligt and De Vries, 1998). Their studies specifically focused on the role of *anticipated* affect (i.e., affect that is anticipated to be felt after a specific behavior would be undertaken) and showed that this is a significant and independent predictor of health behaviors². It also appeared that anticipated affect was more influential than attitudes (assumed to be mainly based on instrumental, cognitive beliefs) in predicting the use of condoms and contraceptives, but then again, the reverse seemed to be true in case of refraining from sexual intercourse.

Meanwhile, already a number of studies have further demonstrated the more important role of affect compared to cognition on many health behaviors, that is, on health risk behaviors as well as on health promotion behaviors (French et al., 2005; Keer, van de Putte, and Neijens, 2010; Lawton, Conner and Parker, 2007; Lawton, Conner, and McEachan, 2009; Loewenstein et al., 2001; Lowe, Eves, Carroll, 2002). In sum, the influence of affect on health behaviors seems to have a much greater scope than previously assumed and also needs to be further clarified (e.g., for which health behaviors and why).

However, the main objective of the current dissertation is not so much to go further into accurately predicting health behaviors, but rather to investigate and improve the effectiveness of health campaigns. That is, this dissertation focuses on *changing* health behaviors rather than on *predicting* them. Specifically, we are interested in how to design persuasive health campaigns, as these have been, and still are, important instruments for health promotion (cfr. section 1 in this chapter). So, for us, the value of the above health behavior models is largely in helping to design (more) effective health campaigns.

Research on this particular topic appears to be limited. In line with this observation, Michie, Rothman, and Sheeran (2007) suggested following direction for further research in an editorial about the future of health psychology: “We need to move beyond assuming the theory indicates how to change behavior to studying behavior change techniques in their own right. This requires greater precision: in articulating the processes through which theories are

² Important to note here is that they only studied health behaviors that are characterized by a discrepancy between their current evaluation and their associated anticipated affective beliefs (i.e., mostly, health risk behaviors, such as sexual behaviors, unhealthy eating, using drugs and alcohol).

refined, in specifying the mediating constructs and processes of change, and in describing techniques to change behavior and their links with theory. Only if we, as health psychologists, change our own behavior can we hope to advance the science of behavior change.” (p. 252).

So, although the above social cognition models and their extensions are often said to be useful to design more effective health campaigns, more research and a change in perspective are required. For example, we may already know that when smokers anticipate lung cancer, this arouses fear which motivates them to quit, but in a next step, we also need to know how to design effective fear eliciting messages. Therefore, in the next section, we will go into research dealing with such issues and thus into the domain of health communication.

2. CHANGING HEALTH BEHAVIORS: HEALTH COMMUNICATION

Although health communication research shares a focus on health communication effectiveness, this domain is also highly dispersed. Relevant studies are found in psychology, marketing, communication, public health et cetera (Keller and Lehmann, 2008). One could look at this research area as a spectrum going from studies that mainly focus on a specific health context for which different communication strategies are examined (e.g., studies on HIV prevention (e.g., Durantini et al., 2006)) to studies that mainly focus on a particular theoretical issue and examine this, among other things, in a health context (e.g., studies on framing (e.g., Maheswaran and Meyers-Levy, 1990)). In between, there are studies on health communication trying to make both theoretical and practical contributions (e.g., studies on anti-drinking messages and the use of emotional appeals (e.g., Agrawal and Duhachek, 2010)) (Keller and Lehmann, 2008).

The main objective of this dissertation is to contribute to this research area of health communication. That is, we want to examine the effectiveness of different health message tactics, in different contexts, for different individuals, and/or their underlying persuasion process. We will hereby focus on theoretical as well as on practical implications.

Because of the large body of research on health communication effectiveness, it is almost impossible, and probably also undesirable, to give an exhaustive overview in this introductory chapter. Instead, depending on our research questions and hypotheses, we extensively deal with the relevant literature in each of the subsequent chapters. As such, the different chapters in this dissertation could be read as stand-alone papers. In the next part, we will give an overview of the studies in this dissertation and briefly outline the main research area in which they could be situated and discuss their contributions herein.

3. OVERVIEW OF THIS DISSERTATION

As already mentioned, health campaigns are set up by governments as well as by companies. Correspondingly, this dissertation can be largely divided into two parts. That is, the first part, with chapters II and III, focuses on public health campaigns, whereas the second part, with chapters IV and V, concerns commercial food campaigns that use health as their main selling proposition.

3.1. Public Health Campaigns: Chapter II and Chapter III

There are many ways in which policymakers can design health campaigns (Keller and Lehmann, 2008). Nonetheless, of all message tactics, fear appeals are assumed to be most consistently used in public health campaigns (Hale and Dillard, 1995; Witte and Allen, 2000). This idea stems from the fact that, especially the earliest, public health campaigns focused mostly on disease prevention (Keller and Lehmann, 2008; Ogden, 2007). Such messages typically communicate potential personal threats and as a result, elicit fear and worry.

Rutter and Quine (2002) claim that recently, more and more interventions in real-life are drawn upon concepts of the above social cognition models. To investigate this, Hardeman et al. (2002) performed a review of studies applying the Theory of Planned Behavior to real health promotion interventions. One of their conclusions was that this particular social cognition model is indeed often said to be employed in practice, but it is not clear to what extent. For example, it did not seem to be commonly used to guide the design of health interventions. So, several questions remain: to what extent are the above assumptions true and, more importantly, to what extent are theory and practice aligned in this domain? In chapter II, we suggest some possible answers.

Specifically, the goal of chapter II is to study how public campaigns to prevent HIV have been designed from the outbreak of HIV/AIDS until recently in 2008. We conduct a content analysis on 135 Flemish print campaigns and consider several, relevant health message tactics (i.e., types of endorsers, positive versus negative frames, threat-action appeals, rational versus emotional appeals, and fear appeals) together with the intended target groups and the main prevention campaign objectives. Next to a descriptive analysis, we also examine whether the design of the campaigns follows *good practice* rules suggested by prior academic research. As such, we want to offer policymakers and health practitioners detailed guidelines to design (more) effective health messages in the future

In chapter III, we further examine the effectiveness of fear appeals because of their presumed relevance for public health communication. In literature, a fear appeal, or in full, a

fear-relief appeal, is often defined as a persuasive message tactic, based on a threat-action format, that first focuses on people's vulnerability to severe health risks (which induces fear) and then offers a solution in the form of feasible behavior (which induces relief) (Rogers, 1975, 1983). For example, in Belgium, a HIV prevention campaign first showed a black-and-white picture of withered flowers accompanied by the slogan "AIDS. Talk about it. Beforehand." and then gave the number of telephone helpline.

Research about fear appeals already started in the 1950's and has mainly focused on determining which fear level should be conveyed in persuasive messages in order to induce optimal behavioral compliance. Several meta-analyses on fear appeals came to the conclusion that more intense fear leads to more persuasion (Milne, Paschal, and Orbell, 2000; Witte and Allen, 2000). However, there is no consensus on this issue (Hastings, Stead, and Webb, 2004). For example, because of possible maladaptive responses to intense fear appeals, researchers have called for a further exploration of the effectiveness of different types of emotional appeals for public health campaigns (Dillard, 1994; Dillard and Nabi, 2006; Hastings et al., 2004). In recent years, there also seems to be a growing interest herein (e.g., Agrawal, Menon, and Aaker, 2007; Block, 2005; Dillard and Peck, 2000). According to Witte and Allen (2000), prior heterogeneous results on fear appeals could also point to potentially important moderators, such as individual differences (Burnett and Oliver, 1979). Although some previous studies already looked into this issue (e.g., socio-demographics and personality), to date, no real valuable moderator has been identified yet (Witte and Allen, 2000).

In chapter III, we want to elaborate on these suggestions. In particular, we will relate fear appeal research to a recent motivation theory, that is, the self-regulatory focus theory (Higgins, 1997). This theory distinguishes between two motivational states, that is, (a) a promotion focus concerned with *ideal* goals (i.e., hopes and wishes) and (b) a prevention focus concerned with *ought* goals (i.e., responsibilities and duties). Taking into account the self-regulatory focus could prove to be valuable, as (a) it has been shown to influence persuasion processes and outcomes and as such, could moderate responses to fear appeals as well (Pham and Higgins, 2005) and as (b) it has been linked to specific emotional vulnerabilities, such as to the fear (relief) versus the sadness (joy) emotion (Higgins, Shah, and Friedman, 1997).

To examine whether the self-regulatory focus theory of Higgins (1997), and its regulatory relevancy principle in particular, determine the effectiveness of different emotional tones in public health campaigns, two experimental studies are set up. A first study

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investigates the responses to two different stop-smoking messages targeted at young smokers. Both are based on a threat-action format, but each focuses on different types of emotional outcomes, as described in the self-regulatory focus theory (Higgins, 1997). Specifically, we compare the persuasiveness (in terms of attitude towards the ad and behavioral intentions) of a fear-relief appeal versus a sadness-joy appeal for people with a predominant chronic prevention versus promotion focus (Higgins et al., 1997). Furthermore, we also study whether ad involvement mediates potential effects of our independent variables (Higgins, 2002).

The objective of the second experiment is to validate the results of the first one. Therefore, we created campaigns to promote UV protection targeted at active women between 24 and 38 years old and, again, manipulated the emotional tone in accordance with the self-regulatory focus theory (i.e., agitation-quiescence vs. dejection-cheerfulness) (Higgins, 1997). Moreover, we also examine the moderating role of the specific research context. Specifically, we take into account prior health risk behavior (i.e., the frequency with which respondents visit solarium) as an indicator of the level of affective involvement, or put differently, the level of affect relevance for judgment (Pham, 1998).

3.2. Food Campaigns: Chapter IV and Chapter V

In the second part of this dissertation, with chapters IV and V, we focus on the effectiveness of health campaigns set up by food companies. Despite the clear confidence of marketers in the effectiveness of health as a selling proposition (cfr. section 1 in this chapter), there also seems to exist a certain degree of *health skepticism* among consumers, that is, consumers tend to distrust general nutrition and health related value propositions (Andrews, Netemeyer, and Burton, 1998). Moreover, some researchers found that the acceptance of healthy positioned food offers depends on the existing health image of the food product that serves as a base for this offer (Balasubramanian and Cole, 2002; Levy, Derby, and Roe, 1997; Poulsen, 1999).

At the same time, prior research also showed that even when a food product is clearly perceived to be unhealthy, the mere presence of a *healthy prime* could still create *health halos* that lead consumers to over-generalize and evaluate non-featured nutrient and caloric content more favorably as well (Andrews et al., 1998; Wansink and Chandon, 2006). This could further lead to more favorable product attitudes and purchase intentions, and to over-consumption, which has real harmful effects on people's health status (Andrews et al., 1998; Chandon and Wansink, 2007; Geyskens et al., 2007; Roe, Levy and Derby, 1999; Wansink and Chandon, 2006).

Given these inconsistencies in literature and the practical relevance of this topic, there is a clear need for further research about the exact conditions in which consumers do and do not critically evaluate healthy positioning strategies for different types of foods. Therefore, the current dissertation wants to further examine when ad and product related responses of consumers to food messages depend on the image of the promoted food product and why in particular.

Chapter IV focuses on health campaigns developed by the food industry and wants to investigate whether the persuasiveness of a health claim depends on the prior health image of the food product. We build hypotheses on schema congruity theory (Mandler, 1982) and test these in an experimental study. Specifically, we examine attitudes and purchase intentions in response to different ad claims (i.e., healthy vs. unhealthy/tasty) for food products that differ in terms of their salient health image (i.e., unhealthy vs. healthy). Moreover, we also measure individual differences, that is, gender and level of health concern, and investigate their moderating role, as these are assumed to drive the salience and relevance of health cues (Beardsworth et al., 2002; Brucks, Mitchell, and Staelin, 1984; Engell et al., 1998; Shavitt et al., 1994).

As opposed to prior research, we focus on the responses of adolescents. Recent examples in the market show that the health strategy of food companies has also been used to target youngsters (e.g., Nutella chocolate spread, La Vache Qui Rit cheese spread, Kellogg's cereals, Kinder confectionery, etc.). However, it is not clear to what extent this target group actually values a healthy lifestyle (Donkin, Neale, and Tilston, 1993). Second, it is also not well understood to what extent their product and persuasion knowledge is already developed and accessible (Boush, Friestad and Rose, 1994; Linn, de Benedictus and Delucchi, 1982).

Chapter V wants to further examine the effectiveness of a healthy positioning strategy for different types of food products (i.e., healthy vs. unhealthy). However, instead of using different claims as in chapter IV, healthy-looking models are used. As such, it also builds on the literature on endorser effectiveness and the match-up hypothesis (Kahle and Homer 1985), which is also in line with schema congruity theory (Mandler, 1982). This time, we also focus on a different target group, namely young females. They are assumed to attach great value to their weight and health, which also leads to high intentions to engage in health protective behaviors, such as restrained and healthy eating (Beardsworth et al., 2002; Jasper and Klassen, 1990; Klassen et al., 1990/1991; Lonquist, Weiss, and Larsen, 1992). As a result, they have always been considered an important target group for healthy food ads. Moreover,

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we can also consider them to be a homogenous target group in terms of motivation and ability, which largely minimizes individual factors as an explanation of our findings.

Chapter V also wants to further clarify the conditions in which effects of congruent versus incongruent product-endorser combinations on persuasion can be expected, as results of prior empirical studies have not been conclusive (Till and Busler, 2000). Among others, Kang and Herr (2006) already studied the moderating role of the depth of information processing and of the type of information processing (i.e., whether or not consumers process information with a high sensitivity to source biases). However, research on the Persuasion Knowledge Model suggests that both moderators could be confounded (Campbell and Kirmani, 2000; Friestad and Wright, 1994). Therefore, we include both moderators in our experimental study.

To test the effect of PK activation, we examine consumer reactions to TV commercials versus to product placements, as these have been shown to differ in their ability to automatically activate PK (Bhatnagar, Aksoy, and Malkoc, 2003; Bhatnagar and Aksoy, 2004; Cowley and Barron, 2008). Depth of processing is manipulated through a distraction task (Williams, Fitzsimons, and Block, 2004).

Finally, we also study whether constructs, such as the perceived level of product-endorser fit and perceived tactic appropriateness, can explain potential main and interaction effects of the above factors on attitudes, purchase intentions and consideration sets.

To conclude, Figure 1.1 outlines the overall structure of this dissertation, and Figure 1.2 gives a detailed overview of the experimental research presented in this dissertation.

FIGURE 1.1

Structure of the Dissertation

Public Health Campaigns	Commercial Health Campaigns
1. Investigating the Design of Health Communication Campaigns: Non-experimental research	
Chapter II: Three Decades of Flemish HIV Prevention Campaigns: What Has Been Said When and to Whom?	
2. Investigating the Effectiveness of Health Communication Campaigns: Experimental research	
Chapter III: The Influence of the Self-Regulatory Focus on the Effectiveness of Emotional Health Campaigns	Chapter IV: Healthy or Unhealthy Slogans: That's the Question... Chapter V: Match-Up Effects Happen for a Reason: The Impact of Activating Persuasion Knowledge on Endorser Effectiveness

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FIGURE 1.2
Overview of the Experimental Studies

Chapter/ Study	Research Context	Independent variables	Dependent variables
Chapter III Study 1	Sender: Public campaign	2 (Type of message: fear-relief vs. sadness-joy tone)	Attitude towards the ad
	Product: Stop-smoking	2 (Type of person: predominantly prevention vs. promotion focused)	Behavioral intentions
	Target: Young smokers		
Chapter III Study 2	Sender: Public campaign	2 (Type of message: agitation-quiescence vs. dejection-cheerfulness tone)	Attitude towards the ad
	Product: Skin protection from exposure to UV radiation	2 (Type of person: predominantly prevention vs. promotion focused)	Behavioral intentions
	Target: Adult women (24-38 years old)	2 (Type of situation: relatively high vs. moderate vs. little affectively involved in the health issue at hand)	
Chapter IV	Sender: Commercial campaign	2 (Type of message: healthy vs. unhealthy/tasty slogan)	Attitude towards the ad
	Product: Food	2 (Type of product: healthy vs. unhealthy food product)	Attitude towards the product
	Target: Adolescents	2 (Type of person: gender and health concern (high vs. little))	Purchase intentions
Chapter V	Sender: Commercial campaign	2 (Level of product-endorser fit in terms of health image: non-fit vs. fit)	Attitude towards the ad
	Product: Food	2 (Depth of processing: high vs. less)	Attitude towards the model
	Target: Female college students	2 (Level of PK activation: high vs. less)	Purchase intentions Consideration set

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CHAPTER II: THREE DECADES OF FLEMISH HIV PREVENTION CAMPAIGNS: WHAT HAS BEEN SAID WHEN AND TO WHOM?

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CHAPTER II: THREE DECADES OF FLEMISH HIV PREVENTION CAMPAIGNS:

WHAT HAS BEEN SAID WHEN AND TO WHOM?

In the early eighties, a new deadly and contagious disease was discovered, later referred to as the *Acquired Immuno Deficiency Syndrome* (AIDS) caused by the *Human Immunodeficiency Virus* (HIV). However, almost three decades later, the end of this epidemic is still not in sight. Despite a gradual stabilization in the percentage of global HIV patients since 2000, the total number was still at the substantial level of 33 million in 2007 (the Joint United Nations Programme on HIV/AIDS [UNAIDS], 2008). More specifically, in the Western region, comprising of North America, Western and Central Europe, the number of HIV patients grew to about 2 million in 2007 (UNAIDS, 2008).

These large numbers can be partially attributed to the life-prolonging effects of antiretroviral therapy (i.e., medication that can suppress the activity of HIV) which has been made available to HIV patients since the mid nineties (World Health Organization [WHO], 2002, 2006). However, the number of new HIV infections should also be taken into account. In the last decade, the rate of new HIV infections was steady in certain Western countries, such as in North America and Canada, and even slightly decreased among certain groups, such as injecting drug users in Europe. However, it increased elsewhere, such as among heterosexuals in Europe (UNAIDS, 2008).

The latter finding is rather unexpected, as at the time of the outbreak of HIV, health policies in Western countries were already shifting from curative to more preventive and HIV prevention programs were immediately set up (Feinstein, 2005; WHO, 1986). Knowing that no complete cure has been discovered yet, this reveals a clear and urgent need to develop more *effective* prevention programs (UNAIDS, 2008).

However, existing policy evaluation reports rarely go into the details of how prevention programs were designed and as such, do not offer any information about which behavioral change techniques have actually worked and which have not (Airhihenbuwa, Makinwa, and Obregon, 2000; UNAIDS, 2008). Also prior academic research evaluating the effectiveness of HIV prevention campaigns have taken on a limited perspective on message design (Albarracin et al., 2003; Dejong, Wolf, and Austin, 2001; Fisher and Fisher, 1992; Freimuth et al., 1990; Johnson, Flora, and Rimal, 1997; Myrhe and Flora, 2000; Noar et al., 2009). So, additional research is needed to offer more comprehensive guidelines to policymakers and health practitioners.

To begin filling this void, the goal of the current study is to conduct a content analysis on existing HIV prevention campaigns and focus on the main issues in designing persuasive communication: (a) campaign objectives, (b) target groups, and (c) the execution of the message itself (Salovey, Schneider and Apanovitch, 2002). Unlike prior research, we recognize the multidimensional character of health communication and integrate a diversity of relevant theoretical perspectives in our coding scheme, such as framing theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1981), protection motivation theory (Rogers, 1975, 1983) and fear appeal research (Witte and Allen, 2001) (Devos-Comby and Salovey, 2002; Keller and Lehmann, 2008; Noar et al., 2009). Moreover, we also go beyond the descriptive analysis of most content analyses. We construct *good practice rules* based on academic findings and test whether these are followed in practice. Specifically, we correlate message features to risk-related audience characteristics, such as age and sexual orientation, and study trends over a time period of almost three decades (i.e., from the early eighties until 2008).

1. THEORETICAL BACKGROUND

1.1. Objectives of HIV Prevention Campaigns

HIV prevention covers more meanings than “preventing the contraction of HIV” alone. In general, disease prevention refers to all the interventions that are set up to reduce and eliminate diseases. Specifically, three types of disease prevention were identified in prior research (Ogden, 2007; Rothman and Salovey, 1997). First, *primary prevention* aims at modifying risk behavior before an actual disease occurs (e.g., use a condom). Furthermore, in case of *secondary prevention*, people are urged to get tested in order to detect a possible disease and as such, to treat it in an early stage to maximize the chances for recovery or survival. Finally, interventions with a *tertiary prevention* objective especially want to help people who already suffer from a disease. They focus, for example, on effective medical treatment and other ways in which people can cope with their disease.

As scientists have not found a cure for HIV yet and because of its contagious character, we expect that HIV prevention campaigns focus mostly on primary and secondary prevention instead of on tertiary prevention. However, as already noted, scientific progress in the mid nineties has led to antiretroviral therapy which can significantly weaken the activity of HIV (WHO, 2002). As a result, the life expectancy of HIV patients has increased substantially, and AIDS has evolved from an instantly mortal to a more chronic disease (WHO, 2006).

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Therefore, over time, campaigns could have also focused more on tertiary prevention themes and thus not only spread the message of “dying of AIDS”, but also of “living with AIDS”. Therefore, the following could be seen as a good practice (GP):

GP 1: In HIV prevention campaigns, there is a significant shift over time from an exclusive focus on primary and secondary prevention themes to more differentiation in prevention themes, that is, to giving more attention to tertiary prevention themes as well.

Furthermore, basic marketing theory puts forward that the target group of a persuasive message should be chosen based on the communication objectives put forward by the organization that sends the message. As a result, we also expect that the choice of a target group of a HIV prevention campaign depends on the type of prevention objective put forward by policymakers (Fisher and Fisher, 1992; Keller and Lehman, 2008). In Western countries, the most important modes of HIV transmission are unprotected sex between men and heterosexual intercourse with a non-regular partner (UNAIDS, 2008). The latter also implies that young people are particularly high at-risk to contract sexually transmitted diseases, such as HIV, as they are in the middle of experimenting with their first sexual contacts. Other risk groups identified in the Western region are sex workers, injecting drug users, people who donate or receive blood et cetera¹.

Primary and secondary prevention campaigns which want to prevent the further spread of the disease should therefore mainly target the foregoing, high at-risk groups. Tertiary prevention campaigns are rather about how to deal with the disease once it is there. As such, they are not only relevant for HIV patients, but for all people involved with HIV patients in one way or another (e.g., family, friends, colleagues et cetera). Therefore, they should target different groups, that is, high at-risk as well as the general public. However, it is not quite clear to what extent they should target which group.

To conclude, academic research recommends the following:

GP 2: Primary and secondary HIV prevention campaigns target groups high at-risk to contract HIV rather than the general public.

¹ However, the first two groups are relatively small in number and all blood transfusions in developed countries are currently subject to strict HIV checkups (UNAIDS, 2008).

1.2. Message Execution of HIV Prevention Campaigns

Below, we will give an overview of the most important message tactics discussed in health communication studies. We focus on the tactics' main effects on persuasion, as well as on some potential interaction effects with personal and situational factors.

1.2.1. *The Use of Endorsers*

It is clear from prior research that endorsers can have a significant impact on message persuasiveness. Different classifications of endorsers exist, but a commonly used distinction is the one between expert endorsers (e.g., doctors or scientific research institutions), celebrity endorsers and *proximal* endorsers, such as ordinary consumers or one's peers (Tellis, 2004; Wilson and Sherrell, 1993).

Personal and situational variables have been found to qualify the effectiveness of different types of endorsers. For example, Friedman and Friedman (1979) showed that product type is an important moderator to consider in this respect, as: (a) celebrity endorsers are most effective when promoting products high in psychological and social risk, (b) expert endorsers are most effective when promoting products high in financial, performance and/or physical risk, and (c) proximal endorsers are most effective when personal risks are minimal. Assuming that HIV prevention campaigns are mainly about preventing high physical risks, the use of experts seems to be the best advice. Support for this premise was also delivered by a recent meta-analysis on the effectiveness of different types of endorsers in HIV prevention programs. Here, it was concluded that there seems to be an advantage of using an expert over a proximal endorser (Durantini et al., 2006). Consequently, academic research proposes the following GP rule:

GP 3: In HIV prevention campaigns, expert endorsers are more often used than celebrity and proximal endorsers.

The meta-analysis of Durantini et al. (2006) also showed that the effectiveness of endorsers depends on the specific target group. Although groups high at-risk to contract HIV generally changed their behavior more in case of an expert endorser than in case of a proximal endorser, the reverse was true for heterosexuals. Furthermore, several, other studies also showed that young people follow the opinions of peers rather than of experts, as they tend to resist authority (e.g., Rickert, Jay, and Gottlieb, 1991). In sum, academics recommend the following:

- GP 4:** In HIV prevention campaigns targeted at gay men and bisexuals, experts are more often used than proximal endorsers, whereas the reverse is true in case of HIV prevention campaigns specifically targeted at heterosexuals and young people.

Moreover, a similarity or matching principle was extracted from the empirical data collected by Durantini et al. (2006). This holds that the higher the similarity or the match between the target audience and the endorser in terms of socio-demographics or behavior, the more favorable the results (Durantini et al., 2006). Similar effects were found in social psychological and advertising research. For example, Houston (1990) showed that individuals who are exposed to a person's self-discrepancy state are more empathic with this person when they share the same type of self-discrepancy; increased empathy also led to more persuasion. Therefore, academics advise the following:

- GP 5:** HIV prevention campaigns targeted at high at-risk groups feature endorsers who are highly at-risk themselves rather than endorsers who are not at-risk.

Finally, we also take a look at the effectiveness of different types of endorsers in different contexts. Chandy et al. (2001) investigated the influence of market age (i.e., the time a product or an idea has been on the market) on the effectiveness of different ad executions. Among other things, these authors demonstrated that expert endorsers are more effective in younger markets than in older ones. This result was explained by the fact that in younger markets, the existing knowledge about a certain product is more limited. In such a context, individuals typically perceive high risk and as a result, tend to rely on the opinions of others. An expert can be an effective source as it can provide the expertise needed here (Biswas, Biswas, and Das, 2006). Moreover, in case of little product knowledge, people are generally also motivated to further elaborate on the product information they are given. Here, expert endorsers can be persuasive, because they are perceived to have informational value and thus can act as strong arguments. Assuming that knowledge about HIV was limited in the early eighties, but increased over time, it seems advisable to have especially used expert endorsers in the earliest HIV prevention campaigns. Furthermore, we would also recommend showing more celebrity endorsers in later HIV prevention campaigns, as AIDS has evolved from an instantly mortal to a more chronic disease (WHO, 2006), implying less physical risks, but

more social and psychological risks (Friedman and Friedman, 1979). In sum, academic research proposes the following good practice:

GP 6: In HIV prevention campaigns, the use of expert endorsers decreases over time, whereas the use of celebrity endorsers increases over time.

1.2.2. The Use of Framing

Many studies already showed that framing messages in a certain way impacts their effectiveness and this proves to be especially relevant in the context of health communication (Levin, Schneider, and Gaeth, 1998; Kahneman and Tversky, 1979; Tversky and Kahneman, 1981). Negative message frames are usually compared to positive ones. In case of a negative frame, negative outcomes are focused upon by pointing at a loss (i.e., the presence of a negative outcome, such as death (e.g., “AIDS could close your eyes”)) or at a non-gain (i.e., the absence of a positive outcome, such as losing your social and romantic life (e.g., “If you are tired of a busy, social life, try the “I have got AIDS” stigma”)), whereas in case of a positive frame, positive outcomes are the focal point, either in terms of a gain (i.e., the presence of a positive outcome) or a non-loss (i.e., the absence of a negative outcome) (Meyers-Levy and Maheswaran, 2004). Overall, negatively framed messages appear to be more motivating than positively framed ones (Levin et al., 1998), though the type of framing often interacts with other variables (Salovey et al., 2002).

First, prospect theory predicts that in case of promoting a *safe* behavioral recommendation, gain frames are more effective than loss frames, whereas the reverse is true in case of promoting a *risky* behavioral recommendation (Meyerowitz and Chaiken, 1987). These predictions were confirmed by research assuming that preventive behaviors (i.e., with the goal of maintaining a good health) are safe and detection behaviors (i.e., with the goal of detecting possible health problems) are perceived to be risky, at least in the short term (Rothman et al., 1993).

However, these results were shown to further depend on the level of personal involvement (Block and Keller, 1995; Maheswaran and Meyers-Levy, 1990; Rothman et al., 1993). Meyers-Levy and Maheswaran (2004) showed that a negative frame is clearly more persuasive than a positive frame in case of highly risky behavioral implications, but only when people are also highly personally involved in this behavior. When personal involvement is low, a positive frame is more effective than a negative one. In fact, the latter turned out to

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be true, independent of the perceived risk of a behavior. In case people are highly involved, but the behavior is perceived to be little risky, framing appears to have no real effect. Assuming that the general public is little personally involved, whereas high at-risk groups are highly personally involved, academics put forward following recommendations:

- GP 7:** Primary and secondary HIV prevention campaigns targeted at the general public are more gain than loss framed.
- GP 8:** Secondary prevention campaigns targeted at high at-risk groups are more loss than gain framed.

Finally, in their study about the effectiveness of different ad tactics over time, Chandy et al. (2001) also found that negatively framed ads are more suited in younger markets, whereas positively framed ads are more persuasive in older markets. They assumed that younger markets usually find their reason of existence in resolving particular consumption problems. As a result, ads focusing on the main problems which could be eliminated by assimilation to the message were proposed to be most persuasive here. As opposed to younger markets, older markets were expected to be characterized by more knowledgeable consumers who would get irritated by the same, negative message over and over again. Here, they proposed that positive frames would be more motivating than negative ones, as they could still demonstrate additional value over the pure instrumental one. Again, assuming that knowledge about HIV significantly increased over time, academics also recommend:

- GP 9:** In HIV prevention campaigns, there is a significant shift over time from a focus on negative frames to a focus on positive frames.

1.2.3. The Use of Threat and Action Appeals

In the domain of health communication, the distinction between negative and positive frames is usually translated into *threat* and *action appeals* (Rothman and Salovey, 1997). The protection motivation theory of Rogers (1975, 1983) further specified the components of these types of appeals and the processes that underlie their effectiveness. Specifically, an effective threat appeal is presumed to consist of two components, that is, (a) the seriousness of the negative health consequences of a risk behavior (i.e., severity) (e.g., “AIDS has no re-examination.”) and (b) the probability of the occurrence of these negative outcomes when

performing the risk behavior (i.e., vulnerability) (e.g., “People have more sex than you think.”). The theory also posits that the perceptions of severity and vulnerability are further compared against the perceived rewards of the risk behavior, which finally leads to an overall threat appraisal.

When considering the components of an effective action appeal, Rogers (1975) originally only discussed the concept of response efficacy, which refers to the ability of a recommended behavioral response to effectively avoid the posed threat (e.g., “Using a condom = Being smart”). However, in 1983, he extended his theory with the concept of self-efficacy, referring to the capability of a person to perform the recommended behavioral response (e.g., “Just put it (= the condom) on”). Again, both components are assumed to lead to perceptions of response and self-efficacy in the target group considered. Comparing these with the perceived costs of the behavioral recommendation determines the final coping appraisal.

Finally, Rogers (1975, 1983) proposed that the threat and coping appraisal both contribute to the level of protection motivation (i.e., the intention to perform the recommended protective behavior) and to behavioral change in the end. Meta-analyses concluded that all four components of the protection motivation theory showed significant positive correlations with attitudes, behavioral intentions and actual change (De Hoog, Stroebe, and De Wit, 2007; Witte and Allen, 2000). Therefore, a complete *threat-action appeal* should have the most potential to persuade people. Such a combined appeal or threat-action appeal is indeed assumed to be frequently used in health campaigns (Hale and Dillard, 1995; Ruiter, Abraham, and Kok, 2001; Rossiter and Thornton, 2004).

However, it should also be noted that response and self-efficacy proved to have the most consistent beneficial effects on behavioral change (De Hoog et al., 2007; Witte and Allen, 2000). Two meta-analytic reviews on the protection motivation theory also found that although both threat components always contributed to persuasion outcomes in a positive manner, the coping appraisal variables, and especially self-efficacy, were mainly responsible for beneficial effects (Floyd, Prentice-Dunn, and Rogers, 2000; Milne, Sheeran, and Orbell, 2000). Norman, Boer, and Seydel (2007) came to similar conclusions when summarizing research on the protection motivation theory and HIV prevention. The only difference here concerned the effect of perceived vulnerability. Unlike prior findings, perceived vulnerability had an inconsistent impact on the effectiveness of HIV prevention. In sum, good practices would be:

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- GP 10:** In HIV prevention campaigns, complete threat-action appeals are more often used than any other threat-action combination, threat-only or action-only appeals.
- GP 11:** In HIV prevention campaigns, the focus is put (a) more on self-efficacy than on response efficacy, (b) more on both types of efficacy than on severity, and (c) more on both types of efficacy and severity than on vulnerability.

Health stage theories have chosen a new path compared to traditional health behavior models such as the protection motivation theory of Rogers (1975, 1983). They claim that behavioral change is rather a process over time, consisting of a series of actions which are qualitatively different (Weinstein, 1988). They further propose that different factors are important at different stages (Sutton, 2007). In line with this, Block and Keller (1998) linked the four components of the protection motivation theory to the first stages proposed by the transtheoretical model (i.e., precontemplation, contemplation, preparation and action), which is the dominant health stage model (e.g., Prochaska and Diclemente, 1982). They also found evidence for following propositions: (a) to get people to think about a health issue and motivate change in general (i.e., from the precontemplation stage to the contemplation stage), the impact of perceived vulnerability is much more important than of perceived severity, response and self-efficacy, (b) to further motivate people who already acknowledge the problem, but are still not willing to change (i.e., from the contemplation stage to the preparation and action stages), perceived severity dominates the other three components in influencing people's intentions, and, finally, (c) when people are already making changes beneficial for health (i.e., in the action stage), increasing the perceptions of response and self-efficacy is more important than increasing the perceptions of vulnerability and severity.

Similarly, Catania, Kegeles, and Coates (1990) proposed a three-stage model (i.e., the AIDS Risk Reduction Model) to describe changes in risky sexual behavior. They put forward that people pass from (a) recognizing that one's sexual behavior is risky, to (b) the stage of making a commitment to reduce risky sexual behavior, and finally, to (c) the stage of seeking and performing coping methods. They showed that perceived vulnerability is important in the first stage, whereas efficacy is the determining factor in the second stage.

Based on the above, a good practice would be to focus more on threatening information at the time a new disease turns up, when people are only little aware of their vulnerability to and the severity of the related health risks. However, later on, as disease related knowledge increases and more people acknowledge the actual health problem, it would be a good idea to

focus more on efficacy related information to come to real behavioral change as well. However, it should also be noted that every new generation, who comes into the world without this disease related knowledge, still needs to go through the different stages of change, regardless of how long the disease as such already exists. So, academics put forward following good practice, excluding HIV prevention campaigns specifically targeted at young people, as for them, a focus on threatening information could still be necessary today.

GP 12: In HIV prevention campaigns, which are not specifically targeted at young people, there is a significant shift over time from a focus on threatening information to a focus on efficacy related information.

1.2.4. The Use of Rational Versus Emotional Appeals

In the protection motivation theory, there is a strong focus on the role of cognitions in the persuasion process (Conner and Norman, 2007). However, from the 1980's on, academics (re-)acknowledged the significant role of emotions in people's judgments (Eagly and Chaiken, 1993). As a result, this study also considers the distinction between rational and emotional appeals.

What is consistently recommended is that the choice of a rational versus an emotional appeal should depend on the consumer's profile and the specific context (Johar and Sirgy, 1991; Vaughn, 1980). For example, an emotional appeal was found to be more persuasive than a rational one when people had consummatory motives (i.e., motives underlying behavior that is intrinsically rewarding, such as reading a book because you like it), whereas the reverse was true when people were mainly driven by instrumental motives (i.e., motives underlying behavior that is not rewarding in itself, but is needed to accomplish another goal, such as reading a book because you have to give a presentation on it in class) (Pham, 1998).

In the context of health behaviors, Lawton, Conner, and McEachan (2009) showed that affect is often a stronger predictor of intentions and behaviors than reason. This was found to be especially true for health risk behaviors, such as drinking, using drugs, smoking et cetera (Lawton, Conner, and Parker, 2007; Lawton et al., 2009). In line with this, Richard, van der Pligt and de Vries (1995) showed that *anticipated* affect (i.e., affect that is anticipated to be felt after a specific behavior would be undertaken) is a significant predictor of (safe vs. risky) sexual behaviors, over and above cognitive factors. It also seemed that anticipated affect was

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more influential than attitudes (assumed to be mainly based on instrumental, cognitive beliefs) in predicting the use of condoms.

In sum, given that unprotected sex is the main transmission mode of HIV in Western countries (UNAIDS, 2008) and that risky sexual behaviors are driven by emotions rather than by reason, emotional appeals rather than rational ones are expected to be more relevant and persuasive in HIV prevention campaigns of Western countries. So, based on prior academic research, a good practice rule would be:

GP 13: In HIV prevention campaigns, emotional appeals are more often used than rational appeals.

Next, we return to the study of Chandy et al. (2001) once more. These authors also showed that rational appeals are more effective in younger markets, whereas emotional appeals work better in older markets. Specifically, they proposed that, on the one hand, in younger markets, where existing product knowledge is rather low, people are also motivated to learn and are interested in additional product information. Rational or argument-based ads can also provide this and can therefore be persuasive. In older markets, on the other hand, product knowledge is assumed to be acquired. Here, the motivation to pay attention to the same product information is expected to be less. To still draw some attention to your product, Chandy et al. (2001) proposed an emotional appeal to do a better job than a rational appeal. If we again assume that knowledge about HIV evolved from little in the early eighties to high in more recent years, a good practice would be:

GP 14: HIV prevention campaigns are less rational and more emotional over time.

Of all emotions, fear is assumed to be most consistently used in health campaigns in general and in HIV prevention campaigns in particular (Freimuth et al., 1990; Hale and Dillard, 1995). Fear appeals are also related to the concept of threat-action appeals, as it is assumed that fear is evoked after being confronted with a personal threat (Rogers, 1983). However, both are still distinct in that fear appeals concern emotion rather than cognition (Dillard, 1994; Witte and Allen, 2000).

Meta-analyses about fear appeals concluded that the more intense the evoked fear, the more motivated people are to protect themselves from the presented threat and as such, to follow the recommended behavioral response (Milne et al., 2000; Witte and Allen, 2000).

Also de Hoog et al. (2007) found empirical support for their proposition that *really high* levels of perceived vulnerability and experienced negative affect could in fact lead to a positive bias in processing behavioral recommendations and as such, to *highly* favorable behavioral intentions (Das, de Wit, and Stroebe, 2003).

However, other researchers have objected against these conclusions and stated that in prior studies, the true level of evoked fear was never really high, but rather moderate or low (Hastings, Stead, and Webb, 2004; Keller and Lehmann, 2008). Moreover, even the earliest fear appeal theories have pointed to the dangers of feeling (too) highly vulnerable and fearful towards a health risk, as this could also lead to defensive processing of personally relevant health messages and to maladaptive responses in the end (Hovland et al., 1953; Liberman and Chaiken, 1992).

