Persuasive health communication
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Chapter 6.  Summary and Discussion
Health messages are everywhere: television commercials, newspaper ads, websites. Almost all these messages are aimed at convincing people to stop doing things that are unhealthy (e.g., smoking tobacco, consuming alcohol) or start doing things that are healthy (e.g., exercising, consuming fruits and vegetables) by mentioning the negative outcomes of unhealthy habits. It is emphasized that people jeopardize their health and life. At the same time, people value good health and want to live a long and healthy life. Therefore, health messages can threaten people’s self-conceptions of being sane and sensible individuals. That is, people are confronted with the fact that they act in ways that are inconsistent with their main values. Such inconsistency constitutes a self-threat. A self-threat creates an aversive psychological state that people are motivated to resolve. Self-affirmation Theory (Steele, 1988) proposes that people can display at least three reactions to handle the self-threat: 1) people can alter unhealthy habits or form intentions to change unhealthy habits; 2) people can react defensively to the health message; or 3) people can apply self-affirmation. In essence, self-affirmation refers to the generation of positive self-images which are unconnected with the threatening event. Self-affirmation weakens initial defensive strategies people use to handle a self-threat. When people are exposed to health messages in this open state of mind, they become painfully aware of the self-threat induced by the health message (e.g., Harris & Napper, 2005).

In the current doctoral thesis, it was examined how people handle self-threats in the domain of health. Self-affirmation was used as a diagnostic tool to help to identify the ways in which people cope with a self-threat. Self-threats were examined in three different ways: 1) the interplay between self-threats and involvement was examined, 2) individual differences in self-affirmation were examined, and 3) self-threat in relation to a specific health threat, cancer, was examined. First, in the current chapter, a summary of the main findings of the empirical chapters is presented. Then, I discuss how the current research relates to and has implications for other fields of research.
Finally, possible practical implications of the current research are discussed.

**Summary of the Main Findings**

*Part 1: Health Messages and Involvement*

In the first empirical chapter, I focused on the role of involvement. The findings of two studies showed that type of involvement (value versus outcome) and level of involvement (weak versus strong) determine how people deal with a threatening health message. In both studies, participants read a story about the negative consequences of insufficient daily fruit and vegetable intake. In Study 2.1, value-involvement and self-affirmation were manipulated. In Study 2.2, outcome-involvement and self-affirmation were manipulated. The self-affirmation procedure consisted of very positive feedback on a test that supposedly predicted success in social relations and in the area of work. The results showed that only participants who valued health to a moderate extent handled the self-threat by reacting defensively. This is inferred from the fact that adding a self-affirmation procedure increased participants’ intention to consume sufficient fruits and vegetables. When strong levels of value-involvement were present participants did not discard valuable health information by reacting defensively; the topic of health was simply too closely connected with their core value of maintaining good health, so the health message could not be ignored. Consequently, participants formed an intention to act in accordance with the recommendations, independent of self-affirmation.

When outcome-involvement was concerned no effect of self-affirmation was found. This type of involvement does not address people’s self-defining values, which prevents them from reacting defensively. In sum, the findings of both studies show that self-affirmation can only be expected to increase persuasion when people’s personal values are in play – but only to a moderate extent.

In the study reported in Chapter 3, I examined whether intentions formed immediately after a self-affirmation procedure were predictive of actual behavior after four weeks. Should this not be the case, the scientific value of all studies on self-affirmation in persuasion
would be limited. To be able to generate defensiveness and, thus, effects of self-affirmation, value-involvement as an individual difference was used. The self-affirmation procedure consisted of a writing assignment; participants in the affirmation condition were asked to write for a few minutes about their most important value in life. The health message again concerned the negative health outcomes of insufficient fruit and vegetable intake. Next, participants reported their intentions to eat sufficient fruits and vegetables. After one week and four weeks, participants completed self-reports of fruit and vegetable intake.

