

**DEFENSIVE REACTIONS TO SELF THREAT IN CONSUMPTION:  
THE MODERATING ROLE OF AFFIRMATION**

by

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## **ABSTRACT**

This dissertation identifies two competing coping strategies individuals may employ to deal with self threat in consumption contexts—defensive and compliant strategies—and addresses the relationship between defensive and compliant consumption by investigating the key factors that determine the adoption of defensive (vs. compliant) consumption. This research 1) first uncovers consumer contexts where self threat activates defensive reactions, leading to a defensive consumption (Study 1 and 2); 2) examines the joint impact of the affirmation value of products and the mode of threat on determining whether defensive or compliant consumption takes place (Study 3); and 3) proposes that opportunities to affirm self views can turn off the defensive coping and reduce defensive consumption (Study 4). Taken together, this research addresses the influence of self threat on consumption by examining these factors which have not been studied systematically in previous consumer research.

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# CHAPTER ONE

## INTRODUCTION

Consumers often receive information posing threats to self in advertising and consumption contexts. For example, exposure to idealized images in advertising media poses a threat to one's own physical attractiveness (Groesz, Levine, and Murnen 2002; Richins 1991). Hearing about other consumers' purchasing the same product at a lower price poses a threat to the self-view on one's smartness as a shopper (Argo, White, and Dahl 2006). Recognizing the need for seeking help from radio counseling programs is threatening to the self view as a mentally healthy person (Raviv, Raviv, and Arnon 1991).

In these cases, we could expect two competing outcomes of self threat. On the one hand, consumers who are made insecure about their positive self views could engage in a defensive reaction toward the threat and dismiss products and brands that claim to boost their self images in the threatened domain. We label this response as a *defensive consumption* mode. On the other hand, consumers could perceive the same products and brands to be an important means of self improvement (Eisenstadt, Leippe, and Rivers 2002), therefore, they would be more likely to welcome and adopt these products and brands. We label this response as a *compliant consumption strategy*. Surprisingly, scanty consumer research has been conducted suggesting *when and why* self threat, once activated, would lead to a defensive (vs. compliant) consumption mode.

There clearly has been a research gap in the cross-disciplinary exploration on self threat. Existing research in psychology has evidenced that self threat can lead to both

defensive reactions (e.g., Baumeister, Dale, and Sommer 1998) and compliant reactions (e.g., Eisenstadt et al. 2002) with regard to self evaluations, emotions, and social interactions. Defensive reactions toward self threat such as acting aggressively (Baumeister, Smart, and Boden 1996), derogating the source of threat (Fein and Spencer 1997; Wan et al. 2008), and enhancing self evaluations in spite of the threatening information (Wan et al. 2008) are all intended to refute the self threat and maintain the overall self-worth without addressing the negative aspects of the self made salient by the threatening information. In contrast, the compliant reactions toward threatened self views are demonstrated by individuals' cognitive and behavioral efforts to update their self views with the threatening information (Eisenstadt et al. 2002) and seek ways to repair the self in the threatened domain (McQueen and Klein 2006; Tetlock et al. 2000). With the compliant approach, individuals reconcile with the lowered self worth activated by threat and address the self threat by seeking means to improve the self.

However, little research has been conducted in examining how defensive or compliant reactions toward self threat would affect subsequent consumption behaviors. A few recent works on this topic only revealed a compliant mode resulting from self threat. That is, consumers who experience self threat would resort to products that can directly repair and bolster the threatened self domain. For example, when consumers' self view on intelligence was threatened by writing an essay on how intelligent they were with non-dominant hands (vs. dominant hands), they were more likely to choose a pen than chocolates (Gao, Wheeler, and Shiv 2009). When consumers' self view was threatened in the domain of power, they were more likely to bid for status-oriented products in auctions (Rucker and Galinsky 2008). What is missing from this stream of research is the lack of

identification of those factors in consumer contexts activating a defensive consumption mode. This research addresses several related issues.

Based on an extensive review of research on dynamic self views (e.g., Baumeister et al. 1998; Tesser 2000), goal automaticity theory (e.g., Bargh 1982; 2002), self affirmation theory (e.g., Sherman and Cohen 2006), and symbolic meaning of products and brands (e.g., Dunning 2007; Elliot 1994), this research first uncovers consumer contexts where self threat can activate a defensive consumption mode. Specifically, consumers who experience self threat would be more likely to reject products that signal self deficiency (e.g., self improvement products). Furthermore, this research addresses the relationship between the two competing coping mechanisms of self threat: compliance and defense. We argue that there are two key factors in modulating whether a defensive or a compliant strategy takes place: 1) opportunities for self affirmation (including general affirmation opportunities and affirmation value offered by products) and 2) the mode of threat (blatant vs. subtle). These two factors jointly determine the adoption of defensive (vs. compliant) consumption. Specifically, defensive consumption is most profound when consumers are threatened in a blatant mode and when the products offer low affirmation value. Lastly, this research further examines the role of affirmation in turning off defensive consumption. We argue that defensive consumption as a result of self threat can be mitigated if consumers are provided an opportunity to affirm the self in an alternative domain.

These propositions have been tested in four experiments. Study 1 explores a consumer context where a defensive reaction to self threat leads to dismissal of self improvement products. Specifically, female participants whose self views were

threatened by idealized body images in media (Richins 1991) engaged in defensive reactions, leading to less favorable attitude toward body enhancement products. Study 2 replicates the findings of Study 1 and extends the research scope by examining self threat in a different domain—gender identity and changing the consumption context from product level to brand level. In this study, male participants whose masculinity was threatened by bogus feminine feedback in a gender identity test (Willer 2006) formed less favorable attitudes toward brands that can improve masculinity (e.g., Boss vs. Chanel). Overall, the first two studies evidenced defensive consumption in diverse self domains and different consumer contexts. Study 3 examines the joint impact of the affirmation value of products and the mode of threat in determining the adoption of defensive (vs. compliant) consumption. In this study, participants' self views were threatened in intelligence domain either blatantly (receiving bogus negative feedback, Dalton 2008) or subtly (performing a difficult task, Creswell et al. 2005). Subsequently, they evaluated products with high affirmation value (products signaling high intelligence of the user) or low affirmation value (intelligence improving products signaling low intelligence of the user). Defensive consumption (i.e., dismissal of the product) occurred for products with low affirmation value when participants were threatened blatantly. The last study, Study 4, further examines the role of affirmation in deactivating self defensive mechanism by adding an external affirmation instead of using products with high (vs. low) affirmation value. The consumption context in the physical appearance domain of Study 1 was re-employed. When the self was affirmed in a different domain (intelligence) and the overall self-worth was maintained, participants' defensive reactions to self threat were mitigated and thus their attitude toward the body enhancement product improved.

The research echoes recent calls from consumer researchers (Dunning 2007) that we need to understand more about the relationship between consumers' self views and their consumption behaviors. Whereas previous research has painted a rosy picture of how products and brands are empowering consumers by providing important symbolic values (e.g., empowerment, masculinity), this dissertation deviates and presents a darker side of the story. That is, when there is a mismatch between products' symbolic value and consumers' fluid self views, consumers would reject these choices as a way to defend or project their self views. Obviously, these defensive reactions to self threat have been overlooked in consumer research. By delineating how consumers switch between compliant and defensive consumption on the basis of contextual factors (such as the way self is threatened, or affirmation value of products), this dissertation enriches our understanding of the nature of adaptive consumer behaviors.

## **CHAPTER TWO**

### **THEORETICAL DEVELOPMENT**

In the past few decades, there has been an explosion of research in psychology on the self (Tesser 2001). Individuals usually hold favorable views of themselves (Baumeister et al. 1998), have reasonably high self-esteem or at least a strong desire to have high self-esteem (e.g., Aronson 1992), and regard themselves as moral, lovable and capable persons (Dunning 2007). They may even hold inflated self-perceptions and believe that they are better than others on a wide variety of personal attributes (Alicke 1985; Baumeister et al. 1998). However, there are numerous cases in daily life that can question, contradict, impugn, mock, challenge, or jeopardize a person's self views, and thus threaten the self (Baumeister et al. 1996). Self threat is manifested by change in self concept (Eisenstadt et al. 2002), decrease in self-esteem (Vohs and Heatherton 2003), and reduced confidence in self views (Schwarz 2004). When the self is threatened, people employ various ways to protect, maintain, or restore self views (Baumeister et al. 1998; Tesser 2000, 2001).

In order to predict consumers' reactions to self threat in consumption contexts, it is important to understand how individuals experience and cope with self threat. In this section, we will review the psychology literature and consumer research on self threat, including the responses to threat and the moderators of the relationship between threat and responses to threat. Based on the review, we will construct the framework of the present research.

## **Defensive Coping with Self Threat**

When external events violate favorable self-views, it is necessary for the individual to employ some mechanisms or processes to defend against the threatening implications of the events (Baumeister et al. 1998; Cramer 1991). Social psychology research on threat to self-esteem has identified substantial evidence for the use of defense mechanisms to protect self-esteem (reviewed by Baumeister et al. 1998). The commonality of these reactions is the refutation of the threat and the maintenance of the overall self-worth without addressing the negative aspect of self made salient by the threatening information.

One of the most common defensive reactions to self threat is the denial of lowered self worth (e.g., Laplanche and Pontalis 1973). People deny or refuse to face certain facts, dispute information that threatens their positive self-views, and are reluctant to accept the implications of the threatening information (Baumeister et al. 1998). There is abundant evidence that people reject implications and interpretations of what they find as threatening. The most common form of denial is the reluctance to accept failure or negative events rather than incorporating them into self-concepts. A review article by Zuckerman (1979) revealed a general pattern that individuals make more external attributions for failure (which is threatening to positive self-view) than for success. Individuals may also deny the validity of the threatening source. Crocker and his colleagues found when African Americans' receive criticism from a White evaluator, their self-esteem is not impacted and they attribute the bad evaluation to racial prejudice.

However, their self esteem decreased if they believed that the evaluator is unaware of racial issues (Crocker et al. 1991). Similarly, subjects in Ditto and Lopez's (1992) experiments questioned the validity of the test when it produces undesired results. In social comparison and body image literature, individuals who were exposed to idealized images denigrated the social comparison target (Wan et al. 2008).

In order to minimize the impact of threat, individuals may employ various self-serving-bias strategies (e.g. Campbell and Sedikides 1999). They may create a mental gap or barrier between the threatening source and other thoughts and feelings, such as changing the relevance of the task to self definition and downplay the importance of the threatened domain (Tesser and Pleban 1983; Tesser 1988), redefining the meaning of the threatening information (e.g., negative feedback, Eisenstadt et al. 2002), or distancing the self from the threatening source (e.g., the person who outperforms, Pleban and Tesser 1981; Tesser 1980, 1988). Individuals also make downward social comparisons after being threatened, in order to feel better about themselves (e.g., Baumeister et al. 1998; Wills 1981).

When being threatened, individuals also experience negative emotions such as frustration, anger, anxiety, and even hostility, and undergo emotional distress (e.g. Campbell and Sedikides 1999; Hokanson, Burgess and Cohan 1963). In line with literature on mood and arousal, under such circumstances, the threatened individuals may behave aggressively. When frustrated by the experimenter, subjects were more aggressive against the experimenter, the research assistant, and even general others than those who were not threatened (Hokanson et al. 1963).

An extreme form of defensive consequences of self threat is self enhancement. Some evidence suggests that individuals rate themselves more favorably after receiving undesirable (vs. desirable) personality feedback (Baumeister and Jones 1978; Greenberg and Pyszczynski 1985). Similarly, people were found to make more optimistic predictions for future performance (McFarlin and Blascovich 1984) and show irrational confidence (Baumeister, Heatherton, and Tice 1993) in response to negative (vs. positive) feedback. When female subjects were explicitly asked to compare themselves with idealized images, they evaluated their own physical appearance more positively than those who did not compare with idealized images (Wan et al. 2008). Sometimes, there is no opportunity to enhance the self views in the threatened domain, or enhancing self-attributes in the threatened domain actually increases dissonance (Blanton et al. 1997; Stone and Cooper 2003). In these circumstances, individuals may emphasize other positive aspects or values of the self (Spencer, Fein, and Lomore 2001; McQueen and Klein 2006) or exert more efforts to perform better in other domains (Steele 1988).

A common theme of these defensive reactions is that individuals, when threatened by external events, refuse to change the status quo in the threatened domain. In all of these examples, the individual may protect against an acute threat to the self-view, but at the cost of losing potentially opportunities for improvement or promotion (Spencer et al. 2001; Major et al. 1998). In the marketplace, there are various self improvement products (SIP), services or programs that promise to change and improve individuals physically, mentally, financially or spiritually. Major categories cover products or services improving physical appearance (such as weight loss products and plastic surgeries), academic competence (such as writing skills and reading speed), work competence (such

as business skills), interpersonal relationships, and stress management, etc., and they can take the form of books, CDs, DVDs, multi-media packages, public seminars, workshops, training programs, motivational speeches, and even personal coaching. We propose that if individuals who experience self threat adopt defensive coping and refuse to make change in the threatened domain, they would dismiss the usefulness of the self improvement products in the same domain. This is a manifestation of defensive coping with self threat in consumption context.

**H1.** Consumers who experience self threat, compared to those who do not experience self threat, are more likely to dismiss self improvement products in the threatened domain.

**H2.** The impact of self threat on consumers' dismissal of self improvement products is mediated by the activation of self defensive mechanism.

Among psychology research on the self, especially self threat, one construct that is most often studied is self-esteem. The general pattern is that high self esteem people are more likely to engage in defensive reactions when they experience self threat. Developmental psychology research shows that children with high self esteem often deny or defend against an underlying sense of imperfection (Cassidy 1988). High self-esteem individuals were evaluated as less likable in interpersonal interactions after being threatened (Vohs and Heatherton 2003). Roese and Olson (1993) identified that high self-

esteem people attribute the causes of failures to external factors rather than blame themselves for the failure, whereas the pattern is reversed among low self-esteem people.