Specifically, in the context of promoting condom use, a meta-analysis by Earl and Albarracin (2007) showed that fear appeals do increase perceived risk, but at the same time, also negatively affect HIV related knowledge and condom use. Looking at different intensity levels of evoked fear, it was found that lower versus higher fear levels were more persuasive in the end. The latter finding seems to be especially true for people performing health risk behavior. Keller (1999) showed in an experiment that for this group, a low rather than moderate fear level is more persuasive, as this could decrease message discounting. In case people are already complying with the recommended healthy behavior, moderate fear appeals are more effective than low fear appeals, because these appeals are assumed to make the cost-benefit analysis of the healthy behavior more appealing and to confirm people in their behavior and as such, enhance their self-view (Keller, 1999). Similarly, Earl and Albarracin (2007) discovered a significant interaction between fear level in the campaign and risk level of the audience (i.e., infection rate among population) in that high versus low at-risk groups reacted more negatively to the presence of fear in campaigns promoting condom use. So, a good practice would entail:

GP 15: HIV prevention campaigns targeted at high at-risk groups contain low rather than moderate levels of fear, whereas HIV prevention campaigns for the general public contain moderate rather than low fear.

2. METHOD

The current research focused on print campaigns only, due to the early and enduring popularity of this medium in the implementation of HIV prevention policies (Myhre and Flora, 2000; Noar et al., 2009; UNAIDS, 2005). Furthermore, we only looked at the Western region, Flanders. To collect data, we contacted Sensoa, which is the Flemish service and expertise centre for sexual health and HIV². In addition, commercial databases and the internet were searched. As a result, we were able to collect 135 public print campaigns, distributed from the outbreak of HIV (i.e., early 1980's) until recently (i.e., 2008). This is thus a non-probabilistic sample. However, we would like to add that this is also an almost exhaustive collection of the print communication about HIV prevention distributed in this particular region.

Next, we performed a content analysis guided by the rules of good practice (Kassarjian, 1977; Neuendorf, 2009). Each campaign was coded independently by three to five coders using a standard rating form. In total, we selected 11 coders from different backgrounds. We recruited six economy students from three Flemish universities, an account manager and a bank employee, both female and in their late twenties, a business man, a housewife and a female secretary, all three in their fifties. As nobody was an expert in the domain of health communication, each coder was trained beforehand. First, they were given general instructions and were asked to read the rating form carefully. Next, they were asked to code a campaign which was not included in the final sample. This was done together with the first author to make sure all concepts, questions and response options were clear.

The rating form started by asking about the intended target group of the campaign, and this in terms of age (i.e., young people (below 26 years old) vs. *everybody* (later referred to as *the general public*)), sexual orientation (i.e., gay men/bisexuals vs. heterosexuals vs. everybody) and general risk level (i.e., high at-risk (drug users, travelers, blood donors, sexually active young people and gay men/bisexuals) vs. everybody). Next, we asked to identify all prevention objectives of the campaign, giving following options: (a) primary prevention, (b) secondary prevention, (c) tertiary prevention and (d) other ("please specify").

Questions about message execution followed. When at least one person was depicted in the campaign, coders needed to indicate which types of roles the main characters fulfilled.

² In 2001, the Flemish government gave Sensoa the main responsibility to promote health in terms of relationships and sexuality.

Coders were given following options: (a) an ordinary person, belonging to a certain high at-risk group, (b) an ordinary person, not belonging to a certain high at-risk group, (c) an expert person (e.g., a scientist or a doctor), (d) an expert group (e.g., a research centre), (e) a celebrity, belonging to a certain high at-risk group, (f) a celebrity, not belonging to a certain high at-risk group, and (g) other (“please specify”).

We also assessed the use of framing. Specifically, coders indicated on two 7-point intensity scales the extent to which the body text of the campaign was positively and negatively framed (Maheswaran and Meyers-Levy, 1990). Also, a “not applicable” option was included. Next, we asked coders to mark which of the four components of the protection motivation theory were present in the campaign (Rogers, 1975, 1983). Finally, we examined the level of rationality or emotionality of a campaign. Therefore, we used a combination of measures. First, we estimated ourselves the relative space taken in by pictures, slogans and text in the ad panel, assuming that rational stimuli use relatively more text and emotional stimuli use relative more pictures to get their appeal across. Second, we asked coders to indicate on two 7-point intensity scales (ranging from 1 (*not at all*) to 7 (*definitely*)) to what extent they thought the campaign wanted people to think about something or to feel something. To examine the intensity of fear elicited by the campaigns, they indicated, again on two 7-point intensity scales, to what extent the HIV prevention campaign intended to evoke worry and fear in its target audience. We always provided definitions and examples to explain the different, theoretical concepts.

The reliability of the nominal variables was assessed through the percentage agreement between the different coders for each variable, as is usually done in content analytic studies (Neuendorf, 2009). However, many researchers point to the disadvantages of exclusively reporting this measure, because it does not take into account the chance agreement which is solely determined by the number of response options (Neuendorf, 2009). Grayson and Rust (2001), for example, recommend using the more advanced PRL measure, developed by Rust and Cooil (1994), to get a more accurate idea of the reliability of the coded nominal data (see Appendix). Therefore, we used both reliability measures (see Table 2.1).

To evaluate the reliability of the nominal codings, one should check whether the percentage agreement is at least 66% and preferably, above 80%, and whether the PRL is at least .60 and is preferably above .80, as it follows the norms of Cronbach’s Alpha. Based on the results in Table 2.1, we can conclude that the reliability was satisfactory for most of the nominal variables. Only the reliability of the measurement of response and self-efficacy was borderline. We should take this into account when drawing conclusions based on these

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variables. All discrepancies between coders were resolved by applying the majority decision rule.

TABLE 2.1

Reliability Coefficients in Terms of Percent Agreement and the PRL Measure of the Nominal Variables in the Coding Scheme

Variable Names	Percent Agreement	PRL
Age of the target group	72	.85
Sexual orientation of the target group	84	.97
Risk level of the target group	80	.93
Primary prevention objective	81	.94
Secondary prevention objective	89	.98
Tertiary prevention objective	94	.99
Endorsement type: ordinary person - within risk group	93	.99
Endorsement type: ordinary person - not within risk group	90	.98
Endorsement type: expert – person	100	1
Endorsement type: expert – group	94	.99
Endorsement type: celebrity - within risk group	99	1
Endorsement type: celebrity - not within risk group	98	1
Response efficacy	61	.65
Self-efficacy	64	.72
Severity	82	.94
Vulnerability	80	.93

The reliability of interval scaled variables was verified through the use of Cronbach's Alpha, which is a measure of internal consistency, used to check the reliability of metric measurement scales (see Table 2.2). Except for the level of fear, the reliability of the codings was satisfactory. Nonetheless, we kept this variable in the data set, but, again, bearing this limitation in mind when drawing conclusions. To come to a unique score for each variable for each campaign, we averaged the scores of the different coders.

TABLE 2.2

The Cronbach's Alpha Coefficients of the Interval-Scaled Variables in the Coding Scheme

Variable Names	Cronbach's Alpha
Positive frame of the text	.75
Negative frame of the text	.74
Goal of the campaign is let people think about something	.93
Goal of the campaign is let people feel something	.91
Worry elicited by the campaign	.66
Fear elicited by the campaign	.55

3. RESULTS

3.1. Preliminary Work

3.1.1. Time Variable

To study time trends, we looked for an appropriate time variable. Given the frequency with which HIV prevention campaigns were launched in the past, using the year of broadcasting would be a good idea. However, some HIV prevention campaigns were broadcasted during several years making it impossible to assign them to one particular year. Therefore, we decided to make up time intervals of several years.

Specifically, we chose to work with three time intervals, namely (a) 1984-1994, (b) 1995-1999 and (c) 2000-2008. The mid nineties were considered to be a meaningful cut-off point, as from then on, antiretroviral therapy was made available for the public, turning AIDS into a chronic disease instead of an instantly mortal disease (WHO, 2006). Furthermore, with this classification, we also had a sufficient number of campaigns in each time interval making statistical testing and inferences more useful ($n_1 = 38$, $n_2 = 42$, and $n_3 = 55$). Finally, we assumed these time periods to be independent of each other. However, this is probably not always the case, as some campaigns built on each other, for example, because of societal and political trends.

3.1.2. Intended Target Groups

We found that 21.5% of the campaigns were specifically targeted at young people (vs. 78.5% targeting the general public) ($X^2(1) = 43.92$, $p < .01$). Looking at segmentation based on sexual orientation, 34.8% of all campaigns were exclusively targeted at gay men and bisexuals and 8.9% of the campaigns were particularly focused on heterosexuals ($X^2(2) =$

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44.61, $p < .01$). Finally, in terms of general risk level, results showed that the distribution between targeted and generic campaigns was about 50/50 (50.4% vs. 47.4%) ($X^2(1) = .01, p = .93$).

3.2. Objectives of HIV Prevention Campaigns

The majority of HIV prevention campaigns (72.6%) wanted to prevent the further spread of HIV (i.e., primary prevention). Furthermore, 13.3% of our sample urged people to get tested for HIV (i.e., secondary prevention). Finally, about one fifth of the sample (21.5%) specifically appealed to empathize more with HIV patients and to reduce HIV related stigma (e.g., “people with HIV are careless and immoral people”) and discrimination towards these people. Although this empathy appeal does not directly address the treatment of HIV patients, it does so in an indirect way. That is, overcoming certain social barriers could motivate more HIV patients to look for and use treatment (e.g., reduce the shame about a history of unprotected sex and reduce the fear of rejection) (Smith, Ferrara, and Witte, 2007; UNAIDS, 2008). As these campaigns address the issue of “living with AIDS”, our coders considered them as tertiary prevention campaigns.

In coding the answers to the open question “Which other objectives does this campaign serve?”, we noticed that two additional themes emerged, that is, (a) improve general HIV knowledge (e.g., campaigns trying to eliminate typical misunderstandings about HIV) (7.4%) and (b) encourage open communication about sex (e.g., “Lost your tongue while kissing?”, “First blah-blah, then bang-bang”) (5.9%). Although they could be related to the above prevention objectives, they serve other objectives as well (e.g., open communication about sex is also about trying to create more respect for each other as sexual partners). They will not be further discussed in the remainder of this paper.

Good practice 1 recommended more diversity in HIV prevention themes over time. Looking at Table 2.3, we noticed a decrease in the relative number of campaigns focusing on primary prevention around the mid nineties: from an almost exclusive focus in the first period to a relatively stable level of a bit more than 60% in the last two periods (going from period 1 to period 2: $X^2(1) = 11.06, p < .01$; going from period 2 to period 3: $X^2(1) = .004, p = .95$). Time had no significant impact on the relative number of secondary prevention campaigns (going from period 2 to period 3: $X^2(1) = .96, p = .33$)³. However, the use of an empathy

³ Significance testing was not possible between period 1 and 2. Here, two cells (i.e., 50%) had an expected count of less than 5.

appeal, which we classified as tertiary prevention, did evolve in a significant way over time. Starting from being almost absent in the starting period of the epidemic, tertiary prevention gained more attention after the mid nineties ($X^2(1) = 5.38; p < .05$). Also, in more recent years, the same trend could be observed, although it was less distinct ($X^2(1) = .60, p = .44$). Overall, we can conclude that good practice rule 1 was followed in reality.

TABLE 2.3

Number of HIV Prevention Campaigns per Type of Prevention Objective over Time (%)

	Period 1 1985-1994	Period 2 1995-1999	Period 3 2000-2008	Total
Primary prevention	94.7	64.3	63.6	72.6
Secondary prevention	13.2	9.5	16.4	13.3
Tertiary prevention	5.3	23.8	30.9	21.5

Finally, we checked good practice rule 2 recommending that primary and secondary HIV prevention campaigns target high at-risk groups rather than the general public. Among the primary prevention campaigns, 59.2% were targeted at high at-risk groups versus 40.8% at the general public ($X^2(1) = 3.31, p = .07$). In case of secondary prevention campaigns, 72.2% focused on high at-risk target groups versus 27.8% targeted at the general public ($X^2(1) = 3.56, p = .06$). These results point to support for good practice rule 2. Tertiary prevention campaigns were expected to target both high at-risk groups and the general public, but we did not make any predictions about exact proportions. Looking at the results, we found that they were not really targeting high at-risk groups (17.2%), but mainly the general public (82.8%) ($X^2(1) = 12.45, p < .01$).

3.3. Message Execution of HIV Prevention Campaigns

3.3.1. The Use of Endorsers

About half of the campaigns (51.9%) did not show any endorser, whereas 45.9% made use of one particular type of endorser and 2.2% (i.e., three campaigns) contained two types of endorsers. In good practice rule 3, it was recommended to use experts rather than proximal or celebrity endorsers. Results indicated that the majority of the campaigns with at least one endorser (86.2%) depicted ordinary people or *proximal endorsers*. Specifically, 61.5% showed ordinary people belonging to a certain high at-risk group, whereas 24.6% showed ordinary people not belonging to a certain high at-risk group. Celebrities were detected in

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16.9% of the campaigns using an endorser. In only one campaign, the celebrity belonged to a high at-risk group. In none of the ads, experts were used. As a result, we can conclude that good practice rule 3 was not followed in reality.

Good practice rule 4 recommended the use of experts when targeting gay men and bisexuals, but the use of proximal endorsers when targeting heterosexuals and young people. Taking into account the targeted audience, we noticed a difference in the relative use of certain types of endorsers (see Table 2.4)⁴. That is, in HIV prevention campaigns targeted at young people and heterosexuals, only ordinary people were used. Also, in case of high at-risk target groups or specifically, in case of gay men and bisexuals, ordinary people were dominant. In generic campaigns, relatively less ordinary people and relatively more celebrities seemed to appear. Good practice rule 4 therefore only seemed to be partially followed in practice: more proximal than expert endorsers seemed to be used in HIV prevention campaigns targeted at heterosexuals and young people, but the reverse was not true in HIV prevention campaigns for gay men and bisexuals.

⁴ Significance testing was not possible here due to too little observations in too many cells.

TABLE 2.4

Number of HIV Prevention Campaigns Targeted at a Certain Target Group Using a Certain Type of Endorser (%)

	General Risk level		Age		Sexual orientation		
	High (n = 41)	Everybody (n = 24)	Young (n = 14)	Everybody (n = 51)	Gay men and bisexuals (n = 33)	Hetero- sexuals (n = 9)	Everybody (n = 23)
Ordinary person ^a	97.6	58.3	100	78.4	97	100	56.5
Expert	0	0	0	0	0	0	0
Celebrity ^b	0	37.5	0	17.6	0	0	39.1
Ordinary Person + Celebrity	2.4	4.2	0	3.9	3	0	4.3

^a This refers to the sum of both ordinary people belonging to a certain high at-risk group and ordinary people not belonging to a certain high at-risk group.

^b This refers to the sum of both celebrities belonging to a certain high at-risk group and celebrities not belonging to a certain high at-risk group.

To examine whether good practice rule 5 (i.e., HIV prevention campaigns targeted at high at-risk groups feature endorsers who are highly at-risk themselves rather than endorsers who are not at-risk) was followed in practice, we recoded the variable *type of endorser* into a variable with two categories, that is, high at-risk or not high at-risk endorser. High at-risk endorsers were clearly more frequently used (90%) than not high at-risk endorsers (10%) in HIV prevention campaigns targeted at high at-risk groups ($X^2(1) = 25.60, p < .01$). This result is in line with the similarity principle proposed in academic research and as such, in line with good practice rule 5.

Finally, we wanted to test the application of good practice rule 6 (i.e., the use of expert endorsers decreases over time, whereas the use of celebrity endorsers increases over time). However, no expert endorsers were used in our sample. We further noticed that only in period 1 and 3, celebrity endorsers were used. Specifically, in period 1, three campaigns used celebrity endorsement, whereas in period 3, there were eight campaigns using this type of

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endorsement. Though the latter result seems to be in line with our recommendations, statistical testing was not possible here. In sum, we can conclude good practice rule 6 was not followed in reality.

3.3.2. *The Use of Framing*

In total, 76.5% of the campaigns contained body text written in a particular frame. On average, they were more positively ($M = 4.83$) than negatively ($M = 3.54$) framed ($t(103) = 5.73, p < .01$) which goes against the dominant view in literature that loss frames rather than gain frames should be used (Levin et al., 1998).

However, based on prior findings, we proposed good practice rules 7 and 8 stating that (a) primary and secondary HIV prevention campaigns targeted at the general public should be more gain than loss framed, and (b) secondary prevention campaigns targeted at high at-risk groups should be more loss than gain framed. We found that primary prevention campaigns targeted at the general public were significantly more positively ($M = 5.22$) than negatively framed ($M = 3.24$) ($t(23) = 5.12, p < .01$). Also, secondary prevention campaigns targeted at the general public had a clearer positive ($M = 4.93$) than negative ($M = 3.40$) frame ($t(4) = 3.94, p < .05$). These results are in line with good practice rule 7.

Considering secondary prevention campaigns targeted at high at-risk groups, they were marginally more positively ($M = 5.18$) than negatively framed ($M = 4.15$) ($t(12) = 2.04, p = .06$), which goes against good practice rule 8. Although not put forward as a good practice rule, also the primary prevention campaigns targeted at those high at-risk had a positive ($M = 4.60$) rather than a negative frame ($M = 3.49$) ($t(45) = 2.91, p < .01$).

Finally, we examined the impact of the time period on the use of certain frames, but did not find significant results ($F_{\text{positive_frame}}(2,103) = 1.28, p = .28, F_{\text{negative_frame}}(2,103) = 1.87, p = .16$). However, based on suggestions made in prior literature, we expected to find a significant shift over time from a focus on negative frames to a focus on positive frames. Looking at the mean scores, the intensity with which positive frames were used, seemed to decrease ($M_1 = 5.16, M_2 = 4.79, M_3 = 4.69$), whereas the intensity of the negative frames seemed to increase ($M_1 = 3.17, M_2 = 3.34, M_3 = 3.83$). However, contrasts were never significant. The mean scores indicated that the text frames were always positive rather than negative over time. This is not in line with good practice rule 9.

3.3.3. *The Use of Threat and Action Appeals*

Overall, 83% of all campaigns contained at least one component specified by Rogers (1975, 1983). In considering specific combinations of threat and action components (see Table 2.5), the most dominant appeal was the one exclusively dealing with response efficacy ($X^2(4) = 66.04, p < .01$). The second most frequently used appeal was the one exclusively focusing on self-efficacy. Also important were appeals using at least one threat component and at least one action component. These appeared in three possible forms, namely (a) with one threat and one action component, (b) with all four components according to Rogers (1983) or (c) with the three components according to Rogers (1975). All other combinations were of little importance ($< 5\%$). As complete threat-action appeals were not more frequently used than all other possible combinations of the four components specified by Rogers (1975, 1983), we can conclude that good practice rule 10 was not followed in reality.

TABLE 2.5

Number of HIV Prevention Campaigns Containing a Certain Combination of the Four Components of the Protection Motivation Theory (Rogers, 1975, 1983) (%)

	Relative to the total sample ($n = 135$)	Relative to the total of campaigns containing at least one component of the protection motivation theory ($n = 112$)
Response efficacy only	37.8	45.5
Self-efficacy only	11.9	14.3
A threat-action combination ^a	8.9	10.7
Complete threat-action combination (Rogers, 1983) ^b	6.7	8
Complete threat-action combination (Rogers, 1975) ^c	6.7	8

Note. For reasons of clarity, we only displayed those combinations of any significance in the sample ($< 5\%$).

^a A threat-action combination contains one threat related component (i.e., severity or vulnerability) and one action related component (i.e., response or self-efficacy).

^b A complete threat-action appeal according to Rogers (1983) contains vulnerability, severity, response and self-efficacy.

^c A complete threat-action appeal according to Rogers (1975) contains vulnerability, severity and response efficacy.

Similarly, we noticed that HIV prevention campaigns put relatively more stress on response efficacy (61.5%) than on the three other components, namely, vulnerability (23.7%),

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severity (22.2%) and self-efficacy (25.9%) ($X^2(3) = 405, p < .01$). This result goes partly against good practice rule 11, as self-efficacy was not the most prevalent component in real HIV prevention campaigns. However, we did find support for the fact that campaigns focused more on response efficacy than on vulnerability and severity.

Finally, good practice rule 12 recommended a significant shift over time from a focus on threatening information to a focus on efficacy related information. When analyzing the effect of time on the relative presence of the four components of the protection motivation theory of Rogers, (1975, 1983), we found significant results on the relative use of severity ($X^2(2) = 9.90, p < .01$) and vulnerability ($X^2(2) = 6.33, p < .05$). More specifically, the relative presence of severity decreased significantly going from period 1 to 2 ($t_1: 46.9\%; t_2: 16.7\%; X^2(1) = 7.24, p < .01$), but remained stable going from period 2 to 3 ($t_3: 18.4\%; X^2(1) = .04, p = .84$). There was a marginally significant decrease in the relative use of vulnerability going from period 1 to period 2 ($t_1: 43.8\%, t_2: 22.2\%; X^2(1) = 3.59, p = .06$), but not anymore going from period 2 to period 3 ($t_3: 18.4\%; X^2(1) = .17, p = .68$). Results showed no time effect on the relative use of response efficacy ($t_1: 75.0\%, t_2: 58.3\%, t_3: 63.2\%$) ($X^2(2) = 2.17, p = .34$) and self-efficacy ($t_1: 21.9\%, t_2: 33.3\%, t_3: 21.1\%$) ($X^2(2) = 1.78, p = .41$). So, we only found partial support for good practice rule 12.

3.3.4. *The Use of Rational Versus Emotional Appeals*

Good practice rule 13 recommended that HIV prevention campaigns use emotional rather than rational appeals. Looking at HIV prevention campaigns, images ($M = .56$) clearly dominated slogans ($M = .18$) ($t(134) = 8.88, p < .01$), body text ($M = .24$) ($t(134) = 5.89, p < .01$) and both types of text taken together ($M = .42$) ($t(134) = 2.27, p < .05$). The coders also considered the selection of campaigns to be designed to let people feel ($M = 4.53$) rather than to think ($M = 3.49$) ($t(121) = -4.15, p < .01$)⁵. Based on these results, we can conclude that HIV prevention campaigns were generally more emotional than rational, which is in line with good practice rule 13.

Next, we also examined the impact of time on the different measures of rationality and emotionality of the message. Specifically, good practice rule 14 recommended less rational and more emotional HIV prevention campaigns over time. We did not find a main effect of time period on the proportion of images in the ad panel ($F(2, 132) = 1.37, p = .26$), but there was a significant effect on the proportion of slogan ($F(2, 132) = 3.91, p < .05$) and text in the

⁵ The lower number of degrees of freedom is due to some missing values on these two variables.

ad panel ($F(2, 132) = 7.28, p < .01$). As shown in Table 2.6, the proportion of images in the ad panels seemed to increase slightly going from period 1 to 2, but to grow more substantially one period later. However, separate contrasts were never significant. The relative space taken in by the slogan fluctuated more over the three time periods. Separate contrasts only pointed to a significant increase going from period 1 to period 2. The proportion body text in the ad panels appeared to decrease steadily over time, but only the difference between period 1 and period 3 was significant.

Furthermore, time had a significant effect on the extent to which coders considered the campaign to want people to think or to feel something ($F_{think}(2, 121) = 5.67, p < .01, F_{feel}(2, 121) = 10.19, p < .01$) (see Table 2.6). Specifically, HIV prevention campaigns seemed to be less about making people think, going from a neutral to rather low intensity. However, only the difference between period 1 and period 3 was significant. Over time, HIV prevention campaigns seemed to be more about letting people feel, ranging from a neutral to a rather high intensity. However, the only significant differences were found between period 1 and the other two periods.

Overall, these findings suggest support for good practice rule 14 (i.e., HIV prevention campaigns evolve to be less rational and more emotional over time). However, here, the biggest changes seemed to have been implemented after period 1, around the mid nineties when scientific progress was also made in treating AIDS.

TABLE 2.6

Mean Levels of the Measures of Rationality and Emotionality in HIV Prevention Campaigns Over Time

	Period 1	Period 2	Period 3	Total
Proportion Images	50.21	53.05	61.73	55.79
Proportion Slogan	11.13	24.05	17.24	17.64
Proportion Text	38.66	22.90	15.40	24.28
Intention to let people think	4.15	3.28	3.09	3.49
Intention to let people feel	3.73	4.87	4.91	4.53

Finally, we looked at the use of fear in HIV prevention campaigns. Comparing the means of elicited worry ($M = 3.28; t(134) = -5.21, p < .01$) and elicited fear ($M = 2.46; t(134) = -13.45, p < .01$) to the mid-point of the scale used (i.e., 4), it was clear that these means were low rather than moderate or high. We also investigated the moderating influence of the type of target group on the use of fear and worry in HIV prevention campaigns. In good practice

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rule 15, we recommended to use low fear when targeting high at-risk groups and to use moderate fear when targeting the general public. Independent-samples t-tests showed that HIV prevention campaigns evoked significantly more worry and fear when targeting high at-risk groups ($M_{fear} = 2.70$; $M_{worry} = 3.73$) than when targeting the general public ($M_{fear} = 2.23$; $M_{worry} = 2.83$) ($t_{fear}(128.28) = 2.91, p < .05$; $t_{worry}(133) = 3.41, p < .01$). However, one-sample t-tests also indicated that the fear evoked by the HIV prevention campaigns targeted at high at-risk groups was low ($t(67) = -7.48, p < .01$); the elicited worry in this case was rather neutral ($t(67) = -1.36, p = .18$). HIV prevention campaigns for the general public evoked little fear ($t(66) = -12.43, p < .01$) and worry ($t(66) = -6.67, p < .01$). In sum, we did not find evidence for good practice rule 15.

4. DISCUSSION

We conducted a content analysis on 135 Flemish print campaigns which were set up by the government to prevent HIV and which were distributed from the outbreak of HIV in the early eighties until 2008. Next to a descriptive analysis, we also examined whether the design of the campaigns followed good practice rules suggested by academic research. Overall, results were mixed. For example, focusing on different prevention objectives over time was in line with scientific research on HIV/AIDS. However, recommendations about the use of framing were not followed in practice. The latter findings point to potential causes of ineffective HIV prevention campaigns and could be considered as opportunities for more effective campaign design in the future. Below, we give an overview of the main results and focus on several points of special interest.

4.1. Objectives of HIV Prevention Campaigns

Most of the HIV prevention campaigns addressed the primary prevention theme. These primary prevention campaigns also focused more on high at-risk groups than on the general public. This is in line with good marketing practices. However, this finding was also only marginally significant. This could point to a need for more specific targeting, especially when considering the statistics from different Western countries indicating major problems in specific high at-risk groups and given the fact that no complete cure has been discovered yet (UNAIDS, 2008). Nevertheless, from a public policy perspective, targeting the general public could also be useful to prevent the spread of HIV at a large scale and to gain public support for HIV prevention efforts (Dejong et al., 2001).

Secondary prevention campaigns constituted a relatively small part of our sample. These campaigns also addressed high at-risk target groups more frequently than the general public, but results were again only marginally significant. Knowing that HIV is still not curable and is also contagious, this result also leads to the recommendation for more specific targeting in the future. However, one might also question whether a mass medium is the most appropriate channel to spread a detection appeal given the fact that HIV in Western countries is particularly a problem in very specific groups of the population (Albarracin et al., 2005; Freimuth et al., 1990; UNAIDS, 2008).

The tertiary prevention theme that was identified in our sample dealt with “living with HIV” in a rather indirect way. That is, it concerned an appeal mainly directed to the general public to empathize more with HIV patients. This is in line with the call of the 2008 UNAIDS report to fight stigma and discrimination related to HIV in order to obtain a long-term solution for the epidemic. We did not find any (tertiary) campaign about possible physical treatments, such as antiretroviral therapy. Perhaps, concrete medical information is mainly provided in personal encounters with health experts and only given to HIV patients when necessary. Stigmatization and discrimination are probably more focused upon in our sample, as these are more public issues and thus require a mass medium.

As expected, we observed significantly more differentiation in the use of prevention themes over time. More specifically, the relative number of HIV prevention campaigns focusing on primary prevention decreased around the mid nineties, when antiretroviral therapy was made available, and those focusing on tertiary prevention increased, when the life expectancy of HIV patients also substantially increased. These evolutions are thus in line with the scientific progress in the treatment of HIV/AIDS.

4.2. Message Execution of HIV Prevention Campaigns

4.2.1. *The Use of Endorsers*

Expert endorsers never appeared in our sample of HIV prevention campaigns. Proximal endorsers turned up the most. This was also true looking at HIV prevention campaigns specifically targeted at gay men and bisexuals. This goes against academic literature which recommends the use of an expert rather than of a proximal endorser in this instance (Durantini et al., 2006; Friedman and Friedman, 1979). Health practitioners should further exploit expert endorsement, not just for certain groups, but also for certain contexts, such as in case of limited knowledge about the health issue at hand (Chandy et al., 2001).

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In HIV prevention campaigns specifically targeted at heterosexuals and young people, only proximal endorsers were used, which is also recommended for these target groups by prior research (Durantini et al., 2006; Rickert et al., 1991). Also, in line with theoretical suggestions, HIV prevention campaigns targeted at high at-risk groups used more endorsers who were high at-risk themselves (Durantini et al., 2006).

Celebrities were found to exclusively endorse messages targeted at the general public. They were also seldom part of a high at-risk group themselves. However, HIV prevention campaigns targeted at high at-risk groups could also benefit from including celebrities, and especially those belonging to a certain high at-risk group. This was already proven in the USA when the famous basketball player “Magic Johnson” announced he was HIV positive (Brown and Basil, 1995). Moreover, celebrity endorsers could especially be effective today, as AIDS has become a chronic disease rather than an instantly deadly disease, which also comes along with less physical risks and more social and psychological risks (Friedman and Friedman, 1979).

4.2.2. The Use of Framing

In line with the proposed good practice rules, primary and secondary prevention campaigns targeted at the general public were more positively than negatively framed. However, the same result was also found for campaigns targeted at high at-risk groups, even among the secondary prevention campaigns, which goes against academic recommendations (Meyers-Levy and Maheswaran, 2004). Also unexpected was the finding that over time, there was no differential use of different types of frames (Chandy et al., 2001). Therefore, we advise to bring the type of frame of HIV prevention campaigns more in line with the type of prevention objective, the target group and the context. Especially negative frames should be used more often to promote HIV testing among high at-risk target groups and among target audiences who have limited knowledge about HIV, such as youngsters.

4.2.3. The Use of Threat and Action Appeals

This content analysis further showed that complete threat-action appeals were not the most frequently used appeals in HIV prevention campaigns, which goes against academic recommendations. However, the HIV prevention campaigns did focus more on efficacy related information than on threat related information, which is in line with the recommendations of recent studies (De Hoog et al., 2007; Floyd et al., 2000; Milne et al., 2000; Norman et al., 2007). More specifically, HIV prevention campaigns exclusively dealing

with response efficacy clearly dominated our sample, using slogans such as “Safe sex is wonderful!”. However, campaigns exclusively focusing on self-efficacy were less prevalent (e.g., “Do you want to prevent infection? It is possible!”), while academic research consistently showed that self-efficacy is the most important factor in changing people’s behavior (Floyd et al., 2000; Milne et al., 2000). Therefore, we recommend health practitioners to focus more on self-efficacy in the future.

Based on previous literature, we recommend that health practitioners first study how their target groups perceive sexual situations and look at the relevant issues that turn up here, and then, give specific advice on how they could deal with these issues (for a comprehensive overview, see Edgar, Noar, and Murphy, 2008). For example, Albarracin et al. (2005) already found that when participating in active, personal HIV prevention programs, condom use among men increased when they were taught specific condom use skills, but condom use decreased when focusing on their interpersonal skills. For women, self-management training worked best (Albarracin et al., 2005). Similarly, Fisher and Fisher (1992) identified different types of behavioral skills which are essential in preventing HIV and are related to sexual situations, such as accepting one’s own sexuality, negotiating HIV prevention with sexual partner et cetera. Looking at our sample, we also discovered a number of recent campaigns dealing with the issue of more open communication about sex (e.g., “First blah-blah, then bang-bang”).

Looking at trends over time in the use of threat and action components in HIV prevention campaigns, we found (a) that a dominant focus on response efficacy was clear in each time period, (b) the presence of information on response and self-efficacy did not change over time, but (c) that the two threat components were used less over time. Only the latter result is in line with academic recommendations. In the early days of HIV, a more dominant focus on threat versus efficacy related information could have been more effective; the reverse is especially recommended when people already know the health issue and are willing to do something about it (Block and Keller, 1998; Catania et al., 1990).

In sum, although efficacy related information appears to be most effective in changing risk behavior, threat related information should not be ignored by health practitioners. That is, for people who have little knowledge about the HIV threat, such as about its seriousness and the modes of transmissions (e.g., youngsters), or for people who are not yet willing to change their risky behavior, threat-related information in campaigns could still be useful to motivate them to take preventive measures (Block and Keller, 1998; Catania et al., 1990; De Hoog et al., 2007; UNAIDS, 2008; Witte and Allen, 2000).

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4.2.4. *The Use of Rational Versus Emotional Appeals*

In general, the HIV prevention campaigns appeared to be more emotional than rational. Also, they were less rational and more emotional over time. These practices are also recommended by academic research (Johar and Sirgy, 1991; Lawton et al., 2007; Lawton et al., 2009; Pham, 1998; Vaughn, 1980).

However, in contrast to academic suggestions concerning fear appeals (Earl and Albarracin, 2007; Keller, 1999), the fear intensity levels were higher in campaigns targeted at high at-risk groups than at the general public. It should be added though that the intensity levels of fear and worry evoked by the HIV prevention campaigns were mostly low. Maybe this is due to the type of medium focused upon in this study. All campaigns were print which is perceived as a rather passive and *cold* medium (Madden, Allen, and Twible, 1988). Health practitioners could also be reluctant to use fear in their campaigns due to potentially harmful health effects (Earl and Albarracin, 2007; Liberman and Chaiken, 1992), although fear could also be a useful emotion to motivation change according to some academics (Das, et al., 2003; de Hoog et al., 2007; Milne et al., 2000; Witte and Allen, 2000).

5. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Although the current study offers valuable recommendations to health practitioners, one should also take into account the real-life constraints that these practitioners have to consider when making decisions. More specifically, HIV prevention also concerns sensitive topics, such as sex and homosexuality. In this case, the current societal and political stand (i.e., conservative vs. progressive) will also impact the design of HIV prevention campaigns, such as the explicitness of sex related cues. Therefore, further research could also look at different time horizons or geographical regions and hereby, take into account political, economic and other possibly relevant societal trends.

Moreover, we only constructed good practice rules based on academic research, which tends to score high in terms of internal validity, but less in terms of external validity. Considering real cases and actual effectiveness figures could additionally inspire practitioners, but academics as well. For example, future research could first subject real-life stimuli to a content analysis in order to classify them on a number of dimensions and then investigate their effectiveness, either in a controlled lab setting or in a natural setting.

Next, we only focused on print. This medium has been often used in practice, but it is not the only (mass) medium through which health messages are spread (Noar et al., 2009;

UNAIDS, 2005). Also, as already mentioned, it could explain why certain good practices were not followed, such as targeting specific, relevant groups and the use of emotions. Therefore, future research should also consider other types of prevention efforts (e.g., class educational programs for students, condom vending machines in schools and other public places) (Albarracin et al., 2005; Freimuth et al., 1990).

Overall, the coding process occurred in a reliable manner. However, coders especially disagreed on the evoked levels of fear and worry. Though different descriptions of each emotion were provided, this message characteristic seemed to be something very personal and subjective. Already for a long time, there is a turbulent debate among academics on whether content analyses should limit themselves to *manifest* or easy-to-recognize content or whether *latent* content, which coders have to induce from the stimuli, could also be looked at (Potter, 2009). Future research should try to clarify this issue in order to provide better guidance for researchers interested in setting up content analytic studies.

Finally, although we already considered different theoretical frameworks in this content analysis, we did not go into detail about all possible message tactics. For example, we only focused on the emotions of fear and worry, as they are assumed to be most often used in health campaigns (Freimuth et al., 1990; Hale and Dillard, 1995). However, in literature, there is a lot of debate about the appropriateness of using fear in health messages and there have been strong calls to further look into the effectiveness of other emotions (Hastings et al., 2004). For example, future research could also look into combinations of emotions (e.g., negative and positive emotions, accountability emotions in fear appeals), positive emotions, and specific emotions, and whether their use was contingent on the target audience and context (e.g., health issue, campaign objective, time period...) (e.g., Dillard and Nabi, 2006).

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APPENDIX - THE PRL MEASURE

Rust and Cooil (1994) developed a reliability measure for judgment-based qualitative data, that is, the Proportional Reduction in Loss measure (i.e., the PRL measure). This measure is, in fact, a generalization of the previously developed reliability measure of Perreault and Leigh (1989) (i.e., the P&L measure).

The P&L measure by Perreault and Leigh (1989)

To avoid some of the problems of former reliability measures (e.g., percent agreement, Cohen's K), Perreault and Leigh (1989) proposed an alternative reliability measure for nominal data based on qualitative judgments by two coders.

Theoretical viewpoint

Unlike earlier work, these authors do not try to correct the observed percent agreement between judges for an estimated chance agreement. Instead, they depart from the notion that the observed percent agreement between judges is a function of a true (= population) level of reliability. Conceptually, they perceive reliability as a proportion of the total of consistent judgments a "typical" judge could make, taking into account various, influencing factors (e.g., coder's ability, coding scheme...). Specifically, their reliability measure directly takes into account the number of categories of the variable being coded.

Formula

$$I_r = \{ [F_0/N] - (1/k) [k/(k-1)] \}^{.5} \quad \text{for } F_0/N \geq 1/k$$
$$I_r = 0 \quad \text{for } F_0/N < 1/k$$

Where

I_r = the P&L reliability measure

F_0 = the observed frequency of agreement between judges

N = the total number of judgments made by each judge

k = the number of categories for a variable being coded

Assumptions

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- The distributions of reliable judgments between the judges are independent (i.e., the judges operate independently and the coding process has been well designed (i.e., the categories, the definitions, the directions and training of the judges)).
- The judges are equally reliable.

Norms

The range of this reliability measure is between 0 (no reliability) and 1 (perfect reliability).

The same values that are used as benchmarks for the Cronbach's Alpha are applicable to the P&L measure.

The PRL measure by Rust and Cooil (1994)

Theoretical viewpoint

These authors assume that researchers seek to avoid wrong judgments and as such, "loss" of reliability. So, they relate reliability to loss from poor decisions. Specifically, their reliability measure is inversely proportional to the amount of loss researchers should normally expect.

Formula

$$\text{PRL} = [E_{\max}(\text{L}) - E(\text{L})] / E_{\max}(\text{L})$$

Where

$E(\text{L})$ = the expected loss to be estimated from the sample

$E_{\max}(\text{L})$ = the maximum possible expected loss that occurs when the items/judgments are completely unreliable

Formula: The Qualitative Case

$$\text{PRL} = [P[\theta_{\text{estimated}} = \theta_{\text{true}}] - k^{-1}] / [1 - k^{-1}]$$

Where

$P[\theta_{\text{estimated}} = \theta_{\text{true}}]$ = the probability that $\theta_{\text{estimated}}$ (i.e., the category most frequently chosen by the judges) is the θ_{true} (i.e., the correct category)

k^{-1} = the probability that randomly chosen category is correct

More information about how to estimate this measure can be found in the article.