The results showed that self-affirmation led to less defensiveness immediately after the confrontation with the message, and that this effect manifested itself in actual behavior after four weeks. That is, when participants were moderately involved, adding self-affirmation increased their intentions to eat sufficient vegetables and their actual vegetable consumption after four weeks. As in Chapter 2, no effect was found of self-affirmation when health was top priority. Again, this indicates that when people’s values are top priority they do not use defensive reactions to handle the self-threat. With regard to fruit consumption no effect of self-affirmation was present. This may be because fruit is seen as easier to consume (it is sweet and needs almost no preparation), while vegetables are more difficult to consume (they are mostly bitter and require more preparation) (Trudeau, Kristal, Li, & Patterson, 1998). Previous research has shown that especially confrontation with difficult behaviors results in defensive information processing (e.g., Fry and Prentice-Dunn, 2005). This suggests that the ease of fruit intake prevents information defensiveness from occurring, and, consequently, self-affirmation procedures have no effect on persuasion. In sum, self-affirmation leads to genuine intentions, but the effect of self-affirmation depends on people’s level of value-involvement and on the difficulty of the behavior.

Part 2: Individual Differences in Self-Affirmation
In the studies reported in Chapter 4, I aimed to answer the question whether people can affirm themselves cognitively. In four studies I
aimed to construct a scale to measure people’s cognitive self-affirmation inclination and to take the first steps in validating this scale. The inclination to use positive self-images when the self is threatened is defined as cognitive self-affirmation inclination. Study 4.1 was a cross-sectional study among smokers; the findings showed that people with a strong cognitive self-affirmation inclination perceived more negative consequences from smoking. This suggests an open-minded view, as commonly found in studies which include self-affirmation manipulations. Study 4.2 showed in a test-retest analysis the stable and reliable character of the cognitive self-affirmation inclination scale. In addition, cognitive self-affirmation inclination was positively related to the number of self-reported positive thoughts during the reading of a threatening message. In Studies 4.3 and 4.4 I manipulated the level of self-threat by presenting all participants with a health message on the negative outcomes of experiencing too much stress. Half of the participants read a text that underlined the severity of these consequences (strong self-threat), while the other half read a text that was constructed to be moderately threatening. The findings of Study 4.3 showed that cognitive self-affirmation inclination led to the same pattern of persuasion as found in earlier studies on self-affirmation manipulations when the threat was moderate. In Study 4.4 I added a self-affirmation manipulation; as in the studies reported in Chapter 2, the manipulation consisted of positive feedback on a bogus test. The results showed that a self-affirmation manipulation did not have any effect for participants with a strong self-affirmation inclination, probably because they already had access to self-generated positive self-images. In addition, the findings could not be explained by self-esteem. In sum, the study findings reported in Chapter 4 show the stability, meaning, and effects of a new scale designed to measure an individual’s cognitive self-affirmation inclination.

Part 3: Health Messages and Cancer
In the studies reported in Chapter 5 I focused on a specific health outcome, cancer. The aim was to show that perceptions pertaining to cancer are crucial in the way people handle death-related cognitions. A
cancer prime consisted of a short writing task; participants wrote down what they thought would happen to them if they contracted cancer or had cancer. Self-affirmation was induced in different ways. In Study 5.1 cognitive self-affirmation inclination was assessed. In Studies 5.2 and 5.3 self-affirmation was manipulated by asking participants to complete a questionnaire about their most important value. In Study 5.4 it was manipulated by asking participants to write about their most important value. The general idea was that different perceptions of cancer lead to different levels of threat because they lead to different associations between cancer and death. When this association is multifaceted and strong, the threat of cancer is high and subsequent defensive or suppressive reactions may be mobilized to lower the threat. Self-affirmation was used to detect these defensive reactions.