Recent research also proposed that fluctuations in state self-esteem are more central than those in trait self-esteem in understanding the role of self-esteem in people's lives (Crocker and Wolfe 2001). People holding unstable or tentative inflated beliefs in the self's superiority were found to be most vulnerable when encountering threats and more likely to engage in aggression and violence (Baumeister et al. 1996). Kernis and his colleagues found that the pattern of external attribution for failure (a way to self defend) was especially common among people with fragile high self-esteem (Kernis et al. 1993). Also, narcissists were found to be more aggressive toward someone who had insulted them than non-narcissists (Bushman and Baumeister 1998).

The self esteem contingency literature explains why some individuals are more vulnerable to threats than others, and why people are vulnerable to threats under certain circumstances (Deci and Ryan 1995; Kernis 2003). According to literature on contingencies of self esteem, self esteem is contingent if the individual views self worth as dependent upon reaching certain standards, appearing certain ways, or accomplishing certain goals (Deci and Ryan 1995). Individuals with high contingent self esteem are more vulnerable to negative events (Deci and Ryan 1995). Contingencies of self-esteem further indicate which domains have the potential to influence people's positive or negative feelings about themselves. The theory predicts that for those activities which are related to self-esteem contingencies, one invests more time and efforts because one wants to succeed (or avoid failure) in those domains and self-esteem levels have been shown to be more strongly influenced by feedback when that feedback is in regards to those

domains which one's self-esteem is contingent upon (Crocker et al. 2003). This stream of research is in line with the research focusing on self domain importance. Economics, for example, was an important domain for some participants, but unimportant for others (Steele and Liu 1983). Physical appearance domain, as another example, is more important for females than for males (Crocker et al. 2003). Generally, threatening information in one's self esteem contingent domain (or important domain, in other words) is more likely to affect one's self esteem (e.g., in work competence domain, Ferris 2009).

In the present research, we propose that the defensive consumption phenomenon (dismissing self improvement products) hypothesized in H1 would be more pronounced if consumers are threatened in the domain that their self worth is contingent upon. For example, as physical appearance domain is the self-worth contingent domain for females but not males (Crocker et al. 2003), females are more likely than males to dismiss body enhancement products as a way to defend self images once they are exposed to idealized images.

- H3.** Consumers are more likely to experience self threat and engage in defensive consumption (dismissing self improvement products in the threatened domain) if the threatening information is relevant to their self-worth contingent domain.

### **Compliant Coping with Self Threat**

Apart from defensive reactions to self threat, psychology research also found some evidence that people may not attempt to dismiss every threat. Instead of refuting the threat, they may simply accept the threat, admit the lowered self worth, alter the way they view themselves, and seek for ways to repair and restore the threatened domain (Eisenstadt et al. 2002; McQueen and Klein 2006). We define these reactions as compliant reactions to self threat.

In comparison to substantial research on defensive reactions to self threat, there is relatively less prior research on compliant reactions. Psychology research has focused on studying behaviors that are related to moral values. For example, when threatened in hypocrisy (Stone et al. 1997), moral values (Tetlock et al. 2000), or ethics (Zhong and Liljenquist 2006), individuals may attempt to directly change their behavior in the same or a closely related domain. Tetlock et al. (2000) found that threats to moral values made people more likely to engage in helping behavior. Zhong and Liljenquist (2006) showed that recalling unethical deeds resulted in behaviors attempting to wash the sin. Other than behaviors, people's cognition also showed evidence of compliant coping with threat. For example, in Mandel and Lehman's (1996) study, following negative outcomes, individuals' thoughts focused more on preventions than causes, so that they may avoid failure or perform better in the future. Tangney and Gavanski (1994) showed that thinking about shame experiences in the past can make people focusing their thoughts on altering qualities of the self. The common theme is that as a result of coping with threat, individuals accept the threat, adapt to it, and change the self in the threatened domain (Cramer 2000).

The manifestation of compliant coping has been documented by emerging consumer research (Gao et al. 2009; Rucker and Galinsky 2008), as mentioned in the Introduction section. In their research, consumers who experience self threat would seek products that can directly repair and bolster the threatened self domain.

### **Relationship between Defensive and Compliant Coping**

Little existing literature specifically examines the relationship between defensive and compliant coping strategies with self threat. However, psychology literature and consumer research suggests that there are two key factors that might be modulating whether a compliant or a defensive strategy would take place: self affirmation opportunity, including affirmation value of product, and mode of threat (blatant vs. subtle).

***Affirmation Value of Products.*** Self affirmation theory implies that opportunity to affirm the self can be a key in determining the switch between defensive and compliant coping. According to self affirmation theory (e.g., Steele 1988), if the individuals have the opportunity to affirm positive aspects of the self, the overall self worth is maintained, the impact of threat can be ameliorated, and thereby they would respond in less defensive or self-protective ways. Self affirmation can be realized in various ways. For example, writing on important values (Sherman, Nelson, and Steele 2000; Cohen, Aronson, and Steele 2000), positive past life events (Klein, Blier, and Janze 2001) or positive aspects of the self (Blanton et al. 1997), provision of bogus positive feedback on a personality test

or social skills test (Ben-Ari, Florian, and Mikulincer 1999), and provision of an unexpected opportunity to perform a positive behavior (Steele and Liu 1981) could all affirm the self and reduce the threat, stress, and defensiveness. Based on these earlier studies, we argue that if consumers are offered opportunities to affirm themselves, their overall self worth can be maintained, the need to self defend is reduced, and thus defensive consumption (i.e., dismissal of products that can improve them in the threatened domain) would be mitigated.

- H4.** When consumers are provided with external opportunities to affirm their self views in a different domain, their defensive reactions to self threat (i.e., defensive consumption) can be mitigated.

In addition to external affirmation opportunities, we suggest that in consumption contexts, products' symbolic values may serve as an affirmation source. Consumers do not consume products only for their functions; they also, or even instead, consume products for their symbolic meanings (e.g., Dunning 2007; Levy 1999). Products have symbolic values that are related to self images (Solemon 1983) and can reflect and signal what type of person the purchaser is (Belk, Bahn, and Mayer 1982; Dunning 2007; Shavitt 1990; Shavitt and Nelson 1999). Consumers may choose economically inferior products only for their diagnostic symbolic meaning (e.g., signaling that the buyer is a nice person, Shafir and Tversky 1992). For hobbies, such as mountaineering, which are expensive, dangerous and uncomfortable, people consume them because the activities communicate the signal that they are brave and fit individuals (Loewenstein 1999).

Consumers purchase and consume these products because the symbolic meanings of the products have affirmation value that can signal their desired self images.

Existing consumer research focused a lot on how to take advantage of the affirmation value of products (e.g., National Geographic magazine bolstering intelligence by Gao et al. 2009), but overlooked the dark side. In the present research, we are more interested to explore the circumstances in which the product does not offer or offers low affirmation value for certain aspects of the self.

For example, self improvement products, in terms of its symbolic meanings, can be double-edged swords. On the one hand, they send promises to improve one's physical or mental well-being. On the other hand, they may signal self deficiency and do not offer high affirmation value, and thus make the self threat even more salient. Take the intelligence domain for instance, intelligence improving products, which blatantly claim to enhance one's intelligence, could actually signal that the user has low intelligence. Thus, these products actually provide low affirmation value in intelligence. This assumption is in line with Sherman and his colleagues' recent research on affirmation. When affirmation task was blatantly depicted as a task that intended to enhance participants' self-esteem, the effectiveness of affirmation diminished and the task could no longer reduce the defensive reactions of self threat (Sherman et al. 2010).

When consumers experience self threat, they are motivated to protect and maintain positive and desirable self-images (Baumeister et al. 1998; Tesser 2000; Tesser et al. 2001). This would make consumers more sensitive to information such the affirmation value of products which is related to self-images. In other words, the affirmation value of products in certain aspects would become more diagnostic when

consumers are under threat in related domains. We argue that when consumers are experiencing self threat (vs. no threat), they act compliantly and adopt the product only if the product has high affirmation value; otherwise if the product has low affirmation value, consumers act defensively and dismiss the product.

- H5.** If the product offers low (vs. high) affirmation value, consumers are more likely to engage in defensive (vs. compliant) consumption as a way to cope with self threat.

***Mode of Threat.*** The psychology literature posits that the type of materials displayed in experiments can influence subjects' attention to threat (Mogg, Bradley, and Hallowell 1994) and awareness of threat (Mathews, Mackintosh, and Fulcher 1997). Compared to threats in a blatant mode (such as bogus feedback) that directly threaten self views, threats in a subtle mode (such as words, picture, and image priming) are only indirectly related to threat and do not pose real or immediate danger. These stimuli are presented below the threshold for awareness (Mathews et al. 1997). According to the neuroscience literature (Critchley, Mathias, and Dolan 2002), the perceptual awareness of threat would lead to bodily states of automatic arousal. A higher level of perceived threat would lead to more defensive reactions, such as response distortion (Locander, Sudman, and Bradburn 1976). This outcome is in line with the social comparison literature. When individuals are explicitly told to compare with an upward comparison target (vs. simply being presented with upward social comparison information), they are more likely to engage in defensive coping such as enhanced self evaluations (Wan et al. 2008). All these

studies indicate that a higher level of awareness of threat which is induced by the blatant (vs. subtle) mode of threat may lead to more defensive reactions. Therefore, we propose that if consumers experience self threat in a blatant (vs. subtle) mode, they are more likely to engage in defensive (vs. compliant) consumption.

**H6.** Consumers who receive self threat in a blatant (vs. subtle) mode would be more likely to engage in defensive (vs. compliant) consumption.

Furthermore, we consider the joint impact of the two factors, affirmation value of products and mode of threat, in determining the adoption of defensive (vs. compliant) consumption. If consumers experience self threat in a subtle mode, their self views may be shaken by the threatening source but the impact may remain below their conscious level (Mathews et al. 1997). Since generally there is an upward drive for individuals to achieve greater abilities (Festinger 1954), they would be interested in products that may help them improve or restore the shaken self domain, regardless of the products' affirmation value. However, if consumers experience self threat in a blatant mode, they become consciously aware of the threat and the self defensive mechanism is activated. Thus they would engage in defensive consumption (dismissing products with low affirmation value, such as self improvement products signaling self deficiency) and only adopt products with high affirmation value.

**H7.** Consumers who receive self threat in a blatant mode would be more likely to engage in defensive (vs. compliant) consumption if the product has low

(vs. high) affirmation value; However, consumers who receive self threat in a subtle mode would be more likely to engage in compliant consumption regardless of the products' affirmation value (high or low).

Methodologically, there are various ways of activation of self threat. Some modes tend to be more blatant, whereas others are in a more subtle form (McQueen and Klein 2006). For example, failures are experienced in many everyday situations and they usually result in dampened beliefs of one's capability. Therefore, the most common blatant threat manipulation paradigm involves bogus failure feedback given to participants regarding their task performance. Individuals experience self threat when receiving negative feedback in skills or ability tests, such as Remote Association Test (McFarlin and Blascovich 1984), intelligence test (Spencer et al. 2001), business competence test (Siegel, Scillitoe, and Parks-Yancy 2005), social sensitivity or accuracy tests (Schimel et al. 2001; Wood, Giordano-Beech, and Ducharme 1999), etc. Apart from these explicit failure manipulations, subtle manipulations of threats have also been documented to negatively influence individuals' self-belief and reduce their confidence in their own ability. For example, writing about past negative life events can induce a feeling of lowered self-worth (McFarland and Alvaro 2000; White and Lehman 2005). Also, the stressfulness of the task (Creswell et al. 2005) and the perceived difficulty of the task (Schwarz 2004) can undermine an individual's confidence in his/her thoughts related to the particular task, and thus reduce confidence in self-views in related domains. Similarly, the paradigm of using cognitive dissonance usually triggers self threat in a less blatant way. Individuals may experience an uncomfortable feeling when simultaneously

hold two contradictory attitudes or beliefs (Festinger 1957). When presented with attitude-disconfirming evidence (e.g., opponents of death penalty reading a pro-death penalty report with bogus scientific facts, Cohen et al. 2000) or writing counter-attitudinal essays (e.g., students writing up strong arguments supporting a substantial increase in tuition, Steele and Liu 1983; Correll, Spencer, and Zanna 2004; Stone and Copper 2003) could indirectly incur a feeling of inherent inconsistency of the self and shake the individuals' feelings of self-integrity and self-worth.

## **Overview of Experiments**

Overall, the central theme of this dissertation is that self threat can activate defensive reactions in consumer behaviors. Specifically, we argue that consumers who experience self threat would be more likely to reject products that explicitly claim to improve them in the threatened domain (H1) as the result of the activation of a self defensive mechanism (H2) when this domain is an important self domain (H3). Furthermore, this dissertation addresses the relationship between the two coping mechanisms to self threat previously identified in psychology research, and proposes that there are two key factors in modulating whether a defensive or a compliant strategy takes place: 1) opportunities for self affirmation (including general affirmation opportunities and affirmation value offered by products) (H5) and 2) the mode of threat (blatant vs. subtle) (H6). These two factors jointly determine the adoption of defensive (vs. compliant) consumption. Specifically, defensive consumption is most profound when consumers are threatened in a blatant mode and when the products offer low affirmation value (H7).

Lastly, this research also examines the role of affirmation in a different self domain in turning off defensive consumption. We argue that defensive consumption as a result of self threat can be mitigated if consumers are provided an opportunity to affirm the self in an alternative self domain (H4). These hypotheses were tested by four experiments.

Study 1 tested hypotheses H1, H2, and H3 by exploring a consumer context where a defensive reaction to self threat leads to dismissal of self improvement products.