Tables

In this article, the authors also provide tables to obtain the PRL measure in a more simple way, that is, based on the following information:

- Percent agreement (i.e., the total number of pairwise agreements divided by the total number of pairwise decisions): the higher the percent agreement, the higher the PRL measure
- The number of judges: the more judges, the higher the PRL measure
- The number of categories: the more categories, the higher the PRL measure

Assumptions

- Each judge acts independently (i.e., the judges make individual judgments and do not take part in a group discussion).
- Each judge chooses the correct category with the same probability p ($p \geq 1/k$) (i.e., all judges are equally competent).
- Each judge makes incorrect classifications randomly to each of the other $k - 1$ categories with equal probability (i.e., there are no categories that are poor or rarely used).
- The researcher incurs a loss of constant value whenever the judges' consensus yields the wrong category (i.e., all incorrect decisions result in equal loss).
- If the judges do not come to an unambiguous consensus (two or more categories tie), then the researcher (in principle) chooses one of the tied categories at random (i.e., all judges are equally competent).

Norms

The range of this reliability measure is between 0 (no reliability) and 1 (perfect reliability).

The same values that are used as benchmarks for the Cronbach's Alpha are applicable to the PRL measure.

Additional Reference

Perreault, W. D and Leigh, L. E. (1989). Reliability of nominal data based on qualitative judgments. *Journal of Marketing Research*, 26 (2), 135-48.

CHAPTER III: THE INFLUENCE OF THE SELF-REGULATORY FOCUS ON THE EFFECTIVENESS OF EMOTIONAL HEALTH CAMPAIGNS

The studies in this chapter were presented at the 2007 European Marketing Academy (EMAC) (held in Reykjavik, Iceland), at the 2008 Latin-American Conference of the Association for Consumer Research (LA ACR) (held in Sao Paulo, Brazil) and at the 2008 North American Conference of the Association for Consumer Research (ACR) (held in San Francisco, USA). The first study was reworked as a separate paper in collaboration with Tineke Faseur and Maggie Geuens and is forthcoming in the Journal of Consumer Affairs

**CHAPTER III: THE INFLUENCE OF THE SELF-REGULATORY FOCUS
ON THE EFFECTIVENESS OF EMOTIONAL HEALTH CAMPAIGNS**

Although there are many possibilities to design mass media campaigns that seek to promote healthier lifestyles, fear-relief appeals are often assumed to be highly effective and to be frequently used in practice (Hale and Dillard, 1995). This *typical* health message is based on a threat-action format that first focuses on people's vulnerability to severe health risks of performing a certain, unhealthy behavior (which induces fear) and ends with offering a solution in the form of feasible, healthy behavioral guidelines (which induces relief) (Rogers, 1983). Research about fear-relief appeals already stems from the 1950's and is mainly focused on determining the optimal fear intensity level to be conveyed in messages in order to induce optimal behavioral compliance (Witte and Allen, 2000).

However, due to inconsistent findings in academic research over the years, the effectiveness of fear-relief appeals in general and in health campaigns in particular has been often questioned (Hastings, Stead, and Webb, 2004; Witte and Allen, 2000). In the past, it has been suggested that a valuable contribution to this debate could result from considering individual difference variables as moderators (Burnett and Oliver, 1979). In this respect, a few studies looked into the role of socio-demographic variables, such as gender and age (Boster and Mongeau, 1984), and of personality traits, such as trait anxiety (Wheatley and Oshikawa, 1970). However, meta-analyses revealed that, up to today, no significant moderator has been identified yet (Witte and Allen, 2000). Therefore, more research is still needed to find effective message appeals for health campaigns targeted at relevant audiences.

The current paper would like to contribute to this field of research by taking on a new perspective. Specifically, we want to examine the importance of the self-regulatory focus theory (Higgins, 1997) for the design of effective emotional appeals in health campaigns, as the self-regulatory focus is linked with specific emotional vulnerabilities (Higgins, Shah, and Friedman, 1997) and has a significant influence on the processing and evaluation of persuasive messages (Pham and Higgins, 2005).

1. THEORETICAL BACKGROUND

1.1. The Self-Regulatory Focus Theory

The self-regulatory focus theory of Higgins (1997) starts from the basic motivational assumption in psychology, namely that people want to approach pleasure and avoid pain. However, Higgins (1997) also extends this hedonic principle by proposing that for some people and in some cases, more focus is put on approaching pleasure via attaining positive outcomes, and for other people and in other cases, the focus is more on approaching pleasure via avoiding negative outcomes. The former way to regulate behavior is referred to as a promotion focus and the latter as a prevention focus.

In case of a promotion focus, goals related to advancement and accomplishment (i.e., *maximal* goals) are more likely to be pursued, whereas, in case of a prevention focus, goals related to security and protection (i.e., *minimal* goals) are more likely to be focused on. Also, the typical strategies used to achieve goals depend on one's primary focus. A promotion focus, on the one hand, is more likely to lead to approach strategies, by which individuals will try to maximize the presence and minimize the absence of positive outcomes. This makes promotion people eager to insure hits and insure against errors of omission. A prevention focus, on the other hand, is more accompanied by the use of avoidance strategies with which people will minimize the presence or maximize the absence of negative outcomes. So, prevention people are more vigilant and focused on insuring correct rejections and insuring against errors of commission.

These motivational states of a promotion and a prevention focus are theoretically conceptualized as independent states of an individual during goal pursuit. Independence refers to the fact that people can be predominantly promotion or prevention focused, but that they also can be both, or neither. Next, the self-regulatory focus can be operationalized as a chronic trait, which is developed throughout socialization processes in life, or as temporarily induced in a person by the context. This study will merely focus on the chronic self-regulatory focus, because chronically accessible constructs are, by definition, always present, actively or passively, and thus, always capable of influencing the perception and evaluation of external stimuli (Bargh et al., 1986). The latter is not the case for primed constructs. Previous research showed that contextual priming effects are usually only found in case of superficial processing and are unlikely in case of more in-depth processing which is the processing mode in high involvement contexts (Agrawal and Maheswaran, 2005; Thompson et al., 1994) and likely to be the case for a personal health issue (Loewenstein et al., 2001).

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The self-regulatory focus also determines specific emotional vulnerabilities, such that it influences the type of negative psychological situation people perceive and thus the intensity with which they experience a specific type of discomfort (Higgins et al. 1986). That is, in case of a negative event, individuals with a promotion focus experience more intense dejection-related emotions, such as sadness, because they tend to interpret the event in terms of an absence of positive outcomes. However, people with a prevention focus feel more intense agitation-related emotions, such as fear and worry, because they read the event in terms of the presence of negative outcomes (Higgins et al., 1986). Later on, Higgins et al. (1997) extended these findings by showing that people with a particular self-regulatory focus experience different specific positive emotions after attaining a goal. As people with a promotion focus interpret success as obtaining positive outcomes, this results in experiencing cheerfulness-related emotions, such as happiness and joy. However, people with a prevention focus read success rather in terms of avoiding negative outcomes, and as such, experience more intense quiescence-related emotions, such as relief.

1.2. Regulatory Relevancy Principle in a Persuasion Context

Recent studies building on the self-regulatory focus theory found evidence for two types of matching or congruency principles in the evaluation of external stimuli: (a) the *regulatory fit* and (b) the *regulatory relevancy principle*. Although both principles relate to matching or congruence effects, they are also distinct from each other. They do not only concern a different topic (i.e., regulatory fit is strategy (vs. content) related vs. regulatory relevancy is content (vs. strategy) related), but they also operate differently (e.g., a feeling of fit could be transferred to unrelated tasks, whereas regulatory relevancy is only related to the stimulus itself) (Avnet and Higgins, 2006).

In particular, the regulatory fit principle puts forward that the perceived value of a stimulus depends on whether people evaluate it in a manner that sustains their goal orientation (i.e., in an approach vs. avoidance manner) (Higgins, 2002). For example, respondents were willing to pay more for a product when they could evaluate it in a manner congruent with their self-regulatory focus, that is, “think about what you could gain from choosing this product” for promotion focused people versus “think about what you could lose by not choosing this product” for prevention focused people (Higgins et al., 2003). Previous health studies mainly focused on this principle by examining, for example, the likelihood of engaging in eager versus vigilant health-related behaviors (Uskul, Keller, and Oyserman, 2008), or by examining the persuasiveness of focusing on negative (i.e., non-gains and/or

losses by non-compliance) versus positive (i.e., gains and/or non-losses by compliance) health outcomes in communications (Gerend and Shepherd, 2007; Updegraff et al., 2007).

The second principle, the regulatory relevancy principle, proposes that the perceived value of a stimulus depends on whether its implied outcomes are congruent with the primary regulatory concerns of its target audience (Higgins, 2002). In particular, in case of a congruent versus an incongruent stimulus, people will perceive this as more personally relevant, which will instigate more effortful processing, which, in turn, could lead to more favorable responses.

The first way in which researchers adapted the outcomes of stimuli to the two dominant goal orientations of Higgins (1997) is through underlining the type of benefits presumed to be congruent with a particular regulatory orientation. In an advertising context, Aaker and Lee (2001) showed that a persuasive message on a website for a fruit juice brand and the brand itself were better recalled and evaluated more favorably when the website displayed a message in which an independent self-view (as an antecedent of a promotion focus) was primed and energy creation was the dominant selling proposition, whereas respondents reacted more favorably in case an interdependent self-view (as an antecedent of a prevention focus) manipulation in the message was followed by disease prevention as the primary product benefit. Similar findings were obtained by Evans and Petty (2003) and by Latimer et al. (2005).

Second, regulatory relevancy effects were also obtained by framing the outcomes of stimuli differently. In contrast to framing the valence of the outcome (i.e., positive vs. negative outcomes) (e.g., avoiding heart disease by eating more fruits and vegetables vs. suffering heart disease by not eating more fruits and vegetables) as is done in studies investigating the regulatory fit principle, here, the outcome focus of messages is framed (i.e., gain versus loss related end-states) (Brendl, Higgins, and Lemm, 1995). More specifically, the outcome is framed differently in terms of gains (i.e., gains vs. non-losses) (e.g., obtaining heart fitness vs. avoiding heart disease by eating more fruits and vegetables) or in terms of losses (non-gains vs. losses, e.g., forgoing heart fitness vs. incurring heart disease by not eating more fruits and vegetables). One of the many studies testing the effectiveness of different outcome frames showed that, as expected, incentives to complete a task led to greater task performance when these were framed in accordance with the current regulatory concerns of the respondents (i.e., in terms of gains/non-gains for a promotion focus vs. in terms of non-losses/losses for a prevention focus) (Shah, Higgins, and Friedman, 1998).

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Although previous studies on regulatory relevancy conceptualized outcome compatibility with the self-regulatory focus already in different ways, they mostly focused on verbal-only stimuli and on informational task- or product-related outcomes. Therefore, our primary objective is to examine the effects of stimuli that focus on emotional outcomes and as such, use emotions as arguments to persuade people to behave differently. This extension to stimuli focusing on emotional outcomes is relevant, as in decision-making, individuals often use their representations of or their predictions on how they would feel in future events (Schwarz and Clore, 1983, 1988). These types of affective considerations especially serve as strong arguments when they are perceived to be representative and relevant for the issue at hand (Pham, 1998). As emotions are considered to be important drivers of individuals' decisions concerning health behaviors (Lawton, Conner, and Parker, 2007), our proposal is also especially important for the design of effective health campaigns.

The regulatory relevancy principle was already confirmed in different persuasive settings. However, similar studies in the health domain are scarce (Latimer et al., 2008; Tykocinski, Higgins, and Chaiken, 1994) (for a notable exception, see Zhao and Pechmann, 2007). Given the strong link between the self-regulatory focus and specific emotional vulnerabilities (Higgins et al., 1997), we believe that this principle could be useful for research on the effectiveness of health campaigns and of fear-relief appeals in particular. So, our second objective is to further examine the validity of the regulatory relevancy principle by adapting the emotional tone of health messages to the motivational profile of a specific audience.

1.3. The Regulatory Relevancy Principle Extended to Emotional Health Campaigns: The Regulatory Focus – Emotion Congruency Hypothesis

We propose that people's self-regulatory focus will determine which specific emotions will be most influential. That is, we expect that goal-congruent versus goal-incongruent emotions in health campaigns will lead to more involvement and persuasion in people with a promotion focus as well as in people with a prevention focus. Put differently, we propose a regulatory focus-emotion congruency hypothesis based on the regulatory relevancy principle (Higgins, 2002).

In particular, we expect that different positive and negative emotions are differently accessible, and thus congruent depending on the chronic self-regulatory focus of people (Higgins et al., 1997; Rusting, 1998). That is, we expect that agitation emotions, such as fear and worry, and quiescence emotions, such as relief and calmness, are more congruent with a

prevention focus, whereas dejection emotions, such as sadness and disappointment, and cheerfulness emotions, such as joy and happiness, are more congruent with a promotion focus (Higgins, et al., 1997).

In line with the regulatory relevancy principle, we then predict that stimuli focusing on goal-congruent versus goal-incongruent emotional outcomes will be perceived as more personally relevant, which could lead to more personal involvement in emotionally congruent versus incongruent campaigns, and as such, to more campaign effectiveness (Evans and Petty, 2003). Applying this to the threat-action format used in health messages, we hypothesize:

- H1a:** For people with a chronic prevention focus, a fear-relief health campaign leads to a more favorable attitude towards the ad and to more favorable behavioral intentions than a sadness-joy health campaign.
- H1b:** For people with a chronic promotion focus, a sadness-joy health campaign leads to a more favorable attitude towards the ad and to more favorable behavioral intentions than a fear-relief health campaign.

- H2:** Message involvement mediates regulatory focus – emotion congruence effects on persuasion.
- H2a:** For people with a chronic prevention focus, a fear-relief health campaign is more involving than a sadness-joy health campaign which leads to a more favorable attitude towards the ad and to more favorable behavioral intentions.
- H2b:** For people with a chronic promotion focus, a sadness-joy health campaign is more involving than a fear-relief health campaign which leads to a more favorable attitude towards the ad and to more favorable behavioral intentions.

2. STUDY 1: STOP-SMOKING CAMPAIGNS

2.1. Objective and Design

The goal of study 1 is to examine whether different emotional frames or tones in health campaigns lead to different responses, depending on the predominant chronic self-regulatory focus of a relevant target group. To test these hypotheses, we set up an experiment with a 2 (emotional tone of the health campaign: fear-relief vs. sadness-joy) x 2 (the chronic self-regulatory focus: predominant prevention vs. promotion) between – subjects design. The

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emotional tone in the health messages was manipulated, whereas the chronic self-regulatory focus was measured.

We chose to develop stop-smoking campaigns targeted at young smokers. This topic is highly relevant from a practical point of view. Despite the well-known health risks of smoking, smoking addiction remains a severe issue. In particular, it is still expected to cause about 3 million deaths annually in the developed countries in the period between 2025 and 2030 (World Health Organization [WHO], 2002). In the fight against the continuing prevalence of smoking, convincing adolescents not to start is an important goal of policymakers, as people usually become smokers before they reach the age of 21 (WHO, 2008). However, another important goal is to encourage smokers to give up smoking. In this respect, smoking cessation programs aimed at young smokers are still a good option though, because the less long people smoke, the less addicted they become, which makes it more easy to quit successfully (WHO, 2008).

2.2. Stimuli Development

In particular, we developed two stop-smoking campaigns for young smokers based on suggestions made in prior antismoking research. Both followed a threat-action format, typically used in health campaigns (see Appendix A). So, respondents were first exposed to a negative ad panel in which a 30 years old woman, who had smoked from the age of 16 until now, testified about the negative health consequences she already had to deal with. This *proximal endorser* was chosen to demonstrate the existence of actual short-term health effects. As such, we wanted to try to negate the optimistic health bias usually strongly present in young people¹ and to induce higher levels of perceived vulnerability to actual health effects (Arnett, 2000; Cohn et al., 1995). In line with this, the negative ad panels also focused on “smoking = addiction”, that is, on the difficulty of quitting smoking through the slogan “Do not think you will have plenty of time left to quit smoking!” and by stating that smoking is not something that you can give up whenever you want (Arnett, 2000; Wolburg, 2006).

Next, respondents saw a positive ad panel in which the same person tried to convince them to quit by telling about the benefits she now experienced herself by quitting. The ad

¹ This refers to the fact that people, and especially young people, believe adverse events will not happen to them but only to others, which could lead to “boomerang” effects, that is, to more risky behavior (Arnett, 2000; Cohn et al., 1995; Wolburg, 2006).

further tried to motivate young smokers to make an actual plan of action with the slogan “set the date: quit smoking” (Prochaska and DiClemente, 1982). In order to increase perceptions of self-efficacy, that is, that quitting is possible, we displayed the number of a stop-smoking telephone helpline which has been proven to be a highly effective technique (Platt et al., 1997).

Each ad panel had the same layout: at the top, there was a tagline (in the negative ad panel: “Do not think you have plenty of time left to quit smoking!” vs. in the positive ad panel: “Set the date: quit smoking”), immediately followed by a picture and a text box containing the personal statements by the model, and finally, a list of health facts (risks in the negative ad panel vs. benefits in the positive ad panel) was given.

In order to elicit the specific negative and positive emotional tones discussed in the self-regulatory focus theory (Higgins, 1997), a combination of color, images, and text was used. We used dark colors for the negative ad panels versus bright pastel colors for the positive ad panels and developed four portraits of the same woman, expressing the four different emotions by putting on matching faces. Also, because framing has been shown to be effective in eliciting specific emotional responses (Schneider et al., 2001), both the negative as well as the positive ad panels were framed differently with respect to outcome focus (i.e., loss vs. non-gain in the negative ad panels, and non-loss vs. gain in the positive ad panels). Specifically, Higgins et al. (1986) stated that on the one hand, focusing on the absence/presence of negative information (i.e., non-loss/loss) leads to variations in feeling relieved to feeling agitated, and on the other hand, focusing on the presence/absence of positive information (i.e., gain/non-gain) results in variations in feeling excited to feeling dejected. Also, ad framing has the advantage over other affect-inducing tactics to not fundamentally change the wording of the ad and thus to minimize additional confounding factors (Chang, 2005).

2.3. Pretest

A pretest by means of a written questionnaire checked whether the four ad panels evoked the intended emotions in the target group. In total, 28 young smokers (53.6% female), who did not participate in the actual experiment afterwards, evaluated the four ad panels in random order. After each ad panel, they had to indicate the extent to which they felt the ad evoked the specific emotions on 7-point scales (ranging from 1 (*the ad does not evoke this emotion at all*) to 7 (*the ad does evoke this emotion completely*)). Based on previous work of Higgins and colleagues, we assessed 11 negative emotions (seven agitation-related (i.e., agitated, anxious,

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afraid, worried, panicky, nervous and tense) ($\alpha = .95$) and four dejection-related emotions (i.e., depressed, sad, unfulfilled and discontented) ($\alpha = .93$) for the negative ad panels, and 11 positive emotions (seven cheerfulness-related (i.e., happy, joyful, optimistic, encouraged, thrilled, excited and enthusiastic) ($\alpha = .96$) and four quiescence-related emotions (i.e., relieved, peaceful, contented and fulfilled) ($\alpha = .93$)) for the positive ad panels.

Paired-samples t-tests were run to check the manipulation (unless specified: $df = 27$). Concerning the negative ad panels, respondents rated the fear ad panel ($M = 4.69$) higher on agitation than the sad ad panel ($M = 3.57$) ($t = 4.03, p < .001$). Similarly, they rated the sad ad panel ($M = 4.46$) higher on dejection than the fear ad panel ($M = 2.77$) ($t = -4.78, p < .001$). Also, the positive ad panels elicited the expected emotional tone: respondents indicated more quiescence after seeing the relief ad panel ($M = 4.54$) than after seeing the joy ad panel ($M = 3.67$) ($t = 2.19, p = .04$), and rated the joy ad panel ($M = 4.99$) higher on cheerfulness than the relief ad panel ($M = 3.53$) ($t = -4.81, p < .001$).

2.4. Experimental Procedure and Participants

We wanted to measure the chronic self-regulatory focus in order to investigate its impact on young smokers' evaluations of different emotional tones in stop-smoking campaigns. When measuring the chronic self-regulatory focus at the beginning of the experiment, right before ad exposure, this might influence subsequent evaluations of the experimental stimuli in an artificially strong way. To avoid this effect, we could measure chronic self-regulatory focus at the end of the questionnaire, but in this case, the self-regulatory focus could also be primed by exposure to the ads (Higgins, 1997). Ad exposure only influences the temporary self-regulatory focus, but respondents might misinterpret it as their chronic focus. Therefore, responses to the chronic self-regulatory focus measurement scale could be biased due to prior ad exposure. The other alternative is to measure the chronic self-regulatory focus independently of the actual experiment, such as at a distant time before the experiment (e.g., Tykocinski, Higgins, and Chaiken, 1994). This option avoids biasing effects, but also demands more than one round of questions, which likely reduces the number of respondents and increases the time and cost requirements. Faced with these trade-offs, we decided to

measure chronic self-regulatory focus both at the end of the questionnaire and a couple of days in advance and thus to verify if they produce different results².

Specifically, 139 young smokers participated in the procedure in which we measured the chronic self-regulatory focus at the end of the questionnaire. These participants were recruited by the online research agency Global Market Insite, Inc. Through an online survey, we first asked questions about respondents' age and their smoking behavior (among other health related behaviors). Only smokers between 18 and 26 years old could continue the rest of the questionnaire. These respondents were randomly assigned to one of the two stop-smoking campaigns. They were told that they would see a campaign consisting of two parts, as is common in real-life magazines (e.g., the first part on page 2, the second part on page 4), and were requested to look at each ad panel carefully. The ad panels were shown to them in a sequential manner. Hereafter, we told respondents that they now saw the whole campaign, and that from here on, questions about the whole campaign were to be answered. These questions dealt with the dependent measures and the manipulation checks. At the end of the questionnaire, we measured the chronic self-regulatory focus and some socio-demographics. Finally, they were thanked for participating.

In the procedure in which we measured the chronic self-regulatory focus a couple of days in advance, the participants were recruited through digital learning platforms of two Belgian public universities and the online newsletter of a regional newspaper. This procedure consisted of two phases. In a first phase, 2759 people completed questions about their smoking behavior (among other health-related behaviors), their chronic self-regulatory focus, and some socio-demographic traits. Only smokers between 18 and 26 years of age could enter the second phase, which resulted in a sample size of 391 young smokers. An e-mailed invitation was sent at least three days after they participated in the first phase. In the end, 87 respondents actually responded to the second phase as well. When they began the second phase, respondents were randomly assigned to one of the two stop-smoking campaigns and completed the second part of the questionnaire described for the first procedure.

In total, we thus obtained a convenience sample of 226 smokers between 18 and 26 years old (39.4% males). Of these, 74% smoked daily and 26% smoked occasionally. On average, the daily smokers smoked 11.73 cigarettes a day and this for a period of 6.69 years, whereas

² All respondents, recruited via the two procedures, were merged into one dataset. When conducting the analyses, the type of procedure was taken into account as a covariate, but did not have any impact on the results. Therefore, we will not discuss this any further.

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the occasional smokers smoked 13.73 cigarettes a month and this for a period of 5.48 years. Moreover, 63% of our sample had tried to quit smoking at least once.

2.5. Measures

2.5.1. Chronic Self-Regulatory Focus

The chronic self-regulatory focus was measured with the 18-item, 7-point scale (ranging from 1 (*this statement is not at all true for me*) to 7 (*this statement is very true for me*)) developed by Lockwood, Jordan, and Kunda (2002). This scale consists of a promotion (e.g., “I typically focus on the success I hope to achieve in the future.”) ($\alpha = .86$) and prevention dimension (e.g., “I often imagine myself experiencing bad things that I fear might happen to me.”) ($\alpha = .80$). The matching items were averaged to obtain a separate promotion and prevention score for each respondent.

Our sample was more promotion focused than prevention focused (see Table 3.1), $t(225) = -10.26$, $p < .001$, which is probably due to their Western cultural background and predominant independent self-view (Lee, Aaker, and Gardner, 2000). The two subscales were only little correlated with each other ($r = .25$, $p < .001$) which is in line with Higgins’ theory (1997).

To test our hypotheses, we needed a measure of the predominant chronic self-regulatory focus. For this, we followed the procedure outlined by Lockwood et al. (2002)³. Specifically, we calculated a difference score by subtracting the mean prevention score from the mean promotion score (see Table 3.1). Positive scores on this measure represent a predominant chronic promotion focus, whereas negative scores reflect a predominant chronic prevention focus.

³ As indicated in the paper by Lockwood et al. (2002), Edwards (1994) states that a difference score is only appropriate if the regression coefficients of its separate components on the dependent variables are equal in magnitude, but opposite in sign. For all of our hypothesized mediators and dependent variables, t-statistics were calculated to examine this (see: Gujarati, 2003, p. 264-266). Analyses confirmed that the necessary assumptions were met.

TABLE 3.1

Descriptive Statistics Regarding the Chronic Self-Regulatory Focus.

	Chronic Promotion Focus	Chronic Prevention Focus	Predominant Chronic Self-Regulatory Focus
<i>Mean</i>	5.14	4.29	.86
<i>Standard Deviation</i>	.91	1.12	1.25
<i>Skewness</i>	-1.15	-.21	-.07
<i>Kurtosis</i>	3.43	-.28	1.34

2.5.2. Dependent Measures

We assessed Aad by three 7-point semantic differential scales that began with “The campaign was...” and were anchored by “bad–good,” “ineffective–effective,” and “unconvincing–convincing” ($\alpha = .83$). We computed an Aad measure for each respondent by averaging the scores on these three items. We also measured overall intention to quit smoking after ad exposure (i.e., overall BI) by the following three 7-point Likert scales (ranging from 1 (*totally disagree*) to 7 (*totally agree*)): (a) “This campaign could motivate me to quit smoking”, (b) “This campaign could help me to quit smoking”, and (c) “After seeing this campaign, I would like to quit smoking” ($\alpha = .88$). Again, we calculated an overall BI measure by averaging the scores on all three items.

Moreover, in line with the concept of stages of change in smoking cessation (e.g., Prochaska and DiClemente, 1983; Prochaska, DiClemente, and Norcross, 1992), we also included three additional intention questions to assess the readiness to quit. That is, because stop-smoking campaigns primarily attempt to convince smokers of the negative health consequences of their behavior and the need to take action using concrete plans and measures (Block and Keller, 1998), we measured the degree to which the campaign made the respondent (1) think about the negative consequences of smoking, (2) think about quitting, and (3) want to find out more about specific methods to quit smoking, using 7-point “disagree–agree” Likert scales. These items were not pooled together.

Finally, to assess ad involvement, respondents had to fill in four 7-point semantic differential scales: “This campaign is ... to me personally” anchored by (a) “irrelevant” versus “relevant”, (b) “unimportant” versus “important”, (c) “useless” versus “useful”, and (d) “unnecessary” versus “necessary” ($\alpha = .90$) (Zaichkowsky, 1994). The mean score of these four items was used as a global measure of ad involvement.

3. RESULTS

3.1. Manipulation Check

Similar to the pretest, we included manipulation checks for the different ad panels in the main study. Specifically, at the end of the questionnaire, respondents were re-exposed to the first negative ad panel and were asked to fill in the same 7-point emotion intensity scales as in the pretest. Next, the same procedure was followed for the positive ad panel⁴. However, due to space and time constraints, we only included two items per type of emotion this time, that is, for (a) dejection: sad and disappointed ($r = .69$), (b) agitation: afraid and worried ($r = .59$), (c) cheerfulness: delighted and cheerful ($r = .84$), and (d) quiescence: calm and quiet ($r = .88$).

Independent-samples t-tests confirmed the results of the pretest. Specifically, respondents considered the fear ad ($M = 4.17$) to be more agitating than the sad ad ($M = 3.83$) ($t = 1.93, p = .05$) (Unless specified: $df = 224$). Also, as expected, the sad ad scored ($M = 3.84$) higher on dejection than the fear ad ($M = 3.45$) ($t = -2.13, p = .03$). Next, respondents felt that the relief ad aroused more quiescence ($M = 4.40$) than the joy ad ($M = 4.06$) ($t = 1.88, p = .06$). Finally, the reverse was true in terms of cheerfulness; the joy ad evoked more cheerfulness ($M = 4.62$) than the relief ad ($M = 3.66$) ($t = -5.29, p < .001$).

3.2. Experimental Effects on Aad and BIs

We regressed our dependent variables on the type of emotional tone in the stop-smoking campaign, on the standardized difference score of promotion minus prevention (i.e., $Z(\text{promotion-prevention})$), as a measure of the predominant chronic self-regulatory focus, and on their interaction term⁵. Results can be found in Table 3.2.

The regression analysis on Aad yielded a significant main effect of the predominant chronic self-regulatory focus. Moreover, we also found a significant interaction effect of both independent variables. The same results were found on the measure of overall BI as well as on the three specific BIs, that is, (a) intention to think about the negative consequences of

⁴ The use of this type of research design, called the message-component research design, is recommended in the fear appeal area where messages typically consist of two parts (Dillard & Anderson, 2004).

⁵ We also took into account following covariates: (a) type of independent questioning of the chronic self-regulatory focus (i.e., at least three days prior to ad exposure vs. after ad exposure), (b) prior mood, (c) gender, (d) age, (e) educational level (i.e., little vs. highly educated), (f) frequency of smoking (i.e., daily vs. occasionally), (g) number of cigarettes per month, (h) number of years as a smoker, and (i) prior attempts to quit (i.e., yes vs. no). Although main effects appeared from time to time, none of these covariates affected the results reported here. Therefore, these will also not be discussed any further.

smoking, (b) intention to think about quitting, and (c) intention to find out more about specific methods to quit smoking.

TABLE 3.2

The Standardized Regression Coefficients of the Independent Variables on the Dependent Variables and their Significance Levels.

	Aad		Overall BI		Intention to Think About Negative Consequences of Smoking		Intention to Think About Quitting		Intention to Find out More About Specific Methods to Quit Smoking	
	β	p	B	p	β	p	β	p	β	p
Type of Emotional Tone	.01	.94	.02	.72	-.01	.84	.06	.36	-.03	.68
Predominant Chronic Self-Regulatory Focus	-.25	.02	-.29	.01	-.20	.06	-.28	.01	-.25	.02
Interaction Term	.24	.02	.26	.01	.24	.02	.31	.003	.28	.01

To clarify these interaction effects, we conducted additional simple slope analyses, as suggested by Baron and Kenny (1986) and as outlined by Aiken and West (1996). In accordance with our hypotheses, we tested the simple effect of the type of emotional tone in the two types of predominant chronic self-regulatory foci by considering one and a half standard deviation below and above the mean score of Z(promotion-prevention).

This analysis on Aad revealed that the slope, indicating the impact of the type of emotional tone, was marginally significant for the predominant chronic prevention people ($b = -.58, p = .06$) and significant for the predominant chronic promotion people ($b = .60, p = .05$). As expected, the negative effect found in predominant chronic prevention people indicates that for them, the fear-relief campaign led to a more positive Aad than the sadness-joy campaign, whereas the positive effect in the predominant chronic promotion people points to the reverse finding (see Figure 3.1). The absolute values of these two simple slopes did not significantly differ from each other ($p = .96$). So, the type of emotional tone seemed to have an equally strong effect in both foci.

Similarly, on the overall BI measure, the slope for the type of emotional tone was marginally significant and negative for predominant chronic prevention people ($b = -.64, p = .06$) and significant and positive for predominant chronic promotion people ($b = .77, p = .02$)

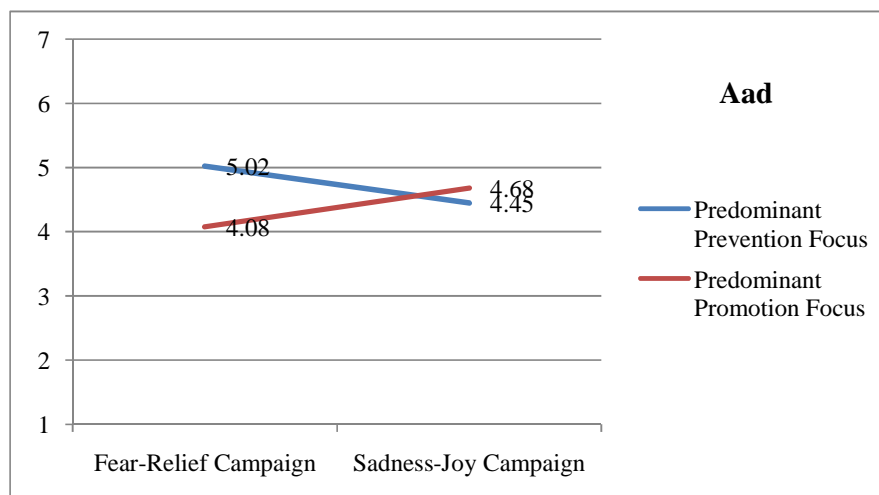
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(see Figure 3.1). Put differently, predominant chronic prevention people were more willing to quit after being exposed to a fear-relief campaign than after a sadness-joy campaign, whereas the reverse is true for predominant chronic promotion people. Again, a t-test indicated that there was no difference in reliance on specific affect in both foci ($p = .82$).

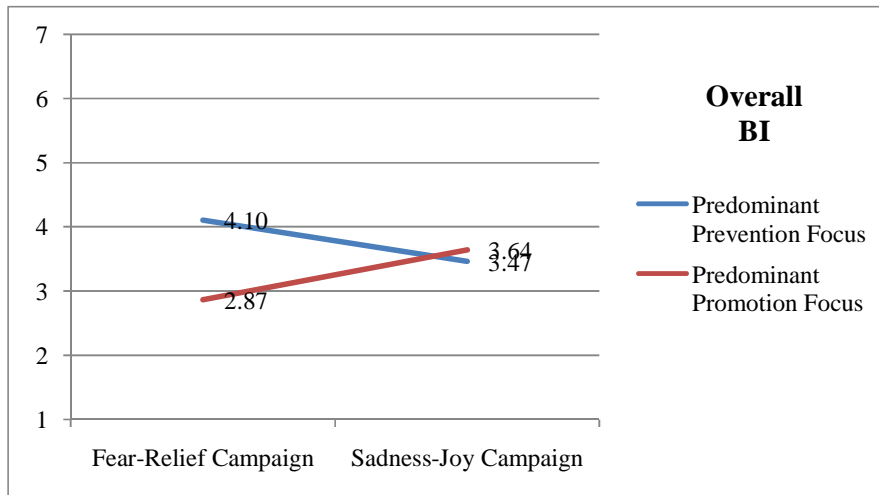
Finally, similar results were found on the three specific BIs, namely (a) intention to think about the negative consequences of smoking (predominant prevention: $b = -.67$, $p = .04$; predominant promotion: $b = .60$, $p = .07$), (b) intention to think about quitting (predominant prevention: $b = -.76$, $p = .04$; predominant promotion: $b = 1.13$, $p < .01$), and (c) intention to find out more about specific methods to quit smoking (predominant prevention: $b = -.93$, $p = .01$; predominant promotion: $b = .76$, $p = .04$)⁶. In sum, these results fully support H1a and H1b.

FIGURE 3.1

The Interaction Effect of the Type of Emotional Tone in a Stop-Smoking Campaign and the Predominant Chronic Self-Regulatory Focus on Attitude towards the Advertisement (Aad) and on Overall Behavioral Intention to Quit Smoking (Overall BI).



⁶ Also, the absolute values of the simple slopes did not significantly differ between a promotion focus and a prevention focus (intention to think about the negative consequences of smoking: $p = .90$; intention to think about quitting: $p = .55$; intention to find out more about specific methods to quit smoking: $p = .79$). So, again, the type of emotional tone seemed to have an equally strong effect in both foci.



Note. Mean values of a three-item, 7-point scale; higher scores indicate a more favorable attitude towards the advertisement (Aad) and a more favorable overall behavioral intention (overall BI).

3.3. Mediation Analyses of Experimental Effects on Aad and BIs

To examine whether ad involvement mediated the interaction effect of type of emotional tone in the stop-smoking campaign and the predominant chronic self-regulatory focus on the above dependent variables, we conducted two additional analyses as prescribed by Baron and Kenny (1986). That is, (a) to prove that the independent variables affected the mediator in the same way as the dependent variables and (b) to prove that the mediator affected the dependent variables even when controlling for the effects of the independent variables (see Table 3.3).

First, we ran the same regression analysis on the hypothesized mediator, ad involvement, as above on our dependent variables. Results showed a significant main effect of the predominant chronic self-regulatory focus ($\beta = -.22, p = .04$) and a significant interaction effect of both independent variables on ad involvement ($\beta = .21, p = .05$). In line with the above, simple slope analyses indicated that predominant promotion respondents were more personally involved in a sadness-joy campaign than in a fear-relief campaign, although the difference was not significant this time ($b = .37, p = .25$). Prevention people, on the other hand, considered the fear-relief campaign as more significantly involving than the sadness-joy campaign ($b = -.70, p = .03$). Nonetheless, again, the type of emotional tone seemed to have an equally strong effect in both foci ($p = .53$).

Second, Aad was regressed on the same independent variables as above together with the standardized score of ad involvement (see Table 3.3). As opposed to the prior regression analysis on Aad, the interaction effect of both independent variables was no longer significant and its regression coefficient also decreased significantly ($t(223) = 24.27, p < .001$). Now,

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only ad involvement had a significant positive effect on Aad. Similar results were found on overall BI to quit smoking ($t(223) = 9.89, p < .001$) and on intention to think about the negative consequences of smoking ($t(223) = 9.01, p < .001$). These findings together support a full *mediated moderation* process, as hypothesized (Baron and Kenny, 1986).

However, the results on intention to think about quitting and on intention to find out more about specific methods to quit smoking only indicate partial mediation as the interaction effects were still significant. Nonetheless, the regression coefficient of the interaction effect on both dependent variables did significantly decrease by incorporating the mediator in the regression model (intention to think about quitting: $t(223) = 11.32, p < .001$; intention to find out more about specific methods to quit smoking $t(223) = 8.44, p < .001$). So, we can confirm hypothesis 2a and 2b, stating that respondents feel more involved in a health campaign, and are therefore more persuaded by it when its emotional tone is congruent versus incongruent with their predominant chronic self-regulatory focus.

TABLE 3.3

The Standardized Regression Coefficients of the Independent Variables on the Dependent Variables and their Significance Levels, When Controlled for Ad Involvement.

	Aad		Overall BI		Intention to Think About Negative Consequences of Smoking		Intention to Think About Quitting		Intention to Find out More About Specific Methods to Quit Smoking	
	β	p	β	p	β	p	β	p	β	p
Type of Emotional Tone	.04	.45	.06	.31	.02	.76	.10	.07	.01	.93
Predominant Chronic Self-Regulatory Focus	-.13	.14	-.17	.05	-.09	.33	-.16	.06	-.14	.13
Interaction Term	.12	.16	.15	.09	.14	.13	.19	.02	.17	.06
Ad Involvement	.58	<.001	.53	<.001	.49	<.001	.58	<.001	.52	<.001

4. DISCUSSION

We hypothesized that the self-regulatory focus theory in general and the regulatory relevancy principle in particular could have important consequences for the persuasiveness of emotional health campaigns based on the typical threat-action format (Rogers, 1983).