Study 5.1 was designed to assess the general effect of self-affirmation when participants were primed with cancer and to relate my procedures and materials to those used in earlier terror management studies. The results showed that cancer primes generally led to suppression of death-related thoughts. Studies 5.2 and 5.4 were focused on the influence of perceptions of the treatability of cancer. In Study 5.3 treatability was manipulated and I looked at the perceptions of the preventability of cancer. In Study 5.4 cancer was also subliminally primed. The findings of all three studies showed that when participants believed cancer could be handled (i.e., cancer is preventable or curable) they suppressed death-related thoughts. This is inferred from the fact that adding a self-affirmation procedure increased the number of reported death-related thoughts. However, when cancer was perceived as difficult to handle, the threat was too potent to be suppressed effectively (i.e., increase in death-thoughts). In addition, the results showed that participants also regulated death-thoughts when they were unaware of the cancer prime. Thus, people’s perceptions of cancer determine the regulatory processes that they use to cope with the threat caused by the association of cancer with death.
Above is a summary of the main findings of the studies reported; below, I discuss how the present doctoral thesis relates to various themes in persuasive health research.

**Theoretical Implications**

*What Happened to Fear?*

Traditionally, the emphasis of studies about persuasive health communication has mainly been on the role of fear or physical threat. See, for example, classic fear appeal theories such as the Drive Reduction Model (Hovland, Janis, & Kelley, 1953), Protection Motivation Theory (Rogers, 1983), and Parallel Response Model (Leventhal, 1970). In the current doctoral thesis I did not consider the role of fear at all. I propose that people’s primary motive for acting healthy and changing unhealthy habits is not to down-regulate fear, but to handle the self-threat. Our main proof that a self-threat was central in our persuasive effects comes from the influence of self-affirmation. After participants were affirmed, they no longer needed to process the information defensively. This implicates that the motive to defend was primarily related to their selves. The results of the study reported in Chapter 3 further show that the self-affirmation effect was not limited to immediate intentions, but extended to actual behavior. The idea that self-threat motivates behavior change is congruent with Social Cognitive Theory (Bandura, 1986). In addition, the emotional experience of a self-threat (self-evaluative emotions) has been shown to be the strongest predictor of quitting activity among smokers (Dijkstra & Buunk, 2008), even when fear is controlled for (Dijkstra & Den Dijker, 2005). Thus, it is plausible that a self-threat can be a powerful motivator.

It would be awkward, nevertheless, to completely deny the occurrence of fear in the present studies, because fear seems so closely related to negative health outcomes. Negative health outcomes that are relevant to a person can cause fear when important goals are threatened. However, it is inherent in persuasive health messages that people somehow play a role in the existence of the threat; they are held responsible for the health outcomes. This aspect of health messages
relates both relevant negative outcomes and fear to the self. Thus, the person not only inflicts objective and feared negative outcomes on him- or herself, but he or she also behaves in a way that induces fear. In this conceptualization, fear is another negative outcome the person is responsible for, which further increases the self-threat.

From an experiential point of view, the quality of the aversive experience, owing to being confronted with possible negative outcomes of one’s own behavior, might depend on the momentary focus of attention. When the focus is on the suffering and the negative outcomes, fear might be the main experience. When the focus is on the causes of the negative outcomes and the behavioral solution, self-threat might be the main experience. It is possible that in the present studies our messages made participants focus more on the causes and solutions, leading to a dominant role of self-threat. Future research is needed to unravel the relationship between fear and self-threat; and to determine whether my assumptions withstand empirical tests.

**Self-Affirmation**

Self-affirmation was included in all studies of the current doctoral thesis. However, the manipulations differed substantially. In the studies reported in Chapter 2 people were given very positive feedback on a bogus personality test, while in the study presented in Chapter 3 people were asked to write about their most important value. In Studies 5.2 and 5.3 people were asked to complete a questionnaire about their most important value. The latter is the most commonly used manipulation of self-affirmation (McQueen & Klein, 2006). In the studies reported in Chapter 4 and in Study 5.1, I showed that people can also affirm themselves cognitively. Thus, I showed that people differ in the extent to which they use positive self-images to affirm themselves when presented with a threatening health message.

These diverse manipulations had the same effects. For example, in Study 2.1 and in the study reported in Chapter 3, the same effects occurred when value-involvement was considered, despite the use of different manipulations. In addition, the same effects were found in Study 5.3, in which participants were asked to write about values, as in
Study 5.4, in which participants were asked to complete a questionnaire. Also the studies reported in Chapter 4 showed the same effects of diverse ways to measure or induce self-affirmation; in Studies 4.3 and 4.4, I showed that a self-affirmation manipulation that provided people with positive feedback had the same effects as when people spontaneously used positive self-images. Because the same effects were found, it can be proposed that all refer to the same underlying process, the use of positive self-images.