Specifically, female (vs. male) participants whose self views were threatened in physical attractiveness domain engaged in defensive reactions, leading to less favorable attitude toward body enhancement products. Threat was manipulated by exposing consumers to ads with idealized images of their own gender (vs. ads without models for same products and brands). Gender was used as a proxy of self domain importance. Results supported all the three hypotheses. Study 2 replicated the findings of Study 1 by extending the research scope to a different self domain (gender identity) and a different consumption context (from product level to brand level). Male participants whose masculinity was threatened by receiving bogus feminine feedback in a gender identity test showed less favorable attitudes toward brands that can improve masculinity than those who were not threatened. Overall, the first two studies identified the manifestation of defensive coping with self threat in consumption contexts.

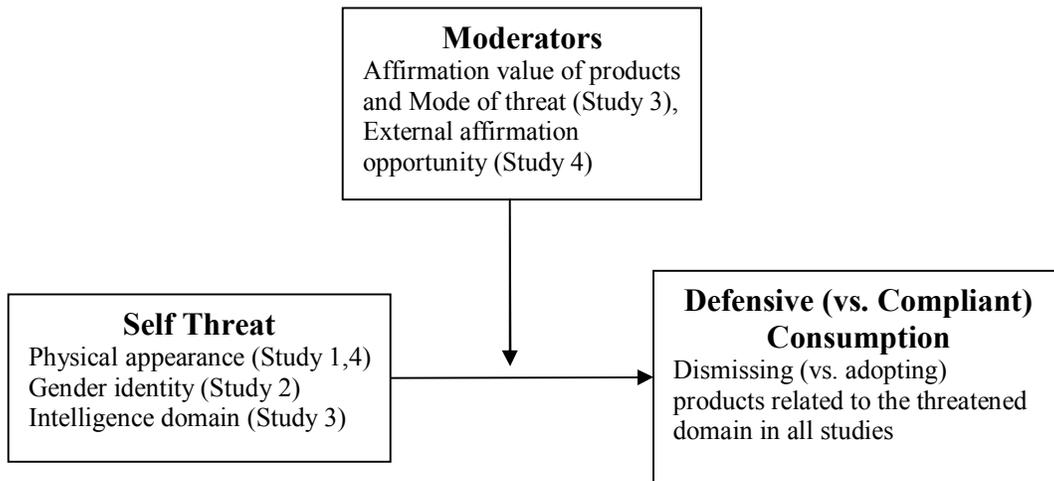
Existent consumer research mainly reported compliant consumption resulted from self threat (e.g., Gao et al. 2009). Study 3 addresses the discrepancies between prior research and present research. It tests H5, H6, and H7 by examining the impact of the two factors, the affirmation value of products and mode of threat, in determining the adoption of defensive vs. compliant consumption. In this study, participants' self views in the

intelligence domain were threatened either blatantly (receiving bogus negative feedback in Remote Association Test, Dalton 2008) or subtly (performing a difficult version of Remote Association Test, Creswell et al. 2005; Schwarz 2004). Subsequently, they evaluated a product with either high affirmation value (i.e., Critical Thinking, a book signaling high intelligence of the reader) or low affirmation value (i.e., IQ Increase multimedia software, signaling low intelligence of the user). Results showed no significant main effect of either factor (H5 and H6 were not supported) but a significant interaction effect of the two factors (H7 was supported). Specifically, participants engaged in compliant consumption when threatened in a subtle mode regardless of the product's affirmation value. However, they coped with blatant mode of threat defensively if product offered low affirmation (IQ Increase software) value and compliantly if product offered high affirmation value (Critical Thinking book).

The last study, Study 4, further examines the role of self affirmation in turning off the defensive mechanism by providing an external affirmation opportunity instead of manipulating products' affirmation value (testing H4). The consumption context of Study 1 was re-employed. All the female participants were threatened in the physical appearance domain. Affirmation opportunity was manipulated by giving bogus positive feedback (vs. no feedback) in an intelligence test (GRE reading comprehension test). We expected that defensive consumption would be mitigated when participants were offered the affirmation opportunity. The effect of affirmation emerged among high self-esteem individuals. Therefore our hypothesis was partially supported.

**FIGURE 1**

CONCEPTUAL FRAMEWORK OF DEFENSIVE AND COMPLIANT  
CONSUMPTION



For all the four studies, students in the introductory marketing course at the University of Manitoba were recruited. They participated in the experiments in exchange for course credit. The studies were conducted in a computer lab. MediaLab software was used for programming all the experiments.

## CHAPTER THREE

### STUDY 1

The first objective of this dissertation is to uncover the impact of a defensive coping strategy of self threat in a consumer context. Psychology research has evidenced that when individuals engage in defensive coping with self threat, they refuse to address the negative aspect of the self, which is made salient by the threat in order to protect their challenged self views (Baumeister et al. 1998). Resulting from this defensive mechanism, individuals can even forego the opportunities or options to improve self in the challenged domain (Spencer et al. 2001). We therefore posit that when consumers adopt a defensive strategy to cope with self threat, they are likely to forego the opportunities provided by products or brands to improve the self in the challenged domain (H1). We further argue that rejection of self improvement products is mediated by an activated self defensive mechanism—a denial of the threat itself (H2).

To test H1 and H2, we employed a consumer context where consumers' self views in physical appearance domain are threatened by idealized images in the media (e.g., Groesz et al. 2002; Richins 1991). Previous research has suggested that idealized images in advertising media pose a substantial threat on individuals' self views of their physical attractiveness (e.g., Groesz et al. 2002; Smeesters and Mandel 2006) and documented various defensive reactions. For example, individuals exposed to idealized images (vs. control images) feel more positive about their body image as a way to mitigate the negative effect of idealized images (Joshi, Herman, and Polivy 2004; Wan,

Main, and Manchanda 2009), or denigrate the threatening source (i.e., highly attractive images) as “less smart” (Wan et al. 2008) or “fake” (Duke 2002). Extending from these research studies, we proposed that consumers whose self views are threatened in the physical attractiveness domain (vs. control group) tend to adopt a defensive strategy to address self threat, characterized by their negative evaluations of the body enhancement products.

This study also considers domain importance as an important moderator of the proposed relationship between threatening source and defensive consumption (H3). That is, defensive consumption is only evident among those to whom physical attractiveness is an important self domain. In this case, gender can be used as a proxy of domain importance, as research (Crocker et al. 2003) has identified that physical attractiveness is a self domain that is more important among females than among males. Therefore, we proposed that the defensive consumption resulting from the threat on physical attractiveness would only emerge among females participants.

## **Method**

***Design and Participants.*** The main study adopted a 2 (ads stimuli: idealized images vs. no images) by 2 (gender: female vs. male) between-subjects experimental design. One hundred and eight undergraduate students completed the study, among which 49 were female students and 59 were males.

***Procedure.*** Participants were randomly assigned to either *Idealized images* or *No images* condition and received the packages that corresponded to their own genders. They were asked to perform three purportedly unrelated tasks: *Ad Viewing Task* (self threat priming), *Word Stem Completion Task* (an unrelated filler task), and *New Product Evaluation Task* (for measuring the main DVs).

In the first part of the experiment—*Ad Viewing Task*, participants viewed a package of ads that was in line with their own gender containing five target ads (with *Idealized images* or *No images*) and two filler ads (same for both conditions). The sequence of the ads being presented was randomized. Participants were told that the task was intended to understand how consumers evaluate print ads. After each ad had been displayed for ten seconds, participants were asked to write down any thoughts related to that ad. The next section will elaborate on how the ads stimuli used in the main study were selected by two pretests.

After a filler task (a three-minute unrelated *Word Stem Completion Task*), participants were asked to complete a *New Product Evaluation Task* where they evaluated an ad of a body enhancement dietary product and they were told that their evaluations could help the producer launch this new product. Ads with a fictitious dietary supplement product were created by a professional graphic designer. Female and male versions of the ad were identical with regard to product features such as fat burning, shape building and energy boosting. The only difference is the backgrounds of the ad—a watermark background of the ad features a female body in the female version and a male body in the male version. The body enhancement product ad was displayed for 20

seconds. After viewing the body enhancement product ad, participants completed a *New Product Evaluation Questionnaire*.

***Ads Stimuli (Idealized Images vs. No Images) Construction.*** Participants' self views in physical appearance were manipulated by exposure to the ads stimuli in the first part of the experiment. The ads stimuli used in the main study were selected and tested by two pretests. Pairs of ads chosen to be used in the two conditions (idealized images vs. no images) should advertise a same product and brand, with one containing a highly attractive model (matching the participant's gender) and one containing no model. Five pairs of ads should be selected for each gender. Pretest A selected the ads stimuli to be used. Pretest B further tested and verified the impact of the ads stimuli on participants' self views in physical appearance domain.

In Pretest A, a pool of 12 pairs of print ads was first generated for each gender. Most of the ads were selected from pictures that are the results of image searching of a product/brand at [www.images.google.com](http://www.images.google.com). Most of them have also been appearing in recent magazines that are frequently read by college students.

A one-factor experimental design (ads stimuli: with images vs. no images) was adopted within each gender. Forty-six female undergraduate students and 62 male undergraduate students participated in the study. Participants viewed either a set of ads that contains models matching their own gender or a set of ads advertising the same products/brands without models. They were asked to rate each ad on ad quality measures (five aspects, i.e., how well designed, how pleasant, how convincing, how lively, and how meaningful the ad is), as well as their likeness of the ad by using 7-point scales.

Participants in the *With images* condition also indicated the attractiveness of the models in the ads by two 7-point Likert scale items (1 = ordinary, unattractive; 7 = beautiful/handsome, attractive) (Richins 1991).

In order to select the ads to be used in the main study, ads with models were ranked in terms of model attractiveness. Then, a comparison was made for each pair of ads (with images vs. no images) on ad quality and likeness of the ad. The pairs of ads that differed significantly in terms of ad quality and likeness were excluded. For each gender, five ads with highly rated models were selected for the *Idealized images* conditions in the main study, while the corresponding ads advertising the same products/brands but containing no models were chosen for the *No images* condition. The average attractiveness of the models in the *Idealized image* condition for females was 5.57 (ranging from 5.00 to 6.04, 7-point scale), whereas the one for males was 4.74 (ranging from 4.34 to 5.10, 7-point scale). For either gender, ANOVA on the measure of ad quality (five aspects) and likeness of the ad revealed no significant difference between the target ads selected for the two conditions. Detailed statistics are displayed in Table 1.

**TABLE 1**  
STUDY 1 PRETEST A: AD QUALITY AND LIKENESS OF AD

	Females				Males			
	<i>F</i> (1,44) value	<i>p</i> value	<i>M</i> <sub>idealized images</sub>	<i>M</i> <sub>no images</sub>	<i>F</i> (1,60) value	<i>p</i> value	<i>M</i> <sub>idealized images</sub>	<i>M</i> <sub>no images</sub>
Ad Quality								
Well designed	.07	.80	4.81	4.75	.00	.97	5.06	5.05
Pleasant	1.41	.24	5.11	4.82	1.07	.30	4.90	5.08
Convincing	.32	.58	4.31	4.15	.96	.33	4.15	4.33
Lively	2.45	.12	4.98	4.60	.10	.75	4.67	4.59
Meaningful	.39	.54	3.97	4.12	1.13	.29	3.88	4.16
Likeness of Ad	1.87	.18	4.48	4.13	2.32	.13	4.20	4.56

We further conducted Pretest B to verify the negative impact of the ads stimuli on participants' self views in the physical appearance domain. We expected to see that female participants' self evaluation would drop after viewing ads containing idealized images (vs. no images), whereas male participants' self evaluation would not be influenced by the same task.

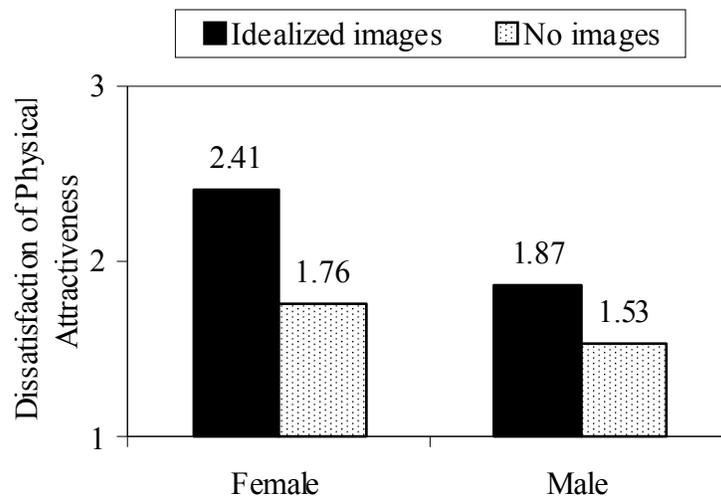
In Pretest B, we adopted a 2 (ads stimuli: idealized images vs. no images) by 2 (gender: female vs. male) between-subjects experimental design. One hundred and eight undergraduate students completed the study. Similar to the procedure of the main study, participants first completed the *Ad Viewing Task*. Ads stimuli selected by Pretest A were employed. Then after a filler task, participants were asked to complete a *Life Style Survey*. They were told that their answers would help the university design better health and fitness programs. Embedded in a number of questions that satisfy the cover story, participants' dissatisfaction about their own physical attractiveness was measured by the question "I feel unattractive at this moment" on a 5-point scale (1= Not at all, 5 = Extremely) (adapted from Heatherton and Polivy's (1991) State Self-Esteem Scale).