Specifically, we posited a regulatory focus – emotion congruency hypothesis. As expected, an experiment, using ad campaigns to motivate young smokers to quit, showed that by matching the emotional tone of these campaigns to the predominant chronic self-regulatory focus of the target audience, more involvement and persuasion was generated. Specifically, young smokers with a predominant chronic promotion focus rated the sadness-joy health campaign as more personally involving which led to a more favorable Aad and BIs, whereas for young smokers with a predominant chronic prevention people, the typical fear-relief health campaign led to more personal involvement and a more favorable Aad and BIs. These findings appear to be driven by a strong link between the self-regulatory focus and specific emotional vulnerabilities, making different emotions also differently accessible and congruent with different motivational orientations (Bower, 1981; Rusting, 1998).

In line with previous studies, these results imply that self-congruent campaigns could be, but are not necessarily evaluated more favorably in terms of attitudes and BIs. Regulatory relevancy effects are, first of all, a matter of increased personal relevance which was also shown by Aaker and Lee (2001) and by Evans and Petty (2003). Congruence effects on beliefs, attitudes, and behaviors are therefore only likely in case of strong arguments and messages (Petty and Cacioppo, 1986). The above results did indicate favorable regulatory focus - emotion congruence effects on Aad and BIs which implies that our messages were probably considered as relatively strong and defensive processes were not at work here.

However, our results appear to be in contrast with the prior conclusions of Pham and Avnet (2004). These authors found that promotion focused people generally rely more on affect in their evaluations than prevention focused people. In study 1, we showed that the difference in reliance on (specific) affect due to different foci does not always apply, but that prevention people sometimes rely just as much on (specific) affect as promotion people. However, Pham and Avnet (2004) only included promotion related emotions, such as enjoyable, exciting, appealing, and pleasantness, whereas we incorporated prevention related emotions, next to promotion related emotions, in an ad campaign as well. In addition, they exclusively focused on *ambiguous* contexts in which both the substance of the message and affective responses to it could serve as relevant input for judgment. We were probably studying a more *unambiguous* context, namely a context in which respondents were all relatively high affectively involved and thus considered affect to be highly relevant for judgment, which is typical in case of health risk behaviors and especially in case of smoking addiction (Lawton et al., 2007; Loewenstein et al., 2001; Sheth, Newman, and Gross, 1991).

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As different results were found in different research studies, it seems necessary to take into account the moderating effect of the specific research context when examining the impact of the chronic self-regulatory focus on the effectiveness of emotional stimuli. This is in line with prior research which recognizes that dominant traits form a relatively stable part of the self-concept and are thus always capable of influencing individuals' perceptions and judgments, but which also stresses the importance of considering interaction with the context as well (Bargh et al., 1986; Higgins, King, and Mavin, 1982; Higgins, 2000; Markus, 1977; Kassirjian, 1971). Therefore, a second study was set up to further explore the conditions in which the regulatory focus-emotion congruency hypothesis could hold. In line with the above, we will study the influence of the level of affective involvement, or put differently, the level of affect relevance for judgment (Pham, 1998).

5. STUDY 2: UV PROTECTION CAMPAIGNS

5.1. Boundary Conditions of the Regulatory Focus – Emotion Congruency Hypothesis

Prior research consistently showed that people's involvement in a certain topic directly influences the depth of processing of a topic related message (Petty and Cacioppo, 1986). When people are highly involved in a certain topic, they process a topic related message more systematically and further elaborate on its content (Petty and Cacioppo, 1986). For example, people who put themselves at-risk by performing a certain health risk behavior are expected to be highly involved in an ad campaign arguing against this particular behavior, as they are also highly affected by the campaign's implied consequences, and are thus likely to further process and elaborate on the content of this campaign (Petty and Cacioppo, 1979, 1990).

We also know from prior research that a topic that is highly involving is, by definition, also related to people's self-concept (Johnson and Eagly, 1989; Petty and Cacioppo, 1990). As the chronic self-regulatory focus is a part of the self-concept, we then expect that it will be more activated and relied on in highly personally involving contexts, such as when people who perform a certain health risk behavior are exposed to an ad campaign about this type of behavior (Bargh, Lombardi, and Higgins, 1988; Higgins and Brendl, 1995; Higgins, 1997). Here, regulatory focus - emotion congruence effects on persuasion are possible. As Pham and Avnet (2004) found that promotion focused people tend to rely more heavily on affect than prevention focused people, these effects could also be more likely in promotion focused people than in prevention focused people.

However, the specific type of topic involvement is also important to consider, as this also determines the relevance of and reliance on specific message arguments (Petty and Cacioppo, 1990; Shavitt et al., 1994). When we again consider people who perform a certain health risk behavior, prior research concluded that they are strongly driven by affect (Lawton et al., 2007; Loewenstein et al., 2001). So, people who perform a certain health risk behavior are expected to perceive affect to be highly relevant for this health issue and are thus expected to be relatively high affectively involved in this particular health issue (Pham, 1998). Here, then, we expect all people to rely heavily on (specific) affect (Forgas, 1995; Higgins and Brendl, 1995; Pham, 1998).

In sum, we propose that in people performing a certain health risk behavior, (a) the chronically accessible self-regulatory focus will be activated and will determine the effectiveness of specific emotional tones in a related health campaign (Bargh et al., 1988; Higgins and Brendl, 1995; Higgins, 1997) and (b) to find equally strong regulatory focus – emotion congruence effects in both foci, as was found in study 1 (Higgins et al., 1986; Higgins et al., 1997).

Given a context in which people's involvement is less clear and which is thus more ambiguous in terms of affect relevance (Higgins and Brendl, 1995; Pham and Avnet, 2004), a less unequivocal pattern of results is expected. For example, it is not clear how people who perform health risk behavior only occasionally perceive a campaign discouraging such behavior. Here, based on Pham and Avnet (2004), we could expect the self-regulatory focus to come into play and determine the choice of a message processing strategy. That is, promotion focused people tend to rely more heavily on affect than prevention focused people (Pham and Avnet, 2004). As a result, regulatory focus - emotion congruence effects could appear both in promotion and prevention focused people, but are expected to be more likely in a promotion than a prevention focus.

Finally, when people are little involved in a certain topic, they are unlikely to further process the content of a topic related message and are likely to base their subsequent judgment on simple message cues (Petty and Cacioppo, 1986). For example, people who do not perform a certain health risk behavior and are little at-risk will be little affected by the consequences implied by a campaign discouraging such health risk behavior, as they already comply with its message, and are therefore expected to be little involved in this campaign (Petty and Cacioppo, 1979, 1990). In this case, we expect that people will rely little on their self-concept to process and evaluate the health campaign and as such, we do not expect significant regulatory focus – emotion congruence effects in these people.

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In sum, we propose the following hypotheses:

- H3:** When people are relatively high affectively involved in a certain health topic, the emotional tone in a message about this health topic that is congruent versus incongruent with their predominant chronic self-regulatory focus will lead to a more favorable attitude towards the ad and behavioral intentions, whereas such regulatory focus – emotion congruence effects will be significantly weaker in people who are relatively moderate or relatively little affectively involved in this health topic.
- H4:** When people are relatively high affectively involved in a certain health topic, an emotional tone in a message about this health topic that is congruent versus incongruent with the predominant chronic self regulatory focus of its audience leads to a more favorable attitude towards the ad and behavioral intentions, and this applies to the same extent for chronic promotion people as well for chronic prevention people.
- H5a:** When chronic prevention people are relatively high affectively involved in a certain health topic, an agitation-quiescence tone in a message about this health topic leads to more ad involvement and empathy than a dejection-cheerfulness tone in a message about this health topic, which in turn, leads to a more favorable attitude towards the ad and to more favorable behavioral intentions.
- H5b:** When chronic promotion people are relatively high affectively involved in a certain health topic, a dejection-cheerfulness tone in a message about this health topic leads to more ad involvement and empathy than an agitation-quiescence tone in a message about this health topic, which in turn, leads to a more favorable attitude towards the ad and to more favorable behavioral intentions.

5.2. Objective and Design

To test the above hypotheses, we set up an experiment with a between-subjects design to examine the impact of the chronic self-regulatory focus (i.e., a predominant promotion vs.

prevention focus) and the level of affective involvement in a health topic (operationalized through prior health risk behavior: relatively high when (frequently) performing it vs. relatively moderate when performing it only occasionally vs. relatively little when not performing it) on the effectiveness of different emotional tones in campaigns on this health topic (i.e., an agitation-quiescence tone vs. a dejection-cheerfulness tone).

Here, we designed campaigns to promote UV protection among active women between 24 and 38 years old. Scientists agree that people need small amounts of UV radiation (i.e., for the production of vitamin D). However, in case of overexposure to UV radiation, the risk of contracting skin cancer and eye diseases increases significantly. So, UV protective measures should be promoted (WHO, 2009). Especially women are a relevant target group for this health issue, as they are generally assumed to be preoccupied with their appearance and as such, with their tan, which is likely to lead to sun tanning in an unprotected way (Burton, Netemeyer, and Lichtenstein, 1995; Saad and Peng, 2006; WHO, 2005)⁷.

Previous studies found that next to rational arguments, such as disease related, also emotional arguments, such as appearance related, are important in the context of sun tanning. More important, it was shown that most health risk behaviors, such as frequent and unprotected sun tanning, are strongly driven by affect, significantly more than by reason (Arthey and Clarke, 1995; Keesling and Friedman, 1987; Lawton et al., 2007; Leary and Jones, 1993; Loewenstein et al., 2001). So, in line with the above, we can assume that people who frequently tan are relatively high affectively involved in this topic. However, to test our hypotheses, we needed variation in the level of affective involvement. Therefore, we also needed to get internal differences in sun tan behavior, and thus decided to draw a sample which varied in age, family status, education et cetera (Arthey and Clarke, 1995; Saad and Peng, 2006).

However, it is difficult to reliably measure risk behavior in this context, that is, the frequency with which one tans in an unprotected way. This is especially true considering sun tanning in natural circumstances. It is almost impossible for people to know and correctly

⁷ The actual health risks caused by exposure to UV radiation depend on the interaction of the amount of ambient UV radiation, skin type and behavior in terms of personal exposure. As we operate in one and the same geographical region, we assume the first risk factor to be rather similar for all of our respondents. The skin type as the second risk factor varies from type I to type IV in Caucasian people, but could also be largely classified as *lightly pigmented*. So, here, we consider behavior as the main risk factor. One way to assess health risk behavior in this context is to focus on sun tanning behavior, although other alternatives exist (Lucas et al., 2006).

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recall the exact amount of natural UV radiation to which they have already been exposed (Lucas et al., 2006). Therefore, we focus on the frequency of visiting solarium, as this concerns a more deliberate act, which respondents are likely to estimate in a more reliable manner. Moreover, additional exposure to the more intense UV radiation from sun beds also points to actual risk behavior, as prior research showed that people visiting solarium are also more likely to tan in natural circumstances (Autier et al., 1991).

In sum, we manipulated the type of emotional tone in UV protection campaigns and measured the chronic self-regulatory focus, next to the frequency of solarium visits as an indicator of the level of affective involvement.

5.3. Stimuli Development

Two emotional health campaigns (i.e., an agitation-quiescence tone vs. a dejection-cheerfulness tone) were developed according to the threat-action format (see Appendix B). Their design and layout were quite similar to the campaigns used in study 1. Only a few changes were made. Instead of using the same model in the before- and after-story, this campaign started with showing a woman of 42 years old in the negative ad panel, telling an emotional story about her negative experiences related to unprotected tanning (about appearance, health, and general well-being). Specifically, the accompanying slogan referred to the main downside of unprotected tanning (i.e., damaged skin, damaged life) and continued with the statement: “Never saw this coming”, to make the audience more aware of actual long-term negative effects. This was followed by a positive ad panel which showed the portrait of a younger female model, expressing to do it differently, again for the above reasons (related to appearance, health, and general well-being), but hereby focusing on the long term (i.e., be happy, all the time). This was followed by guidelines to protect the skin from UV radiation (WHO, 2007).

5.4. Pretest

The four ad panels were subjected to a pretest to examine whether they reflected the intended emotion (i.e., agitation vs. dejection, quiescence vs. cheerfulness). Data was collected through an online survey ($n = 65$). Each respondent only saw one ad panel for which they had to indicate the extent to which they felt that the ad panel reflected specific emotions on 7-point scales (ranging from 1 (*not at all*) to 7 (*completely*)). We administered six agitation-related (i.e., scared, afraid, panicky, guilty, uneasy and remorseful) ($\alpha = .79$) and six dejection-related emotion items (i.e., depressed, sad, unfulfilled, embarrassed, ashamed and humiliated) ($\alpha = .88$) in case of a negative ad panel and three cheerfulness-related (i.e.,

cheerful, excited and enthusiastic) ($\alpha = .94$) and three quiescence-related emotion items (i.e., calm, peaceful, quiet) ($\alpha = .94$) for a positive ad panel (again, based on the previous work of Higgins and colleagues).

Independent-samples *t*-tests were run to check the manipulation. Analyses confirmed that the dejection ad panel evoked more intense dejection than the agitation ad panel ($M = 5.46$ vs. $M = 3.69$, respectively) ($t(25.64) = 4.53, p < .001$). In addition, the agitation ad panel was also rated higher on agitation-related emotions than the dejection ad panel ($M = 5.11$ vs. $M = 4.37$, respectively), though this difference was only marginally significant ($t(33) = -1.70, p = .10$). In case of the positive ad panels, our predictions were fully supported. Here, stronger quiescent emotions were indicated for the quiescent ad panel than for the cheerful ad panel ($M = 4.93$ vs. $M = 3.64$, respectively) ($t(28) = -2.74, p = .01$), and the cheerful ad panel received higher scores on the cheerfulness measure than the quiescent ad panel ($M = 4.69$ vs. $M = 2.71$, respectively) ($t(28) = 3.91, p = .001$).

5.5. Experimental Procedure and Participants

Compared to study 1, the procedure of this study only changed in a few aspects. The introductory questions changed (asking respondents about their tanning behavior) and the chronic self-regulatory focus scale was moved to the end of the questionnaire⁸.

Our target group was reached through two websites of a large media concern. Considering the above socio-demographic criteria, we obtained a convenience sample of 502 women ($M_{\text{age}} = 31.12, SD = 4.13$) who were exposed to one particular UV protection campaign.

5.6. Measures

5.6.1. Frequency of Solarium Visits

To assess the frequency of solarium visits, we asked “How often do you visit solaria?” with response options being “1 = never” (43.03%), “2 = less than 10 times a year” (32.47%), “3 = between 11 and 20 times a year” (15.74%), “4 = between 21 and 30 times a year” (4.98%), “5 = more than 30 times a year” (3.78%).

To test our hypotheses, we needed to come to three levels of risk behavior, namely: (a) people (frequently) performing risk behavior, (b) people performing risk behavior only

⁸ Study 1 showed that the location of this measure does not affect the results.

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occasionally, and (c) people not performing risk behavior. However, what in fact is *risk behavior*?

Most studies on the health effects of solarium use have compared people who never versus ever use solaria and found some evidence for increased risk for melanoma (i.e., a type of skin cancer). Although results have not always been consistent, scientists, in general, discourage any use of sun beds (WHO, 2006). So, “ever using solaria” could be considered as risk behavior.

However, some researchers have further investigated the impact of different levels of solarium use on the risk for melanoma. For example, Westerdahl et al. (1994) found that when solarium use exceeded 10 times a year, the risk for melanoma increased significantly compared to never using a solarium. Similarly, Veierød et al. (2003) found a significant increase in risk for melanoma when comparing women between 10 and 39 years old who used solaria never or rarely versus once or more per month. Based on the latter results, “using solaria more than 10 times a year” could be seen as real risk behavior.

What is clear is that solarium use exceeding 10 times a year becomes risky and never using solaria is the least risky. So, in line with the above, we performed a tertile split: (a) respondents never visiting solaria, (b) respondents visiting solaria less than 10 times a year and (c) respondents visiting solaria more than 10 times a year. This also led to a reasonably balanced distribution of our sample.

5.6.2. Chronic Self-Regulatory Focus

We used the same scale as in study 1 to measure respondents’ chronic promotion and prevention focus (Lockwood et al., 2002), except now, we used 9-point scales. Again, on average, our total sample was more promotion ($\alpha = .79$) than prevention oriented ($\alpha = .82$) (see Table 3.4) ($t(501) = 17.99, p < .001$). Also, the promotion and prevention measure were significantly, but only little correlated ($r = .22, p < .001$) (Higgins, 1997). As in study 1, we generated a measure of the predominant chronic self-regulatory focus by calculating a difference score by subtracting the mean prevention score from the mean promotion score (see Table 3.4)³.

TABLE 3.4

Descriptive Statistics Regarding the Chronic Self-Regulatory Focus.

	Chronic Promotion Focus	Chronic Prevention Focus	Predominant Chronic Self-Regulatory Focus
<i>Mean</i>	6.29	4.85	1.43
<i>Standard Deviation</i>	1.19	1.62	1.79
<i>Skewness</i>	-.33	-.04	.56
<i>Kurtosis</i>	.49	-.21	.32

5.6.3. Dependent Measures

To measure Aad, we used the same scale as in study 1 ($\alpha = .89$). Furthermore, in reference to the behavioral recommendations of the campaign, we assessed three BIs on 7-point scales (ranging from 1 (*definitely not applicable*) to 7 (*definitely applicable*)) with following items: “I definitely intend to get rid of my old sun products and to buy new ones each year”, “At my next sunbath, I will rub myself thoroughly and frequently with a protective sun cream” and “The next time that I will take a sunbath, I will implement moments of shade regularly, and especially between 12 and 3 p.m.”. These items concern different behaviors and were therefore not pooled together.

Ad involvement was measured in a similar way as in the first experiment ($\alpha = .80$) (Zaichkowsky, 1994). In addition, we also included a measure of empathy with the situation and emotions of the depicted characters (*empathy*)⁹. Based on Baumgartner, Sujan, and Bettman (1992), we used three 5-point scales (“I felt I was right there in the ad experiencing the same emotions”, “I really got involved in the feelings of the characters in the ad”, and “While I was looking at the ad, I could easily put myself in the place of one of the characters”) on which respondents had to indicate to which degree this was true for them ($\alpha = .83$).

⁹ After all, Houston (1990) showed that individuals who are exposed to a person’s self-discrepancy state and resulting personal distress are more empathic with this person when they share the same type of self-discrepancy.

6. RESULTS

6.1. Manipulation Checks

In the main experiment, we checked whether people who (frequently) perform health risk behavior (i.e., visiting solarium more than 10 times a year) versus those who do only occasionally (i.e., visiting solarium less than 10 times a year) versus those who do not (i.e., never visiting solarium) differ in their level of affective involvement in this health issue (i.e., sun tanning), or put differently, in their perceived level of affect relevance for evaluating this health issue (Pham, 1998). Therefore, after asking about the frequency of solarium visits, but before ad exposure, we asked respondents to think about the typical considerations they make when deciding on sun tanning. We assessed to what extent they agreed with following two statements: (a) “When making these considerations, my emotions and feelings are especially relevant.” and (b) “When making these considerations, objective benefits and costs are especially relevant.” (ranging from 1 (*totally disagree*) to 5 (*totally agree*)). As expected, a one-way ANOVA showed a marginally significant effect of the frequency of solarium visits on the perceived level of affect relevance ($F(2, 501) = 2.63, p = .07$). That is, people visiting solarium more than 10 times a year considered affect to be more relevant ($M = 3.28$) than people never visiting solarium ($M = 3.04$). No other contrasts were significant; people who visit solarium less than 10 times a year seem to be somewhat in the middle, as expected ($M_{LessThan10TimesaYear} = 3.18$). Moreover, no significant differences were found between the three groups in terms of the perceived relevance of objective arguments ($M_{MoreThan10TimesaYear} = 2.71; M_{LessThan10TimesaYear} = 2.68; M_{Never} = 2.81; F(2, 501) = .79, p = .45$).

Finally, we also included a manipulation check for the different ad panels. After exposure to each ad panel, respondents were asked to indicate the extent to which they felt that the ad panel reflected specific emotions⁴. The same emotion items as in the pretest were used. Independent-samples t-tests confirmed the results of the pretest. The agitation ad panel was more agitating ($M = 5.09$) than the dejection ad panel ($M = 4.49$) ($t(500) = -5.45, p < .001$), whereas the reverse was true in terms of dejection ($M = 4.37$ vs. $M = 4.88$, respectively) ($t(500) = 5.31, p < .001$). Also, as expected, the quiescence ad panel aroused more quiescence ($M = 5.31$) than the cheerfulness ad panel ($M = 4.94$) ($t(489.04) = -7.84, p < .001$), and also less cheerfulness ($M = 4.66$ vs. $M = 6.26$, respectively) ($t(360.96) = 15.14, p < .001$).

6.2. Experimental Effects on Aad and BIs

In order to test hypothesis 3, we regressed Aad and BIs on the type of emotional tone in the UV protection campaign, on the standardized difference score of promotion minus

prevention (i.e., Z(promotion-prevention)), as a measure of the predominant chronic self-regulatory focus, on two dummy variables representing the frequency of solarium visits (i.e., dummy 1: visiting solaria more than 10 times a year, dummy 2: visiting solaria less than 10 times a year) and on their interaction terms¹⁰. Results can be found in Table 3.5.

TABLE 3.5

The Standardized Regression Coefficients of the Independent Variables on the Dependent Variables and their Significance Levels.

	Aad		Intention to buy new sun products		Intention to use sun cream		Intention to take shade breaks	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Type of Emotional Tone	-.15	.02	-.13	.06	-.23	.001	-.15	.03
Predominant Chronic Self-Regulatory Focus (SRF)	.03	.79	.02	.84	-.02	.84	.08	.43
Solarium Visits – Dummy 1 (frequently)	.07	.32	.07	.32	-.11	.12	-.20	.003
Solarium Visits – Dummy 2 (occasionally)	-.07	.33	.04	.55	-.13	.05	-.11	.09
Interaction Emotional Tone x SRF	.02	.88	-.01	.93	.17	.08	.15	.15
Interaction Emotional Tone x Solarium Visits – Dummy 1	.03	.67	.16	.04	.20	.01	.16	.03
Interaction SRF x Solarium Visits – Dummy 1	.02	.84	.02	.84	.09	.24	-.09	.26
Interaction Emotional Tone x SRF x Solarium Visits – Dummy 1	-.16	.04	.03	.68	-.12	.13	-.11	.16
Interaction Emotional Tone x Solarium Visits – Dummy 2	-.01	.89	.11	.16	.28	< .001	.07	.35
Interaction SRF x Solarium Visits – Dummy 2	.13	.14	.07	.32	.12	.17	.03	.74
Interaction Emotional Tone x SRF x Solarium Visits – Dummy 2	-.12	.19	-.004	.97	-.16	.09	-.16	.09

¹⁰Additional variables, such as age and family status (single vs. in a relationship, kids vs. no kids) were included in the analyses. Apart from a few main effects, none of them had a significant impact on the results reported here, so they will not be discussed any further.

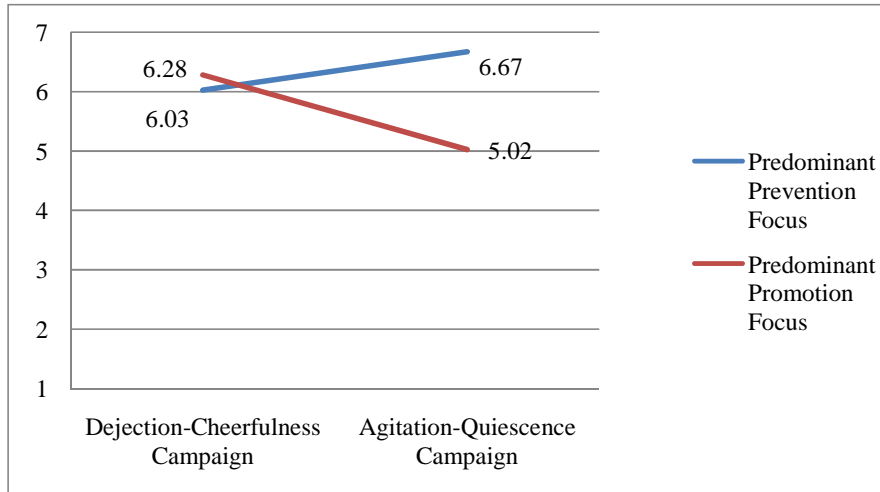
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As hypothesized, on Aad, we found a significant 3rd order interaction effect of the type of emotional tone, the chronic self-regulatory focus and dummy 1. Looking at respondents who visit solaria more than 10 times a year (i.e., dummy 1 = 1), the regression analysis revealed an interaction effect of type of emotional tone and the predominant chronic self-regulatory focus ($\beta = -.34, p < .01; p's > .18$). Selecting those respondents who visit solaria never or less than 10 times a year (i.e., dummy 1 = 0), we only found a significant main effect of type of emotional tone in the UV protection campaign ($\beta = -.15, p = .03; p's > .15$), in that the dejection-cheerfulness tone led to a more favorable Aad than the agitation-quiescence tone. No other 3rd order interaction effects were found on BIs. Taken together, these results are in line with the predictions made in hypothesis 3, predicting a stronger interaction effect of type of emotional tone and the chronic self-regulatory focus in case of relatively high versus relatively moderate or relatively little affective involvement. However, this was only true for Aad and not for BIs.

As explained in study 1, we further performed simple slope analyses to test the simple effect of the type of emotional tone on Aad in the two types of predominant chronic self-regulatory foci of respondents visiting solaria more than 10 times a year. Therefore, we considered one and a half standard deviation below and above the mean score of Z(promotion-prevention). These analyses revealed that the slope, indicating the impact of the type of emotional tone, was significant for the predominant chronic promotion people ($b = -1.26, p < .01$) and marginally significant for the predominant chronic prevention people ($b = .65, p = .11$). A t-test was run to compare the absolute values of both simple slopes and as such, to compare the degree of reliance on specific affect in both foci. This test indicated that there appeared to be no difference between both foci ($p = .37$). This supports hypothesis 4, predicting a significant effect of type of emotional tone both in promotion and prevention people. However, again, this was only true in terms of Aad. Also, as expected, the predominant chronic promotion people had a more favorable Aad towards the dejection-cheerfulness tone than to the agitation-quiescence tone, whereas the positive effect in the predominant chronic prevention people points to the reverse finding (see Figure 3.2). These results are in line with hypotheses 5a and 5b, again only taking into account Aad.

FIGURE 3.2

The Interaction Effect of the Type of Emotional Tone in a UV protection Campaign and the Predominant Chronic Self-Regulatory Focus on Attitude towards the Advertisement (Aad) in Individuals Visiting Solaria More Than 10 Times a Year.



Although not hypothesized, we specifically expected not to find significant regulatory focus – emotion congruence effects in people never visiting solaria (i.e., relatively little affectively involved), whereas in people visiting solaria occasionally (i.e., relatively moderate affectively involved), such effects were assumed to be more likely in promotion than in prevention people. Selecting the first group, we only found a main effect of type of emotional tone; the interaction effect was indeed not significant ($\beta_{\text{emotional_tone}} = -.15, p = .03$; $\beta_{Z_SRF} = .02, p = .80$; $\beta_{\text{interaction}} = .01, p = .88$). Selecting the second group, similar results were discovered, although the interaction effect now turned out to be marginally significant ($\beta_{\text{emotional_tone}} = -.16, p = .04$; $\beta_{Z_SRF} = .25, p = .03$; $\beta_{\text{interaction}} = -.19, p = .11$). A simple slope analysis showed that the effect of type of emotional tone was significant in case of a promotion focus ($b = -1.02, p < .01$), but not in case of a prevention focus ($b = .05, p = .91$), which is in line with our expectations. However, a formal t-test indicated no significant difference in the absolute values of these two slopes ($p = .15$).

In Table 3.5, we also noticed that almost all regression analyses led to a main effect of the type of emotional tone in the UV protection campaign. That is, the agitation-quiescence tone led to a less favorable Aad and less favorable BIs than the dejection-cheerfulness tone. Next, we found a main effect of frequent solarium visits on intention to take shade breaks in that respondents visiting solaria more than 10 times a year were less willing to perform this behavioral recommendation than respondents visiting solaria less than 10 times a year or

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never. Moreover, visiting solaria occasionally also decreased the intention to use sun cream compared to never visiting solaria and frequently visiting solaria. Finally, on all three intention measures, there was a significant interaction effect of type of emotional tone in the campaign and frequent solarium visits. Selecting those respondents who visit solaria less than 10 times a year or never, results pointed to the same main effect of type of emotional tone as described above (Intention to buy sun products: $\beta = -.13, p = .06$; Intention to use sun cream: $\beta = -.23, p < .01$; Intention to take shade breaks: $\beta = -.16, p = .02$). However, when considering those respondents who visit solaria more than 10 times a year, no significant main effects were found (p 's $> .23$).

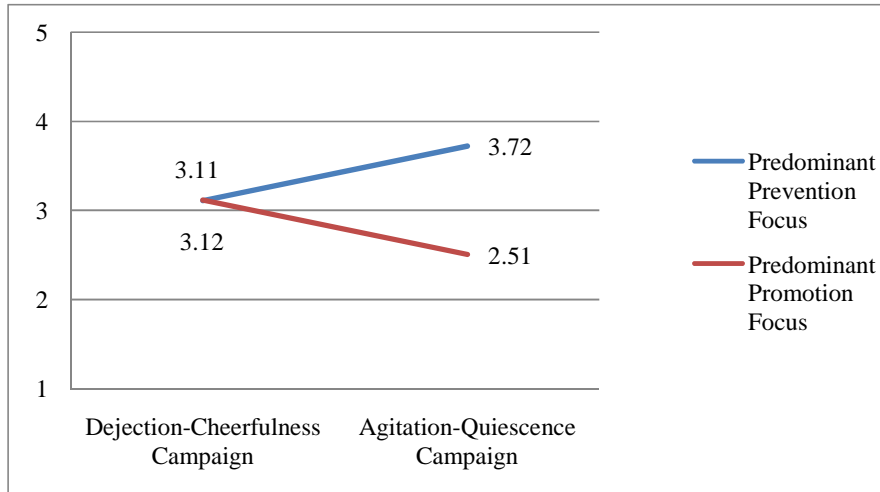
6.3. Mediation Analyses of Experimental Effects on Aad

Here, we further test hypotheses 5a and 5b which also propose mediation of the above regulatory focus – emotion congruence effects on Aad through ad involvement and empathy. As we only found such congruence effects in people who visit solaria more than 10 times a year, we only selected those respondents. First, to examine whether ad involvement mediated the above 2nd order interaction effect on Aad, we performed a regression analysis with type of emotional tone in the campaign and the predominant chronic self-regulatory focus as independent variables and with ad involvement as the dependent variable. However, no significant results were found (p 's $> .26$). So, it seems that ad involvement could not be mediator of the regulatory focus – emotion congruence effect on Aad in frequent solaria visitors, as opposed to what was found in Study 1 and what was proposed in hypotheses 5a and 5b.

Second, we assessed the mediating role of empathy. The same regression analysis as on ad involvement now did show a significant 2nd order interaction effect ($\beta_{\text{emotional_tone}} = .001, p = .99$; $\beta_{\text{Z_SRF}} = .002, p = .98$; $\beta_{\text{interaction}} = -.31, p = .01$). Simple slope analyses further showed that predominant promotion people felt more empathic with the situation and emotions of the depicted characters in the dejection-cheerfulness campaign than in the agitation-quiescence campaign ($b = -.61, p = .04$), whereas the reverse was true for predominant prevention people ($b = .62, p = .03$) (see Figure 3.3). Again, there was no significant difference in reliance on specific affect in both foci ($p = .99$).

FIGURE 3.3

The Interaction Effect of the Type of Emotional Tone in a UV protection Campaign and the Predominant Chronic Self-Regulatory Focus on Empathy in Individuals Visiting Solaria More Than 10 Times a Year.



In a final step, Aad was regressed on the same independent variables as above, but now including the standardized score of empathy. Here, the initial 2nd order interaction effect on Aad was now only marginally significant ($\beta = -.19, p = .08$), its regression coefficient also decreased significantly ($t(119) = 6.05, p < .001$), and only empathy had a significant positive effect on Aad ($\beta = .46, p < .001$) (p 's $> .14$). These findings point to a *mediated moderation* process (Baron and Kenny, 1986). In sum, these results partially support hypothesis 5a and 5b.

7. GENERAL DISCUSSION

Study 2 showed the importance of taking into account the level of affective involvement (operationalized through prior health risk behavior) in studying regulatory focus – emotion congruence effects. As hypothesized, a stronger regulatory focus – emotion congruence effect on Aad was found in people visiting solaria more than 10 times a year compared to people visiting solaria less than 10 times a year or never. These results replicate those of study 1 in that regulatory focus – emotion congruence effects were also found in people performing health risk behavior (i.e., visiting a solarium more than 10 times a year in study 2 and smoking in study 1). These respondents were assumed to further elaborate on the content of a campaign about this health topic, thereby relying on their chronic self-regulatory focus and specific affective arguments (Bargh et al., 1988; Higgins and Brendl, 1995; Higgins, 1997;

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Petty and Cacioppo, 1986, 1990; Pham, 1998). A manipulation check confirmed that they indeed perceived affect to be of relatively high relevance for this health issue and were thus relatively high affectively involved in the health topic of the campaign.

Moreover, in line with study 1 and our hypotheses, people with a predominant chronic promotion focus were more empathic with the situation and emotions of the depicted characters in a UV protection campaign with a dejection-cheerfulness tone than with an agitation-quiescence tone, which also led to a more positive Aad. The reverse result was found in case of a predominant chronic prevention focus. Again, we found an equally strong effect of the type of emotional tone in both foci, suggesting reliance on specific affect to the same, relatively high extent by both foci. Unexpectedly, ad involvement was no significant mediator in this study (as opposed to study 1). Future research should further clarify the mediating process behind regulatory focus – emotion congruence effects, that is, (a) “does it involve a cognitive or an emotional process or both?” and/or (b) “is it about the *message* of the campaign or related to the specific persons depicted in the campaign and their testimonial?”.

As expected, regulatory focus - emotion effects were not found when a UV protection campaign was shown to respondents who never visit a solarium, who were also found to consider affect to be less relevant for this health issue and thus to be less affectively involved in this health issue than respondents visiting solaria more than 10 times a year. This result could be explained by the fact that the health topic under consideration was of relatively little relevance to these people that they merely processed the message heuristically and relied on simple cues rather than further elaborated on its content (Petty and Cacioppo, 1986). We further noticed that they have a more favorable attitude towards a UV protection campaign with a dejection-cheerfulness tone than with an agitation-quiescence tone. As the latter tone is more often used in health campaigns (Hale and Dillard, 1995), the former tone could have been more salient and as such, more persuasive (Higgins and Brendl, 1995).

Similarly, among occasional solarium users, we only found a main effect of type of emotional tone, that is, the same effect as in respondents who never visit a solarium. We expected this to be a more ambiguous context in terms of affect relevance, in which promotion people were more likely to rely on affect than prevention people (Higgins and Brendl, 1995; Pham and Avnet, 2004). A manipulation check also confirmed this group to be positioned somewhere in the middle in terms of perceived affect relevance. In such a context, regulatory focus – emotion congruence effects were assumed to be more likely in promotion focused people than in prevention focused people. Although results were not significant, they

did point to a regulatory focus-emotion congruence effect on Aad and to a difference in reliance on specific affect between a promotion and a prevention focus, as predicted. However, the latter findings clearly need to be validated in further research.

In general, we extended the validity of the regulatory relevancy principle to emotional stimuli, but also discovered its boundary conditions. As such, we also nuanced the propositions of Pham and Avnet (2004). That is, our results suggest that regulatory focus – emotion congruence effects could be more likely in promotion than in prevention people. However, in certain contexts, such as in which affect is perceived to be of relatively high relevance, equally strong emotion-congruence effects were found in both. However, as already mentioned, further validation is needed. Future studies should also try to manipulate the depth and type of topic involvement in a more conservative way.

As opposed to Experiment 1, the regulatory focus – emotion congruence effects were non-existent on BIs in the second study. Consequently, compared to the stop-smoking campaigns, the UV protection campaigns seemed to be less strong. However, the BI measures in study 1 only examined specific ad effects rather than general intentions to comply with health guidelines as was done in study 2. To find effects on the latter is much more difficult, as so many, other factors, next to advertising, influence our behavior. Also, this would have been especially difficult in study 1 about stop-smoking, as previous research already showed that a once-only exposure to an antismoking campaign usually has a relatively small behavioral impact (Pechmann et al., 2003; Wolburg, 2006).

Moreover, as many health topics, such as smoking and UV protection, have been mediatized already for a long time, we could also expect that people are already quite knowledgeable about them, and no real and drastic behavioral changes due to health campaigns could therefore be detected. The latter could also explain why no real negative or *defensive* reactions were found in the above studies (typically found in respondents high at-risk (Liberian and Chaiken, 1992)). Possibly, the information in the campaigns was already familiar to respondents and thus did not appear to be highly threatening.

In such instances, it could be more suitable to anticipate latent effects, such as on the strength dimensions of attitudinal and behavioral constructs. This could be especially valid in case of self-congruent campaigns, as they lead to more involvement in the first place and as such, potentially lead to more hidden effects. That is, knowing that exposing people to a self-congruent versus a self-incongruent health campaign will make them process this campaign into more depth, this could, above all, lead to stronger attitudes and BIs, which, in turn, are stronger predictors of actual behavior (Petty and Cacioppo, 1986). Future research could

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therefore not only include measures of attitude favorability, but also of attitude strength. Related to this, health practitioners could use self-congruent campaigns to help strengthen people's preliminary *good* intentions or to help remind people of their already made action plans for change, and make actual change more likely.

Specifically, we showed that the chronic self-regulatory focus as an individual difference variable could be useful to segment an audience and to position health messages accordingly. Moreover, as we relied on the typical threat-action format, our results also contribute to fear appeal research. Assuming that health campaigns especially target audiences performing risk behavior, this study shows that traditional fear-relief tones could be effective and could be used in health campaigns, but only to address prevention focused people, who are especially concerned with negative outcomes and minimal goals, such as their duties and responsibilities (Higgins, 1997). For other audience profiles predominantly focusing on positive outcomes and on maximal goals, such as accomplishments and ambitions, which are thus promotion focused, we recommend that designers of health campaigns use a dejection-cheerfulness tone instead.

In case the chronic self-regulatory focus of the target group is unknown to policymakers, they can try to infer this by means of other variables, such as cultural background (Lee et al., 2000). For example, in Western parts of the world, such as the U.S.A. and Western Europe, people tend to possess a more independent self-view and to define themselves more in terms of their own, unique goals, preferences, and attitudes. As such, individuals here tend to be more promotion than prevention focused. In Eastern countries, on the other hand, individuals tend to possess a more interdependent self-view and to define themselves more in terms of their relationships with others and group memberships. Consequently, here, people tend to be more prevention than promotion focused (Lee et al., 2000).