Traditionally, self-esteem is portrayed as an important factor in self-affirmation (e.g., McQueen & Klein, 2006; Sherman & Cohen, 2006). However, the findings of the current doctoral thesis do not provide evidence for this point of view. The effects found in Chapter 4 on cognitive self-affirmation inclination could not be explained by self-esteem. In addition, the cognitive self-affirmation scale showed the same effect on persuasion as the more traditional self-affirmation manipulations. These results prevent the conclusion that self-esteem is the underlying mechanism of self-affirmation.

Figure 6.1 portrays my model of the relationship between self-esteem and self-affirmation. People have a reservoir of standing resources that they can use in the face of a threat to their self-integrity (Steele, Spencer, & Lynch, 1993). The standing resources refer to stored self-images in self-memory (Rogers, Kuiper, & Kirker, 1999). In my present conceptualization, self-esteem is a general evaluation of the self based on the information stored in self-memory. Thus, self-esteem is not the use of positive self-images but a global conclusion about the self. It is, however, the actual and active use of one's positive self-images that has the self-affirmative effects.
Use of the concept of self-memory causes the relationship between self-affirmation and self-esteem to become clearer. I propose that self-affirmation and self-esteem originate from the same source (from the self-memory) and, therefore, show some overlap. However, the concepts have unique aspects that work separately and have separate effects.

**Levels of Self-Threat**

In general, the positive effects of self-affirmation on persuasion were emphasized in earlier studies in which self-affirmation manipulations were used (for overviews, see Harris & Napper, 2005; McQueen & Klein, 2006). In the current doctoral thesis this effect was also prevalent in several studies. For example, in Study 2.1, it was found that for participants who were made to believe that health is important (but not top priority), adding a self-affirmation procedure increased their intention to consume sufficient fruits and vegetables. However, self-affirmation did not increase persuasion in all empirical studies described in the current doctoral thesis. Instead, a much more diverse picture emerges of the effect and role of self-affirmation in the domain of health persuasion. I also showed that self-affirmation can have no
effect at all (e.g., Study 2.2) or can lead to more suppression of death-related thoughts (e.g., Study 5.2).

I propose that the reason why these diverse effects emerged may be the substantial differences in the presented studies concerning the level of self-threat that was induced and the availability of solutions to restore the self. Self-threats and solutions were influenced by the individual differences that were included (e.g., level of value-involvement, level of perceived treatability of cancer), by the different levels of severity of health outcomes that were manipulated (e.g., experiencing stress results in moderate versus very severe outcomes), and by the health domains used (e.g., insufficient fruit and vegetable intake, experiencing stress, having cancer).

In some cases, self-affirmation did not have an effect on outcomes. For example, in Study 2.2, self-affirmation had no effect when levels of outcome-involvement were manipulated. Outcome-involvement does not concern people’s core values; therefore, the self is less directly involved. Consequently, no defensive regulation is needed. This means that self-affirmation simply had no defenses to lower. In the study reported in Chapter 3, self-affirmation also did not have an effect, probably for another reason. Although moderately involved participants were defensive about vegetable consumption, they were not defensive about fruit consumption. This may be explained by the ease of the behavior. When the behavioral solution to avert the actual threat is easily available, the attractiveness of using this option to lower a self-threat is clear. In Chapters 2 and 3 I also present findings that show no effect of self-affirmation. That is, when value-involvement was high (i.e., health was top priority for participants), self-affirmation did not influence the outcomes, probably again for another reason. In this case, it is possible that no defenses were raised because the information concerned participants’ top priority, and holding off information about one’s top priority may not be an available response. Again, self-affirmation had no defenses to lower. Thus, while it is stressed in the literature that self-affirmation fosters threat acceptance, I found several cases that showed no effect of self-
affirmation. This could not be explained simply by a lack of statistical power or ineffective manipulations.