A 2 (ads stimuli: idealized images vs. no images) by 2 (gender: female vs. male) between-subjects ANOVA on the measure of dissatisfaction of physical attractiveness revealed a significant main effect of the ads stimuli manipulation ( $M_{idealized\ images} = 2.12$ ,  $SD = 1.15$  vs.  $M_{no\ images} = 1.63$ ,  $SD = .64$ ;  $F(1, 104) = 8.19$ ,  $p < .01$ ) and significant effect of gender ( $M_{female} = 2.09$ ,  $SD = 1.01$  vs.  $M_{male} = 1.70$ ,  $SD = .94$ ;  $F(1, 104) = 4.41$ ,  $p < .05$ ). Overall, participants in the *Idealized images* condition felt more dissatisfied about their own physical attractiveness than those in the *No images* condition. In addition, female

participants tended to be more dissatisfied than the male counterparts. No significant interaction effect ( $F(1, 104) = .64, p > .10$ ) was found. Post-hoc contrast analysis (splitting the data by gender) showed that female participants in the *Idealized images* condition felt significantly more dissatisfied about their own physical appearance than those in the *No images* condition ( $M_{idealized images} = 2.41, SD = 1.16$  vs.  $M_{no images} = 1.76, SD = .73; F(1, 44) = 5.16, p < .05$ ). Among male participants, the difference between the two conditions was not significant ( $M_{idealized images} = 1.87, SD = 1.11$  vs.  $M_{no images} = 1.53, SD = .56; F(1, 60) = 2.30, p > .10$ ). Results supported our expectation about the impact of ads stimuli on participants' self evaluation. Therefore, the ads stimuli were finalized.

**FIGURE 2**

STUDY 1 PRETEST B: DISSATISFACTION OF PHYSICAL ATTRACTIVENESS



**Measures.** In the main study, the dependent variables were measured in a *New Product Evaluation Questionnaire*, which was the last part of the experiment. After participants read the ad for a new body enhancement product, their attitude toward the

advertised product was first measured by 4-item 7-point Likert scales (1 = bad, negative, unfavorable, I dislike it; 7 = good, positive, favorable, I like it). An index of attitude toward product was created by averaging the four items ( $\alpha = .90$ ).

Following that, participants responded to an open-ended question that asked them to list all the thoughts that crossed their minds while they were viewing the ad for the product. Their responses were coded into number of positive, negative, and neutral thoughts by two judges blind to the hypotheses. Since selective information processing occurs when the individual is holding defensive motivation (Ahluwalia 2002), the number of negative thoughts was used in the analyses as one of the reflections of defensive coping with self threat. More than 90 percent of the thoughts were coded successfully using this method. The disagreements were resolved through discussion.

In addition, participants were asked to indicate the reasons that may lead them to reject the product. Embedded in a list of 12 reasons were the measures for participants' engagement in defensive mechanism, which included four focal items. These items are "The product features do not fit my needs", "I am not interested in the product because I do not need to lose any weight", "I do not need the product because I have a very good body shape", and "I do not need the product because I think I look very attractive". These four items were averaged to form an index for defensive mechanism ( $\alpha = .85$ ).

Lastly, we measured the importance of physical appearance domain as a manipulation check for the gender difference. Participants responded to five-items regarding the importance of physical appearance domain (adopted from self-esteem contingency scale; Crocker et al. 2003). These items included "My self-esteem does not depend on whether or not I feel attractive", "My self-esteem is influenced by how

attractive I think my face or facial features are”, “My sense of self-worth suffers whenever I think I don’t look good”, “My self-esteem is unrelated to how I feel about the way my body looks”, and “When I think I look attractive, I feel good about myself.” Responses were made on 7-point scales (1 = strongly disagree; 7 = strongly agree) and were averaged to form an index of perceived importance of physical attractiveness (alpha = .76).

## Results

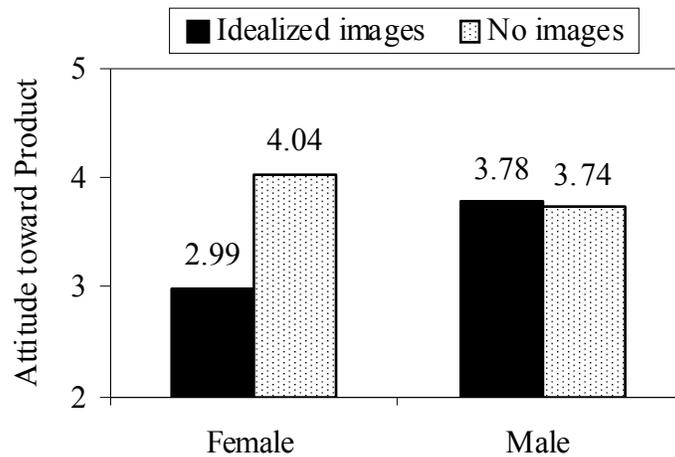
**Gender Manipulation Check.** Gender was used as a proxy for self domain importance in this study. We expected the importance of physical appearance domain to be significantly different between the two genders. Results of a one-factor ANOVA on the measure of the importance of physical appearance domain supported our expectation that this self domain was significantly more important for female participants than for the males ( $M_{female} = 5.26, SD = .98$  vs.  $M_{male} = 4.77, SD = 1.28$ ;  $F(1,106) = 4.58, p < .05$ ).

**Attitude toward Product.** A 2 (ads stimuli: idealized images vs. no images)  $\times$  2 (gender: female vs. male) between-subjects ANOVA on the measure of attitude toward product revealed a significant main effect of ads stimuli manipulation ( $M_{idealized\ images} = 3.41, SD = 1.34$  vs.  $M_{no\ images} = 3.87, SD = 1.28$ ;  $F(1, 104) = 4.17, p < .05$ ), qualified by a significant interaction effect ( $F(1, 104) = 4.89, p < .05$ ). The main effect of gender was not significant ( $M_{female} = 3.48, SD = 1.23$  vs.  $M_{male} = 3.76, SD = 1.39$ ;  $F(1, 104) = .94, p > .10$ ). Planned contrast analysis showed that female participants in the *Idealized images*

condition showed significantly more negative attitude toward the product than those in the *No images* condition ( $M_{idealized\ images} = 2.99, SD = 1.18$  vs.  $M_{no\ images} = 4.04, SD = 1.06$ ;  $F(1, 104) = 8.26, p < .01$ ), whereas among male participants there was no such difference ( $M_{idealized\ images} = 3.78, SD = 1.38$  vs.  $M_{no\ images} = 3.74, SD = 1.43$ ;  $F(1, 104) = .02, p > .10$ ). Our hypothesis was supported that self threat could lead to rejection of improvement products (defensive consumption) if the threatened self domain is important.

**FIGURE 3**

STUDY 1: ATTITUDE TOWARD PRODUCT

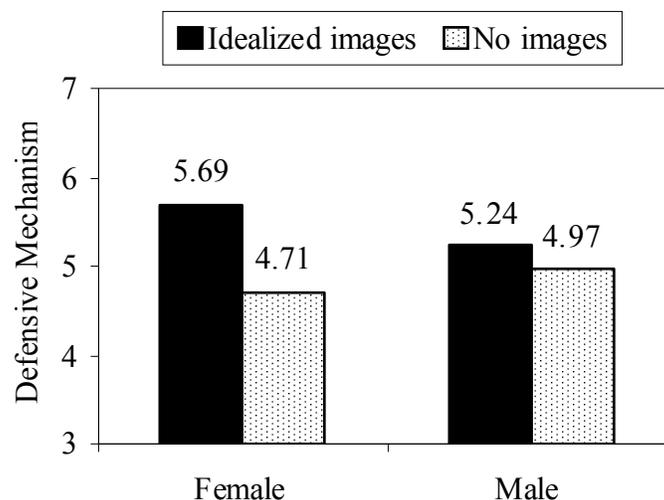


**Defensive Mechanism.** A 2 (ads stimuli: idealized images vs. no images)  $\times$  2 (gender: female vs. male) between-subjects ANOVA on the measure of activation of defensive mechanism revealed a significant main effect of ads stimuli manipulation ( $M_{idealized\ images} = 5.45, SD = 1.14$  vs.  $M_{no\ images} = 4.86, SD = 1.49$ ;  $F(1, 104) = 6.07, p < .05$ ), but no significant main effect of gender ( $M_{female} = 5.23, SD = 1.27$  vs.  $M_{male} = 5.11, SD = 1.41$ ;  $F(1, 104) = .13, p > .10$ ) or significant interaction effect ( $F(1, 104) = 2.00, p$

= .16). Post-hoc contrast analysis (splitting the data by gender) showed that female participants in the *Idealized images* condition agreed to a greater extent to the statements related to defensive thoughts than those in the *No images* condition ( $M_{idealized\ images} = 5.69$ ,  $SD = 1.12$  vs.  $M_{no\ images} = 4.71$ ,  $SD = 1.25$ ;  $F(1, 47) = 8.47$ ,  $p = .005$ ). Among male participants, the difference between the two conditions was not significant ( $M_{idealized\ images} = 5.24$ ,  $SD = 1.12$  vs.  $M_{no\ images} = 4.97$ ,  $SD = 1.66$ ;  $F(1, 57) = .53$ ,  $p > .10$ ).

**FIGURE 4**

STUDY 1: DEFENSIVE MECHANISM

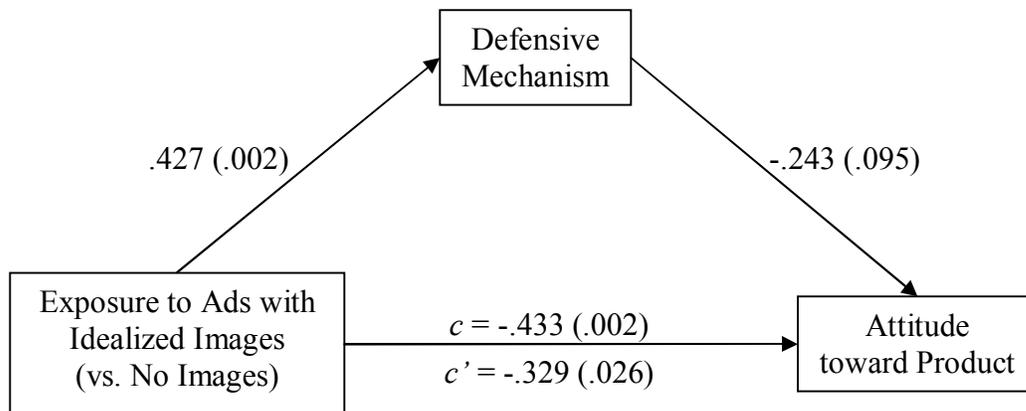


We further assessed whether *female* participants' attitude toward the product would be mediated by the activation of defensive mechanism. Figure 4 summarizes the results of mediation analysis. As can be seen, exposure to ads with idealized images (vs. no images) activated participant's defensive mechanism ( $a = .427$ ,  $t = 3.24$ ,  $p < .01$ ). The impact of defensive mechanism on attitudes toward the product was marginally significant ( $b = -.243$ ,  $t = -1.70$ ,  $p < .10$ ), which means a higher activation of defensive

mechanism led to a less favorable attitude toward the product. When attitudes toward the product was the dependent variable and only the ads manipulation was entered as independent variable, the impact of the ads manipulation was significant ( $c = -.433, t = -3.29, p < .01$ ). The path coefficient and its significance level dropped when the proposed mediator defensive mechanism was also entered as an independent variable ( $c' = -.329, t = -2.31, p < .05$ ). These met the first three mediation criteria as Baron and Kenny (1986) suggested. Lastly, when assessing whether the mediation effect was perfect, the result of Sobel test was non-significant ( $z = -.95, p > .10; a = .427, s_a = .402, b = -.243, s_b = .114$ ). Therefore, defensive mechanism *partially mediates* the impact of the ads manipulation (idealized images vs. no images) on attitude toward the product among female participants.

**FIGURE 5**

STUDY 1: DEFENSIVE MECHANISM AS A MEDIATOR



Note:  $p$  values are presented in the brackets beside path coefficients.

Overall, the results of ANOVA on defensive mechanism and the mediation analysis supported our hypothesis on the mediation role of a self defensive mechanism.

Among female participants, when they were threatened by exposure to idealized images (vs. no images), their less favorable attitude toward the improvement product was mediated by the activation of a self defensive mechanism.

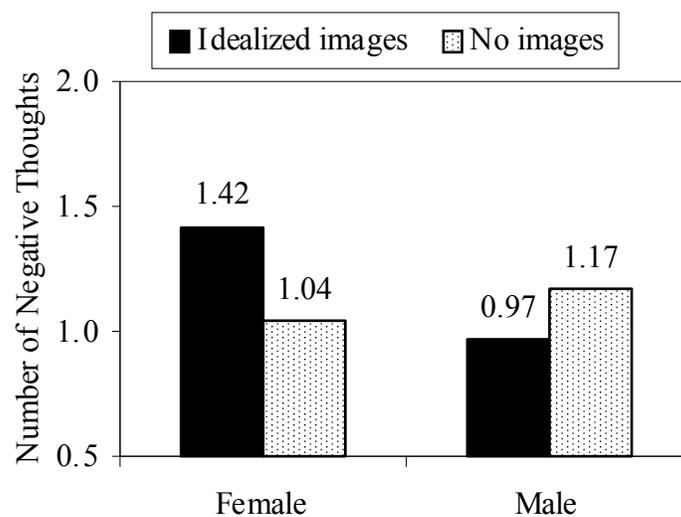
**Negative Thoughts.** As an alternative way to tap into the defensive mechanism, we used open-ended question to record participants' thoughts about the product and the ad before they responded to the scale response items regarding defensive mechanism. Two judges coded participants' responses into a number of positive, negative, and neutral thoughts. The number of negative thoughts was used as a reflection of defensive processing (Ahluwalia 2002). A 2 (ads stimuli: idealized images vs. no images) by 2 (gender: female vs. male) between-subjects ANOVA on the number of negative thoughts revealed a significant interaction effect ( $F(1, 104) = 4.72, p < .05$ ). Contrast analysis showed that for female participants, viewing ads containing idealized images generated significantly more negative thoughts than viewing ads without images ( $M_{idealized\ images} = 1.42, SD = .70$  vs.  $M_{no\ images} = 1.04, SD = .82; F(1, 104) = 3.63, p = .06$ ). However, for male participants, the number of negative thoughts did not differ significantly between the two conditions ( $M_{idealized\ images} = .97, SD = .67$  vs.  $M_{no\ images} = 1.17, SD = .60; F(1, 104) = 1.29, p > .10$ ). No significant main effects were found for the ads stimuli manipulation ( $M_{idealized\ images} = 1.18, SD = .72$  vs.  $M_{no\ images} = 1.16, SD = .70; F(1, 104) = .42, p > .10$ ) or gender ( $M_{female} = 1.24, SD = .78$  vs.  $M_{male} = 1.07, SD = .64; F(1, 104) = 1.48, p > .10$ ). Results yielded a similar pattern as the scale response measure of defensive mechanism.