The chronic self-regulatory focus is also expected to correlate with other socio-demographics, as its accessibility and strength is mainly determined by the frequency with which individuals are exposed to specific promotion versus prevention oriented situations (Higgins and Brendl, 1995; Higgins, 1997). For example, getting married, buying a house and having children all come along with more responsibilities, which could result in a more intense prevention focus. Also, the type of professional occupation could determine whether people are more promotion versus prevention focused. For example, managers and sales people usually have to focus on identifying opportunities and maximizing profits and are therefore expected to be more promotion focused, whereas accountants and researchers have

to focus more on accuracy and are therefore expected to be more prevention focused (Förster, Higgins, and Bianco, 2003).

Moreover, the self-regulatory focus could also be primed by the context before exposure to the actual health campaign. This could be done, for example, by showing an ad beforehand which mainly focuses on ideals (i.e., hopes, ambitions, accomplishments, etc.) to activate a promotion focus versus on oughts (i.e., obligations, responsibilities, duties, etc.) to activate a prevention focus. Also, specific media contexts could be used as such. For example, in magazines or TV shows about diseases and other medical issues, prevention-focused health messages could be more effective, whereas in magazines or TV shows about how to live an active and successful life, promotion-focused health messages could work better.

We also recommend that in designing health campaigns, the specific health topic has to be considered as well. Looking at health risk behaviors, affective beliefs are assumed to be highly important, even more than instrumental ones (Lawton et al., 2007). As a result, here, it could prove to be useful to consider regulatory focus – emotion congruence effects. However, Lawton, Conner, and McEachan (2009) also showed that, although affect is important for many health behaviors, this is not the case for all types of health behaviors, such as for certain health protective behaviors (e.g., vitamin use). This points to the necessity of analyzing the target group towards a specific health issue prior to actual ad design.

Finally, we showed that the regulatory relevancy principle, next to regulatory fit, is valuable to study in a health context (Higgins, 2002). A future challenge for health researchers and practitioners, then, is to identify other relevant promotion- and prevention-related health outcomes and validate the above results. For example, Geeroms, Verbeke, and Van Kenhove (2008) found five specific health-related motivational orientations, that is, (a) health is about energy, (b) health is about emotional well-being, (c) health is about social responsibility, (d) health is about outward appearance, and (e) health is about physical well-being. These health-related motives were also linked to two important communication dimensions, that is, (a) reliance on information versus affect, and (b) focus on the independent versus interdependent self. These dimensions also correlate with the self-regulatory focus (Lee et al., 2000; Pham and Avnet, 2004). Based on these findings, promotion focused people are expected to be more concerned with health in terms of energy, whereas prevention focused people are expected to value health more in terms of social responsibility. Future research could validate this and also further investigate the relationships between these types of motivational frameworks.

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APPENDIX A - STOP-SMOKING CAMPAIGNS

Fear-Relief Health Campaign

Part 1 - Fear Campaign

DENK NIET DAT JE LATER TIJD GENOEG HEBT OM TE STOPPEN MET ROKEN!!!
Roken en tegelijk niet ziek worden? Dan ben jij toch de enige...



GETUIGENIS: Stefanie (30 jaar) vertelt: Ik ben beginnen roken toen ik 16 jaar was onder druk van een aantal vrienden. We voelden ons stoer, bewonderd en volwassen. Ik had toen zeker niet het gevoel dat ik verslaafd was aan sigaretten. Ik dacht dat ik een aantal jaar kon roken en toch op elk moment zou kunnen stoppen. Al die jaren wist ik wel dat roken ongezond is en allerlei aandoeningen veroorzaakt, maar ik dacht altijd dat dit mij nooit zou overkomen... Maar na een aantal jaar roken, kreeg ik steeds meer last van hoestbuien en opkomende slijmen. Ik voelde me altijd slecht en de dokter stelde bij mij chronische bronchitis vast...Nu weet ik dus wel beter...

OPGELET: 60% van alle rokende jongeren zijn, net zoals Stefanie, zeer verslaafd aan nicotine!

Jongeren kennen de gevolgen van roken maar geloven dat ze een aantal jaar zonder gevaar kunnen roken en dan kunnen stoppen wanneer ze willen. Niets is minder waar! Roken is een zware verslaving waar je maar moeilijk vanaf geraakt. Hoe langer je rookt, hoe moeilijker het wordt om ermee te kappen en hoe groter het risico op onaangename en gevaarlijke aandoeningen:

- Rokers hebben gele tanden en een slechte adem.
- Rokers hebben last van een voortdurende rokershoest en het opgeven van slijm.
- Rokers worden kortademig en ademen vaak brommend en piepend.
- Rokers lijden vaak aan chronische bronchitis.
- Rokers hebben een veel hogere kans op hart- en vaat-aandoeningen.
- Rokers hebben veel hoger risico op longkanker dan niet-rokers... en uiteindelijk een veel hoger risico op een zware terminale doodstrijd en vroegtijdige sterfte.

Translation of the Fear Campaign

Slogan: “Don’t think you have plenty of time left to quit smoking!!! Smoking and not getting sick at the same time? You will be the only one then...”

Testimonial: “Stephanie (30 years old) testifies: I started smoking at the age of 16 because of a couple of friends. We felt cool, admired and so grown-up. Back then, I didn’t feel like a true addicted smoker. I thought that I could smoke for a few years and that I could quit whenever I wanted. All those years I knew that smoking is unhealthy and causes different diseases, but I always thought that this was not going to happen to me... However, after a few years as a smoker, bad coughing fits raising phlegm were bothering me. I always felt sick and the doctor diagnosed a chronic bronchitis... So now, I know better...”

Text below: “Warning: 60% of all young smokers are, just as Stephanie, very addicted to nicotine!

Young people know the risks of smoking, but believe that they can smoke for a few years without running actual risks and then, quit whenever they want. Nothing is further from the truth! Smoking is a very severe addiction which you do not get rid of easily. The longer a person smokes, the more difficult it gets to quit, and the greater the risk of getting unpleasant and dangerous diseases:

- Smokers get yellow teeth and bad breaths.
- Smokers are bothered with bad coughing fits raising phlegm.
- Smokers are often short of breath and often breathe grumpy and wheezing.
- Smokers often suffer from a chronic bronchitis.
- Smokers run greater risk of having heart and vascular diseases.
- Smokers run a much higher risk than non-smokers of getting lung cancer... and eventually, a much higher risk to a severe and terminal death-struggle and early death”

Part 2 - Relief Campaign

SET THE DATE: STOP MET ROKEN EN MAAK KOMAF MET JE ONGEZOND LEVEN!!!



GETUIGENIS: Stefanie (30 jaar) vertelt: Door jarenlang intensief te roken kreeg ik een zware chronische bronchitis. Ik moest voortdurend hoesten, had last van slijmen en piepende longen. Daarom ben ik vorig jaar gestopt met roken. Stoppen was moeilijker dan verwacht, maar toch ben ik erin geslaagd en sindsdien zijn de zware hoestbuien en piepende longen verdwenen en kan ik opnieuw opgelucht ademen!

Stoppen met roken vermindert een aantal belangrijke gezondheidsrisico's:

- De longen werken na een paar dagen al beter zodat het hoesten vermindert en de ademhalingsproblemen verbeteren.
- Na 1 dag vermindert het risico op een hartaanval al aanzienlijk.
- Na 5 jaar is het risico op hart- en vaatziekten nog slechts half zo groot.
- Het risico op longkanker vermindert aanzienlijk. Na 10 jaar is het risico nog maar half zo groot als toen men rookte.

Doe dus zoals Stefanie en bepaal nu voor jezelf een dag om te stoppen met roken!

Wij kunnen u helpen! Bel onze **ANTIROOKLIJN** op het nummer 0800/00.11.00. Dit is een gratis hulplijn, elke dag beschikbaar van 10u tot 22u. Getrainde medewerkers geven je advies en informatie over hoe je het best van de sigaretten kunt afblijven. Je kunt er ook onze gids aanvragen die stap-voor-stap praktisch advies geeft om succesvol te stoppen met roken!

Translation of the Relief Campaign

Slogan: “Set the date: Quit smoking and give short shrift to your unhealthy life!!!”

Testimonial: “Stephanie (30 years old) testifies: Due to many years of heavy smoking, I was diagnosed with a severe chronic bronchitis. I coughed continuously; I was bothered with coughing phlegm and wheezing lungs. That is why I quit smoking last year. Quitting was harder than expected, but nevertheless, I succeeded and since then, these bad coughing fits and wheezing lungs have disappeared and I can heave a sigh of relief!”

Text below: “Quitting smoking reduces a number of severe health risks:

- After a few days already, the lungs function better, which reduces coughing fits and breathing problems.
- After one day, the risk of a heart attack reduces significantly.
- After five years, the risk of heart and vascular diseases has reduced to half.
- The risk of getting lung cancer reduces significantly. After 10 years, this risk has reduced to half compared to when one smoked.

Follow Stephanie’s lead and set your own date to quit smoking!

We can help you! Call our stop-smoking telephone helpline at 0800/00.11.00. This is a free helpline, available every day from 10 a.m. until 10 p.m. Trained workers will give you advice and information on how to quit smoking in the best way possible. Here, you can also order our manual which gives you, step-by-step, practical advice to quit smoking successfully.”

Sadness-Joy Health Campaign

Part 1 - Sad Campaign

DENK NIET DAT JE LATER TIJD GENOEG HEBT OM TE STOPPEN MET ROKEN!!!
Roken en tegelijk gezond blijven? Dan ben jij toch de enige...



GETUIGENIS: Stefanie (30 jaar) vertelt: Ik ben beginnen roken toen ik 16 jaar was onder druk van een aantal vrienden. We voelden ons stoer, bewonderd en volwassen. Ik had toen zeker niet het gevoel dat ik verslaafd was aan sigaretten. Ik dacht dat ik een aantal jaar kon roken en toch op elk moment zou kunnen stoppen. Al die jaren wist ik wel dat roken je goede conditie en gezondheid in gevaar brengt, maar ik dacht altijd dat dit mij nooit zou overkomen... Maar na een aantal jaar roken, voelde ik dat sporten niet meer zo vlot ging als vroeger. Ik voelde me minder fit en dynamisch en mijn conditie werd steeds minder goed...Nu weet ik dus wel beter...

OPGELET: 60% van alle rokende jongeren zijn, net zoals Stefanie, zeer verslaafd aan nicotine!

Jongeren kennen de gevolgen van roken maar geloven dat ze een aantal jaar zonder gevaar kunnen roken en dan kunnen stoppen wanneer ze willen. Niets is minder waar! Roken is een zware verslaving waar je maar moeilijk vanaf geraakt. Hoe langer je rookt, hoe moeilijker het wordt om ermee te kappen en hoe meer je conditie en gezondheid achteruitgaan:

- Rokers hun witte tanden en goede adem verdwijnen.
- Rokers hebben weinig geur en smaak.
- Rokers voelen zich vaker niet lekker en zijn minder dynamisch dan niet-rokers.
- Roken en sport gaan niet samen doordat de longen van rokers minder goed werken.
- Rokers hebben daardoor een minder goede conditie dan niet-rokers.
- Rokers hebben in het algemeen een veel minder goede gezondheid dan niet-rokers... en uiteindelijk ook vaker een korter en minder kwalitatief leven.

Translation of the Sadness Campaign

Slogan: “Don’t think you have plenty of time left to quit smoking!!! Smoke and stay healthy at the same time? You will be the only one then...”

Testimonial: “Stephanie (30 years old) testifies: I started smoking at the age of 16 because of a couple of friends. We felt cool, admired and so grown-up. Back then, I didn’t feel like a true addicted smoker. I thought that I could smoke for a few years and that I could quit whenever I wanted. All those years I knew that smoking endangers your good shape and health, but I always thought that this was not going to happen to me... However, after a few years as a smoker, I felt that exercising did not go as smoothly as before. I felt less fit and dynamic and my shape got worse... So now, I know better...”

Text below: “Warning: 60% of all young smokers are, just as Stephanie, very addicted to nicotine!

Young people know the risks of smoking, but believe that they can smoke for a few years without running actual risks and then, quit whenever they want. Nothing is further from the truth! Smoking is a very severe addiction which you do not get rid of easily. The longer a person smokes, the more difficult it gets to quit, and the worse your shape and health get:

- Smokers do not have white teeth and nice breath anymore.
- Smokers have less smell and taste.
- Smokers often do not feel well and are less dynamic than non-smokers.
- Smoking and exercising do not go together, because the lungs of smokers do not function properly.
- Smokers are in a worse shape than non-smokers.
- Smokers are, overall, less healthier than non-smokers... and eventually, they often have a shorter life with less quality”

Part 2 - Joy Campaign

SET THE DATE: STOP MET ROKEN EN START EEN GEZOND LEVEN!!!



GETUIGENIS: Stefanie (30 jaar) vertelt: Door jarenlang intensief te roken voelde ik me steeds minder fit en actief en mijn conditie ging sterk achteruit. Zelfs een kleine inspanning, zoals de trappen oplopen, werd een zware opdracht. Daarom ben ik vorig jaar gestopt met roken. Stoppen was moeilijker dan verwacht, maar toch ben ik erin geslaagd en sindsdien voel ik me in topvorm. Mijn conditie is sterk verbeterd en sinds enkele weken ben ik zelfs al volop aan het trainen voor een loopwedstrijd...

Stoppen met roken heeft heel wat positieve effecten op je gezondheid:

- De bloedcirculatie in het hele lichaam verbetert al na 20 minuten.
- Na enkele dagen verbeteren de smaak- en geurzin al aanzienlijk.
- Na 1 week wordt het ademen gemakkelijker en het energieniveau verhoogt.
- Na 2 weken verbetert de zuurstoftoevoer zodat sporten gemakkelijker wordt.

Doe dus zoals Stefanie en bepaal nu voor jezelf een dag om te stoppen met roken!

Wij kunnen u helpen! Bel onze **ANTIROOKLIJN** op het nummer 0800/00.11.00. Dit is een gratis hulplijn, elke dag beschikbaar van 10u tot 22u. Getrainde medewerkers geven je advies en informatie over hoe je het best van de sigaretten kunt afbliven. Je kunt er ook onze gids aanvragen die stap-voor-stap praktisch advies geeft om succesvol te stoppen met roken!

Translation of the Joy Campaign

Slogan: “Set the date: Quit smoking and start a healthy life!!!”

Testimonial: “Stephanie (30 years old) testifies: Due to many years of heavy smoking, I felt less fit and dynamic and my shape was getting worse. Even the smallest effort, such as running up stairs, became a heavy task. That is why I quit smoking last year. Quitting was more difficult than expected, but nevertheless, I succeeded and since then, I really feel in shape. My condition has improved significantly and since several weeks, I am even training for a running contest...”

Text below: “Quitting smoking has a number of positive health effects:

- The blood circulation in your whole body already improves after 20 minutes.
- After a few days, smell and taste ameliorate significantly.
- After one week, breathing gets easier and your energy level increases.
- After two weeks, the oxygen supply in your body improves, making exercising much easier.

Follow Stephanie’s lead and set your own date to quit smoking!

We can help you! Call our stop-smoking telephone helpline at 0800/00.11.00. This is a free helpline, available every day from 10 a.m. until 10 p.m. Trained workers will give you advice and information on how to quit smoking in the best way possible. Here, you can also order our manual which gives you, step-by-step, practical advice to quit smoking successfully.”

APPENDIX B – UV PROTECTION CAMPAIGNS

Agitation-Quiescence Health Campaign

De zon heeft ons zoveel pijn gedaan.

Dat hadden we nooit zien aankomen...



Karen (42 jaar) vertelt...

«De vele uitstapjes naar de kust, allemaal samen in de zon, een mooi bruin velletje achteraf. Leuke herinneringen, maar al die jaren in de zon hebben mijn huid ook sneller doen verouderen, zegt de huidarts. En dat is nu al overduidelijk, terwijl ik er eigenlijk nog maar 42 ben.

Ik ben dan vaak heel bezorgd over wat er nog gaat komen en reageer die angsten dan af op mijn naasten. Ik ben immers echt bang dat mijn omgeving mij één van de dagen zal afwijzen als moeder, als vrouw... Het is nog onduidelijk hoe we samen uit deze negatieve spiraal zullen geraken...»

Translation of the agitation ad

Slogan: “The sun has harmed us so much.”

“Really, we never saw this coming...”

Testimonial: “Karen (42 years old) testifies:

The many trips to the beach, together in the blazing sun, a nice tan afterwards. Nice memories, but all those years in the sun also aged my skin more rapidly, something my doctor pointed out to me. This is already apparent today, whereas you should know that I am only 42 years old.

I am often very worried about what is still to come and then, I vent these fears on my loved ones. I am really scared that someday, they will reject me as a mother, wife... It is still not clear how we are going to get out of this downward spiral...”

Wij laten het niet zo ver komen...

**Wij vermijden onnodige spanningen,
én wel op elk moment tezamen!**



Ons gezamenlijk 'TO DO' LIJSTJE voor deze zomer!

- Wij vermijden de zon tussen 12.00 en 15.00!
- In de zon...
 - o Drinken wij voldoende water
 - o Dragen wij meestal ook een zonnebril en beschermende kledij
- Wij kopen elk jaar opnieuw een degelijke zonnecrème...
 - Met een aangepaste SPF factor
- En wij smeren...
 - Op voorhand
 - Regelmatig
 - Overal
 - Voldoende

Translation of the quiescence ad

Slogan: “We will not let it get so far... We avoid unnecessary tensions, at each moment of our lives together!”

Testimonial: “Our joint TO DO list for this summer:

- We will avoid the sun between 12 a.m. and 3 p.m.
- In the sun,
 - o We will drink plenty of water
 - o We will wear sunglasses and protective clothes most of the time
- Every year, we buy a new and reliable sun cream... with a suitable SPF factor
- And we rub ourselves with it
 - o In advance
 - o Frequently
 - o Everywhere
 - o Sufficiently”

Dejection-cheerfulness health campaign

De zon heeft ons niets vooruitgeholpen.

Dat hadden we nooit zien aankomen...



Karen (42 jaar) vertelt...

«Wij hebben vaak op het strand, in de volle zon gelegen, liefst samen met een hele bende. We dachten immers: hoe meer kleur, hoe meer aantrekkelijk. En we waren dus ook niet zo bezig met het beschermen van onze huid. Maar hierdoor is deze ook sneller veel minder strak en mooi geworden, zegt de huidarts. En dat is nu al overduidelijk, terwijl ik er eigenlijk nog maar 42 ben.

Ik schaam me hier echt wel voor en heb niet graag dat anderen naar me kijken. Ik voel me hierdoor ook minder waard als vrouw, als moeder, vriendin... Ons leven samen is gewoon niet meer zo gemakkelijk en onbezonnen als voorheen...»

Translation of the dejection ad

Slogan: “The sun did not help us move forward.”

“Really, we never saw this coming...”

Testimonial: “We often went to the beach together, lied there in the blazing sun, preferably with a whole group. After all, we thought: the more color, the more attractive. As such, we were not really preoccupied with protecting our skin. But as a result, the latter is also a lot less tight and beautiful, something my doctor pointed out to me. This is already apparent today, whereas you should know that I am only 42 years old.

I am really embarrassed for this and I also do not like others looking at me. Because of this, I also value myself less, as a woman, mother, wife... Our life together is not as easy and as “happy-go-lucky” as it used to be...”

Wij pakken het verstandiger aan...

**Wij maken plezier en genieten ten volle,
én wel op elk moment tezamen!**



Ons gezamenlijk ACTIELIJSTJE voor deze zomer!

- Wij genieten liefst van de zon voor 12.00 en na 15.00!
- In de zon...
 - o Drinken wij veel water
 - o Dragen we meestal ook een zonnebril en beschermende kledij
- Wij kopen elk jaar opnieuw een luxueuze zonnecrème...
 - Met een aangepaste SPF factor
- En wij smeren...
 - Op voorhand
 - Regelmatig
 - Overal
 - Voldoende

Translation of the cheerfulness ad

Slogan: “We deal with it more sensibly... We have fun and enjoy life completely, at each moment of our lives together!”

Testimonial: “Our joint ACTION list for this summer:

- We will enjoy the sun before 12 a.m. and after 3 p.m.
- In the sun,
 - o We will drink plenty of water
 - o We will wear sunglasses and protective clothes most of the time
- Every year, we buy a new and luxurious sun cream... with a suitable SPF factor
- And we rub ourselves with it
 - o In advance
 - o Frequently
 - o Everywhere
 - o Sufficiently”

CHAPTER IV: HEALTHY OR UNHEALTHY SLOGANS: THAT'S THE QUESTION...

This chapter was presented at the 2005 International Conference on Corporate and Marketing Communication (ICMC) (held in Nicosia, Cyprus) and won the best working paper award. It was also published as “Adams, L. and Geuens, M. (2007). Healthy or Unhealthy Slogans: That's the Question. *Journal of Health Communication*, 12 (2), 173-185.” and as “Adams, L. en Geuens, M. (2008). Een gezonde of ongezonde reclameslogan? That's the question. In R. Duyck en C. Van Tilborgh (Eds.), *Marketing denken en doen, Marketingjaarboek*. Kalmthout: Pimms NV.”

CHAPTER IV: HEALTHY OR UNHEALTHY SLOGANS: THAT'S THE QUESTION...

In response to a growing health consciousness in consumers, more and more food companies position their products as healthy. This trend towards an increased use of health claims for food products was already obvious from the 1980s (Ippolito and Mathios, 1991; Klassen, Wauer, and Cassel, 1990/1991). Initially, the food industry mainly targeted women, as they are assumed to be more influential concerning this topic (Beardsworth et al., 2002; Jasper and Klassen, 1990; Klassen et al., 1990/1991; Lonquist, Weiss, and Larsen, 1992). However, recent examples in the market show that this health strategy has been expanded to younger segments as well (e.g., Nutella chocolate spread, La Vache Qui Rit cheese spread, Kellogg's cereals, Kinder confectionery, etc.). But how effective is this?

Previous academic studies have mainly focused on the extent to which real-life food advertising has an influence on the food preferences and choices of youngsters. Based hereupon, the consensus seems to prevail that especially in the short term, a significant, causal effect exists (for an overview, see: Hastings et al., 2003; Livingstone, 2004; Livingstone and Helsper, 2004). We would like to contribute to this stream of research by further looking into the persuasiveness of different types of appeals used in food ads for adolescents.

Although research already exists on the impact of different types of health and nutrition claims on food packaging and in food ads on responses of adult consumers (e.g., Andrews, Netemeyer, and Burton, 1998; Andrews, Burton, and Netemeyer, 2000; Brucks, Mitchell, and Staelin, 1984; Roe, Levy, and Derby, 1999), to our knowledge, it has not been investigated yet how adolescents react to ads promoting food in a healthy or in an unhealthy/tasty manner.

The objective of the current paper is threefold. First, we would like to explore how adolescents respond to healthy versus unhealthy/tasty slogans and to healthy versus unhealthy perceived food products in general. Secondly, we would like to find out whether the nature of the product (i.e., with a healthy versus unhealthy image) serves as a moderator in the reaction to health slogans used in food ads. And finally, we are interested in the role of individual characteristics, namely gender and health concern, as potential moderators of the relationship between food ad and ad/product evaluations.

1. THEORETICAL BACKGROUND

1.1. The Effectiveness of Health Claims

There seems to exist a certain degree of *healthy* skepticism among consumers in that they tend to distrust general nutrition and health claims that are often used in food ads and on food packaging (Andrews et al., 1998; Balasubramian, and Cole, 2002). However, previous research also showed that promoting a food product as healthy and/or nutritious leads adult consumers to change their product beliefs accordingly, even to over-generalize these claims and as such, evaluate non-featured nutrient content more favorably as well. This has induced more positive attitudes and purchase intentions towards the healthy positioned product (Andrews et al., 1998, 2000; Roe et al., 1999). It has also led to over-consumption and real harmful effects on people's health status (Chandon and Wansink, 2007; Geyskens et al., 2007; Wansink and Chandon, 2006). Furthermore, looking at the practices in food advertising since the 1980s (Klassen et al., 1990/1991), we can also presume that the presence of health claims typically causes more favorable responses of adult consumers. However, it is not clear whether a healthy promotional strategy will produce the same responses in adolescents as in adults due to differences in education level, values and lifestyle.

At least, we expect that adolescents, as adults, will automatically discriminate between healthy and unhealthy food products and will associate different characteristics with these two product categories, as Young (2000) showed that even children of 6 years old mainly categorize food products on a healthy-unhealthy dimension. As a consequence, we propose that the health criterion will also be of importance in adolescents' evaluations of food ads and further affect their product evaluations and purchase intentions.

However, the direction of their responses could go either way. Because of a general health consciousness trend in society, one could assume that adolescents, again as adults, will generally respond more positively to healthy food products and ad slogans. However, knowing that today's food preferences of adolescents generally do not correspond with a healthy diet (i.e., adolescents are not fond of vegetables; since childhood, they have a natural and on-going preference for a sweet and salty taste; they have developed a distinct preference for high-fat products (Birch and Fisher, 1998; Birch, 1999; Donkin, Neale, and Tilston, 1993; Escobar, 1999; Skinner et al., 2002)), it would not be surprising that they rather prefer unhealthy food products and ad slogans which stress the sweet, fatty and/or salty taste instead of the healthiness of the product. Therefore, we put forward following research question:

RQ1: How do adolescents respond to healthy versus unhealthy/tasty slogans in food ads?

1.2. The Moderating Role of Product Type

Ad effectiveness may further depend on the combination of the advertised product and the slogan used in the ad. In line with this, schema congruity theory (Mandler, 1982) proposes that people use their existing knowledge or category schemas to evaluate related stimuli. This means that when exposed to a new stimulus, a relevant category schema will be evoked and people will further examine whether the new stimulus is congruent with their expectations based on the activated category schema. In case of congruence, rather favorable responses towards the new stimulus are generated. However, in case of incongruence, people are expected to engage in more elaborated processing to try to resolve the schema incongruity. If this turns out to be unsuccessful (i.e., the incongruity will remain in effect), this will lead to negative feelings and counterarguments in order to discount the new stimulus, which will all together result in less positive evaluations than in case of schema congruity (Mandler, 1982). Specifically, when exposed to an ad, an incongruent versus a congruent product-slogan combination may be perceived as less appropriate and more manipulative, implying a higher activation of consumers' persuasion knowledge, which could lead to a negative instead of a positive impact of the ad claim (Friestad and Wright, 1994; Levy, Derby, and Roe, 1997).

In line with the foregoing, prior studies showed that the evaluation of healthy positioned food products depends on the prior health image of the food product that serves as a carrier for the health claim. Specifically, congruent product-claim combinations outperformed incongruent ones in several studies. For example, in a study about the use of product labels, Levy et al. (1997) investigated the impact of health claims presented in the Food Drug Administration's regulations and alternative health claims suggested by policymakers. Among other things, they manipulated the presence of nutrient content and health claims which were, objectively seen, applicable to three different food products (cereals, yogurt and lasagna). Their results indicated that health claims on product labels did not have an unequivocal positive effect on respondents' product attitudes. For cereals, the presence of healthy claims created a positive effect; for yogurt, it did not cause detectable differences in attitudes; and for a product like lasagna, it even created a negative effect.

Although these were not validated, Levy et al. (1997) mentioned two possible explanations for their results. First, the effectiveness of a healthy slogan could depend on

whether it provides new information and adds extra value for the consumer. Second, its persuasiveness could depend on the perceived appropriateness of applying the healthy claim to that product. In case the health benefits of a product are already well known (e.g., yogurt), a healthy claim does not really seem to add extra value to the product and as such, will probably not improve attitudes and purchase intentions in comparison to the situation in which no health appeals are used. The ineffectiveness of a healthy claim for a product like lasagna, on the other hand, could be due to the fact that consumers held the opinion that lasagna did not deserve a healthy label and, that, as a consequence, they viewed the presence of a healthy claim as an inappropriate influence attempt. Levy et al. (1997) concluded that “[...], consumer prior beliefs about the healthful characteristics of foods may constitute effective limits on the potential utility of health claims” (p. 39).

Similarly, a study about consumer attitudes towards functional foods by Poulsen (1999) provided strong indications for the finding that the more natural a healthy enrichment for a food product is, the more this combination is preferred (e.g., a bread product enriched with fiber versus enriched with omega-3). Finally, focus groups conducted by Balasubramanian and Cole (2002) revealed that nutritional information only seems to pay off for healthy foods and that such information is likely to be ignored and even perceived to be incredible for “fun foods” satisfying hedonic needs.

In this study, we want to build on the latter findings. Although the effectiveness of a health claim seems to depend on the prior health image of the promoted food product, prior studies only compared the presence versus the absence of a *healthy* selling proposition. In the current study, we will explicitly manipulate the healthy-unhealthy dimension of food products and their labels and as such, investigate the schema congruity account more fully. Specifically, we will compare the effectiveness of different types of ad slogans (i.e., unhealthy/tasty vs. healthy) in promoting different types of food products in terms of their existing health image (i.e., unhealthy vs. healthy).

Moreover, previous studies only focused on adult consumers. Here, we want to investigate whether adolescents also react less positively to a perceived incongruent combination than to a perceived congruent combination of slogan and product, as can be expected from adults. Specifically, schema-based evaluation requires that relevant knowledge is accessible and that people also further process the ad (Mandler, 1982). Looking at the adolescence stage, youngsters are assumed to readily notice the difference between healthy and unhealthy food products and to be able to use this product knowledge in further evaluations (Young, 2000). Also, they are expected to be aware of the persuasive intent of commercials and to be rather

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skeptical about advertising (Boush, Friestad, and Rose, 1994; Robertson and Rossiter, 1974; Roedder, 1981). They also tend to use this knowledge more and more spontaneously during exposure to advertising (Roedder, 1981). This means that adolescents already have a certain degree of defense against persuasive attempts of the advertiser (Roedder, 1981). However, adolescence is a very dynamic phase in which youngsters still have to learn a lot, for example, about specific tactics used in ads (Boush et al., 1994; Linn, de Benedictus, and Delucchi, 1982). So, it is not clear whether adolescents will react as critical as adults towards different food ads. Therefore, we put forward following research question:

RQ2: Do the responses of adolescents to healthy versus unhealthy/tasty slogans in food ads depend on the health image of the food product (i.e., food products with a typically healthy versus unhealthy image)?

1.3. The Moderating Role of Individual Characteristics

Finally, the impact of two individual variables which could qualify the above propositions will be investigated, namely gender and health concern. Specifically, it is expected that the healthy-unhealthy dimension will be more salient and relevant for female adolescents versus male adolescents, and for adolescents with a high versus low health concern (Brucks et al., 1984; Shavitt et al., 1994). The reason for this is that females tend to be more health conscious than males (Beardsworth et al., 2002). Especially young females tend to feel strong social pressure to be beautiful and slim and to attach great value to their weight and health, which also predicts a high engagement in health protective behaviors, such as restrained and healthy eating (Beardsworth et al., 2002; Jasper and Klassen, 1990; Klassen et al., 1990/1991; Lonquist et al., 1992). Males tend to have a more traditional and uncritical view of eating and appear to attach more importance to good taste and pleasure derived from food than to health as a criterion in food choice (Beardsworth et al., 2002; Verbeke and Vackier, 2004). However, as modern times are rapidly changing, it is not clear whether these traditional gender roles or stereotypes still apply, and especially in adolescents today (Brooks and Bolzendahl, 2004; Davis, 2007). Therefore, we included another personal variable, namely health concern, which underlies the presumed difference between females and males.

In line with the latter, Engell et al. (1998) conducted a study on the effects of information about fat content on food preferences in adolescents. They used two sorts of cookies (standard and reduced-fat) which they both presented to two groups of pre-adolescent children, either

with or without a label containing the real fat content. Their results indicated that the preferences of youngsters were influenced by the presence of the fat-content label. The healthy cookie was more preferred when information about the fat content was revealed, while the reverse held true for the unhealthy cookie. However, information about fat content only influenced those youngsters who regarded more fat content as extremely unhealthy. That is, highly concerned respondents had a distinct preference for the unhealthy cookie when no information about fat content was given, but this preference shifted significantly in the condition in which fat content was indicated. There was no significant difference in preference between the two conditions (exposure to information about fat content or not) for respondents who were not really concerned with their health.

Similarly, we could expect that female adolescents and/or adolescents who are highly concerned about their health will respond more positively to healthy products and slogans than to unhealthy or more tasty ones, and that young males and/or adolescents who are little concerned about their health will not really discriminate between the two types of ad appeals and food products. Moreover, stronger interaction effects of product and claim type could be expected among female adolescents and/or highly health concerned adolescents, as research on schema-based evaluation also proposes that consumers only use relevant knowledge to try to make sense of a new ad message unless they are highly motivated to process the ad content into more depth (Mandler, 1982). In sum, we propose following research question:

RQ3: Do the responses of adolescents to healthy versus unhealthy/tasty slogans in food ads depend on individual characteristics (i.e., gender and level of health concern)?

2. EXPERIMENT

2.1. Objective and Design

We set up a 2 (type of product) x 2 (type of slogan) x 2 (type of individual) between – subjects design. We chose to work with two different kinds of food products that fit well in adolescents’ lives and have completely opposite health images. The positive/negative connotations of the selected food products were not manipulated, but were assumed to already exist in adolescents’ minds, as they have the tendency to automatically classify foods as good or bad for health (Rozin, 1986). This means that they simply consider some foods as healthy and nutritious, and others as fatty and innutritious (Oakes and Slotterback, 2001a, b). Based

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on previous research, we assumed that adolescents would automatically categorize cookies as an unhealthy food product and cornflakes as a rather healthy one (Croll, Neumark-Sztainer, and Story, 2001; Oakes and Slotterback, 2001a, b, c). We also made up two different types of slogans for each product, with each slogan representing a different degree of healthiness (unhealthy/tasty (*referring to a high level of sweetness*) and healthy (*referring to an ingredient with a high nutritional value*) slogan). As such, four different print advertisements were created (see Table 4.1). We used pictures of foreign food products not present on the Belgian market at the time of the experiment (see Appendix). We obtained these pictures from the internet. The ads were pretested to make sure that they were understandable, believable and likeable to the target group.

TABLE 4.1

Brand Names and Slogan Types

Unhealthy product	Cookies
Brand name	Munchies
Healthy slogan	Munchies, the healthy, fiber rich snack!
Unhealthy/tasty slogan	Munchies, the sweet snack, full of taste!

Healthy product	Cornflakes
Brand name	Flakes
Healthy slogan	Flakes, cereals rich in calcium, for an alimentary breakfast!
Unhealthy/tasty slogan	Flakes, with extra sugar, for a full breakfast!

2.2. Participants and Procedure

Four different schools participated in the study. These schools were situated in the region of the city of Ghent. They all offered exclusively non-vocational educational programs and were about the same size. In terms of gender, they were all mixed schools with a more or less equal distribution between girls and boys. In total, we obtained a sample of 310 adolescents, all aged 15, of which 60% girls.

Every school was randomly assigned to one advertisement. In each school, we questioned a number of smaller groups of students (about 20-30 students per session) right before or after one of their classes. The ads were printed in color, on posters of format A1 (841 mm by 595 mm). We attached the poster of the printed ad onto the blackboard in front of the classroom. After exposure to the ad, every student was asked to fill in the questionnaire, which was pretested on understandability.

In the introduction of the questionnaire, they did not receive any information about the purpose of the study. The students were asked to fill in the questionnaire correctly, were thanked for their cooperation and were assured that their answers would be processed in complete anonymity.

First, they were asked to fill in a manipulation check and to rate their attitudes and purchase intentions. Next, participants indicated their level of health concern and gave some socio-demographic data, such as gender and age. Each session lasted about fifteen minutes and students were supervised and helped during the whole procedure.

2.3. Measures

2.3.1. *Product Perceptions*

The health image of the product was measured by a 6-item 7-point semantic differential scale anchored by the following statements: “I think that this product (1) is healthy-unhealthy; (2) contains a lot of sugar – contains little sugar; (3) has a high nutritional value – has a low nutritional value; (4) is good for my body – is bad for my body; (5) has a positive influence on my weight – has a negative influence on my weight ; (6) is good for my teeth – is bad for my teeth”. The Cronbach’s Alpha for these six items was .85. The six items were averaged to obtain a general health perception of the product for each respondent.

With this measure, we checked the manipulation of product type. Cornflakes appeared to have a rather healthy connotation ($M = 4.22$) ($t(158) = 2.01, p = .05$) and cookies a rather unhealthy connotation ($M = 3.21$) ($t(150) = -9.79, p < .001$). These mean scores were also significantly different from each other ($t(288.12) = -7.45, p < .001$), as expected.

To make sure our manipulation of “healthiness” was not confounded with a manipulation of “tastiness”, we included one control item, also on a 7-point semantic differential scale, to assess the taste perception of the product (“I think that this product is good tasting - bad tasting”). As expected, the two products did not seem to differ in perceived tastiness ($t(308) = .42, p = .67$).

2.3.2. *Health Concern*

Health concern was measured by means of nine statements: (a) “I really do not think about whether everything I do, is healthy for me”, (b) “I do not always wonder if something is good for me”, (c) “My health is so valuable to me that I give up many things in life”, (d) “I do not feel like wondering all the time whether certain foods are or are not healthy for me”, (e) “I think that I am considerate in life towards healthy food”, (f) “I think that I often dwell on

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being healthy”, (g) “I give up a lot to eat as healthy as possible”, (h) “I think that, in general, I give up a lot for my health”, and (i) “I think it is important to know how you have to eat healthy”. These were all measured on a 5-point Likert scale (ranging from 1 (*totally disagree*) to 5 (*totally agree*)).

Principle Component Analysis with Varimax rotation indicated one factor with an Eigenvalue greater than one (4.4), explaining 49% of the total variance ($\alpha = .87$). We computed a health concern measure for each respondent by averaging the scores of the above nine items. Afterwards, the respondents were classified into a low and highly health concerned group by means of a median split. Seventeen respondents were left out of the analyses because their health concern level equaled the median of the group ($Mdn = 2.67$). The scores on the health concern measure differed significantly between the low and highly concerned group ($M_{\text{highly concerned}} = 3.35$; $M_{\text{low concerned}} = 2.21$; $t(245.93) = -25.03$; $p < .001$).

2.3.3. Attitude towards the advertisement

Attitude towards the ad (Aad) was assessed by a 5-item 5-point semantic differential scale, anchored by following pairs: (a) “not attractive-attractive”, (b) “not credible-credible”, (c) “not convincing-convincing”, (d) “not appealing-appealing”, and (e) “bad-good” ($\alpha = .88$). We averaged the scores on these five items to arrive at a global attitude towards the ad for every respondent.

2.3.4. Attitude towards the product

We measured attitude towards the product (Ap) via four items, each on a 5-point Likert scale, in which respondents had to disagree/agree with following statements: (a) “This product is not for me”, (b) “I rather like this product”, (c) “I think this product is rather useless to me”, and (d) “This product leaves a good impression on me” ($\alpha = .91$). Again, we followed the same procedure and calculated a global attitude towards the product measure by averaging the scores on all these items.

2.3.5. Purchase Intention

Purchase intention (PI) was measured by means of the following four 5-point items: (a) “If I could choose, this product would be considered”, (b) “I would like to try this product once”, (c) “I would not be inclined to buy this product”, and (d) “If I had the chance, I would buy this product” ($\alpha = .92$). The four items were averaged to obtain a general purchase intention measure.