In one study self-affirmation even resulted in increased defensiveness. This can be observed in the studies reported in Chapter 5; participants were confronted with a fatal disease and at the same time they believed that the disease could not be prevented in any way (Studies 5.2, 5.3, and 5.4). Again, self-affirmation weakens regulatory efforts, making people painfully aware of the threat. However, this time the threat was too strong to accept. The result was a renewed effort to handle the threat using defensive regulations. This effect of self-affirmation was documented when exploring death-thought accessibility, and not intention formation. However, Dijkstra (2009) reports the same defensive effect of self-affirmation on intention.

In conclusion, self-affirmation does not always enhance persuasion, as is sometimes suggested in studies in which self-affirmation manipulations were used. Future research may systematically disentangle the conditions under which self-affirmation leads to more, to no, or to less threat and persuasion.

**Practical Implications**

In the literature, self-affirmation is portrayed as the procedure or technique that enhances persuasion in general (e.g., Harris et al., 2007). However, the findings of my studies show that self-affirmation is not necessarily effective in increasing persuasion or in making people tolerate scary thoughts (i.e., death-related thoughts). Although indications have been found in previous research that self-affirmation is not always effective (e.g., Fry & Prentice-Dunne, 2005) or can even backfire (e.g., Reed & Aspinwall, 1998) in the domain of health, this has not been given much attention. In the current doctoral thesis explicit attention was paid to the possibility that self-affirmation can be ineffective; the findings of the study reported in Chapter 3 show that adding self-affirmation when health is top priority has no impact on actual behavior change. The findings of the current doctoral thesis also show that self-affirmation can lead to less open-mindedness; the findings presented in Chapter 5 suggest that addition of self-affirmation
induces suppression of death-related thoughts when people’s memory network concerning health outcomes is too strongly activated (e.g., Study 5.2 – cancer was seen as poorly treatable). Therefore, I believe that self-affirmation is a procedure that should be applied carefully in persuasion.

I showed that self-affirmation is effective mainly when moderate threats are presented to participants. In this case it leads to increased intentions to act healthy and to engage in more healthy behavior. In the case of weak threats or strong threats, addition of self-affirmation has no effect. In these cases, however, self-affirmation also does not seem to interfere with persuasion. Only when threats are very strong (i.e., cancer is seen as poorly preventable or treatable) is there a chance that self-affirmation may backfire. Thus, when self-affirmation is used to increase persuasion, this should not be in areas or topics that are extremely scary or threatening.

The question remains how self-affirmation should be used in daily life. To my knowledge, no researchers have come up with suggestions for how to use it in health campaigns. The findings of the current studies show that diverse self-affirmation procedures can increase persuasion. In essence, recipients should be invited to think about a positive self-image. This might be done by asking a question: “Please think a moment about some accomplishment you have had,” or “Please take a moment to think about what you stand for in life,” or by giving general positive feedback: “The fact that you read this means that you are not the kind of person that avoids important issues.” It is a challenge to find a feasible means of inducing self-affirmation outside the laboratory.

Self-affirmation does not necessarily need to be included in health campaigns to make them convincing. A more straightforward recommendation would be to prevent participants from displaying defensive reactions. This may be achieved by convincing people that health is a top priority in life; when values are top priority, defensiveness is absent (see Study 2.1 and Chapter 3). This may, for example, be accomplished by adding a short statement to a physician’s health message that health is a top priority in life. Future research is
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necessary to test how exactly messages should be framed when they are used outside laboratory.

Concluding Remarks

The findings of the present doctoral thesis show that self-integrity maintenance is a key motive in people’s choice of ways to cope with health messages. Stressing of negative health outcomes causes an aversive psychological state that people are motivated to reduce. In short, the findings of the present dissertation show that the extent to which health messages induce a self-threat determines how people will try to cope with the threat at hand. Self-affirmation is a useful tool to unravel the underlying defensive processes. The focus on the self in the domain of health is a perspective that tells us much about the way health messages affect people; accordingly, this perspective deserves more attention in research on persuasive health communication.