Listed are some typical examples of negative thoughts among female participants, "I don't feel like I need them" (self defending thoughts), "They cost lots of money"

(financial reasons), “It’s a very dangerous substance that could alter the body in harmful ways” (health concerns), “Working out and eating healthy are better options than taking supplements” (mentioning alternative options), and “The product advertised does not seem any different than the all of the other dietary supplements on the market” (advertising and market related issues). Interestingly, the following thought only emerged among male participants. “I’m not interested in the product because I don’t care how I look.”

**FIGURE 6**

STUDY 1: NUMBER OF NEGATIVE THOUGHTS



## Discussion

Overall, the results of Study 1 evidenced the outcome of self threat and supported H1 (defensive consumption as a way of coping with self threat), H2 (moderating role of self domain importance), and H3 (mediating role of defensive mechanism). Participants

primed of self threat by idealized images in media formed less favorable attitudes toward body enhancement products than those who were not exposed to idealized images. Regarding general gender differences, female participants generally formed less favorable responses than males. Moreover, the interaction effects were driven by the difference between the two manipulated conditions among only female participants. Female participants dismissed the body enhancement product after viewing idealized images whereas this pattern was not identified among male participants. Furthermore, among female participants, the defensive consumption (dismissing the body enhancement product) was found to be mediated by the activated self defensive mechanism.

Negative state self views are often deemed as the exemplification of self threat. However, we did not perform a manipulation check for the threatening task in the main study. Instead, we used a separate Pretest B to verify that the manipulation task did impact the participants' self views. In this way, we avoided data contamination. If self evaluation is measured before product evaluation, the measurement itself could trigger a conscious process of coping with self threat (Bargh and Chartrand 1999). As a result, individuals will be more likely to modify their reactions toward product evaluation, a typical attribute of conscious and controlled processing (Bargh and Chartrand 1999; Wan et al. 2008). However, if product evaluation is measured first and then followed by the measure of self evaluation, consumers are likely to use their evaluations of the product (e.g., dismissing the product) as the means to cope with the self threat. As a result, the impact of self threat on self evaluations will be diluted.

## CHAPTER FOUR

### STUDY 2

The purpose of Study 2 is to replicate the findings of Study 1 in different contexts. This study extends the research scope in two directions. First, a different self domain, gender identity, was examined. In existing research, men are found to be nearly constantly threatened by any contextual information that might indicate insufficient masculinity (Kimmel 2000; Willer 2006), whereas women are not as easily influenced by contextual information that might question their femininity. In this study, we examined male consumers' responses to self threat in masculinity.

Second, we also intended to extend the consumption context from product level to brand level. According to existing research on the gender identity of brands (Levy 1999), some brands are perceived as more masculinity oriented than the others. For example, among cigarette brands, Marlboro is perceived to be masculine whereas Virginia Slim is perceived to be feminine. Brands that may (vs. may not) enhance masculinity were examined in this study.

Akin to Study 1, we expected to identify the manifestation of defensive consumption in gender identity domain. That is, male consumers who are threatened in masculinity would defensively protect the threatened self views, resulting in the rejection of products and brands that can improve masculinity.

## Method

***Design and Participants.*** A 2 (threat in masculinity: threat vs. control) by 2 (brands: improving masculinity vs. not improving) between-subjects experimental design will be adopted to test the hypothesis. Seventy-eight *male* undergraduate students participated in the study.

***Procedure.*** In the experiment, the participants were randomly assigned to one of the four conditions. They were asked to perform three purportedly unrelated tasks. Participants first filled out a *Gender Identity Survey*, by which their views in masculinity were manipulated (threatened vs. control). Then, following an unrelated filler task—*Word Stem Completion Task*, they completed a *Brand Survey* in which their attitudes toward and purchase intentions of different brands (improving masculinity vs. not improving) were measured.

***Threat Manipulation.*** Self threat in masculinity was manipulated in the first part of the experiment when participants received bogus feedback for the *Gender Identity Survey* they filled in. Adapted from Willer's (2006) procedure, participants were told that some researchers were interested in pretesting the reliability of an instrument. The survey was in fact the Bem Sex Role Inventory (Bem 1974), which includes 60 items (20 measuring masculinity, 20 measuring femininity, and 20 neutral terms). In this task, participants' masculinity was threatened by bogus feminine feedback in gender identity test (Bem 1974; Willer 2006). They were told that the possible scores of the test range

from 0 to 50. The range from 0 to 25 is the masculine half of the scale and 26 to 50 the feminine half. Participants in the *Threat* condition received bogus feminine feedback indicating that their score is 32, which falls within the feminine range of the scale. Participants in the *Control* condition were told that their results will be released at the end of the lab session.

***Brands Manipulation.*** Brands (improving masculinity vs. not improving masculinity) were manipulated in the last part of the experiment by the *Brand Survey*. The brand stimuli adopted to manipulate the brand feature as either *Improving masculinity* or *Not improving masculinity* were selected by a pretest. In the pretest with 28 male participants from the same population, participants were presented with a pool of 12 brands. According to existing research on the gender identity of brands (Levy 1999), some brands are perceived as more masculinity oriented than the others. Brands chosen for the pretest included several pairs of brands for typical male consumer products with one brand perceived to be more masculine than the other (e.g., Boss and Chanel men's watch). Several products/brands with no obvious gender identity (e.g., Sony laptop) were also included in the pretest. Participants were asked to choose three brands/products that 1) they would be interested in using if they want to enhance their masculinity; 2) they would hate to use when they want to enhance their masculinity. Number of choices for Question 1) and 2) was calculated for each brand. Brands were then ranked in terms of number of choices for Question 1) and 2) respectively. VW SUV and Boss men's watch were chosen as the brands for *brands improving masculinity* condition, as they ranked highest for Question 1) and lowest for Question 2). Vice versa, VW Beetle and Chanel

men’s watch were chosen as the brands for *brands not improving masculinity* condition. Cologne spray and Sony laptop which ranked in the middle for both questions were chosen as two filler brands used in both conditions. Table 2 displays the numbers of choices for these selected brands.

**TABLE 2**  
STUDY 2 PRETEST: BRAND SELECTION

Condition	Brands Chosen	Q1. Interested in using	Q2. Hate to use
Brands improving masculinity	VW SUV	16	6
	Boss watch	11	3
Brands not improving masculinity	VW Beetle	3	13
	Chanel watch	5	12
Filler brands	Cologne spray	9	7
	Sony laptop	7	8

**Measures.** After viewing the image of each brand/product, participants’ purchase intention of the product/brand as well as their attitude toward brand were measured. For purchase intention, participants indicated whether they agreed to the following statements on 7-point scales (1 = Not at all; 7 = Very much): “Are you interested in finding more information about the product/brand?”, “Are you interested in trying the product/brand?”, and “Are you interested in purchasing the product/brand?”. Participants’ responses to the three items were averaged to form the index of purchase intention ( $\alpha = .84$ ). Their attitudes toward brands were measured by 4-item 7-point Likert scales (1 = bad, negative, unfavorable, I dislike it; 7 = good, positive, favorable, I like it). An index of attitude toward brand was created by averaging the four items ( $\alpha = .88$ ).

## Results

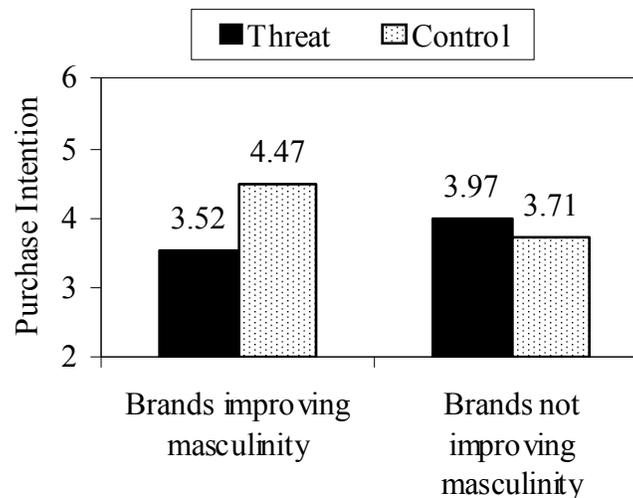
A 2 (threat in masculinity: threat vs. control)  $\times$  2 (brands: improving masculinity vs. not improving) between-subjects ANOVA on the measures of purchase intention of and attitude toward brands for the two pairs of target brands revealed similar patterns. We performed within-subjects repeated measure analyses by defining Pair 1 (VW SUV vs. VW Beetle) and Pair 2 (Boss vs. Chanel) as different levels of the within-subject factor. No significant effect of the within-subject factor emerged. Therefore, the measures on the two pairs of target brands (VW SUV/Boss vs. VW Beetle/Chanel) were collapsed.

***Purchase Intention.*** A 2 (threat in masculinity: threat vs. control)  $\times$  2 (brands: improving masculinity vs. not improving) between-subjects ANOVA on the collapsed measure of purchase intention yielded a significant interaction effect of the two manipulated variables ( $F(1, 74) = 3.96, p = .05$ ). Planned contrast analysis revealed that for brands improving masculinity, there was a significant effect of threat manipulation ( $M_{threat} = 3.52, SD = 1.44$  vs.  $M_{control} = 4.47, SD = 1.35; F(1, 74) = 5.00, p < .05$ ). Participants threatened in masculinity showed a lower intention in purchasing the brands than those who were not threatened. However, the effect of threat manipulation was not significant for brands not improving masculinity ( $M_{threat} = 3.97, SD = 1.44$  vs.  $M_{control} = 3.71, SD = 1.35; F(1, 74) = .36, p > .10$ ). The main effect of threat manipulation ( $M_{threat} = 3.72, SD = 1.42$  vs.  $M_{control} = 4.07, SD = 1.27; F(1, 74) = 1.29, p > .10$ ) and the main

effect of brands manipulation ( $M_{improving} = 3.95, SD = 1.46$  vs.  $M_{not\ improving} = 3.83, SD = 1.24; F(1, 74) = .27, p > .10$ ) were non-significant.

**FIGURE 7**

STUDY 2: PURCHASE INTENTION

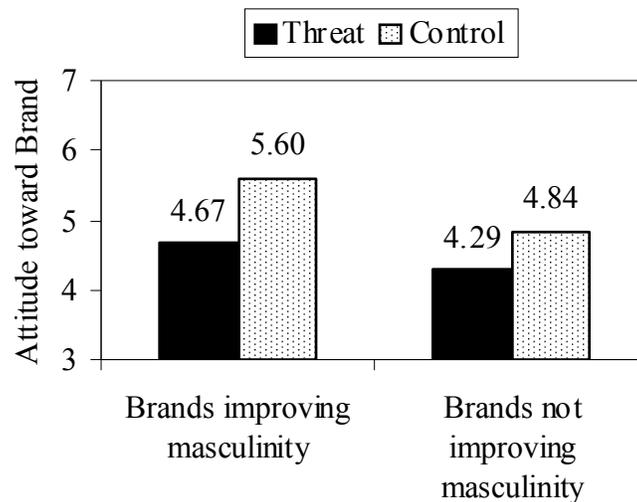


**Attitude toward Brand.** A 2 (threat in masculinity: threat vs. control) by 2 (brands: improving masculinity vs. not improving) between-subjects ANOVA on the collapsed measure of attitudes toward the brand revealed a significant main effect of threat manipulation ( $M_{threat} = 4.51, SD = 1.10$  vs.  $M_{control} = 5.20, SD = 1.09; F(1, 74) = 9.15, p < .01$ ). Participants threatened in masculinity showed less favorable attitude toward the brand than those in the control condition. ANOVA results also showed a significant main effect of brands manipulation ( $M_{improving} = 5.10, SD = 1.10$  vs.  $M_{not\ improving} = 4.58, SD = 1.14; F(1, 74) = 5.76, p < .05$ ). Overall, participants showed more favorable attitude toward the brand that can (vs. cannot) improve masculinity. No significant interaction effect emerged ( $F(1, 74) = .60, p > .10$ ). Post-hoc contrast analysis

(splitting the data by brands manipulation) yielded a similar pattern as the results of purchase intention. For brands improving masculinity, participants threatened in masculinity showed less favorable attitude toward the brand than those who were not threatened ( $M_{threat} = 4.67, SD = 1.16$  vs.  $M_{control} = 5.60, SD = .79$ ;  $F(1, 38) = 8.16, p < .01$ ). However, there was no such effect for brands not improving masculinity ( $M_{threat} = 4.29, SD = 1.01$  vs.  $M_{control} = 4.84, SD = 1.20$ ;  $F(1, 36) = 2.25, p > .10$ ).

**FIGURE 8**

**STUDY 2: ATTITUDE TOWARD BRANDS**



**Discussion**

Study 2 extended the scope of research by examining another self domain (gender identity) and exploring the consumption context from product level to brand level. Results replicated the findings of Study 1. Male participants who experienced self threat

in masculinity (vs. who did not experience self threat) dismissed brands that can improve masculinity.

An alternative explanation for male participants who received feminine (vs. no) feedback to show lower interests in masculine brands is that they absorbed the feedback, and thus believed that masculine brands do not match their image (gender orientation). In other words, it might not be the defensive mechanism that led them to dismiss the masculine brands. If that is the case, then those who received feminine (vs. no) feedback should have shown a more positive attitude toward products and brands not improving masculinity (Beetle and Chanel that match feminine self image). However, this pattern has not been identified for those feminine brands ( $p > .10$  for both purchase intention and attitude toward brand). Therefore, this alternative explanation is ruled out. The defensive mechanism should be playing a role for the threatened male participants to dismiss the masculine brands.