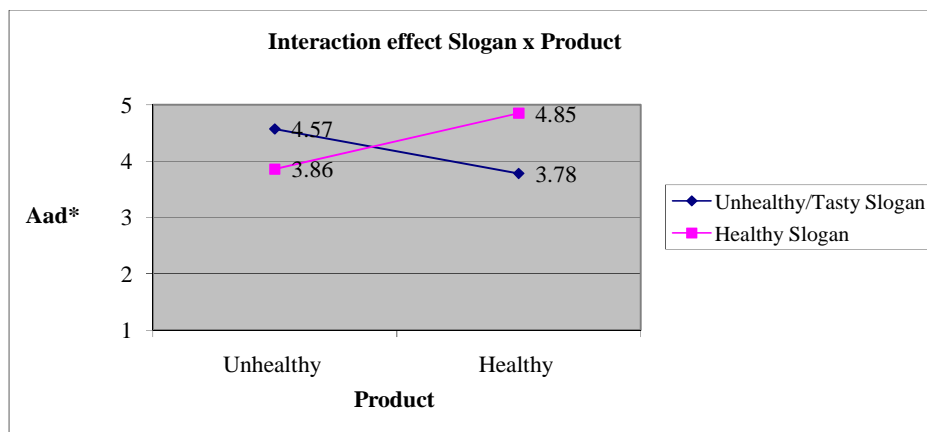
3. RESULTS

Multivariate analyses of variance were carried out, taking as dependent measures Aad, Ap and PI, and taking as independent variables type of slogan, type of product, and type of individual. Regarding the latter experimental factor, we decided to perform separate analyses with gender on the one hand, and with health concern on the other hand, because these two variables were not completely independent from each other, as could be expected based on the literature discussed above ($X^2(1) = 3.08, p = .08$).

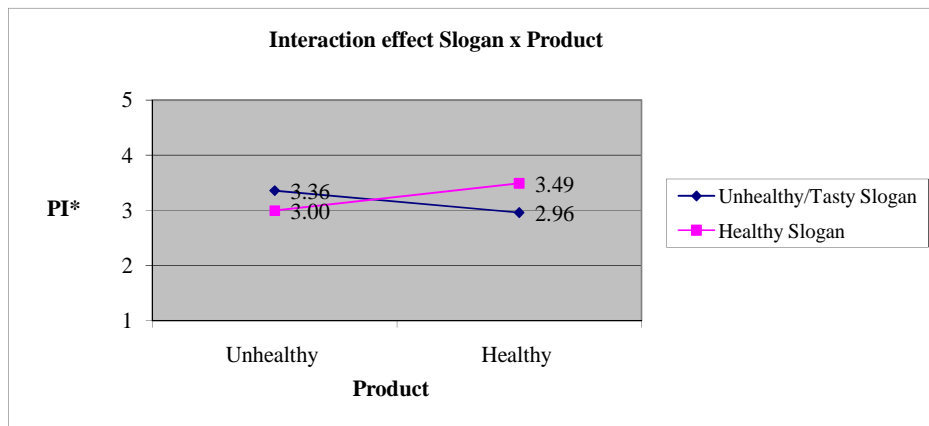
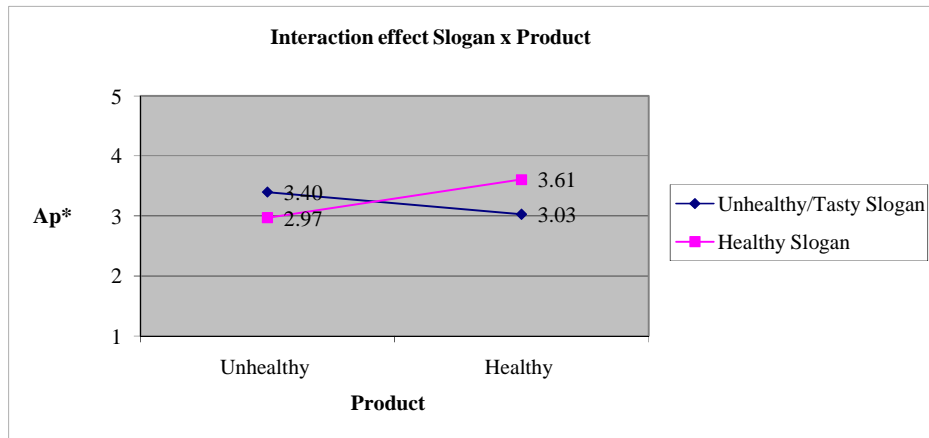
Taking into account gender, no main effects were found. However, we did find a significant interaction effect of slogan and product ($F(3, 283) = 11.39, p < .001$). Looking at Aad, Ap and PI separately, both slogan and product mattered (unless specified: $df = 1, 285$) ($F = 32.54, p < .001$; $F = 19.67, p < .001$; $F = 16.70, p < .001$). Independent samples t-tests on these three dependent variables showed that the simple effect of slogan was significant in case of a healthy product ($t(135.32) = 4.78, p < .001$; $t(139.90) = 3.90, p < .001$; $t(148) = 3.51, p < .001$) as well as in case of an unhealthy product ($t(141) = -3.41, p = .001$; $t(141) = -2.56, p = .01$; $t(141) = -2.36, p = .02$). A healthy slogan, stressing the high nutritional value of the product, only led to better ad and product responses in comparison with the unhealthy/tasty slogan, stressing the sweetness of the product, if the product was also being perceived as healthy. In the case of the unhealthy perceived product, the healthy slogan even generated lower scores than the unhealthy/tasty slogan (see Figure 4.1). No other effects were found.

FIGURE 4.1

The Interaction Effect of Type of Slogan and Product



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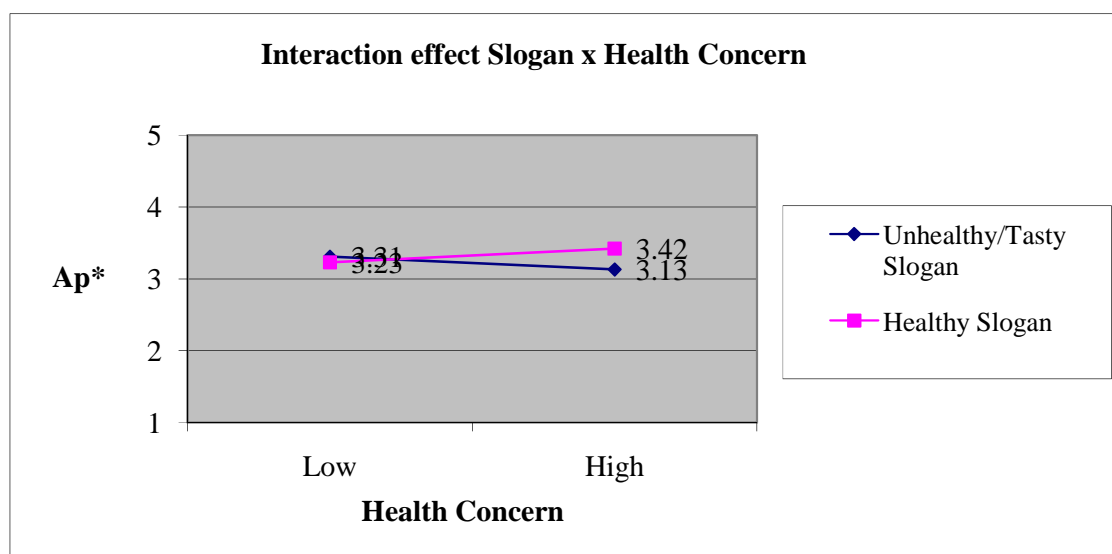
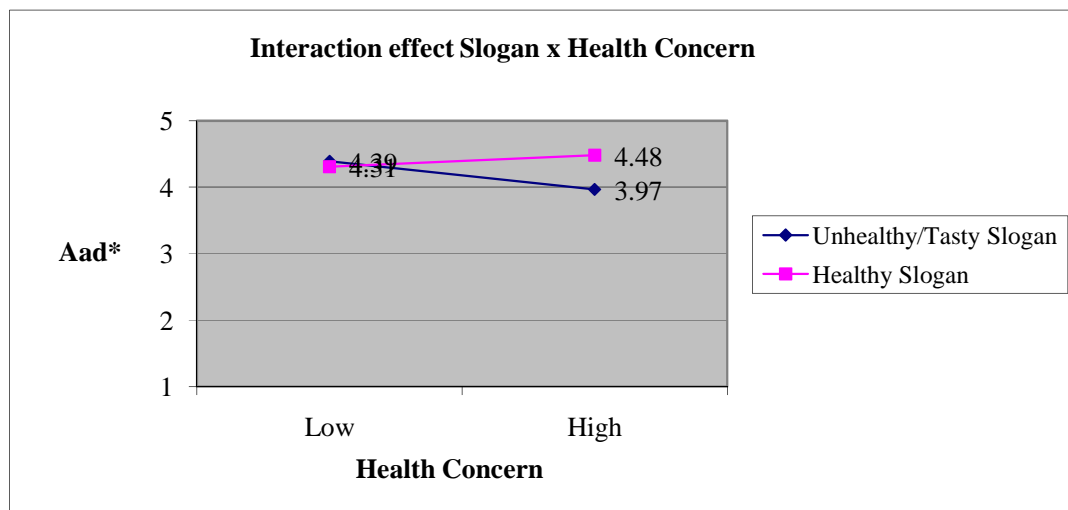


Note. Higher scores indicate more favorable scores.

Taking into account health concern, we again found no significant main effects, but did find the same interaction effect of product and slogan on all three dependent variables as explained earlier ($F(3, 283) = 12.63, p < .001$). Moreover, we discovered a second significant second order interaction effect, namely, that of slogan and health concern ($F(3,283) = 3.58, p = .01$). Univariate tests revealed a significant interaction effect between slogan and health concern on attitude towards the ad ($F = 4.96, p = .03$) and on attitude towards the product ($F = 4.07, p = .05$), but not on purchase intention ($F = .65, p = .42$) (see Figure 4.2). Further contrast analyses showed that a healthy versus an unhealthy/tasty ad appeal led to more favorable attitudes towards the ad and product only for people who were highly concerned about their health ($t(143) = 2.16, p = .03$; $t(143) = 1.93, p = .06$). Respondents who were little concerned about their health did not react significantly different in case of exposure to a healthy versus an unhealthy/tasty slogan, neither in terms of Aad nor Ap. No other significant interaction effects were found.

FIGURE 4.2

The Interaction Effect of Type of Slogan and Health Concern



Note. Higher scores indicate more favorable scores.

4. DISCUSSION

The main objective of the current study was to examine to what extent the health criterion would be important in the responses of adolescents to food advertising. We did not find a significant main effect neither of claim type nor of product type, which indicates that adolescents do not have a systematic preference for healthy over unhealthy food products and slogans. However, results did indicate a significant interaction effect between slogan and

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product type on attitudes and purchase intentions. More positive communication effects were obtained if the appeal in the food ad was congruent versus incongruent with the health image of the advertised food product. Specifically, in case an ad promoted a food product typically perceived as unhealthy, to be healthy, adolescents reacted less favorably than in case the same product was promoted with an unhealthy/tasty slogan. If a food product was already perceived as healthy, a healthy rather than an unhealthy/tasty slogan led to better responses.

So, in general, we showed that adolescents evaluate a health claim for a specific food product differently according to the product category to which it is assigned, that is, a healthy or unhealthy one. This result could be attributed to the fact that consumers typically consider food products to be either healthy or tasty, to either belong to the category of healthy food or to the category of unhealthy food, and this already from a very young age (Young, 2000). As such, our findings fully support the predictions based on schema congruity theory (Mandler, 1982). These results are also in line with previous studies, held among adult consumers, about the effectiveness of different selling propositions (i.e., whether or not health related) for different food products (Balasubramanian and Cole, 2002; Levy et al., 1997, Poulsen, 1999).

Our findings could further indicate that adolescents are already able to defend themselves against persuasive attempts of advertisers (Roedder, 1981). That is, if an advertised food product is believed to belong to the unhealthy food product category, a healthy versus an unhealthy/tasty slogan could be perceived as less appropriate, which then leads to a less positive ad evaluation, whereas the reverse could be true for food products categorized into the product category of healthy foods (Friestad and Wright, 1994). This less positive Aad could then further lead to a less positive Ap and PIs (Mitchell and Olson, 1981).

However, an alternative explanation could account for our findings as well, when considering the work of Raghunathan, Naylor and Hoyer (2006). These authors showed that positioning a food product as less healthy leads to increased taste inferences and product preference in choice tasks when a hedonic goal is more (vs. less) salient. Based hereupon, we could also propose that in our study, exposure to an unhealthy food product primed a hedonic consumption goal which resulted into a greater preference for the food product when combined with an unhealthy/tasty slogan than when combined with a healthy slogan. In accordance with Raghunathan et al. (2006), the unhealthy/tasty versus healthy slogan could have led to increased taste inferences, and was thus more congruent with the activated consumption goal. Conversely, exposure to a healthy food item could have rather activated the goal of healthiness and as a result, also led to an increased product preference in case of exposure to a healthy slogan than in case of exposure to an unhealthy/tasty slogan. So,

possibly, the unhealthy/tasty versus healthy slogan not only led to more favorable taste inferences, but to less favorable health inferences as well, and was thus less congruent with the activated consumption goal. In sum, goal congruent versus goal incongruent slogans could lead to increased product preferences and as such, also improve ad judgments.

As we measured consumers' taste and health perceptions of the product after ad exposure, we also checked this alternative account. Therefore, we ran multivariate analyses of variance, with the same independent variables as above, but now with taste and health perceptions of the product as dependent variables. As on Aad, Ap and PI, we found a significant interaction effect of product and slogan on health perceptions of the product (with gender as a moderator: $F(1, 285) = 14.33, p < .001$; with health concern as a moderator: $F(1, 285) = 14.40, p < .001$). However, no such interaction effect was found on the perceived taste of the product. Next, we also included both measures as covariates in the initial analyses on Aad, Ap and PI. Although both were significant covariates, they did not change our initial results, suggesting that neither health perceptions of the product nor the taste perception of the product are the main drivers of our initial results.

Looking at the absolute values of Aad, Ap and PI, we could additionally conclude that though adolescents responded more favorably to congruent versus incongruent combinations of slogan and product, their responses always appeared to be quite favorable. So, they do not seem to have engaged in complete discounting of the ad information and to have reacted negatively to an incongruent combination of slogan and product per se. The ad claim could have been considered as slightly less appropriate and credible for the advertised food product instead of totally inappropriate. This could also further imply that their persuasion knowledge, although present to some extent, is still less developed and chronically accessible than that of adults (Friestad and Wright, 1994).

As a consequence, these results could be relevant for policymakers. Prior research also showed that, next to young children, adolescents could still be a fragile age group. In theory, adolescents already possess sufficient cognitive skills to understand the persuasive intent of commercials. They can also use this knowledge spontaneously, which results in a certain degree of defense against these persuasive attacks. However, they might still need to learn more about certain ad tactics that could be misleading (Boush et al., 1994; Linn et al., 1982). Moreover, by developing programs to provide adolescents with more nutritional information and knowledge, policymakers can also strengthen their ability to evaluate nutrition and health claims in food advertising (Andrews et al., 1998, 2000).

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Also marketers can learn from these results. Specifically, if they want to launch certain food offers on the market, they have to be cautious and use appropriate product positioning strategies, also when targeting younger segments. Marketers better use a food product which has a health image that is already congruent versus incongruent with their desired position in the market. To further increase the credibility of their food offers, they could also use additional tactics. For example, endorsement by a diet expert or scientific institution has already proven to be a successful ad strategy in the cornflakes market (Ippolito and Mathios, 1991).

Boys and girls in our sample did not differ significantly in their reaction to healthy and unhealthy/tasty slogans and products. A concern towards living a healthy lifestyle, however, did moderate the responses to healthy food ads. People with a high concern for their diet and health responded much more positively to healthy food ads than to unhealthy/tasty ones. People with a low health concern, on the other hand, did not react differently to healthy or unhealthy/tasty ads. They are likely to be persuaded by other arguments such as the pleasure of eating (Verbeke and Vackier, 2004).

Although gender and health concern correlated as expected (Beardsworth et al., 2002), our results showed that the level of health concern rather than gender as such drives the salience and relevance of health claims in advertising. Therefore, in order to promote a healthy lifestyle, policymakers could first focus on making adolescents more health concerned, as the latter have to perceive nutritional information as important and useful in order to be motivated to consider it. In practice, however, this is not an obvious task, as health does not always appear to be an important value in the lives of adolescents (Story, Neumark-Sztainer and French, 2002). Creative strategies could resolve this issue; the key solution here could be linking health to things that do matter to them, such as good performance in school and in sports (Baltas, 2001). An important next step, and a real challenge, is to reinforce the positive attitudes towards healthy slogans to turn them into real behavior, into a more healthy diet pattern and lifestyle.

Finally, although health concern did influence the use and evaluation of health related ad cues, it did not further moderate the product-slogan congruency effect on persuasion. We expected that a higher concern for health would lead to a more elaborated processing of health related ad information which in turn would lead to a more pronounced product-slogan congruency effect. Our results suggest that adolescent consumers, irrespective of their level of health concern, always respond more favorably to a congruent versus an incongruent product-slogan combination. Therefore, other factors than health concern seem to drive the latter

result. As consumers tend to classify food products automatically into healthy versus unhealthy categories (Young, 2000), the knowledge needed to perceive and evaluate the congruence between an ad claim and product could be so easily accessible to use in relevant situations that no elaborated process is needed as such. However, this explanation needs to be validated in further research.

Several limitations in this study should be mentioned. First, within the framework of this study, we selected food products with a rather unhealthy connotation and food products with a rather healthy connotation. For reasons of practicality, we investigated only two food products, namely cookies and cornflakes. Other examples could be investigated in the future to see whether the current findings can be replicated. Second, we only investigated one age group (age of 15), which immediately raises problems in terms of the generalization of our results to all adolescents and thus, in terms of external validity. However, having no variety regarding age is beneficial for the internal validity of our results. Third, all of our respondents attended a non-vocational school. This fact might have biased our findings in several ways, because, in general, these youngsters tend to belong to the wealthier middle class and have higher educated parents. First, there is a proven correlation between the education level of parents and the ability of children to attribute a persuasive intent to commercials. Youngsters with higher educated parents seem to have more cognitive defenses against persuasive attempts of advertisers (Robertson and Rossiter, 1974). Next to that, numerous studies (e.g., Donkin et al., 1993; Lien, Jacobs, and Klepp, 2002; Shelton, 2005; World Health Organization [WHO], 2005) have shown that people of a higher social class tend to have a healthier lifestyle and eating pattern. It is therefore possible that our sample of adolescents was more critical than the average group of adolescents. Further, we only examined the short term influence of a perceived incongruent combination of health appeal and health image at a certain point in time. It would be interesting to see what happens if a healthy slogan is repeatedly used by the same product. Finally, we only measured attitudes and behavioral intentions. The real challenge lies in measuring actual behavior and finding out how exactly youngsters can be persuaded to adopt a healthy lifestyle.

5. ACKNOWLEDGMENTS

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APPENDIX – FOOD ADS



**Munchies,
het zoete tussendoortje
vol smaak !**



**CHAPTER V: REVISITING THE MATCH-UP HYPOTHESIS: THE IMPACT OF PERSUASION
KNOWLEDGE ACTIVATED BY ADVERTISING VERSUS PRODUCT PLACEMENT ON ENDORSER
EFFECTIVENESS**

This chapter will be presented at the 2010 ACR North American Conference (Jacksonville, Florida), October 7-10, 2010.

**CHAPTER V: REVISITING THE MATCH-UP HYPOTHESIS: THE IMPACT OF PERSUASION
KNOWLEDGE ACTIVATED BY ADVERTISING VERSUS PRODUCT PLACEMENT ON ENDORSER
EFFECTIVENESS**

The use of endorsers is a common persuasive tactic employed by marketers to promote products to consumers. Research on endorser effectiveness has put forward the match-up hypothesis: endorser effectiveness increases when there is a fit between the image of the endorser and the product being endorsed (Kahle and Homer, 1985). Because empirical evidence is not very convincing (Till and Busler, 2000), recent studies have focused on the moderating role of either depth of information processing or the type of information processing (i.e., skeptical processing or not). In short, these have proposed and shown that match-up effects on persuasion are most likely in case of (extreme) in-depth processing or in case of skeptical processing (Kang and Herr, 2006).

However, based on the Persuasion Knowledge Model (PKM; Friestad and Wright, 1994), we propose that these two moderators have been confounded in past research (Campbell and Kirmani, 2000; Williams, Fitzsimons, and Block, 2004). Specifically, we hypothesize that match-up effects on persuasion are actually the result of activating and using persuasion knowledge (PK; i.e., a variety of beliefs related to the “psychology of persuasion”) when processing a stimulus (i.e., skeptical processing), irrespective of the depth with which people process this stimulus as such. This implies that match-up effects on persuasion could occur in case of heuristic processing as well as in case of in-depth processing, as long as PK is highly activated and used, and the stimulus is thus skeptically processed.

Furthermore, we also look into the mechanism behind the effect of PK on match-up effects. According to the PKM, consumers possess PK, which enables them to recognize, interpret, evaluate, and remember a persuasion attempt and to cope with it (Friestad and Wright, 1994). Consequently, we expect that when PK is highly versus less activated, this makes it more likely that consumers use this PK when processing a stimulus (i.e., skeptical processing), which also makes the link between an endorser and a product in the stimulus more salient. In case PK is highly activated and used, a salient product-endorser non-fit versus fit will lead to less favorable evaluations, as a non-fit will be evaluated as less appropriate than a fit (Forehand and Grier, 2003; Wei, Fischer, and Main, 2008). In the end, this will lead to match-up effects on persuasion.

To test the effect of PK, we will examine consumer reactions to TV ads versus product placements¹, as these have been shown to differ in their ability to automatically activate PK (Balasubramanian, 1994; Bhatnagar, Aksoy, and Malkoc, 2003; Bhatnagar and Aksoy, 2004; Cowley and Barron, 2008). By using real communication formats, the current study would like to offer valid insights for communication research and marketing practitioners (Balasubramanian et al., 2006).

A secondary aim of this study is to contribute to the research investigating the effectiveness of *healthy* positioning strategies for different food products, such as through the use of healthy-looking endorsers. Previous research found that a *healthy* positioning strategy can either negatively or positively influence consumer responses, or can even depend on the product category being promoted (e.g., Adams and Geuens, 2007; Andrews, Netemeyer, and Burton, 1998; Geyskens et al., 2007; Wansink and Chandon, 2006). Clearly, more validation is needed here. These results can again be useful for marketing practitioners, but for policymakers as well as.

1. THEORETICAL BACKGROUND

One of the first studies proposing and testing the validity of the match-up hypothesis in an advertising context was set up by Kahle and Homer (1985). Based on social adaptation theory, they expected that ad effectiveness would be enhanced by a fit (vs. a non-fit) between a product's most salient benefits (i.e., enhancing physical attractiveness) and the most salient characteristics of the endorser (i.e., physically unattractive vs. attractive). An experiment showed that the endorser's physical attractiveness not only positively influenced attitudes and purchase intentions in a low involvement situation, but under high involvement as well. As such, endorsers should not be merely perceived as ad cues, but can serve as real product arguments as well. When they served as product arguments, a product-endorser fit in an ad was more persuasive than a product-endorser non-fit, supporting the match-up hypothesis.

Follow-up studies tested the robustness of these match-up effects (e.g., Kahle and Homer, 1985; Kamins, 1990). Typically, these studies compared the persuasiveness of

¹ In academic literature, different definitions of a product placement exist. These could be summarized as follows: a product placement refers to a message about a (branded) product, embedded in a mass medium, from a source who tries to influence its target audience, but in an implicit, indirect and hidden way rather than in an explicit, direct and obvious way (Balasubramanian, 1994; Balasubramanian, Karrh, and Patwardhan, 2006).

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different types of endorsers (i.e., attractive vs. unattractive, expert vs. non-expert (Ohanian, 1990)) in endorsing different products (i.e., related vs. unrelated to the salient endorser characteristic). However, mixed results on ad effectiveness were obtained (Till and Busler, 2000). Moreover, many researchers share the view that match-up effects are the result of *perceiving* a certain degree of fit between the salient image of the endorser and the product being endorsed (Till and Busler, 2000). However, mostly, perceived product-endorser fit was only assumed or inferred rather than directly manipulated or measured. A few exceptions did further look into this *perception of fit* mechanism, though they only presented suggestive evidence (Kanungo and Pang, 1973; Kamins and Gupta, 1994; Kirmani and Shiv, 1998; Till and Busler, 2000). Clearly, there is a need to further investigate *when* as well as *why* match-up effects can be expected.

In line with prior theorizing, we expect that match-up effects on persuasion only occur when consumers also perceive a product-endorser non-fit versus fit, or put differently, when the level of product-endorser fit is also salient. A next, important question, then, pertains to the particular conditions that lead to this perception of the level of product-endorser fit. A possible answer can be found in previous studies suggesting that depth of processing affects endorser effectiveness (Woodside and Davenport, 1974). For instance, Till and Busler (2000) hypothesized that in case of low involvement, endorser characteristics would merely serve as heuristic cues, whereas under high involvement, the link between source and product would become more important in the formation of attitudes and as a result, match-up effects would arise. Previous studies by Kirmani and Shiv (1998) and by Shavitt et al. (1994) already found results supporting such hypotheses. Similarly, Kang and Herr (2006) showed that in case of limited processing, positive endorser characteristics (i.e., attractiveness) enhanced product attitudes unconditionally, whereas in case of in-depth processing, positive effects only appeared when the salient endorser characteristic was also relevant to the product being promoted.

Nevertheless, this account does not seem to explain all different types of endorser effects. Therefore, Kang and Herr (2006) developed a more extended, integrative framework. According to this framework, positive endorser characteristics can also influence product attitudes in a negative way, that is, (a) when message recipients have *excessively* high resources to process or (b) when they are made aware of a potential bias due to the endorser. Two experiments confirmed their propositions. Also, in these two situations, an attractive versus average source again led to more favorable attitudes in case of an attractiveness related product. Furthermore, when no endorser bias was primed, endorser attractiveness favorably

influenced attitudes, irrespective of the product, as in case of limited processing. Taken together, Kang and Herr (2006) showed that both depth of processing and the awareness of a possible endorser bias can explain the existence of match-up effects on persuasion.

However, we propose that these two moderators have been confounded, as they could be both related to skeptical processing. For this, we built on research about the PKM studying the relative contribution of depth of processing versus PK activation and use in explaining consumer responses to persuasion attempts. Campbell and Kirmani (2000), for example, demonstrated that in case of flattery by a salesperson prior to a purchase, PK was activated to such a high extent that cognitive capacity did not have an additional impact on the evaluation of the salesperson in question. In a more ambiguous sales context, cognitive capacity did significantly determine the use of PK; that is, occupied versus attentive consumers used their PK less and, as a result, evaluated the salesperson as more sincere. Williams et al. (2004) further showed that merely asking an intention question positively affected subsequent behavior, but only because this did not activate PK at all; the manipulation of cognitive capacity as such could not explain their findings.

So, when PK is already activated to a high extent or not present at all, depth of processing does not seem to further contribute to the activation and use of PK and thus to skeptical processing. This implies that the activation and use of PK refers to the *type* of processing (i.e., whether or not information is processed with suspicion, skepticism or vigilance; Campbell and Kirmani, 2000; Kirmani and Zhu, 2007) rather than to the *depth* of processing. Put differently, the activation and use of PK leading to skeptical processing could occur in case of in-depth processing as well as in case of heuristic processing. As a result, we suggest that the above results of Kang and Herr (2006) could be reinterpreted as follows: match-up effects are the result of activating and using PK rather than of in-depth information processing as such.

- H1:** The activation of PK, rather than the mere depth of processing, causes match-up effects to appear on attitude towards the stimulus, on perceived credibility of the endorser, on purchase intentions and product considerations.

In line with Kang and Herr (2006) who showed that match-up effects on persuasion are more likely in case respondents are highly versus less aware of a potentially biasing influence of the source's presence, we further hypothesize:

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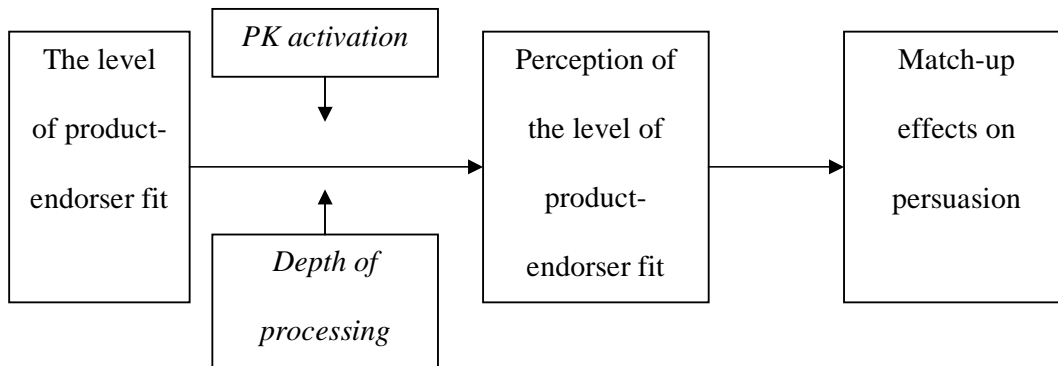
- H2:** In case of high versus less PK activation, there will be stronger match-up effects on the attitude towards the stimulus, on perceived credibility of the endorser, on purchase intentions and product considerations.

However, why would the activation of PK lead to stronger match-up effects on persuasion? The PKM proposes that when PK is activated by a stimulus, consumers will also use this PK to identify the stimulus as a persuasion attempt and to further analyze and interpret its content and intentions (Friestad and Wright, 1994). Consequently, we propose that the activation and subsequent use of PK will also make the link between a product and an endorser more salient and further motivate consumers to try to make sense of this link. Moreover, as incongruent versus congruent information is generally assumed to be highly versus little salient (Mandler, 1982), we especially expect a significant influence of the activation of PK on the perception of a product-endorser non-fit. In sum, then, the activation of PK will result in a more salient product-endorser fit level and thus in a more clearly perceived product-endorser fit versus non-fit, which is assumed to underlie the match-up hypothesis as stated earlier (Till and Busler, 2000). Therefore, we expect the following:

- H3:** In case of high versus less PK activation, the level of fit between an endorser and a product will be more salient, resulting in more extreme perceptions of level of fit, especially in case of a product-endorser non-fit (vs. a product-endorser fit).
- H4:** Perceived product-endorser fit mediates the moderating effect of PK activation on match-up effects. That is, in case of high versus less PK activation, a fit versus a non-fit between an endorser and a product will be more salient, which will lead to stronger match-up effects on the attitude towards the stimulus, on perceived credibility of the endorser, on purchase intentions and product considerations.

In sum, we test the model shown in Figure 5.1.

FIGURE 5.1

Model of Match-up Effects on Persuasion

Finally, one would expect when PK is highly activated, this will lead to unfavorable responses due to the recognition of a persuasive tactic involved (e.g., Campbell and Kirmani, 2000; Kirmani and Zhu, 2007; Williams et al., 2004). However, the activation of PK (i.e., recognizing that a stimulus is intended to persuade) has a stronger negative impact on brand evaluations when one perceives the stimulus to be less appropriate (Forehand and Grier, 2003; Wei et al., 2008). In other words, when a persuasive tactic is viewed as appropriate, the activation of PK may not negatively affect brand attitudes. In this regard, it is interesting that Kang and Herr (2006) found that a product-endorser fit always led to a highly favorable product attitude, even after an endorser bias was primed. Therefore, we also propose that when PK is highly activated, match-up effects on persuasion are caused by consumers evaluating a perceived product-endorser non-fit as less appropriate than a perceived product-endorser fit. So, we hypothesize:

- H5:** Perceived tactic appropriateness mediates match-up effects in case of high PK activation. That is, a fit versus a non-fit between an endorser and a product will be perceived as more appropriate which will lead to match-up effects on the attitude towards the stimulus, on perceived credibility of the endorser, purchase intentions and product considerations.

2. EXPERIMENT

2.1. Objective and Design

As mentioned, we test our hypotheses in the context of healthy-looking endorsers promoting different food products (i.e., healthy vs. unhealthy). Looking at current food offers

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on the market, it is clear that marketers frequently position these as beneficial for health. Prior research also showed that the mere presence of a *healthy* prime (e.g., slogan, model) can create *health halos* which can lead to more and even, over-consumption (Andrews et al., 1998; Geyskens et al., 2007; Wansink and Chandon, 2006). However, other studies found that the evaluation of a healthy positioned food depends on the existing health image of this food product. That is, congruent product-claim combinations outperform incongruent ones (Adams and Geuens, 2007). Therefore, both from a theoretical and a practical point of view, it is important that we further examine the conditions in which consumers do and do not critically evaluate the appropriateness of healthy positioning strategies in order to identify techniques to overcome their potentially harmful effects.

As marketers mainly target involved and interested consumers, we chose young females as our target group. In particular, they are assumed to attach great value to their weight and health, which predicts a strong engagement in health protective behaviors, such as restrained and healthy eating (e.g., Beardsworth et al., 2002; Lonquist, Weiss, and Larsen, 1992). They are also assumed to have substantial knowledge about health and food (e.g., Drichoutis, Lazaridis, and Nayga, 2005; Nayga, 2000). As a result, we also consider them to be a homogenous target group in terms of motivation and ability, which largely minimizes individual factors as an explanation of our findings.

Overall, our objective was to examine the impact of PK activation and of depth of processing on the perception, evaluation and persuasiveness of stimuli showing fitting versus non-fitting product-endorser combinations. Therefore, we set up a 2 (level of fit between a food product and a female endorser in terms of health image: non-fit vs. fit) x 2 (level of activation of PK through type of communication format: high in case of advertising vs. less in case of product placement) x 2 (depth of processing: high vs. less) between-subjects design. We also included a control group to test the absolute effectiveness of the stimuli used.

As indicated in the introduction, we used two different communication formats to manipulate the level of PK activation. That is, we compared TV commercials and product placements, as these have been shown to differ in their ability to automatically activate PK (Balasubramanian, 1994; Bhatnagar et al., 2003; Bhatnagar and Aksoy, 2004; Cowley and Barron, 2008). Within these two communication formats, existing stimuli showing either fitting or non-fitting product-endorser combinations were sought. This is further explained here below. To be able to investigate the impact of depth of processing, we drew on prior research that has shown that implementing a distraction task could effectively divide respondents' attention (e.g., Williams et al., 2004).

2.2. Materials

2.2.1. Selection of Stimuli

To operationalize the level of fit between product and endorser in terms of healthiness, we looked for stimuli in which a slim and healthy-looking model was used in combination with a typically healthy food product (e.g., fruit, granola...) (i.e., examples of fit) and for stimuli in which the same type of model was shown in combination with a typically unhealthy food product (e.g., desserts, pizza...) (i.e., examples of non-fit). To further enhance the external validity of our research, we chose to work with existing instead of fictitious ads and product placements. For this, we searched advertising databases, the internet and video stores. Overall, we preferred foreign footage unknown to our respondents to control for prior exposure. However, older video fragments or those only broadcasted on niche TV channels were included as well to have sufficient options to choose from after pretesting. For example, we found a TV commercial by Pizzahut showing a beautiful blond woman on a blind date, enjoying her *unhealthy* pizza dinner. Or, concerning product placements, we selected a fragment from the sitcom *Sex and the City* in which the female main character, played by Sarah Jessica Parker, enjoys her *healthy* bread lunch in the park.

To prevent confounding effects as much as possible, we selected several stimuli per experimental condition (Jackson, O' Keefe, and Jacobs, 1988; Slater, 1991). Furthermore, we set out some general standards. For example, we looked for conceptually the same message content in all stimuli. That is, a relatively young, slim and healthy-looking female should play a leading part and should be clearly paired with a typically healthy or unhealthy food product. We also wanted (a) to avoid female endorsers who are too well-known and controversial in any way (Lee and Thorson, 2008) and (b) to only use food products which are familiar to our target group and appear tasty, as it is known that the sensory aspect of food is a very dominant determinant of our food choices, and thus, also in healthy ones (e.g., sweet fruits rather than plain lettuce) (Eertmans, Baeyens, and Van den Bergh, 2001). Also, as TV commercials mostly have a visual component, we excluded audio-only product placements. However, within these bounds, as much diversity as possible was aimed for. That is, in terms of modality, we allowed visual-only as well as audiovisual ads and product placements.

Differences between advertising and product placement unrelated to the automatic activation of PK could complicate a direct comparison between the two communication formats (Balasubramanian et al., 2006). So, characteristics unrelated to the prominence of the persuasive intent were controlled for as much as possible (for an extensive overview, see

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Balasubramanian et al., 2006). For example, product placements are assumed to be overall highly transformational and little informational, whereas ads can range from highly informational to highly transformational. We excluded strict informational ads from our selection and only focused on transformational stimuli which projected a certain mood or atmosphere. Similarly, as commercial ads are mostly positively framed, only product placements in a positive context were retained.

Finally, we also paid special attention to the length of the commercial message. Although this typically differs between TV commercials and product placements (i.e., 30-second commercials vs. 5-second product placements (La Ferle and Edwards, 2006)), we decided to leave this aspect as it is, as (a) it is technically difficult to control for, and (b) as it would also result in unrealistic stimuli. Prolonging a product placement (i.e., making it more prominent or explicit) or shortening an ad (i.e., making it more hidden and less explicit) would probably also undo the difference in automatic activation of PK in which we are interested in this paper (Cowley and Barron, 2008). Nevertheless, it remains a potential confounding factor for which we did not control in the current study.

2.2.2. Pretest of Stimuli

The above search led to 27 ads and product placements. These were pretested in an online survey to come to a balanced sample of ads and product placements containing either a product-endorser fit or a product-endorser non-fit. In total, seven pretest versions were set up; one pretest contained six different, specific product-endorser combinations.

The first objective of this pretest was to test our general assumption that the match-up factor “healthiness” is highly, spontaneously accessible to our target audience, given their presumed high involvement in and knowledge of the health domain (Beardsworth et al., 2002; Drichoutis et al., 2005; Lonnquist et al., 1992; Nayga, 2000). Therefore, each pretest version started by showing one specific product-endorser combination. In particular, respondents saw a picture of a food product next to a picture of a young female model, which also appeared together in one of the selected stimuli. We asked respondents in an open question to write down the thoughts and feelings that occurred to them seeing both pictures together. As there were seven pretest versions, seven different, specific product-endorser combinations of our initial selection were evaluated as such.

We coded these responses. That is, each time a respondent referred to the good health, beauty or slim figure of the female endorser or to the calories or healthiness of the food product, this was coded as an *indirect reference to product-endorser health fit*, meaning that,

at least, the match-up factor “healthiness” occurred to the target group spontaneously. When a respondent explicitly pointed to the level of fit between the endorser and the product in terms of healthiness, this was coded as a *direct reference to product-endorser health fit*. Other answers were coded as *irrelevant*. In total, 29.49% of the respondents made a direct reference to the product-endorser health fit, whereas 41.03% made an indirect reference to the product-endorser health fit. So, as expected, healthiness as a match-up factor was highly, spontaneously accessible to about 70% of our sample, that is, the majority, $X^2(1) = 13.13, p < .01$.

We further examined whether the type of product-endorser combination to which the respondent was exposed (i.e., non-fit vs. fit) influenced the accessibility of the match-up factor “healthiness”. As expected, this did not seem to influence the relative number of both types of fit references taken together (i.e., indirect and direct references to fit) ($X^2(1) = .24, p = .63$). However, it did affect the relative number of indirect versus direct references to fit. That is, relatively more respondents referred to fit in direct terms when exposed to a non-fitting (45.45%) than to a fitting product-endorser combination (8.82%) ($X^2(1) = 12.38, p < .01$), and to fit in indirect terms when exposed to a fitting (58.82%) than to a non-fitting product-endorser combination (27.27%) ($X^2(1) = 7.89, p < .05$). This is in line with the general finding that congruent information, such as a product-endorser fit, is generally less salient than incongruent information, such as a product-endorser non-fit (Mandler, 1982).

Secondly, with this pretest, we also wanted to directly assess the level of product-endorser fit (i.e., in terms of healthiness) in all 27 stimuli. Therefore, each respondent had to evaluate another five product-endorser combinations from our initial selection. As such, each stimulus was assessed by at least 10 female respondents between 18 and 26 years old.

Based on Lee and Thorson (2008), we assessed the level of product-endorser fit, irrespective of the communication context. In particular, we merely showed snapshots of the food products and endorsers and thus did not present both of them together in the accompanying ad or product placement. We did so to be able to check the actual, independent levels of the variable “level of product-endorser fit” and not the perceived ones, as the latter is expected to be a mediator of the match-up effects on persuasion.

For each specific product-endorser combination, we first showed a snapshot of the female endorser and asked respondents to evaluate this person on four 7-point Likert scales (ranging from 1 (*totally disagree*) to 7 (*totally agree*)) in terms of health self-consciousness (e.g., “The woman in the picture is someone who is often preoccupied with her health”) (Gould, 1988) ($\alpha = .96$). We also checked physical attractiveness with three 7-point semantic

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differential scales anchored by following pairs: (a) unattractive-attractive, (b) not classy-classy, and (c) ugly-pretty ($\alpha = .84$).

Second, we showed a snapshot of the promoted food product and measured its salience in terms of the match-up factor, that is, healthiness, ($\alpha = .98$) in a similar way as in case of the endorser (e.g., “The food product in the picture is a typical product for a person who is often preoccupied with her health.”). Additionally, we asked respondents to indicate how often they typically consume this type of food, and this on a 5-point scale (ranging from 1 (*never*) to 5 (*very often*)).

Next, we asked respondents to give their opinion on the explicit combination of product and endorser on four 7-point semantic differential scales, accompanied by the statement “Taking into account the image of the woman in the picture and that of the food product shown, these are...” and anchored by following adjective pairs: (a) consistent-inconsistent, (b) similar-different, (c) representative-unrepresentative, and (d) typical-atypical (Ahluwalia and Gurhan-Canli, 2000) ($\alpha = .95$). Here below, we refer to the latter as *the direct fit measure* (remark: items were recoded so that higher values represent higher levels of fit).

We examined for each product-endorser combination whether its level of fit deviated from the neutral mid-point of the scale (i.e., score of 4). We selected the four best fitting and non-fitting ads and product placements (see Table 5.1).

TABLE 5.1

Results on the Direct Fit Measure of Presumed Fitting and Non-Fitting Product-Endorser Combinations

Description stimulus	Format	Presumed fit or non-fit	<i>M</i>	<i>t</i>	<i>df</i>	<i>p</i>
Taco Bell ^a	Ad	Non-fit	1.40	-15.92	9	< .001
Soap the OC and cup cakes ^a	Product placement	Non-fit	1.85	-13.17	9	< .001
Movie No Reservations and tiramisù ^a	Product placement	Non-fit	1.85	-6.04	9	< .001
Soap Beverly Hills 90210 and cake ^a	Product placement	Non-fit	2.04	-6.48	13	< .001

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Movie Made of Honour and cake ^a	Product placement	Non-fit	2.85	-3.51	11	.01
Pizzahut ^a	Ad	Non-fit	2.18	-5.81	9	< .001
Fud Snax pizza ^a	Ad	Non-fit	2.50	-3.93	11	.002
Soap Beverly Hills 90210 and fries	Product placement	Non-fit	2.70	-4.63	9	.001
Soap the OC and ice cream	Product placement	Non-fit	2.83	-2.93	11	.01
McDonald's ^a	Ad	Non-fit	3.00	-2.35	9	.04
Magnum	Ad	Non-fit	3.85	-.32	9	.75
Movie Summer Catch and ice cream	Product placement	Non-fit	3.78	-.49	9	.64
Galaxy chocolate	Ad	Non-fit	3.53	-1.33	9	.22
Movie City of Angels and peers ^a	Product placement	Fit	5.92	6.31	11	< .001
White bread ^a	Ad	Fit	5.52	4.74	9	.001
Soap Sex and the City and cherries ^a	Product placement	Fit	5.32	3.18	13	.01
Danone yoghurt ad ^a	Ad	Fit	5.25	5.93	25	.001
Alpen granola ^a	Ad	Fit	5.15	2.78	9	.02
Movie Sex and the City and bread ^a	Product placement	Fit	5.15	3.07	9	.01
Special K - Kellogg's (beach) ^a	Ad	Fit	5.12	2.72	11	.02

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Movie City of Angels and fruit salad ^a	Product placement	Fit	4.90	2.36	9	.04
Special K - Kellogg's (Lisa Snowdon)	Ad	Fit	4.87	2.14	9	.06
Movie Prime and soup	Product placement	Fit	4.85	1.95	11	.08
Movie Spanglish and asparagus	Product placement	Fit	4.70	2.29	23	.03
Movie Prime and sushi	Product placement	Fit	4.50	.74	23	.47
Itambé Fit light yoghurt	Ad	Fit	3.82	-.34	9	.74
Soap Gilmore Girls and vegetables	Product placement	Fit	4.52	1.25	9	.24

^a The selected video fragments

Considering these 16 product-endorser combinations, we compared their scores on the direct fit measure. Specifically, combinations within a pretest version were contrasted to each other via paired sample t-tests, whereas combinations between pretest versions were compared through independent sample t-tests. As this methodology gives rise to a huge amount of statistical information, we only report the main finding here (more statistics are available upon request to the first author). That is, each presumed fitting combination was significantly more fitting than each presumed non-fitting combination.

Next, we also examined the scores on the items specifically related to the endorsers of our selection. As expected, all endorsers scored significantly high in terms of health consciousness and physical attractiveness, and these scores were not influenced by the type of stimulus from which the endorsers were selected (i.e., ad vs. product placement) (health consciousness: $M = 5.17$ vs. $M = 4.97$, $t(158.48) = 1.19$, $p = .23$; physical attractiveness: $M = 5.43$, $M = 5.50$, $t(190) = -.43$, $p = .67$).

Finally, looking at the selected products, we found that presumed unhealthy foods were considered to be unhealthy ($M = 2.45$), whereas presumed healthy foods were considered to be healthy ($M = 5.69$; $t(190) = -24.16$, $p < .001$). Also, all food products were consumed by our respondents once in a while. The exceptions were fruit and bread which were consumed more frequently, whereas wraps and desserts appeared less often on the menu of our

respondents. Therefore, in the experiment, we will check whether this variable will have an influence on our results.

We subtitled all of the selected video fragments using Windows Movie Maker, and made sure that (a) all TV commercials lasted about 30 seconds, (b) all product placements lasted about 5 seconds and (c) all product placements appeared in the middle of an excerpt of five minutes of their accompanying movie or soap.

2.2.3. Pretest of Attention Manipulation

To manipulate depth of processing, we asked one group of respondents ($n = 16$) to count the number of times they blinked when watching a stimulus and another group we asked nothing further when watching the same stimulus ($n = 25$) (e.g., Williams et al., 2004). We pretested this task on a two minute news broadcast in an online survey with young females ($M_{age} = 21.49$, $SD = 1.47$).

Independent-samples t-tests on 7-point scales showed that distracted versus non-distracted respondents could concentrate less easily ($M_{distracted} = 4.00$; $M_{non-distracted} = 5.24$; $t(39) = 2.51$, $p < .05$) and paid less attention to the stimulus ($M_{distracted} = 3.92$; $M_{non-distracted} = 4.62$; $t(39) = 2.34$, $p < .05$) ($\alpha = .84$; Laczniaik, Muehling, and Grossbart, 1989). A recall test with 11 open-ended questions also showed that non-distracted people could recall more ($M = 5.04$) than distracted people ($M = 3.81$) ($t(39) = 2.25$, $p < .05$). In sum, this task proved to be successful in distracting respondents and was therefore also used in the main experiment.

2.3. Participants and Procedure

We collected data from 252 female college students between 18 and 26 years old ($M_{age} = 20.60$, $SD = 1.82$), and also included a control group of 102 females of the same age category ($M_{age} = 20.87$, $SD = 1.90$). All respondents were questioned in a controlled research setting, that is, in a PC room of our university in the presence of two experimenters.

The experimental study was designed according to the “unrelated studies” paradigm (e.g., Cowley and Barron, 2008; Law and Braun, 2000). In particular, the 252 respondents were invited to participate in two seemingly independent studies. The first study was titled “Evaluating a video fragment”. Participants viewed a randomly selected video fragment and indicated their attitude towards the stimulus, perceived credibility of the female head character, prior knowledge of the endorser and stimulus, and attention paid to the stimulus. Next, they took part in the supposedly second study about “The typical preferences of young, modern women” in which participants answered questions pertaining to their preferences for a

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variety of products and in different consumption situations. Sufficient filler questions and response options were included to disguise the true research objective. Finally, participants responded to some additional questions regarding the video they had seen in the “first” study, concerning the perception and appropriateness of the product-endorser fit, manipulation checks and some potential covariates. In the final screen, respondents were thanked for their participation.

The 102 respondents who were assigned to the control group only received the “second study” and the covariate measures.

2.4. Measures

2.4.1. Effectiveness Measures

Attitude towards the stimulus was assessed by three 7-point semantic differential scales: (a) “I do not like/I like this video fragment.”, (b) “I think this video fragment is bad/good.”, and (c) “The video fragment is unpleasant/pleasant.” ($\alpha = .95$). We also measured the credibility of the endorser by two 7-point semantic differential scales: (a) “The female head character in the video fragment is not credible/credible.” and (b) “The female head character in the video fragment is incompetent/competent.” ($r = .62, p < .01$) (Kang and Herr, 2006).

Based on Law and Braun (2000), a *target consumption situation* was set up to assess respondents’ food considerations. This target situation was the second out of a series of four hypothetical consumption situations which were presented to the respondents. Respondents’ food consideration set was assessed by asking them to imagine themselves in a situation in which they did not have a proper lunch, dinner was still far away, and they were hungry. Then, they were asked to think about all the foods they would consider eating in this particular situation. They could choose from a list of different options (half of them pertained to food used in the product placements and ads, and half of them were filler food items). If the product from the video was chosen, this was coded as one; otherwise, we coded this variable as zero.

Finally, we also measured explicit purchase intention towards the product shown in the stimulus on a 7-point Likert scale ((ranging from 1 (*very unlikely*) to 7 (*very likely*)). Again, we presented respondents a long list of products/activities, accompanied by the question “How likely is it that, next week, you will buy the products or undertake the activities listed here below?”. In this list, all the target products shown in the video fragments were included next to other, filler options (about 25% target products vs. 75% filler products).

2.4.2. Perception and Appropriateness of Product-Endorser Fit

As in the pretest of materials, respondents had to indicate to what extent they considered the combination of the female main character and the food product to be fitting (*perceived fit*) on four 7-point semantic differential scales: “The image of the female head character in the video and that of the food she chose are...” (a) inconsistent-consistent, (b) different-similar, (c) unrepresentative-representative, and (d) atypical-typical (Ahluwalia and Gurhan-Canli, 2000) ($\alpha = .95$). Furthermore, two 7-point disagree-agree scales measured to what extent participants considered the endorsement to be appropriate: (a) “It seems acceptable to me if the female main character was paid to eat the particular food product shown in the video.” and (b) “It seems fair to me if the female main character was paid to eat the particular food product shown in the video.” ($r = .68$) (Wei et al., 2008).

3. RESULTS

3.1. Manipulation Checks

First, we checked whether using different communication formats effectively manipulated the activation of PK. Based on Campbell and Kirmani (2000), we measured the activation of PK on a 7-point disagree-agree scale accompanied by the statement “The food product was shown together with the female main character because an interested party had paid for this.”. Results of an independent-samples t-test indicated a significant effect of type of communication format ($t(230.95) = 3.41, p < .001$). As expected, advertising automatically evoked high levels of PK ($M = 5.16$), whereas product placement did significantly less ($M = 4.39$). Second, the effectiveness of the distraction task in the main experiment was examined. Again, respondents who were given the distraction task felt they could concentrate significantly less ($M = 4.20$) than respondents in the neutral condition ($M = 5.07$), ($t(242.79) = 3.85, p < .001$).

3.2. Relative Effectiveness

To check our hypotheses, 2 (level of product-endorser fit: non-fit vs. fit) x 2 (level of activation of PK through type of communication format: high in case of advertising vs. less in case of product placement) x 2 (depth of processing: high vs. less) mixed ANOVAs were run, unless specified otherwise. So, we also incorporated a random effect to account for the potential biasing influence of having drawn a specific sample of stimuli, as we would like to be able to generalize our findings to more than just this sample (Jackson et al., 1988; Slater,

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1991). Also, our stimuli were chosen based on type of communication format and level of product-endorser fit, and therefore, the random effect of the specific stimulus was nested in this super-ordinate 2 x 2 level. Below, we will only discuss the fixed effects of the estimated mixed models, as these are the main focus of our research.

The ANOVA on *attitude towards the stimulus* yielded a main effect of type of communication format ($F(1, 12.16) = 7.71, p = .02$) and of level of product-endorser fit ($F(1, 12.16) = 14.17, p < .01$). The effect of depth of processing was not significant ($F(1, 232.75) = 1, p = .32$). An ad led to a less favorable attitude than a product placement ($M = 4.59$ vs. $M = 5.32$). Also, a product-endorser non-fit ($M = 4.46$) evoked a less favorable attitude than product-endorser fit ($M = 5.44$). As hypothesized, we also obtained a significant interaction between type of communication format and level of fit ($F(1, 12.16) = 4.87, p = .05$). In case of exposure to an ad, respondents clearly judged a non-fit (vs. a fit) between the endorser and the product as less favorable ($M_{non-fit} = 3.81$ vs. $M_{fit} = 5.37$; $F(1, 5.88) = 19.52, p < .01$). Looking at respondents who were exposed to a product placement, we found no significant effect ($F(1, 6.22) = 1.12, p = .33$). Here, non-fitting product-endorser combinations were judged as favorable as fitting ones ($M_{non-fit} = 5.11$ vs. $M_{fit} = 5.52$). This supports hypothesis 2, proposing that high versus less PK activation leads to stronger match-up effects on persuasion, as well as hypothesis 1, stating that the activation of PK rather than the mere depth of processing causes match-up effects on persuasion, as no interactions with depth of processing were found (p 's $> .32$).

Results for *perceived credibility of the endorser* indicated a similar pattern. The effect of depth of processing was not significant ($F(1, 232.35) = .51, p = .48$). Significant main effects of type of communication format ($F(1, 12.08) = 7.14, p = .02$) and of level of product-endorser fit ($F(1, 12.08) = 5.09, p = .04$) were qualified by a significant interaction ($F(1, 12.08) = 6.24, p = .03$). As above, being exposed to a product placement ($M = 5.23$) or to a product-endorser fit ($M = 5.16$) led to perceptions of a more credible endorser than being exposed to an ad ($M = 4.33$) or to a product-endorser non-fit ($M = 4.40$). Moreover, when respondents saw an ad containing a product-endorser non-fit, they perceived the endorser as less credible ($M = 3.54$), whereas a fit evoked the opposite response ($M = 5.13$; $F(1, 6.04) = 13.14, p = .01$). This fit effect was, however, not found when people were exposed to a product placement ($F(1, 6.03) = .03, p = .88$). In fact, the endorsers in the product placements were always perceived as credible ($M_{Non-fit} = 5.27$ vs. $M_{Fit} = 5.19$). Again, no other effects were found; depth of processing did not contribute to explain match-up effects of endorsers (p 's $> .09$). These results again support hypothesis 1 and 2.

An analysis of respondents' *purchase intentions* towards the target product only indicated a significant main effect of level of fit ($F_{Level_of_fit} (1, 11.84) = 6.41, p = .03$; $F_{Type_of_communication_format} (1, 11.84) = 4.02, p = .07$; $F_{Depth_of_processing} (1, 232.12) = .07, p = .79$). Fitting product-endorser combinations in the stimuli led to more favorable intentions towards the accompanying product ($M = 5.38$) than non-fitting combinations ($M = 4.13$). No interactions were found ($p's > .74$).

Finally, we ran a logistic regression analysis on the dependent variable indicating whether or not the target product was included in respondents' consideration set ($X^2(7) = 43.92, p < .01$). The only significant result pertained to the type of communication format ($\beta = -2.22, Wald = 13.94, p < .01$) (all other $p's > .26$). Respondents considered the target product more often (64.34%) after being exposed to a product placement than after being shown an ad (26.83%). In sum, hypothesis 1 and 2 were confirmed for attitudes only.

The above analyses were also performed with following covariates: age, educational degree, time of day (morning vs. afternoon), level of hunger, dieting habits, type of incentive to participate (money vs. course credits), prior knowledge of the video, prior knowledge of the endorser, and prior product experience. Although these covariates were sometimes significant, they did not change the results we reported. Therefore, these will not be discussed any further in the results section.

3.3. Mediation Analyses

To get a better understanding of the mechanism underlying the above effects, we ran mediation analyses with the hypothesized mediator, perceived fit (hypothesis 4). One step in this procedure, that is, showing that the independent variables affect the dependent variables, was already completed above. Here, we conducted two additional analyses on the hypothesized mediator, that is, (a) to prove that the independent variables affect the mediator in the same way as the dependent variables and (b) to prove that the mediator affects the dependent variables even when controlling for the effects of the independent variables² (Baron and Kenny, 1986).

So, here, we test whether perceived product-endorser fit mediates the above interactions on attitude towards the stimulus and on perceived credibility of the endorser. A significant

² We also performed these three steps through regression analyses and came to the same conclusions as described below. Here, we only report the ANOVAs to remain consistent throughout the paper and account for the random effect.

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main effect of type of communication format showed that there was more perceived fit in case of a product placement ($M = 4.40$) than in case of an ad ($M = 3.61$) ($F(1, 11.95) = 28.66, p < .001$). Also, as expected, a significant main effect of level of fit indicated that presumed non-fitting product-endorser combinations were perceived to be non-fitting ($M = 3.19$) and presumed fitting combinations were perceived to fit ($M = 4.82$) ($F(1, 11.95) = 121.44, p < .001$). More importantly, there was a significant interaction effect between level of fit and type of communication format on perceived fit ($F(1, 11.95) = 21.65, p < .01$). That is, when respondents were exposed to advertising, the difference in perceived fit was very pronounced ($M_{fit} = 4.77$ vs. $M_{non-fit} = 2.45$) ($F(1, 6.06) = 95.83, p < .001$), whereas this was less the case when respondents saw a product placement³ ($M_{fit} = 4.87$ vs. $M_{non-fit} = 3.93$) ($F(1, 125) = 26.20, p < .001$). This pattern of results was similar to that on attitude towards the stimulus and on perceived credibility of the endorser. No other effects were significant (all other p 's $> .07$).

The latter interaction effect between level of fit and type of communication format on perceived fit can be interpreted in another way. That is, when selecting people who were exposed to a product-endorser non-fit, results showed that the type of communication format had a significant effect on the level of perceived fit ($F(1, 5.86) = 44.33, p < .001$). As expected, the score on perceived fit went from neutral in case of product placement to low in case of advertising. However, when respondents saw a product-endorser fit, the type of communication format was of no influence ($F(1, 118) = .26, p = .61$). The product-endorser fits were always perceived to fit. This supports hypothesis 3, proposing that in case of high versus less PK activation, the level of fit between an endorser and a product will be more salient, resulting in more extreme perceptions of level of fit, and especially in case of a product-endorser non-fit.

Next, a $2 \times 2 \times 2$ mixed ANCOVA on attitude towards the stimulus suggested that perceived fit mediated the experimental effects⁴. First, the effect of perceived fit was significant ($F(1, 240.08) = 5.40, p = .02$). Second, although the initial main effects did not completely disappear ($F_{CC}(1, 13.54) = 4.93, p = .04, F_{Fit}(1, 18.73) = 5.82, p = .03$), the interaction on attitude towards the stimulus was not significant anymore ($F_{Interaction}(1, 13.18)$

³ In this analysis, the random effect could not be estimated. So, the statistics reported here are the results of a traditional fixed-effects model. Overall, the latter implies that effects reach significance faster.

⁴ In this particular research context, a Sobel test could not be calculated. Therefore, we merely relied on the rules for mediation as outlined in Baron and Kenny (1986).

= 3.01, $p = .11$). In sum, perceived fit seemed to mediate the main effects partially and the interaction totally, which is in line with hypothesis 4.

A similar analysis on perceived credibility of the endorser also pointed to weaker and even to insignificant experimental effects ($F_{CC}(1, 12.71) = 5.43, p = .04, F_{Fit}(1, 14.84) = 2.23, p = .16, F_{Interaction}(1, 12.56) = 4.86, p = .05$). Moreover, the effect of perceived fit turned out to be significant ($F(1, 235.63) = 4.61, p = .03$). Again, these results suggest that perceived fit fully mediated the main effect of the level of product-endorser fit and partially mediated the main effect of type of communication format and the interaction on endorser credibility; findings that are consistent with hypothesis 4.

Hypothesis 5 proposes that in case of high PK activation, when the level of fit between an endorser and a product is highly salient, a fit versus non-fit will be perceived as more appropriate which will lead to match-up effects on persuasion. So, we only considered those respondents who were exposed to an ad (i.e., in case of high PK activation). Specifically, we wanted to test whether specific perceptions of persuasion tactic appropriateness could further explain match-up effects on measures of persuasion. Results of a one-way (level of product-endorser fit: non-fit vs. fit) mixed ANOVA on perceived tactic appropriateness indicated a significant main effect of level of fit ($F(1, 119) = 11.60, p < .01$)³. In particular, non-fit was perceived to be less appropriate ($M = 4.69$) than fit ($M = 5.41$).

The same mixed ANOVA on attitude towards the stimulus also showed a significant main effect of level of product-endorser fit ($F(1, 5.90) = 18.81, p < .01$); a non-fit was evaluated less favorably ($M = 3.81$) than fit ($M = 5.36$). A mixed ANCOVA on attitude towards the stimulus further indicated that perceived appropriateness of the persuasive tactic was a significant covariate ($F(1, 114.33) = 8.95, p < .01$). The initial main effect of level of product-endorser fit on attitude towards the stimulus, however, did not become insignificant ($F(1, 6.27) = 13.92, p < .01$), which suggests partial rather than full mediation⁴.

Considering the perceived credibility of the endorser, we again found a significant main effect of product-endorser fit ($F(1, 6.04) = 13.24, p = .01$); respondents who saw a non-fitting combination evaluated the endorser less favorably ($M = 3.52$) than respondents who were exposed to a fitting combination ($M = 5.13$). By introducing perceived tactic appropriateness as a covariate, we also found a significant main effect ($F(1, 113.18) = 13.44, p < .001$). The initial effect of level of product-endorser fit, however, remained significant ($F(1, 6.19) = 7.94, p = .03$)⁴. In sum, hypothesis 5 was only partially supported.

3.4. Absolute Effectiveness

In order to assess absolute effectiveness next to relative effectiveness, we compared the purchase intentions and type of consideration sets of the four different conditions (i.e., non-fit/advertising, non-fit/ product placement, fit/advertising and fit/ product placement) with those of a control group. We collapsed across depth of processing as this factor did not affect the obtained findings.

First, we compared explicit intentions towards the target product of each type of stimulus to the control group via separate independent-samples t-tests (see Table 5.2). A significant difference was found between respondents who saw a non-fitting ad and those in the control group ($t(156) = -2.89, p = .004$) in that the first group was significantly less willing to purchase the target product in the near future than the latter. Moreover, a fitting product placement led to significantly more favorable intentions towards the target product than seeing no stimulus at all ($t(150.80) = 4.15, p < .001$). Other contrasts were not significant (p 's $> .68$).

Looking at consideration sets (see Table 5.2), we discovered that the non-fitting ads ($X^2(1) = 8.92, p = .003$) as well as the fitting ads ($X^2(1) = 4.55, p = .03$) differed significantly from the control condition. That is, respondents exposed to a non-fit ad and those exposed to a fit ad considered the target product significantly less than respondents in the control condition. The control group did not differ from the condition in which a non-fitting product placement was shown ($X^2(1) = 2.01, p = .16$). However, respondents who saw a fitting product placement included the target product more often in their consideration set than respondents who were not exposed to a stimulus ($X^2(1) = 8.95, p = .003$).

These results clearly point at a contrast response when being exposed to advertising, and especially, to an ad in which a non-fitting product-endorser combination is shown. Here, people tend to exclude the target product from their consideration set and to be less willing to purchase the product in the near future. The reverse is true when a product placement is shown with a fitting product-endorser combination; here, a clear beneficial effect on consumers' product consideration sets and explicit intentions could be anticipated.

TABLE 5.2

Respondents' Product Preferences in Four Experimental Conditions and the Control Group

	Control	Ad		Product Placement	
		Product-endorser non-fit	Product-endorser fit	Product-endorser non-fit	Product-endorser fit
Explicit Intentions Towards the Target Product	4.68	3.73	4.82	4.55	5.97
Relative Number of People Considering the Target Product	47.06%	23.81%	30%	58.21%	70.97%

4. DISCUSSION

The general objective of the current study was to clarify when and why a fit versus a non-fit between an endorser and a product being endorsed leads to more persuasion. Specifically, we wanted to determine to what extent the activation of PK (i.e., operationalized through the type of communication format: high in case of advertising vs. less in case of product placement) versus depth of processing can explain these match-up effects. As hypothesized, the experiment showed that irrespective of the depth of processing, the activation of PK, and thus the level of skeptical processing, drives the perception of the level of fit between a product and an endorser and as a result, determines the persuasiveness of specific product-endorser combinations used in marketing campaigns.

Specifically, in an advertising context, typically characterized by high PK activation, both a product-endorser fit and a non-fit were highly salient, that is, they were clearly perceived as intended. This led to a significantly more favorable attitude towards the fitting versus the non-fitting stimulus and to a significantly more favorable attitude towards the endorser used in the fitting versus the non-fitting stimulus (i.e., in terms of perceived credibility). Moreover, the fitting product-endorser combinations were perceived to be more appropriate than the non-fitting ones, also partially explaining the match-up effects on the attitude measures.

In a product placement context, in which the persuasive intent is typically less obvious, the difference between a product-endorser fit versus non-fit was also less salient. Again, the product-endorser fit was perceived as intended, but this time, the product-endorser non-fit was

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perceived as a more neutral combination. As a result, no match-up effects on attitudes were obtained.

In line with these results, comparisons with a control group showed that fitting product-endorser combinations only led to positive results in terms of purchase intentions and actual product consideration when shown in a product placement. Fitting product-endorser combinations in an ad did not seem to influence purchase intentions. Moreover, they even caused respondents to consider the target product less often compared to the control group. Furthermore, non-fitting product-endorser combinations in an ad evoked negative responses towards the product, both in terms of purchase intentions and actual product consideration, whereas non-fits in a product placement appeared to have no impact at all.

To our knowledge, the current study is one of the exceptions to provide evidence for the notion that the perception of the level of product-endorser fit underlies the match-up hypothesis, supporting prior theorizing in endorsement literature (Till and Busler, 2000). Although a few studies already made an attempt to validate the match-up hypothesis more fully, they only presented weak evidence (Kamins and Gupta, 1994; Kanungo and Pang, 1973; Kirmani and Shiv, 1998; Till and Busler, 2000). In contrast to these studies, ours showed that match-up effects are, above all, the result of clearly perceiving a certain level of fit between endorser and product. This implies that match-up effects occur irrespective of how product-endorser fit is set up (e.g., combining an attractive endorser with an attractiveness related (i.e., fit) versus unrelated product (i.e., non-fit) or combining an unattractive endorser with an attractiveness related (i.e., non-fit) versus unrelated product (i.e., non-fit)). Therefore, additional studies could be set up to further test the perception of fit mechanism by incorporating different types of product and endorser combinations, that is, based on the relatedness of their salient attributes as well as based on the consistency in terms of their salient attributes.

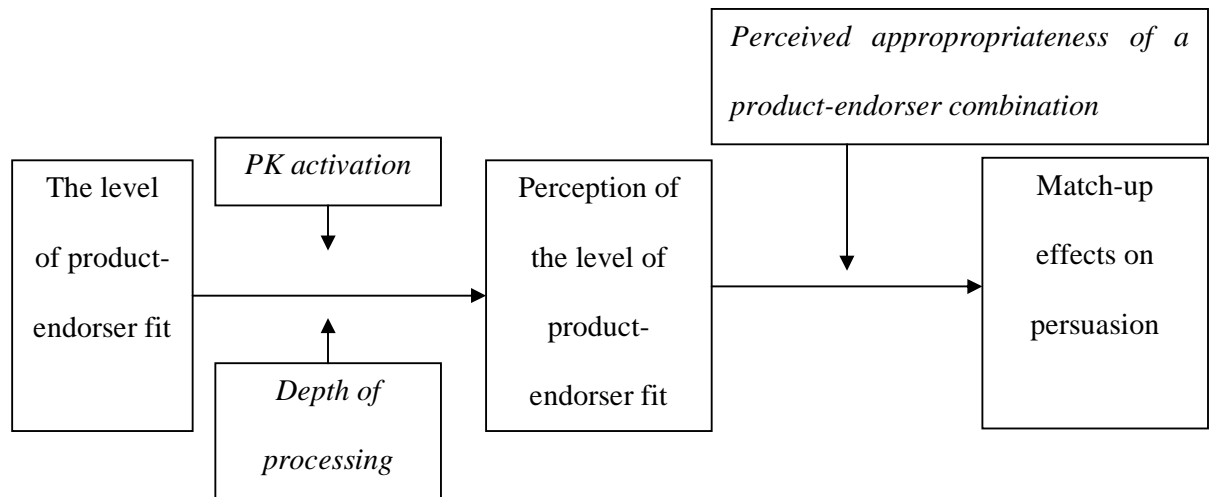
We also demonstrated the usefulness of the PKM for the endorsement domain (Friestad and Wright, 1994). Based on this model, we were able to clarify the conditions that lead to the perception of a fit versus a non-fit between products and endorsers, and as such, extend prior research (Kang and Herr, 2006; Kirmani and Shiv, 1998; Petty et al., 1998; Shavitt et al., 1994; Till and Busler, 2000; Woodside and Davenport, 1974). In particular, we showed that the salience of a product-endorser fit versus non-fit is the result of recognizing the act of an endorser as a persuasion attempt and using this PK to process the stimulus, and not merely of more in-depth processing. However, people can also encounter less clear-cut situations, in which PK is activated to some extent, but not that extreme (e.g., a sales person makes a

flattery remark after a purchase (Campbell and Kirmani, 2000)). Here, depth of processing could still play a significant role in explaining skeptical consumer responses, but only to the extent that it also further stimulates the activation and use of PK (Campbell and Kirmani, 2000).

Moreover, we also showed the importance of specific perceptions of the appropriateness of the endorsement tactic in consumers' evaluations of this persuasive tactic and the endorser itself. It appears that next to investigating the perceived level of fit between a product and an endorser, message recipients also need to have a distinct opinion about the degree of appropriateness of this product-endorser combination in order for match-up effects to appear on attitudinal measures. Further research could study whether the perceived fit between a product and an endorser, on the one hand, and the perceived appropriateness of a product-endorser combination, on the other hand, are independent concepts and what their relative contribution is in explaining match-up effects. Possibly, the perceived appropriateness of a product-endorser combination moderates the effect of perceived product-endorser fit on measures of persuasion (see Figure 5.2) (Campbell, 1995; Forehand and Grier, 2003; Mandler, 1982; Wei et al., 2008). Linear regression analyses with the standardized score of perceived product-endorser fit, the standardized score of perceived appropriateness of a product-endorser combination and their interaction term also showed a marginally significant interaction effect, but only on attitude towards the stimulus. Additional studies should further investigate their interaction by manipulating both constructs independently. Hereby, it would also be interesting to examine why certain product-endorser combinations are perceived to be appropriate and others to be inappropriate. For example, Campbell (1995) found that a low versus high fit between an ad appeal and a product was perceived to be less appropriate, as this led consumers to perceive less personal benefits and less advertiser's investments.

FIGURE 5.2

Extended Model of Match-up Effects on Persuasion



Despite the contributions of the current study, we did not find the same results on product related responses, namely on purchase intentions and product considerations, as on the attitude measures. Prior research has encountered this issue as well (e.g., Kamins, 1990; Till and Busler, 2000). Similarly, the most robust match-up effects have been found on attitude towards the endorser, whereas match-up effects on product related responses, such as purchase intentions, were the least reliable. Possible reasons for these results could be found in the differences between these dependent measures, that is, (a) they tend to result from a different type of processing (i.e., rational vs. emotional, conscious vs. unconscious), (b) they concern different targets (i.e., related to the message vs. the product), and (c) they are questioned differently (i.e., direct vs. indirect).

Looking at the results for purchase intentions, the match-up hypothesis appeared to be valid, irrespective of the type of communication format, irrespective of depth of processing. In other words, a fit versus a non-fit between a product and an endorser always led to more favorable purchase intentions, whether or not this endorsement tactic was perceived to be persuasive and/or appropriate, whether or not cognitive resources were constrained. Possibly, this difference in results compared to those on the attitude measures can be explained by the way in which intentions are typically formed (Schlosser, 2003). Overall, attitudes are assumed to be driven by more cognitive elaboration than other consumer responses (e.g., Billings and Scherer, 1988). Therefore, cognitions related to the topic of the stimulus as well as cognitions related to the sender of the stimulus are both likely to be relevant and incorporated in attitude judgments (Friestad and Wright, 1994; Shiv, Edell, and Payne, 1997). Behavioral intentions

are supposed to be driven by more emotional processing, such as imagery, rather than by cognitive processing (MacInnis and Price, 1987; Schlosser, 2003).

Irrespective of the type of processing, the same message cues (i.e., product and endorser combinations) could be salient, but they could be relevant for different reasons, also leading to different results (Petty, Wegener, and White, 1998). Specifically, in asking about purchase intentions, the level of product-endorser fit could have been relevant, because of its overall emotional value (e.g., “A fit feels good/right, whereas a non-fit feels bad/wrong.”) rather than because of its inferences about the persuasive intent of the messenger.

Another explanation could be found in our specific operationalization of the level of product-endorser fit which could have been confounded with the type of product, that is, healthy versus unhealthy products. Possibly, respondents have merely indicated their “normal” preference for healthy versus unhealthy foods. Although we can not exclude this account completely, we did find that prior product experience was not a significant covariate. Finally, it is also possible that asking about purchase intentions as such did highly activate PK which resulted in the match-up effects as previously found in this situation. However, manipulation checks related to PK activation followed the measurement of purchase intentions and still pointed to a significant difference in PK activation due to our experimental manipulation.

Looking at respondents’ food considerations, no effects of product-endorser fit were found. Again, a different type of processing driving the construction of consideration sets could explain why. The question about consumers’ product considerations was based on a measure used by Law and Braun (2000) who have referred to this as an implicit or an indirect measure to capture influences of which respondents do not have to be consciously aware. It has been shown that implicit and explicit measures do not necessarily correlate and could even dissociate, namely: (a) different factors could be of influence on these measures, or (b) the same factors could influence these measures, but in a different way (e.g., Holden and Vanhuele, 1999). For example, in the context of product placement, Law and Braun (2000) found that the centrality of a product in a product placement (i.e., single-mode (i.e., either visual-only or verbal-only product placements) vs. dual-mode product placement (i.e., both visual and verbal product placements)) did not affect an implicit choice task, but did influence explicit memory measures. So, it is possible that the level of product-endorser fit did not influence implicit processes and outcomes, but only the more explicit, conscious ones. This implies that match-up effects on attitudes and purchase intentions do not necessarily affect our choice and consumption behavior.

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However, conscious influences could still override automatic ones, which could have led to an impact of product-endorser fit on the choice measure (Jacoby, 1991). Probably, then, the level of product-endorser fit was not accessible anymore at the time of assessing respondents' consideration sets. This could be the case, because this question was positioned after all other questions concerning the stimulus and endorser and because it also made no explicit reference to the stimulus, endorser or target product (Shapiro and Spence, 2005). Moreover, the level of product-endorser fit could have been little activated, as it was not perceived to be relevant for construing a consideration set of food products, for example, as this was already a highly familiar task for the respondents (Higgins and Brendl, 1995).

The question, then, remains as to why there was a significant effect of PK activation on whether or not the target product was considered. That is, the target product was more considered when people were exposed to a product placement (vs. an ad) and when their PK was less activated. As already mentioned, Law and Braun (2000) have found no effect of product centrality in a product placements (i.e., single-mode vs. dual-mode product placements) on their hypothetical choice task, but they did find that respondents considered the target product significantly more often after seeing a visual-only product placement compared to an audiovisual product placement. This is in line with our result, assuming that a visual-only product placement compared to an audiovisual product placement is less intrusive and activates PK less automatically (Russell, 2002). So, the reason why respondents consider a previously shown product more often in case of less versus high PK activation could be due to them being unaware versus aware of any priming by the stimulus (Wegener and Petty, 1995). Being unaware of a potential persuasive bias eliminates counter-arguing or other correction processes and facilitates the experience of positive affect which could further lead to more positive consumer responses (Friestad and Wright, 1994; Matthes, Schemer, and Wirth, 2007).

Moreover, Nedungadi (1990) showed that what is considered in a given situation is mainly determined by product accessibility, whereas evaluations are rather driven by the target's value on the attributes considered to be important at that time. Our result could therefore be additionally explained by the fact that not priming PK could have made the product itself more accessible than priming PK. This is in line with the propositions of the PKM in that consumers are motivated to activate and use different types of knowledge structures (i.e., about persuasion, about the topic of the message and about the sender of the message), but that they typically have to allocate their resources among these knowledge structures in processing stimuli (Friestad and Wright, 1994). More research is definitely

needed to test the above explanations and further clarify how far match-up effects are expected to reach and why in particular.

Moreover, the current study is also qualified by limitations which are mainly due to the experimental manipulation of PK activation, that is, by comparing TV commercials with product placements. We have tried to control for as many confounding factors as possible in the selection of these stimuli. Also, the characteristics that were difficult to control for were assessed in the experiment, such as prior familiarity with the endorser, product and stimulus. The latter appeared not to have influenced our results and were thus of no further concern. However, ads and product placements may differ in other aspects we did not think of. Consequently, the criticism could be raised that our results are due to other differences between ads and product placements than to the different levels of PK they activate.