Overall, the first two studies identified the manifestations of defensive consumption in different self domains and different consumption contexts. Generally, consumers who are threatened in one self domain are likely to dismiss the products or brands that may improve them in the same domain.

## CHAPTER FIVE

### STUDY 3

Findings of Study 1 and 2 documenting defensive consumption seem to be contradicting to the existing literature on compliant consumption (e.g., Gao et al. 2009). The main objective of Study 3 was to examine the relationship between compliant and defensive consumption and identify the factors that modulate the switch between these two consumption modes when consumers experience self threat in consumption contexts.

We suggest that the *affirmation value of products* can be a factor influencing whether the self threat leads to a defensive or compliant consumption. Research has suggested that products have symbolic meanings (Solomon 1983; Dunning 2007) which reflect and signal the attributes of the target user (Fournier 1998). We define affirmation value as whether or not a product can signal positive attributes of the target users. For example, a weight-loss product may signal that the target user is overweight, which has very low affirmation value to consumers who feel insecure about their physical attractiveness. Therefore, self threat leads to the rejection of products with low affirmation value (such as the body enhancement product in Study 1). On the contrary, magazines such as *National Geography* (vs. *Playboy*) have higher affirmation value to consumers whose self views on intelligence are threatened because they implicitly signal that the reader is a person with high intelligence. Thus, self threat leads to the adoption of products with high affirmation value (Gao et al. 2009). We therefore propose that self threat would lead to a defensive consumption when the affirmation value of the product is

low; a compliant consumption would emerge when the product affirmation value is high (H5).

In addition to affirmation opportunities offered by products, this study also explores the way self threat is activated—the *mode of threat*. Psychology research suggests that blatant (vs. subtle) threat can lead to a higher level of perceived threat, resulting in more defensive reactions such as response distortion (Locander et al. 1976). Social comparison literature also suggests that compared to the subtle or implicit form of social comparison (exposing subjects to idealized images with distracting tasks), the explicit instructions directing participants to evaluate the attractiveness of the idealized images (i.e., blatant social comparison) leads to the defensive reactions toward the threat such as motivations to enhance self views, or to denigrate the source of threat (idealized images) (Wan et al. 2008). Therefore, we posit that in the consumption context, when self threat is activated blatantly (vs. subtly), consumers are more likely to engage in defensive (vs. compliant) consumption (H6). As a matter of fact, prior consumer research observed a compliant consumption when self threat is activated via more implicit and subtle means (i.e., instructing participants to use their non-dominant vs. dominant hands to write an essay on how intelligent they are, Gao et al. 2009). The present research identifies the emergence of defensive consumption when self threat is activated via more blatant means (i.e., instructing participants to evaluate the ads with highly attractive models, making them insecure about their own physical attractiveness in Study 1; giving bogus feminine feedback to male participants in gender identity test, making them questioning their own masculinity in Study 2).

Combining the two factors, *mode of threat* and *affirmation value of products*, we expect to find when consumers are threatened blatantly, they dismiss self improvement products that signal self deficiency (low affirmation value), but may adopt products that may bolster their self views (high affirmation value) (H7). When consumers are threatened subtly, they adopt both types of products. In other words, blatant (vs. subtle) mode of threat and low (vs. high) affirmation value of product jointly determines the adoption of defensive (vs. compliant) consumption.

These hypotheses are tested in Study 3 in a different self domain (intelligence) and a different consumption context (intelligence improving products vs. products signaling high intelligence). The intelligence domain has been identified as a self domain with no gender difference among college students (Dalton 2008). Therefore, both female and male subjects were recruited in this study.

## **Method**

***Design and Participants.*** This study adopted a 2 (mode of threat: blatant vs. subtle)  $\times$  2 (product affirmation value: high vs. low) between-subjects experimental design. One hundred and fourteen undergraduate students participated in the study in exchange for course credits.

***Procedure and Measure.*** Participants were randomly assigned to one of the four conditions. In the experiment, participants were first asked to complete a *Remote Association Test* (RAT), by which their self views in intelligence would be threatened

either blatantly (by receiving bogus negative feedback) or subtly (by simply performing the difficult version of the test). Following an unrelated filler task, participants then filled out a *Product Survey* which measures their attitude toward product as the main dependent variable. The product had either high or low affirmation value in intelligence. The same measure of attitude toward product as the one in Study 1 was employed ( $\alpha = .95$ ).

***Mode of Threat Manipulation.*** Participants' self views in the intelligence domain were threatened by an intelligence test, the *Remote Association Test* (Mednick 1962; Vohs and Heatherton 2001). This task involved 12 sets of words. Each set presented three words, and participants were asked to generate a fourth word for each set that relates to the words in the set in a meaningful way. An example set would be the three presented words *over*, *plant*, and *horse*, and the answer is *power*. Adapted from Dalton's (2008) procedure, participants were told that the test intends to measure college students' integrative orientation, and "Integrative Orientation is a stable intellectual ability that has been shown to predict college performance as well as general *intelligence*." The difficult version based on the established norms for performance on RAT terms (Bowden and Beeman 2007) was used in both threat conditions. Participants' self views were threatened either blatantly or subtly. In the *Blatant* threat conditions, participants received bogus negative feedbacks on their performance immediately after the test was done (Mednick 1962; Vohs and Heatherton 2001; Dalton 2008), saying that they performed worse than 75% of the other participants who had completed the same test before. In the *Subtle* threat conditions, participants simply performed the difficult version of the RAT, received no immediate feedback, and were told that results would be

released at the end of the lab session. According to Creswell et al. (2005) and Schwarz (2004), performing a difficult task could induce a subtle form of self threat.

***Product Affirmation Value Manipulation.*** Product affirmation value was manipulated in the last part of the experiment by the type of product included in the *Product Survey*. Embedded in several filler products was a product with either high or low affirmation value in intelligence.

A pretest was conducted to select the products to be used in high vs. low affirmation value conditions. Eight books or audio/video programs were selected for pretesting. Twenty-six undergraduate students from the same population participated in the pretest and evaluated the eight selected products. After viewing the information of each product, they first indicated their purchase intention of the product by the same 3-item measure (same as the one in Study 2). This measure was used in the analysis to ensure that the products selected for the two conditions do not differ significantly in terms of consumers' likeness when no self threat is involved. Then participants also responded to questions asking about the characteristics of typical users of the product under evaluation. Embedded in a number of adjectives, participants rated how *Intelligent* and *Smart* the typical users would be. This measure was used to represent the product's affirmation value in intelligence. The rationale is that if the product signals high (vs. low) intelligence of users, then it can offer high (vs. low) affirmation value for the purchasers to boost their self views on intelligence domain. Products chosen for the high vs. low affirmation value conditions should differ significantly on this measure.

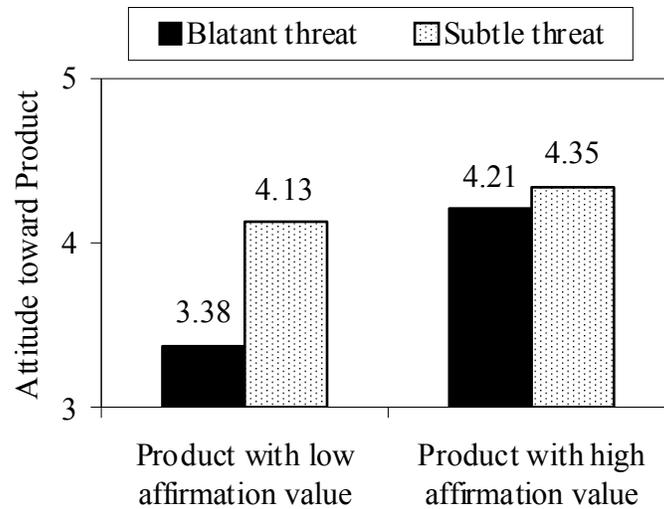
Within-subjects repeated measure analyses were conducted. Different products on the same measure were defined as different levels of the within-subject factor. The book called *Critical Thinking* was selected for the *High affirmation value* condition, whereas the video program *IQ Increase* was selected for the *Low affirmation value* condition. The difference in affirmation value is significant ( $M_{Critical\ Thinking} = 4.92, SD = .98$  vs.  $M_{IQ\ Increase} = 3.98, SD = 1.36; F(1, 25) = 8.53, p < .01$ ) between the two products. Participants' purchase intention of the two products showed no significant difference ( $M_{Critical\ Thinking} = 3.74, SD = 1.70$  vs.  $M_{IQ\ Increase} = 3.49, SD = 1.89; F(1, 25) = .27, p > .10$ ).

## Results

A 2 (mode of threat: blatant vs. subtle) by 2 (product affirmation value: high vs. low) between-subjects ANOVA on the measure of attitude toward product revealed a marginally significant main effect of mode of threat manipulation ( $M_{blatant} = 3.81, SD = 1.41$  vs.  $M_{subtle} = 4.24, SD = 1.19; F(1, 110) = 3.50, p = .06$ ). Participants who had been threatened *Blatantly* by negative feedback showed less favorable attitudes toward the product than those in the *Subtle* threat condition, supporting H6. ANOVA results also showed a significant main effect of product affirmation value ( $M_{high} = 4.28, SD = 1.16$  vs.  $M_{low} = 3.77, SD = 1.43; F(1, 110) = 4.82, p < .05$ ). Participants showed more favorable attitudes toward the product that has *High affirmation value* in intelligence (*Critical Thinking*) than the one with *Low affirmation value* (*IQ Increase*), supporting H5. No significant interaction effect emerged ( $F(1, 110) = 1.59, p > .10$ ).

**FIGURE 9**

**STUDY 3: ATTITUDE TOWARD PRODUCT**



We performed two post-hoc contrast analyses. First, we split the data by the manipulation of product affirmation value. There emerged a significant main effect of mode of threat manipulation for product with low affirmation value ( $M_{blatant} = 3.38$ ,  $SD = 1.64$  vs.  $M_{subtle} = 4.13$ ,  $SD = 1.10$ ;  $F(1, 54) = 4.09$ ,  $p = .05$ ). Participants threatened in the blatant mode showed less favorable attitude toward the product (IQ Increase) than those who were threatened in the subtle mode. However, there was no significant main effect of mode of threat for the product with high affirmation value ( $M_{blatant} = 4.21$ ,  $SD = 1.02$  vs.  $M_{subtle} = 4.35$ ,  $SD = 1.29$ ;  $F(1, 56) = .23$ ,  $p > .10$ ).

We also performed post-hoc contrast analysis by splitting the data by the manipulation of mode of threat. When participants were threatened in blatant mode, there was a significant main effect of the product affirmation value manipulation ( $M_{high} = 4.21$ ,  $SD = 1.02$  vs.  $M_{low} = 3.38$ ,  $SD = 1.64$ ;  $F(1, 54) = 5.22$ ,  $p < .05$ ). The product with high affirmation value was evaluated more favorably than the product with low affirmation

value. When participants were threatened in subtle mode, no significant difference was found between the products with high and low affirmation value in terms of attitude toward the product ( $M_{high} = 4.35, SD = 1.29$  vs.  $M_{low} = 4.13, SD = 1.10; F(1, 56) = .51, p > .10$ ).

Results supported our hypothesis that defensive consumption (a relatively less positive attitude toward product) occurred when the participants were threatened in a blatant mode and when the product offered no opportunity for affirming the self in the threatened domain.

## **Discussion**

Overall, Study 3 examined the impact of products' affirmation value and mode of threat on consumers' adoption of defensive (vs. compliant) coping with self threat in consumption contexts. The two factors individually impacts participants' engagement in defensive consumption (supporting H5 and H6) and jointly determine the adoption of defensive (vs. compliant) consumption (supporting H7). Specifically, when products had low affirmation value (such as self improvement products that signals self deficiency), blatant (vs. subtle) threat evoked defensive coping, leading to defensive consumption (dismissal of the product). This replicated the findings of Study 1 and 2. When products had high affirmation value (products signal positive attributes of the user), no such pattern was identified. Compared to those in the subtle threat condition, participants in the blatant threat condition showed a positive attitude toward the product at a comparable level, without a sign of defensive consumption. We argue that this is because the high

affirmation value of the products already satiated their goal to maintain their positive self image, and thus there was no need for them to self-defend. In fact, when participants were threatened blatantly, they showed significantly less favorable attitude toward the product with low affirmation value than the product with high affirmation value. These two products had been evaluated as equally attractive in the pretest when no threat was involved. However, when blatant threat occurred, the high affirmation value of the product freed the participants from defensive consumption, whereas the low affirmation value did not.

***Follow-up Study on Mode of Threat.*** From the results of the main study, we observe that consumers cope with threat differently—they engage in defensive or compliant consumption—when they are threatened in different modes (blatant or subtle). In order to understand the true difference between these two different modes of threat, we conducted a follow-up study by which we examined the impact on self views of the two modes of threat, the defensive reactions that were incurred by the threat, as well as participants' awareness of the threat.

We adopted a one-factor (mode of threat: blatant, subtle, control) between-subjects experimental design. *Blatant* and *Subtle* manipulation was exactly the same as the one employed in the main study. We added a control condition (no threat was involved) as a baseline to gauge the occurrence of self threat. In the *Control* condition, participants simply completed the easy version of *Remote Association Test* (RAT) and received no feedback (control condition used by Dalton 2008). Fifty-nine undergraduate students from the same population participated in the follow-up study. They were

randomly assigned to one of the three conditions. In the experiment, they first completed one version of RAT. Then following an unrelated filler task, they were asked to complete a *Scale Development Questionnaire*. They were instructed that some researchers were interested in testing the reliability of a scale.

In the questionnaire, the following dependent variables were measured. Embedded in Heatherton and Polivy's (1991) state self-esteem scale were four items with regard to intelligence domain (on 5-point scale), "I feel confident about my intellectual ability", "I feel as smart as others", "I feel inferior to others at this moment (reversed)", and "I feel that I have less intellectual ability right now than others (reverse)". The items were modified from the original scale to fit the context (intelligence domain).