For example, Balasubramanian et al. (2006) have proposed that ads are more likely to be processed evaluatively or cognitively, whereas product placements are more likely to be processed empathically or affectively. Specifically, product placements (vs. ads) are typically embedded in (vs. separated from) an entertainment context (Balasubramanian et al., 2006; La Ferle and Edwards, 2006). Such a context tends to carry away its viewers and to lead to empathic identification with the characters and their situation. As a result, embedding a commercial message herein (vs. in a separate ad) could also lead to a stronger transfer of context-induced affect (e.g., positive context-induced affect leads to positive attitudes towards the product/brand) and to less cognitive processing of this particular message (e.g., thinking about (the fit between) the image of endorser and the product/brand) (Balasubramanian et al., 2006; Russell, 1998).

Although additional research is needed to further look into different, potential mechanisms behind our results, the above criticism on the role of PK can already be largely countered. That is, we ran linear regression analyses with the standardized score of the manipulation check of PK activation (instead of *the type of communication format*), the level of product-endorser fit, the depth of processing and their four interaction terms and showed a significant interaction effect of PK activation and the level of product-endorser fit on attitude towards the stimulus ($\beta = .23, p = .05$) and on perceived credibility of the endorser ($\beta = .27, p = .02$), which indeed mirrors the above results taking into account type of communication format (instead of *PK activation*).

Nevertheless, although skeptical processing could indeed (partially) account for our results, it could also have been induced by the study design, rather than merely by the type of communication format. Specifically, we tried to disguise the topic under investigation by

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using the “unrelated studies” paradigm, as described above. However, in case of being exposed to an ad (vs. a product placement), it could have been quite clear what we wanted to investigate with the second study on product preferences. Respondents could have considered this way of questioning to be inappropriate, which could have further increased skeptical processing in the ad conditions compared to the product placement conditions (e.g., “I am not stupid, I remember you showing me an ad for a specific product, do not think I am going to do what you ask me to do”) (Wegener and Petty, 1995).

Therefore, it would be a good idea to replicate the current findings by manipulating PK activation in a more conservative way. However, by using different real-life stimuli, the current study can also offer results that are externally more valid and which could contribute to more practically oriented communication literature. As such, our results also have important implications for practitioners. For example, marketers wanting to reposition their products by means of endorsers with a certain salient image consistent with a target position should try to remain subtle about their immediate commercial intent, for example, by using hybrid messages such as product placements (Balasubramanian, 1994) or congruent creative media (Dahlen, 2005). However, in case they decide to use more traditional communication formats of which the persuasive intent is better understood by consumers (e.g., TV commercials), they should aim at product-endorser combinations which are perceived to be fitting and to be acceptable to consumers, for example, by additionally providing objective information to validate subjective ad information (Shiv et al., 1997). As we specifically considered the use of healthy-looking female endorsers to promote different types of food, our results are also relevant for policymakers. The latter could take additional measures to stimulate the development and as such, the automatic activation, of PK about rather new and/or more hidden commercial messages. They could also pay special attention to stimulate more specific PK, that is, about the appropriateness of endorsement tactics.

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CHAPTER VI: CONCLUSIONS, CONTRIBUTIONS AND FUTURE RESEARCH

In this final chapter, we resume the most important conclusions of the different studies presented in this dissertation. We also go into their implications, theoretically as well as practically. Finally, we discuss their main limitations and offer recommendations for future research.

CHAPTER VI: CONCLUSIONS, CONTRIBUTIONS AND FUTURE RESEARCH

The main objective of this dissertation was to investigate and improve the effectiveness of health campaigns. In chapter II, we presented a non-experimental study in which we analyzed the design of real health campaigns to test their theoretical underpinnings. In the three subsequent chapters, we depicted experimental research set up to study the effectiveness of different health message tactics, in different contexts, for different individuals, and/or their underlying persuasion process. Based on these studies, several conclusions regarding health communication effectiveness could be drawn. Below, we first discuss the results concerning public health campaigns and then move on to the findings on commercial health campaigns.

1. THE EFFECTIVENESS OF PUBLIC HEALTH CAMPAIGNS

1.1. Recapitulation

In chapter II, we analyzed the content of 135 Flemish print campaigns, set up by the government to prevent HIV, which were distributed from the outbreak of HIV in the early eighties until 2008. We considered the most relevant health message tactics, target groups and campaign objectives. Results were mixed in that some rules of good practice based on academic findings were followed, whereas others were not. For example, focusing on different prevention objectives over time was in line with scientific research on HIV/AIDS. However, recommendations about the use of framing were not followed in practice. Mostly, a positive frame was used, whereas negative frames could have beneficial effects as well.

Chapter III experimentally studied the impact of the chronic self-regulatory focus on the effectiveness of different emotional tones in public health campaigns. A first study compared the effectiveness of two stop-smoking messages targeted at young smokers. Each focused on one of two types of emotions specified in the self-regulatory focus theory (i.e., agitation versus dejection related emotions). When the emotional tone of the health campaign was congruent versus incongruent with the chronic self-regulatory focus of its audience, this resulted into more campaign involvement and as a result, into more persuasion as well. That is, young smokers with a predominant chronic promotion focus rated a sadness-joy campaign as more involving which led to a more favorable Aad and behavioral intentions, whereas for young smokers with a predominant chronic prevention focus, a fear-relief campaign led to more campaign involvement and a more favorable Aad and behavioral intentions.

A second experiment, held in the context of promoting UV protection among adult women, replicated the above regulatory focus – emotion congruence effects on empathy with the situation and emotions of the depicted characters in the campaign and attitude towards the campaign in people visiting solaria more than 10 times a year (i.e., relatively high affectively involved in the issue of tanning). This result is in line with the first study which also merely focused on people high at-risk, that is, smokers. In people who never visit solaria or who visit solaria less than 10 times a year, we only found a main effect of type of emotional appeal; the dejection – cheerfulness appeal was more effective than the agitation – quiescence appeal. Moreover, in people who visit solaria less than 10 times a year, results also pointed to a marginally significant regulatory focus - emotion congruence effect on Aad. There also seemed to exist a difference in reliance on specific affect between a promotion and a prevention focus, but this was not significant. Finally, as opposed to the results of study 1, here, regulatory focus – emotion congruence effects were non-existent on ad involvement and on BIs.

1.2. Theoretical Contributions

Chapter II integrates different theoretical perspectives which are relevant in the context of health communication, such as framing theory, protection motivation theory and fear appeal research. As such, it provides a useful overview and guidance for all actors involved in investigating and improving the persuasiveness of public health campaigns. For example, from this literature review, it was clear that the effectiveness of health message tactics is not always straightforward, but often depends on personal and contextual factors.

In chapter III, we discussed experimental research we set up to further investigate the effectiveness of public health campaigns. As health communication research is typically multidisciplinary, our studies also contribute to the literature in several ways.

First, we add knowledge to the fear appeal research domain in which there is still a lot of debate about the effectiveness of fear appeals in general and in public health campaigns in particular. Instead of focusing on the optimal intensity level of fear as in prior research, we looked into the effectiveness of different emotional tones and considered the moderating role of an individual difference variable, that is, the chronic self-regulatory focus. Our research showed that fear appeals in public health campaigns are effective to target high at-risk groups, but especially in case of a predominant chronic prevention focus; in case of a high at-risk target group with a predominant promotion focus, a different emotional tone (i.e., dejection-cheerfulness) is more persuasive. This is consistent with the prior finding that different

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negative and positive emotions are differently accessible depending on the chronic self-regulatory focus of people.

As such, we also make contributions to the self-regulatory focus theory. Moreover, we extend the validity of the regulatory relevancy principle by considering different types of outcomes, that is, both emotional and health related outcomes. However, we also showed its boundary conditions. People who did not perform the health risk behavior brought up in the health campaign did not seem to use their chronic self-regulatory focus to evaluate this campaign. This was only clearly the case for people who put themselves at-risk by (frequently) performing the health risk behavior. Here, results pointed to an equally strong regulatory focus - emotion congruence effects in both foci. This implies that in certain contexts, a prevention focus relies on (specific) affect to the same, high extent as a promotion focus, which brings nuance to the prior finding that a promotion focus tends to rely more on affect than a prevention focus. The latter seems to apply only in more ambiguous contexts (i.e., in terms of perceived affect relevance), such as when people perform the health risk behavior only occasionally.

Finally, our results have implications for related research areas as well. For example, they point to the important role of affect in understanding and predicting health behaviors and further specify how emotions can be used to change health behaviors. Next, the significant interaction effect found between contextual and individual characteristics indicates the importance of considering both types of factors when studying the impact of external stimuli. A contribution to the affect-as-information literature is also made, as it was shown that not only the valence dimension of emotions is interesting to study, but that different individuals also respond differently to different, specific emotional tones in persuasive messages.

1.3. Practical Contributions

In general, the above studies offer policymakers more detailed guidelines to design more effective public health campaigns, especially those to discourage health risk behaviors. It is clear that there are many message tactics to choose from. However, never did one particular tactic consistently outperform all of the others. Instead, when designing public health campaigns, practitioners should take into account relevant personal and contextual factors.

In chapter II, we scanned the literature and identified four common health message strategies (i.e., the use of endorsers, the use of framing, the use of threat and action appeals, and the use of rational versus emotional appeals (e.g., fear appeals)). Prior health communication research found that their effectiveness mostly depends on the risk level of the

target audience, the main objective of the health campaign and the specific context of the health campaign (for example, issue date, as this could be related to different levels of prior knowledge and readiness to change). Based hereupon, we set up good practice rules for policymakers. By studying their application in the context of HIV prevention as well, we showed that not all have been implemented yet. So, special points of interests were also identified to come to more effective HIV prevention message design in the future.

In chapter III, we especially focused on the effectiveness of fear appeals, presumed to be often used in campaigns communicating health risks. Despite the controversy concerning the effectiveness of this appeal, we showed that it could prove to be useful for public health campaigns. However, policymakers should hereby take into account the risk level and the predominant chronic self-regulatory focus of their audience.

Let us assume they want to set up a campaign to discourage a certain health risk behavior among people currently performing the risk behavior. In this case, they should segment their audience according to their chronic self-regulatory focus and target different foci with different emotional messages. That is, they should use an agitation-quiescence appeal in case of a prevention focused audience and a dejection-cheerfulness appeal in case of a promotion focused audience.

Although the chronic self-regulatory focus as such could not be known in advance without explicit measurement, one could also infer this individual difference variable by means of other variables that could be known in advance, such as cultural background and socio-demographics (e.g., age, family status, professional occupation). A particular self-regulatory focus could also be primed by the context right before exposure to the actual health campaign. This could be done by showing an ad beforehand or using media whose content is related to different self-regulatory orientations.

If a campaign concerns a certain health risk behavior and mainly wants to address people less at-risk, for example, to improve the knowledge or create awareness among the general public, policymakers should rather use a dejection-cheerfulness appeal instead of an agitation-quiescence appeal. Although we did not validate the reason behind this result, we assume that this “atypical” health appeal simply draws more attention. So, it seems that practitioners should try to use more attention-getting tactics in this particular case.

1.4. Future Research

In spite of the above contributions, future research is needed to deal with the limitations of our studies and to further extend our understanding of the effectiveness of public health communication. Specific issues have been already discussed at the end of each chapter. Therefore, below, we will only discuss those related to all three studies on public health communication.

In the above studies, we focused on particular health message tactics and moderators. For example, for most health message tactics, it turned out to be important to take into account the risk level of the target group. Of course, there are other health message tactics and moderators which could be interesting to study in the context of public health promotion. In particular, one could investigate the effectiveness of different emotional tones and look at potentially relevant moderators, such as the level of affect intensity of individuals or the type of health behavior brought up in the health campaign.

Concerning the type of health behavior, the above three studies only focused on disease prevention, and specifically on discouraging health risk behaviors followed by recommending preventive health behaviors, as these have been also mostly focused upon in real public health campaigns. However, it would be interesting to study health promotion behaviors as well, such as nutritious eating and exercising, and to find out which message tactics work best, when and why, in this type of context. For example, as indicated in the introduction, a possible difference between health risk behaviors and health promoting behaviors could be the role of affect versus cognition. This could further influence the effectiveness of emotional versus rational appeals in campaigns promoting such behaviors. Moreover, existing classifications of types of health behavior (cfr. Chapter I – Introduction) could be linked to the self-regulatory focus. For example, to persuade people in general to live healthier, promoting *health promotion behaviors* could work better for promotion people, whereas promoting *disease prevention behaviors* could be more effective for prevention people.

In this first part of the dissertation, we conducted non-experimental research with real-life stimuli in chapter II and experimental research using newly developed stimuli in chapter III. Further research could also use real-life stimuli, classify them in relevant categories and experimentally test their effectiveness. Although this method could lead to more externally valid findings, its major downside is the potential noise in the data due to unanticipated, confounding differences between the selected stimuli. Another option is to set up a field experiment with more calibrated stimuli, such as the ones used in our experimental studies.

As such, we could study their persuasiveness in a more natural environment. Nonetheless, this method has disadvantages as well, such as the generalizability of results and the difficulty to investigate the processes underlying persuasion effects.

Finally, we only considered print campaigns, as these are often used in the context of public health promotion. However, other traditional mass media, such as television and radio, have been employed as well and are thus also valuable to study. In addition, new media, such as the internet and the mobile network, offer new, more interactive ways to communicate with individuals, to get the message across. A more personal approach could prove to be useful for certain audiences, in certain health contexts. For example, when people try to quit smoking, personal messages providing personal support could prove to be highly successful. Also less overt persuasive communication formats, such as entertainment-education (i.e., the placement of educational content in entertainment contexts) or advertorials (i.e., a persuasive message, but designed as editorial content), could be further examined, because these could lead to less defensive processing which is not unusual in case of messages communicating personal health threats.

2. THE EFFECTIVENESS OF COMMERCIAL HEALTH CAMPAIGNS

2.1. Recapitulation

The studies in chapter IV and V focused on the effectiveness of persuasive message tactics to position food products as healthy. First, we examined the role of congruence between the health image of the promoted food product and the content of the message. In chapter IV, we found an interaction effect between type of slogan and product (both manipulated in terms of healthy versus unhealthy/tasty) on ad and product related responses of adolescents. In chapter V, we discovered a main effect of the level of product-endorser fit (healthy endorsers promoting healthy versus unhealthy products) on attitude towards the ad and the endorser and on purchase intentions of young females. Both studies pointed to a congruence effect: messages promoting food are more persuasive when they are congruent versus incongruent with the health image of this food product.

Both studies focused on different moderators. In chapter IV, we took into account personal factors, that is, gender and level of health concern. Adolescents who are highly concerned about health have more favorable ad and product attitudes after exposure to a healthy versus an unhealthy/tasty slogan, whereas adolescents who are little concerned about health do not respond differently to both types of slogans. No other interaction effects were

found. In chapter V, we took into account contextual factors, that is, the level of persuasion knowledge activation (i.e., high (advertising) versus little (product placement)) and the depth of processing (i.e., high versus little (without versus with a distraction task)). Only the level of persuasion knowledge activation had a significant impact. That is, in case of advertising, in which persuasion knowledge was activated to a high extent, there was a significant product-endorser fit effect on attitude measures, whereas this was not true in case of product placement, where persuasion knowledge was activated to a lesser extent.

In chapter V, we also investigated mediation. First, we showed that in case of advertising and high persuasion knowledge activation, the level of product-endorser fit was highly salient, whereas in case of product placement and less persuasion knowledge activation, this was significantly less the case. In particular, a product-endorser non-fit was perceived as a non-fit in case of advertising, but received a neutral score in case of product placement. A product-endorser fit was always perceived as a fit. Furthermore, we found that a salient product-endorser non-fit versus fit in an ad context was evaluated as less appropriate. Additional analyses pointed to partial mediation. That is, the level of perceived product-endorser fit and the perceived message tactic appropriateness could partially explain why persuasion knowledge influences the strength of product-endorser congruence effects on persuasion.

2.2. Theoretical Contributions

This research contributes to the understanding of the effectiveness of positioning food products as healthy. In two studies using different target groups and persuasive tactics, we found consistent evidence for the finding that ad and product related responses of consumers to food messages are more favorable in case of congruence versus incongruence with the existing health image of the promoted food product. As a result, we contribute to different research domains, such as marketing, public policy and behavioral nutrition, in which inconsistent results were previously found. It also supports the predictions of schema congruity theory in general and of the match-up hypothesis in particular.

Furthermore, we clarified the moderating role of relevant personal and contextual factors. Although the level of health concern determined the responses to particular ad slogans, it did not moderate the product-slogan congruence effect on persuasion; this congruence effect was always significant. This could imply that the knowledge needed to perceive a product-slogan fit versus a non-fit is already well developed in adolescents, and as such, also accessible to be used in subsequent evaluations. Nonetheless, reactions of adolescents were always quite favorable, whereas adults previously showed negative

responses in case of a product-slogan non-fit. This could point to a difference in the development of persuasion knowledge, rather than in the development of nutrition knowledge, which is in line with existing literature.

Based on the study in chapter IV, it was not clear yet to what extent the product-slogan congruence effect on persuasion was the result of in-depth processing, as proposed by schema congruity theory. Prior studies on the effectiveness of product-endorser fit were divided on the underlying process as well. Therefore, in chapter V, the role of the activation of persuasion knowledge and the depth of processing were further investigated. Here, it was shown that the activation of persuasion knowledge rather than the depth of processing drives product-endorser congruence effects on persuasion. That is, the salience and evaluation of the level of fit between a message tactic and a product does not necessarily implies in-depth processing, but is rather determined by the type of processing, that is, guided or not by the activation of persuasion knowledge. As such, we confirm prior research building on the persuasion knowledge model and also extend schema congruity theory and endorsement literature.

2.3. Practical Contributions

Again, these studies have implications for marketers as well as for policymakers.

First, especially in case of well-known persuasive tactics, we recommend marketers to position their food offers only as healthy (vs. unhealthy/tasty) if the food product that serves as a base for these offers has a healthy (vs. unhealthy/tasty) image as well. In case of such an overt persuasive context, consumers are likely to perceive the link between the message and the type of food product being promoted; a fit (vs. non-fit) is more likely to be evaluated as more appropriate and as such, will be more persuasive. Nonetheless, if marketers want to reposition their food products (i.e., from “unhealthy” to “healthy”), they should try to remain quite subtle about their immediate persuasive intent or try to come up with a message-product combination that is still perceived to be highly appropriate.

Second, we recommend policymakers to actively stimulate the development and use of relevant knowledge to enable consumers to critically process persuasive message tactics. Looking at the responses of adolescents, we noticed that they already possess the knowledge to perceive a link between the message and the type of food product. However, we did not really find contrast responses to non-fitting combinations as in adults. This could point to a need to further develop their persuasion knowledge, for example, on specific persuasive

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tactics. However, based on our final study, we also noticed that adults need to be further educated as well, such as on new and/or more hidden commercial messages.

2.4. Future Research

Below, we will again focus on the most important and general limitations and suggestions for future research of this second part of the dissertation.

The above studies focused on food products, as the food industry was one of the first to use health as a selling proposition. This evolution is still ongoing; more and more food products are positioned as healthy. However, there also seems to be a bandwagon effect in that also other product categories are being positioned as healthy. For example, ads for cosmetics, mobile phone services, cars and insurances have also stressed their beneficial effects on health. Therefore, future research could investigate the effectiveness of such strategies and, for example, compare them to the more typical persuasive tactics used for these products.

As far as the message-product fit is concerned, we only used food products, which tend to be automatically classified on the unhealthy-healthy dimension, in combination with slogans which also varied in these terms or with endorsers who had a salient healthy image. As such, we only focused on salient and related product attributes. However, we could also create non-fitting combinations in a different way, by positioning, for example, batteries and software, which are far less related to health, as healthy. Such studies could further validate our results.

Also, we only considered extreme levels of fit between the message strategy and the type of product (i.e., non-fit versus fit). However, in reality, there are many examples of more ambiguous combinations that lie in between these extremes (e.g., a slim woman, promoting caloric, but nutritious food products such as dairy, pasta (sauces) et cetera). It would be interesting to study when and why such combinations are persuasive or not.

Next, we solely focused on the short term influence of the level of message-product fit. However, we could also examine what happens when a food product typically perceived to be unhealthy is repeatedly positioned as healthy. Although this does not really seem to work in the short term, it could work in the long run. For example, in Belgium, Tia Hellebaut (who won a gold medal at the 2008 Summer Olympics, held in Beijing) was first heavily criticized for endorsing Pizza Hut, but today, she still appears in Pizza Hut commercials and the company itself claims the sales increased drastically because of her endorsement. This could especially be the case when contrast responses to non-fitting combinations are merely the

result of heuristic processing, which also leads to weak attitudes which are not highly persistent over time.

Finally, more research is needed to further clarify the underlying mechanisms of the message-product congruence effect on persuasion. Although schema congruity theory attributes an important role to existing knowledge in producing congruence effects, it does not specify which type of knowledge is required. The persuasion knowledge model does identify different knowledge structures which could together determine persuasion; they focus on persuasion knowledge, but also topic and agent knowledge. In the current research context, it would be interesting to study which type of knowledge, food related or persuasion knowledge, leads to which types of persuasion outcomes.

Furthermore, the role of persuasion knowledge activation (versus the depth of processing) should be further tested. Now, we compared advertising versus product placement, but unanticipated, confounding factors could have distorted our results. A more straightforward manipulation is needed. Finally, we also need to go further into the concepts of (a) the perception of a message-product combination and (b) the perceived appropriateness of a message-product combination; it would be interesting to further investigate their antecedents and consequences.

3. GENERAL DISCUSSION

By investigating the persuasiveness of common as well as of (relatively) new health message tactics, their moderators and mediators, both in the context of public health campaigns and commercial health campaigns, this dissertation contributes to the understanding of health communication effectiveness.

It offers empirical evidence for the general finding that health communication is more effective when the message is congruent versus incongruent with its target group or with the product being promoted. However, this congruence effect on persuasion was not universal. In the first two experimental studies, we only found a congruence effect of the type of emotional health message and the chronic self-regulatory focus in respondents who performed the risk behavior brought up in the campaign. This result could be explained by their high personal and affective involvement in the health issue and thus, by in-depth processing and high reliance on affect (as a certain type of processing).

Similar explanations were advanced for the congruence effect of the type of message and the health image of the food product found in chapter IV. According to schema congruity

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theory, both in-depth processing as well as the activation of relevant knowledge (which is related to the type of processing) are responsible for such findings. However, the study in chapter V showed that a message-product congruence effect on persuasion is moderated by the activation of persuasion knowledge rather than by the depth of processing.

Nonetheless, as already noted, no study is without limitations, pointing to the need for more research in the future. For example, we could further validate the findings in chapter V by extending the experimental study in chapter IV. Specifically, we could also promote healthy or unhealthy food products with healthy or unhealthy slogans by using hybrid stimuli which have a more covert persuasive intent (compared to advertising), such as advertorials (i.e., print ads that also offer editorial content and as such, are difficult to distinguish from newspaper content) (Balasubramanian, 1994). Exposing respondents to such stimuli (vs. print ads) could lead to similar results as exposing respondents to product placement (vs. TV commercials). That is, the congruence effect between slogan and product type found in chapter IV using ads only could become less significant when using advertorials instead. Moreover, we could also take into account respondents' self-regulatory focus in chapter IV and V to further investigate the role of PK activation and use, as Kirmani and Zhu (2007) found that a prevention versus promotion focus increases skeptical processing. So, there are still many ideas awaiting empirical testing. Future work is definitely needed to enhance the understanding of health communication effectiveness and as such, to further enable people to increase control over, and to improve, their health.

4. REFERENCES

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DUTCH SUMMARY

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In de loop van de 20^{ste} eeuw is de visie op ziekte en gezondheid drastisch veranderd. Wetenschappers beschouwden iemands' gezondheidstoestand niet langer als het resultaat van uitsluitend externe, biologische factoren, maar erkennen steeds meer de invloed van eigen overtuigingen, gedragingen e.d. in deze. Dit heeft ervoor gezorgd dat, vooral sinds het midden van de jaren '80, het gezondheidsbeleid in Westerse landen geëvolueerd is van curatief naar meer preventief. In dit kader werden er onder meer gezondheidscampagnes, bvb. tegen roken, tegen alcohol- en drugsgebruik, opgezet om burgers te informeren en aan te moedigen om gezonder te gaan leven. Bovendien zijn ook bedrijven ook beginnen inspelen op deze gezondheidstrend. Voornamelijk de voedingsindustrie is zijn producten meer en meer beginnen positioneren als zijnde “gezond”.

Ondanks dat deze evoluties vandaag nog steeds aan de gang zijn, zie je tegelijk ook dat er in de Westerse wereld nog steeds miljoenen mensen zijn die door hun eigen gedrag hun gezondheid en leven op het spel zetten. In het Westen zijn het merendeel van de overlijdens dan ook grotendeels te wijten aan bepaalde leefgewoonten. Met andere woorden, gezondheidscampagnes zijn nog steeds nodig. En bovenal lijken ook meer *effectieve* gezondheidscampagnes noodzakelijk.

Tot voor kort heeft onderzoek in het domein van de gezondheidspsychologie zich voornamelijk toegespitst op de rol van individuele factoren in het *verklaren* en *voorspellen* van gezondheidsgedrag. Echter, recent zijn er meer en meer wetenschappers die suggereren om meer onderzoek te doen naar het *veranderen* van gezondheidsgedragingen. Onderzoek over de effectiviteit van gezondheidscommunicatie komt hier alvast aan tegemoet. Ondanks de enorme veelheid en diversiteit van studies in dit domein, zijn er toch nog steeds vele, onbeantwoorde vragen. Zo is het niet altijd duidelijk wanneer en waarom bepaalde gezondheidsboodschappen al dan hun doelstelling bereiken. Dit doctoraat wil daarom ook tot dit onderzoeksdomein bijdragen en de effectiviteit van gezondheidscampagnes verder bestuderen. Hierbij concentreren we ons zowel op publieke (hoofdstuk II en III) als op commerciële gezondheidscampagnes (hoofdstuk IV en V).

In het eerste onderzoekshoofdstuk (hoofdstuk II) maken we een stand van zaken op. Meer bepaald gaan we na in welke mate het ontwerp van bestaande, publieke gezondheidscampagnes theoretisch onderbouwd is. Daarom voerden we een inhoudsanalyse uit op 135 printcampagnes die werden opgezet door de Vlaamse overheid in de periode van begin de jaren '80 (i.e., het moment dat HIV/AIDS uitbrak wereldwijd) tot 2008 met als doelstelling om HIV verder te voorkomen. Hierbij keken we naar diverse campagnedoelstellingen, doelgroepen en boodschapstrategieën (i.e., diverse types van

modellen, positief versus negatief verwoorde boodschappen, bedreigende en/of oplossingsgerichte boodschappen, en angstaanjagende boodschappen). Verder stelden we ook een aantal *good practice rules* op, gebaseerd op eerdere academische bevindingen, en testten we of deze al dan niet gevolgd worden in de realiteit.

De resultaten zijn eerder verdeeld: sommige assumpties worden bevestigd, andere niet. Bijvoorbeeld, we vinden dat er, over de tijd heen, in HIV preventiecampagnes op andere soorten preventiedoelstellingen gefocust werd. Deze evolutie was ook in lijn met de vooruitgang in het wetenschappelijk onderzoek over HIV/AIDS. Echter, aanbevelingen over de manier van verwoorden van gezondheidsboodschappen werden niet gevolgd in de realiteit. Meestal werden boodschappen positief verwoord, terwijl er eerder al aangetoond is dat een negatieve verwoording ook gunstige effecten kan hebben.

In de daaropvolgende hoofdstukken (van hoofdstuk III t.e.m. V) onderzoeken we aan de hand van eigen experimenteel onderzoek de effectiviteit van diverse boodschapstrategieën, in diverse situaties, voor diverse individuen, en/of de bijhorende overtuigingsprocessen.

Hoofdstuk III gaat verder in op publieke gezondheidscampagnes. In het algemeen wordt aangenomen dat hierin vaak angstaanjagende boodschappen voorkomen. Er wordt al sinds de jaren '50 onderzoek gedaan naar de effectiviteit van deze boodschapstrategie, maar er is nog steeds geen eensgezindheid onder wetenschappers wanneer en waarom deze al dan niet werkt, en of deze ook wel gepast is voor gezondheidscampagnes. Wij willen dit onderzoeksdomein bekijken vanuit een nieuw perspectief. Meer bepaald willen we onderzoeken of de recent ontwikkelde *self-regulatory focus theory* hieraan een bijdrage kan leveren.

Deze *self-regulatory focus theory* onderscheidt twee soorten motivationele oriëntaties van individuen, namelijk (a) de promotiefocus, als men vooral begaan is met idealen, dromen en wensen en (b) de preventiefocus, als men vooral gefocust is op verplichtingen, verantwoordelijkheden en taken. Afhankelijk van de dominante focus van individuen ervaren zij typisch andere soorten positieve en negatieve gevoelens, namelijk (a) de promotiefocus is eerder gevoelig voor angst en opluchting en (b) de preventiefocus is eerder gevoelig voor triestheid en geluk. Ook reageren verschillende foci anders op overtuigende boodschappen. Meer bepaald voelen ze zich meer betrokken bij een boodschap die congruent versus incongruent is met hun dominante focus, wat verder kan leiden tot meer overtuiging.

Een eerste studie gaat de effectiviteit na van twee verschillende stop-met-roken boodschappen gericht op jonge rokers. Elke campagne concentreert zich op andere soorten emoties zoals beschreven in de *self-regulatory focus theory*. In lijn met eerder onderzoek stellen we vast dat wanneer de emoties in de boodschap afgestemd versus niet afgestemd zijn

op de dominante focus van het publiek, deze boodschap tot meer betrokkenheid leidt en uiteindelijk ook tot meer gunstige attitudes en gedragsintenties. Meer specifiek zien we dat een boodschap met angst en opluchting meer relevant en overtuigend is voor jongeren met een dominante preventiefocus, terwijl een boodschap met triestheid en geluk meer relevant en overtuigend is voor jongeren met een dominante promotiefocus.

Een tweede studie wil de resultaten van de eerste studie bevestigen. Daarom ontwikkelden we opnieuw twee soorten emotionele gezondheidscampagnes, maar ditmaal om actieve vrouwen tussen 24 en 38 jaar oud te motiveren om zich te beschermen tegen UV straling. Ook gaan we hier het belang na van de specifieke onderzoekscontext. Immers, andere onderzoekers waren eerder tot de conclusie gekomen dat promotiemensen meer op emoties steunen dan preventiemensen, terwijl dit verschil niet tot uiting kwam in onze eerste studie. Op basis van een vergelijking van beide studies namen we dan ook het eerdere risicogedrag van respondenten op als moderator (i.e., de frequentie waarmee men naar de zonnebank gaat).

We vinden opnieuw dat gezondheidsboodschappen congruent versus incongruent met de dominante focus van het doelpubliek meer betrokkenheid opwekken en effectiever zijn, maar dan alleen maar voor personen die daarnaast ook nog naar de zonnebank gaan en dus risicogedrag stellen. Dit resultaat is ook in lijn met de bevindingen van de eerste studie die zich uitsluitend op een risicovolle doelgroep, namelijk rokers, concentreerde. In geval van geen zonnebankgebruik of weinig risicogedrag, zien we geen congruentie-effect meer. Hier leek de atypische eerder dan de typische gezondheidscampagne meer succesvol te zijn.

In tegenstelling tot de eerste twee onderzoekshoofdstukken gaan hoofdstuk IV en V in op de effectiviteit van commerciële gezondheidscampagnes, en meer bepaald voor voedingsproducten. Op basis van vorig onderzoek is het niet echt duidelijk wanneer gezondheidsboodschappen in deze context al dan niet werken. Wij doen daarom bijkomend onderzoek om na te gaan of de effectiviteit van gezondheidsboodschappen voor voedingsproducten al dan niet afhangt van het bestaande gezondheidsimago van het voedingsproduct, wanneer en waarom dit al dan niet het geval is.

Daarom zetten we in hoofdstuk IV een experiment op om de overtuigingskracht na te gaan van verschillende slogans (i.e., gezond vs. ongezond/smakelijk) in reclameboodschappen voor typisch gezonde versus ongezonde voedingsproducten. In tegenstelling tot vroeger onderzoek gingen we hier specifiek de reacties van adolescenten na. Ook zij worden vandaag de dag meer en meer aangespoord om gezond te eten. Echter, het is niet echt duidelijk in welk mate deze groep ook belang hecht aan deze gezondheidstrend. Ook is het niet echt duidelijk in welke mate hun productkennis en kennis over overtuigingsstactieken al voldoende ontwikkeld

en toegankelijk is om voedingsreclame kritisch te verwerken. De resultaten geven aan dat adolescenten positiever reageren op voedingsreclame waarin de slogan congruent versus incongruent is met de typische gezondheidsperceptie van het product. Deze resultaten zijn dan ook in lijn met *schema congruity theory*.

We namen ook nog het geslacht en het gepercipieerde belang van gezondheid op als moderatoren in de analyses, aangezien deze mede kunnen bepalen in welke mate gezondheidsclaims opvallen en relevant zijn en in welke mate ze verwerkt zullen worden. Op basis hiervan zien we dat adolescenten die gezondheid als belangrijk percipiëren ook een meer gunstige attitude hebben ten opzichte van een gezonde slogan dan ten opzichte van een ongezonde/smakelijke slogan. Adolescenten die weinig begaan zijn met hun gezondheid reageren niet anders op beide slogans. Echter, het congruentie-effect van type slogan en product op overtuigingskracht wordt niet gemodereerd door deze factoren. Het lijkt altijd aanwezig te zijn.

Dit zou kunnen suggereren dat de kennis nodig om een fit versus een non-fit te percipiëren reeds sterk aanwezig is in adolescenten, zodat het ook gebruikt kan worden in de evaluatie van voedingsreclame. Echter, adolescenten reageren ook wel altijd eerder positief, zelfs op een non-fit, terwijl bij volwassenen eerder duidelijk negatieve reacties vastgesteld werden in dit geval. Dit zou kunnen wijzen op een verschil in ontwikkeling van relevante kennis

Hoofdstuk V gaat door op het elan van hoofdstuk IV. Ook hier werd de effectiviteit van een gezonde positionering voor diverse voedingsproducten (i.e., gezond versus ongezond) onderzocht. Echter, ditmaal gebruikten we gezond ogende modellen in plaats van gezonde slogans. Op die manier bouwen we ook verder op de literatuur over *endorsement* en diens *match-up hypothesis* die stelt dat een gepercipieerde fit versus non-fit tussen het imago van een model en dat van het gepromotee product beter werkt (i.e., *match-up effecten*). Nog een verschil met de vorige studie is dat we ons hier concentreren op jonge vrouwen, aangezien we aannemen dat deze ook een relevante doelgroep zijn voor de voedingsindustrie.

Bijkomend onderzoekt deze studie ook in welke omstandigheden bovenstaande congruentie-effecten kunnen opduiken en welke daar de redenen voor zijn, aangezien de resultaten van zowel eerdere studies als onze studie hierover geen duidelijkheid verschaft hebben. Verschillende andere onderzoekers hebben de afgelopen jaren de modererende rol van de diepte van verwerken en/of van het type van verwerken (i.e., al dan niet bewust van een mogelijk overtuigende invloed van het model) onderzocht. Echter, onderzoek op basis van het Persuasion Knowledge Model stelt dat deze moderatoren door elkaar gebruikt worden, terwijl ze in werkelijkheid op andere processen wijzen.

Wij onderzoeken daarom beide moderatoren samen, namelijk (a) de rol van de diepte van verwerking (diepe versus minder diepe verwerking, gemanipuleerd door al dan niet een bijkomende, afleidende taak) en (b) de rol van het type van verwerken (hoge versus minder hoge activatie van de kennis van overtuigingsstactieken, gemanipuleerd door communicatie-instrument (reclame versus *product placement*)).

Resultaten tonen aan dat congruentie-effecten van type model en product op overtuiging eerder gestuurd worden door het type van verwerken dan door de diepte van verwerking, wat ook in lijn is met het Persuasion Knowledge Model. Meer specifiek stellen we vast dat deze effecten sterker zijn in geval van reclame, waar de overtuigingskennis ook sterk aanwezig is, dan in geval van product placement, waar de overtuigingskennis veel minder toegankelijk is.

We zien verder dat de mate van fit tussen model en product duidelijker gepercipieerd wordt in een reclame- dan in een product placement context. Meer bepaald wordt een non-fit ook gezien als een non-fit in geval van reclame, maar als een neutrale combinatie in geval van product placement. Een fit wordt altijd gezien als een fit. Bovendien stellen we ook vast dat een duidelijk gepercipieerde fit versus non-fit ook als meer gepast wordt beschouwd.

Bijkomende analyses wezen dan ook op partiële mediatie. Met andere woorden, de mate van gepercipieerde fit tussen het type model en product en de mate waarin deze combinatie als gepast beschouwd wordt, verklaren deels waarom veel (vs. weinig) overtuigingskennis tot congruentie-effecten op overtuiging leidt.

Tot slot, in hoofdstuk VI, bespreken we de belangrijkste conclusies, bijdragen en suggesties voor verder onderzoek van de verschillende studies in dit proefschrift. In het algemeen toont dit proefschrift aan dat gezondheidscommunicatie meer effectief is wanneer de boodschap congruent versus incongruent is met diens doelgroep of met het product dat erin gepromoot wordt.

Echter, zulk een congruentie-effect op communicatie-effectiviteit is niet universeel. In de eerste twee studies over publieke gezondheids promotie stellen we vast dat het congruentie-effect van de soort gezondheidsboodschap en de chronische self-regulatory focus enkel aanwezig is bij respondenten die het risicogedrag, dat aangekaart werd in de campagne, ook zelf stellen; het effect is niet significant bij respondenten die weinig risicogedrag stellen. Dit congruentie-effect wordt mogelijk verklaard door de mate van persoonlijke betrokkenheid bij het gezondheidsthema (en dus, de diepte van verwerken) en door de soort betrokkenheid (hier: emotioneel versus rationeel) (en dus, de mate van steunen op emoties in de verwerking van de gezondheidscampagne).

Gelijkaardige verklaringen kunnen vooropgesteld worden voor het congruentie-effect van de soort gezondheidsboodschap en het gezondheidsimago van het voedingsproduct, dat we terugvinden bij adolescenten. Volgens schema congruity theory kunnen zowel de activatie van relevante kennis (gerelateerd tot het type verwerken) en diep verwerken hiervoor verantwoordelijk zijn. Echter, de laatste experimentele studie toont aan dat een congruentie-effect van type boodschap en product op overtuiging enkel gemodereerd wordt door de activatie van overtuigingskennis (en dus, door het type van verwerken) en niet door de diepte van verwerking.

Nietteminsteande onze bijdragen aan het onderzoek over de effectiviteit van gezondheidscommunicatie, blijft bijkomend onderzoek nodig om onze kennis hierover te vergroten. Enkel op die manier kunnen we mensen ook effectief in staat stellen om hun gezondheid meer in handen te gaan nemen en bijgevolg te verbeteren.