Participants' responses to the four items were averaged to form an index of their self evaluation (state self-views in intelligence domain,  $\alpha = .87$ ). Since self threat can be manifested by various defensive reactions, such as denigrating the threatening source (Wan et al. 2008; Duke 2002), we also measured participants' defensive reactions as a way to verify the impact of threat. Compared to self evaluation (self views in intelligence domain), this is a less explicit measure. Participants were asked to rate whether they agreed to the following two questions on a 7-point scale (1 = Strongly disagree; 7 = Strongly agree). These two questions were: "Do you agree that the Remote Association Test can truly reflect a person's intellectual ability?" and "Do you agree that the Remote Association Test truly reflects your own intellectual ability?". Their responses were reversed and averaged to form an index of their defensive reactions ( $\alpha = .88$ ). Finally, adapted from Sherman et al.'s (2010) awareness probe measure, we also measured participants' awareness of the impact of the threat task. In responding to the question

“Please rate the extent to which each of the following factors influenced your responses to the scale,” participants rated a number of factors on a 9-point scale (1= Did not influence at all; 9 = Influenced a lot). The target item “the first computer task that you completed” was embedded in the list of 12 factors.

One-factor ANOVA and contrast analyses were conducted on the three dependent measures. Table 3 summarizes the results. As can be seen from the table, participants were marginally more aware of the impact of threat if they experienced it in a blatant mode than in a subtle mode ( $M_{blatant} = 5.60, SD = .70$  vs.  $M_{subtle} = 4.61, SD = 1.09; F(1, 37) = 2.10, p = .10$ ). In addition, a blatant mode of threat resulted in significantly more defensive reactions than the subtle mode of threat ( $M_{blatant} = 5.10, SD = 3.14$  vs.  $M_{subtle} = 3.47, SD = 2.80; F(1, 37) = 11.66, p < .01$ ). Surprisingly, participants self evaluation after being threatened did not differ significantly between the two threat conditions ( $M_{blatant} = 3.28, SD = .80$  vs.  $M_{subtle} = 3.66, SD = .90; F(1, 37) = 1.98, p > .10$ ).

**TABLE 3**

STUDY 3 FOLLOW-UP STUDY: DESCRIPTIVE STATISTICS AND RESULTS

Measures	Descriptive Statistics			ANOVA Results	
	Blatant Threat	Subtle Threat	No Threat	3 Conditions $F(2, 56), p$	Blatant vs. Subtle $F(1, 37), p$
Self Evaluation (5-point)	3.28 (.80)	3.66 (.90)	3.96 (.84)	$F = 3.32,$ $p < .05$	$F = 1.98,$ $p > .10$
Defensive Reaction (7-point)	5.10 (3.14)	3.47 (2.80)	2.70 (1.98)	$F = 17.48,$ $p < .001$	$F = 11.66,$ $p < .01$
Awareness of Threat (9-point)	5.60 (.70)	4.61 (1.09)	3.87 (.96)	$F = 4.17,$ $p < .05$	$F = 2.10,$ $p = .10$

Results of the follow-up study show that both blatant and subtle modes of threat can negatively impact self views, with no significant difference in severity of threat. However, individuals can be more consciously aware of blatant (vs. subtle) threat, and blatant (vs. subtle) threat can evoke more defensive reactions. In other words, the true difference between the two threat modes lies in individuals' conscious awareness of the threat, rather than the magnitude of the impact on self views. In consumption contexts, the awareness of threat (under the blatant mode) may lead consumers cope with the threat in a more defensive manner and engage in defensive consumption (as identified in the main study).

***Generalizability of the Findings.*** Subtle modes of threat have not been thoroughly studied even in psychology research. In order to generalize the findings of this study on subtle vs. blatant modes of threat, future research may examine different self domains by designing subtle threat tasks. For example, as an extension of Study 1 in physical appearance domain, instead of blatantly exposing the participants to idealized images, we may adopt a subtle mode of exposure, such as letting the participants select sunglasses for the attractive models (Wan et al. 2008). As an extension of Study 2, instead of blatantly threatening the male participants by bogus feminine feedback in the gender identity test, we may also employ subtle forms of threat, such as letting them perform small tasks that are more often executed by girls.

## CHAPTER SIX

### STUDY 4

Study 1 and 2 examined self threat in different self domains (physical appearance and gender identity) and identified evidence of defensive consumption in different consumption contexts (product level and brand level). Study 3 bridged the gap between previous and present research and identified the joint impact of mode of threat (blatant or subtle) and products' affirmation value in moderating the switch between defensive and compliant consumption. When products had low affirmation value, defensive consumption emerged as a result of blatant (vs. subtle) threat, replicating the findings of Study 1 and 2. However, when products had high affirmation value, the results of blatant and subtle threats did not differ. Furthermore, when threatened blatantly, defensive consumption occurred when the product has low (vs. high) affirmation value. We argue that it is the high affirmation value that satiates the threatened individuals' goal to protect their self images, and thus there remains no need to defend. The objective of Study 4 is to further test the role of affirmation in turning off the defensive mechanism by examining an external affirmation opportunity which is independent of the products.

Research on self affirmation (Sherman et al. 2000; Sherman and Cohen 2006) and goal satiation (DeWall, Baumeister, and Vohs 2008; Williams et al. 2009) suggests that when individuals have opportunities to affirm themselves (e.g., receiving ego boosting feedbacks), they are less likely to engage in defensive strategies to cope with the threatening information. We argue that for threatened consumers, when the self can be

affirmed immediately after the threat, their overall self-worth will be maintained and the subsequent defensive reactions toward self improvement products will be mitigated. Consumers dismiss self improvement products when they are threatened, because these products or brands focus on the domain where their self image is threatened, therefore providing no opportunities for self affirmation. We tested this proposition by employing the same research context as in Study 1 and adopting the affirmation tasks from Vohs and Heatherton (2001) (i.e., receiving bogus positive feedback in intelligence domain).

We also argue that self esteem can moderate the relationship between self affirmation and a defensive consumption strategy. Research on threats to self-esteem has demonstrated that individuals with different trait self-esteem (high vs. low) respond differently in information seeking once being threatened. After receiving a self threat, high self-esteem (HSE) individuals, compared to the low self-esteem (LSE) individuals, tend to be more sensitive to competency feedback (Vohs and Heatherton, 2001) and are more likely to utilize external opportunities to replenish self worth (Vohs and Heatherton 2004). In our research context, we expect that the self affirmation task (receiving bogus positive feedbacks) would be more effective at deactivating defensive coping with self threat, i.e., enhancing evaluations of self improvement products, for HSE individuals than for low LSE individuals.

## **Method**

***Design and Participants.*** A 2 (self-affirmation: affirmation vs. control) between-subjects experimental design was adopted in this study. In addition, participants' trait

self-esteem in physical appearance dimension was measured as a continuous individual difference variable and used in regression analysis. One hundred and one *female* undergraduate students participated in this study.

***Procedure and Measures.*** Participants were randomly assigned to one of the two conditions. Upon arriving at the lab, they first filled in a questionnaire, *Feelings about Yourself*, composed of five measures of trait self-esteem in physical appearance dimension, together with some filler measures. The five items were adopted from Fleming and Courtney's (1984) global trait self-esteem scale. An index of trait self-esteem was created ( $\alpha = .66$ ) and used as one of the independent variables in the regression analysis. Afterwards, all the participants completed the *Ad Viewing Task* with ads containing attractive female models. The procedure and materials were identical to the ones used in the *Idealized images* condition (female version) of Study 1.

Following that, participants were given a *Cognitive Task* which manipulated the self affirmation opportunity (immediate positive feedbacks vs. delayed feedbacks given at the end). Finally, they finished the same *New Product Evaluation Task* (body enhancement product evaluation) as in Study 1. We used the same measure as in Study 1 for capturing participants' attitude toward product ( $\alpha = .93$ ).

***Self Affirmation Manipulation.*** The opportunity for self affirmation was manipulated by a *Cognitive Task* (two essays from the verbal test of the GRE, Vohs and Heatherton, 2001). Participants were asked to complete a cognitive task with GRE reading comprehension questions. Two conditions were created, the *Affirmation* and the

*Control* condition. Participants in the *Affirmation* condition were given 480 seconds (longer time) to finish the GRE test, while those in the *Control* condition were given 360 seconds (shorter time) to finish the same task. When time was up, participants in the *Affirmation* condition were told that their results were being gauged at a central remote station. After 30 seconds, they were given the positive bogus result, saying that their score was higher than 90% of the participants who took the same test before them and the result indicated that their comprehension ability was above average. In the *Control* condition, participants were simply told that their results were being gauged at a central remote station and their scores were to be released at the end of the lab session.

## **Results**

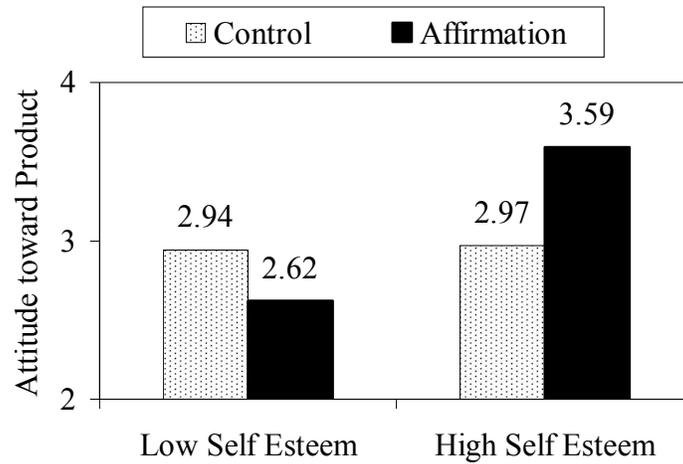
We ran a regression analysis on the measure of attitudes toward the product with the continuous measure of trait self-esteem (in physical appearance dimension, measured at the beginning of the experiment), affirmation manipulation, and their interaction as predictors. We centered the continuous trait self-esteem measure on its mean and coded the affirmation manipulation by using 1 representing the *Affirmation* condition and 0 representing the *Control* condition. The regression showed no main effects for either trait self-esteem ( $b = -.129, t(97) = -.71, p > .10$ ) or the affirmation manipulation ( $b = .116, t(97) = .43, p > .10$ ). However, there was a significant interaction between trait self-esteem and the affirmation manipulation ( $b = .556, t(97) = 2.08, p < .05$ ). We ran simple slopes analyses within each of the manipulated conditions (affirmation vs. control) and the results are reported separately as follows. In the *Affirmation* condition, participants'

trait self-esteem had a significant impact on their attitudes toward the product ( $b = .426$ ,  $t(49) = 2.26$ ,  $p < .05$ ). When affirmed with positive feedback (an ego-boost), high self-esteem (HSE) participants showed more favorable attitude toward the product than the LSE participants. However, in the *Control* condition, pre-existing trait self-esteem had no impact on product attitude ( $b = -.129$ ,  $t(48) = -.69$ ,  $p > .10$ ).

We also ran another analysis to test our hypothesis that HSE and LSE participants react to self affirmation differently. We used median split to categorize the trait self-esteem variable and entered it, together with self affirmation to a 2 (trait self-esteem: high vs. low)  $\times$  2 (self-affirmation: affirmation vs. control) ANOVA analysis on attitude toward product. We found a marginally significant main effect of self-esteem ( $M_{high} = 3.29$ ,  $SD = 1.28$  vs.  $M_{low} = 2.78$ ,  $SD = 1.41$ ;  $F(1, 97) = 3.51$ ,  $p < .07$ ) qualified by a marginally significant interaction effect ( $F(1, 97) = 3.07$ ,  $p < .08$ ). Contrast analysis indicated a marginally significant effect of affirmation manipulation within HSE participants ( $M_{affirmation} = 3.59$ ,  $SD = 1.28$  vs.  $M_{control} = 2.97$ ,  $SD = 1.23$ ;  $F(1, 97) = 2.87$ ,  $p < .10$ ) and no effect of affirmation within LSE participants ( $M_{affirmation} = 2.62$ ,  $SD = 1.26$  vs.  $M_{control} = 2.94$ ,  $SD = 1.56$ ;  $F(1, 97) < 1$ ,  $p > .10$ ). Consistent with our hypothesis, affirmation (vs. control) deactivated defensive coping with self esteem among HSE individuals and made them evaluate the body enhancement product more positively. However, such effect was not observed among LSE individuals.

**FIGURE 10**

**STUDY 4: ATTITUDE TOWARD PRODUCT**



## **Discussion**

Study 4 was conducted to alternatively test the role of affirmation in modulating the adoption of defensive vs. compliant consumption. We expected that by providing an external self affirmation opportunity to affirm the self in a domain different from the one under threat could enhance the overall self worth and eliminate the adoption of defensive consumption. Our results suggested that this is the case only for High Self Esteem (HSE) participants. Consistent with previous research findings, self affirmation can be an effective tool to deactivate the defensive mechanism (Schwinghammer et al. 2006) and the ability to engage in self-enhancement and self-defending activities is what makes HSEs and LSEs different after they receive self threat (Vohs and Heatherton 2001).

An alternative explanation for the non-significant main effect of the affirmation manipulation could be that the cognitive performance domain (in the self affirmation

task), comparing to the physical attractiveness domain (in the self threat task), is less relevant for females and thus the affirmation manipulation worked among HSEs only. To rule out the alternative explanation, future research could test the effectiveness of affirmation in a closely related domain (e.g., social attractiveness) or a domain which is equivalently important for females (e.g., interpersonal relationships).

## **CHAPTER SEVEN**

### **GENERAL DISCUSSION**

#### **Conclusions**

Taken together, this dissertation uncovers the manifestations of defensive consumption, explores the boundary conditions, and examines the underlying mechanism. Study 1 identified that female consumers dismiss body enhancement products (defensive consumption) when they receive self threat by viewing idealized images. Study 2 replicated the findings in a different context. Male consumers reject brands that can enhance masculinity after they receive self threat in masculinity. Study 3 examined the role of mode of threat (blatant vs. subtle) and affirmation value of products (high vs. low). These two factors jointly determined the adoption of defensive (vs. compliant) consumption. Specifically, defensive consumption is most profound when consumers are threatened in a blatant mode and when the products offer low affirmation value. Lastly, this research also examined the role of affirmation in a different self domain in turning off defensive consumption. By receiving bogus positive feedback in an intelligence task, threatened female consumers no longer dismiss the body enhancement product.

#### **Theoretical Implications**

Overall, this dissertation has several theoretical contributions. First, it echoes with the recent calls from consumer researchers (Dunning 2007) that we need to understand more about the relationship between consumers' self views and their consumption behaviors. It explores an understudied area of consumer research—the impact of self threat on consumers' preference and choices of products and brands. Existing consumer research has so far revealed that self threat can lead to a compliant consumption, such that consumers are more likely to choose products to affirm the threatened self domain (e.g., Gao et al. 2009). However, the impact of defensive reactions toward self threat on consumption has not been well studied. Building upon existing research on dynamic self views (e.g., Baumeister et al. 1998; Tesser 2000), this research investigates consumer contexts where self threat activates defensive consumption such that consumers are more likely to dismiss the products that can improve the threatened domain. To date, this research is one of the first empirical investigations of the defensive consumption resulting from self threat (*vis-à-vis* compliant consumption in existing consumer research).

In addition, this research integrates several theoretical perspectives (goal automaticity, Bargh 2002; self affirmation theory, Sherman and Cohen 2006; and symbolic meaning of products, Dunning 2007) into the investigation of the impact of self threat in consumption contexts and examines when and why self threat can lead to a defensive (vs. compliant) consumption. It identifies the *opportunities for affirmation* (including *affirmation value of products* and *external affirmation*) and the *mode of threat* as the key factors determining whether self threat triggers a defensive (vs. compliant) consumption. These relationships have not been systematically and empirically studied in prior consumer research. By delineating how consumers switch between compliant and

defensive consumption on the basis of contextual factors, including the way self is threatened and the affirmation value of products, this research enriches our understanding of the nature of adaptive consumer behaviors.

Lastly, by four experiments, this research investigates a number of self domains where self threat is activated such as physical attractiveness, gender identity and intelligence and a number of consumption contexts such as evaluating self improvement products (at both product level and brand level) and choosing products with different symbolic meanings. This diverse set of consumer contexts not only allows a rigorous test of the core propositions put forward by this research but also delineates a dynamic process of self view reconstruction (i.e., defensive vs. compliant coping with self threat) and a symbolic process of consumption guided by self views across a variety of consumer contexts.

### **Practical Implications**

In the marketplace, there are various self improvement products (SIPs) or services promoting hope of personal betterment or promising improvement in different domains of a person's life: appearance, body shape, relationship satisfaction, academic and career competence, stress management and self-esteem (MacInnis and De Mello 2005). One common theme of the advertising and promotion strategies for these products is the emphasis on the gap between ideal self and actual self, with the intention to activate consumers' self deficiency and thus induce their want of the products (MacInnis and De Mello, 2005). Whereas prior research has painted a rosy picture of how products are

empowering consumers by providing the promise and hope of improving their lives, this research deviates and presents a darker side of the story. That is, when there is a mismatch between products symbolic value (if signals self deficiency) and consumers' fluid self views (when threatened by external cues), consumers would reject those choices as a way to defend their self views. Based on the insights from our research, marketers should be cautious in designing advertising and promotion messages for SIPs to avoid their possible threatening effects on consumers' self views.

In addition to the practical implications for marketers, there are also some suggestions for the public policy makers. Just as most individuals are unaware of the process in which they react defensively to self threat (Sherman et al. 2009); most consumers are unaware of the process in which they use defensive consumption as a way to cope with self threat. Defensive consumption may make consumers more resistible to marketers' persuasion efforts, but may also make them miss the opportunities to improve themselves. Public policy makers may design programs to help consumers understand their information processing and decision making processes, and teach them the ways to overcome defensive mechanism and identify true needs. When consumers are aware of the underlying defensive coping mechanism, they may process the information and make the decision in a more rational way, which will eventually benefit their well-being in a long run.

### **Limitations and Areas for Future Research**

Although there are several limitations to this research, it opens up a broad area for future research on the relationship between consumers' self views and their consumption behaviors. First, using university students as subjects limits the generalizability of the findings. Self threats (in physical appearance, gender identity, and intelligence domain) and consumption contexts (products and brands selected) examined by this research are the ones that are most relevant for young adults. As research on self-esteem across life span has documented, global self-esteem may change and develop over one's life time (Robins et al. 2002). Adolescents and young adults have relatively low and instable self esteem and they are more sensitive to external cues related to self views. Future research may examine whether there is an age difference in defensive consumption resulting from self threat. It is possible that the older generation might be sensitive to threatening information in domains such as financial wellbeing and aging (rather than physical appearance or intelligence among young people), and engage in defensive consumption in those domains. If the evidence of defensive consumption can be identified among diverse populations in various domains, it would be interesting to examine whether there is a universal need for individuals to establish and maintain their autonomy. Defensive consumption may be the manifestation of a fundamental reactance when the individual's autonomy is challenged.

Second, the empirical testing of the present research is conducted within North American culture where individualism is prevalent. Further investigation is required to explore whether the findings reported by the present research (the tendency to defensively cope with self threat in certain consumption contexts) would hold in other cultures. Considering cross-cultural differences, there might be competing hypotheses.

On the one hand, the cross-cultural social psychology literature has indicated that, compared to individualistic cultures, in collectivistic cultures persons' self views are less likely to be negatively impacted by threatening information (e.g., upward social comparison information, as they want to fit in the group and keep up with group standards, White and Lehman 2005). In these circumstances, they are less likely to feel threatened and engage in defensive consumption than those from individualistic cultures. On the other hand, individuals from collectivistic cultures concern more about their social images. Their self views are largely constructed by what they perceive others are thinking of them (Markus and Kitayama 1991). Therefore, if the product or the advertising message reveals or signals self deficiencies (as a lot of self improvement products do), they are less likely to choose them when others are present (vs. absent). There might be an interesting interaction between culture (individualistic vs. collectivistic) and purchasing context (private vs. public). For individualistic persons, defensive consumption might be prevalent no matter what the purchasing context is (private or public). However, when self views are challenged, individuals from collectivistic cultures might adopt self improvement products if the purchasing context is private but dismiss the products if there are others present.

Third, the four experiments of the present research have not considered the long term effects of self threat on purchase decisions. All of them tested consumers' spontaneous responses after being threatened but did not consider whether time itself might reduce or exacerbate the defensive reactions. The psychology literature has revealed that with the passage of time, the impact of negative events may be healed in some circumstances (McCullough, Fincham, and Tsang 2003), but may also intensify and

deteriorate in other circumstances (e.g., lack of communication if the stress results from interpersonal conflicts, Sillars and Parry 1982). Would consumers' coping strategy with self threat change as time goes by? Future research may look into this issue by examining consumers' delayed responses.

Lastly, all four experiments were conducted within lab settings. Although we used different measures (e.g., attitude toward product, attitude toward brand, and purchase intention) trying to tap into consumers' purchase decisions resulting from self threat in hypothetical consumption contexts, lab setting by its very nature still limits the external validity of the findings (Berkowitz and Donnerstein 1982). Future research, if supported by sufficient funding, can design field studies to more rigorously test the propositions and replicate the findings.

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## Appendix 1.1

### Study 1: Ads Stimuli (Idealized Images vs. No Images Manipulation) Female Version

Idealized images condition	No images condition
<p data-bbox="435 380 597 415"><b>5 target ads</b></p>  <p data-bbox="237 856 787 919"><a href="http://www.desktop-3d.com/90/-/Calvin_Klein_-_Euphoria/">http://www.desktop-3d.com/90/-/Calvin_Klein_-_Euphoria/</a></p>	<p data-bbox="1019 380 1182 415"><b>5 target ads</b></p>  <p data-bbox="824 877 1365 940"><a href="http://www.bellasugar.com/Coming-Soon-Calvin-Klein-Euphoria-Crystalline-Collection-657487">http://www.bellasugar.com/Coming-Soon-Calvin-Klein-Euphoria-Crystalline-Collection-657487</a></p>
 <p data-bbox="237 1287 797 1350"><a href="http://www.teamliquid.net/forum/viewmessage.php?topic_id=103509&amp;currentpage=4">http://www.teamliquid.net/forum/viewmessage.php?topic_id=103509&amp;currentpage=4</a></p>	 <p data-bbox="824 1297 1365 1350"><a href="http://www.cruzperformance.co.uk/videos/honda-advert-video/">http://www.cruzperformance.co.uk/videos/honda-advert-video/</a></p>
 <p data-bbox="237 1843 797 1896"><a href="http://www.zimbio.com/Heidi+Klum/articles/1028/Heidi+Klum+s+got+milk">http://www.zimbio.com/Heidi+Klum/articles/1028/Heidi+Klum+s+got+milk</a></p>	 <p data-bbox="824 1772 1365 1864"><a href="http://wallpapers.org/60_Braun_Multiquick_Culinary_Milk_Blender.htm">http://wallpapers.org/60_Braun_Multiquick_Culinary_Milk_Blender.htm</a></p>



<http://trendland.net/tag/moet-chandon-campaign/>



[http://www.globalpackagegallery.com/main.php/key/pack+aktuell?g2\\_itemId=51577](http://www.globalpackagegallery.com/main.php/key/pack+aktuell?g2_itemId=51577)



[http://www.shavingtips.com/en\\_US/products/malibu/index.jsp?action=staf\\_form&firstName=&email=](http://www.shavingtips.com/en_US/products/malibu/index.jsp?action=staf_form&firstName=&email=)



[http://instoresnow.walmart.com/enhancedrendercontent\\_ektid13884.aspx](http://instoresnow.walmart.com/enhancedrendercontent_ektid13884.aspx)

**2 filler ads in both conditions**



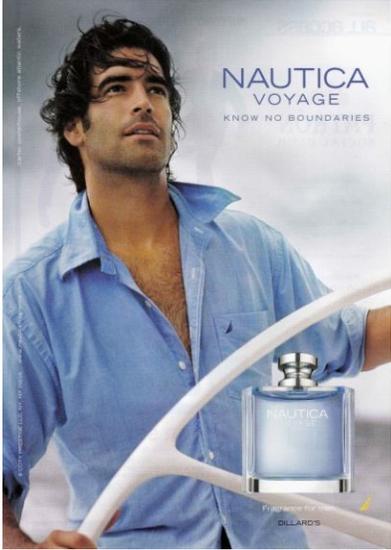
<http://dangeruss.deviantart.com/art/Zenith-El-Primero-GMT-Open-109315770>



[http://www.desktop-3d.com/90/-/Perfume\\_Hugo\\_Boss/](http://www.desktop-3d.com/90/-/Perfume_Hugo_Boss/)

## Appendix 1.2

### Study 1: Ads Stimuli (Idealized Images vs. No Images Manipulation) Male Version

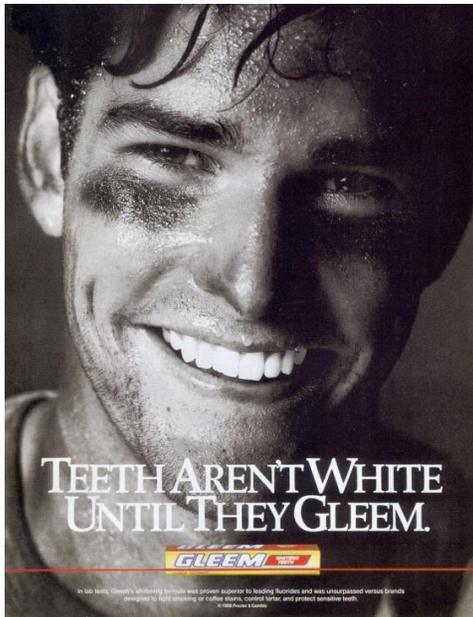
Idealized images condition	No images condition
<p data-bbox="428 415 589 449">5 target ads</p>	<p data-bbox="1013 415 1174 449">5 target ads</p>
 <p data-bbox="233 1003 771 1062"><a href="http://www.flickr.com/photos/scanlife/4731079826/">http://www.flickr.com/photos/scanlife/4731079826/</a></p>	 <p data-bbox="808 930 1159 989"><a href="http://www.desktop-3d.com/90-/Perfume_Hugo_Boss/">http://www.desktop-3d.com/90-/Perfume_Hugo_Boss/</a></p>
 <p data-bbox="233 1667 771 1694"><a href="http://www.flickr.com/photos/neushen/963406032/">http://www.flickr.com/photos/neushen/963406032/</a></p>	 <p data-bbox="808 1556 1369 1614"><a href="http://www.freewallpapershq.com/Motorola-RAZR-V3-Razor-Promo-12368-free-wallpaper.htm">http://www.freewallpapershq.com/Motorola-RAZR-V3-Razor-Promo-12368-free-wallpaper.htm</a></p>



<http://pzrservices.typepad.com/advertisingisgoodfor/you/2009/06/levis-live-unbuttoned.html>



<http://fashionindie.com/random-cool-shit-shredded-levis-by-stefan-sagmeister/>



<http://www.flickr.com/photos/gatochy/333500673/>



<http://www.flickr.com/photos/28877105@N05/2710798588>



[http://wallpapers.org/60\\_Zenith\\_Defy\\_Xtreme\\_Watches.htm](http://wallpapers.org/60_Zenith_Defy_Xtreme_Watches.htm)



<http://dangeruss.deviantart.com/art/Zenith-El-Primero-GMT-Open-109315770>

**2 filler ads in both conditions**



[http://www.globalpackagegallery.com/main.php/ke y/pack+aktuell?g2\\_itemId=51577](http://www.globalpackagegallery.com/main.php/ke y/pack+aktuell?g2_itemId=51577)



<http://www.cruzperformance.co.uk/videos/honda-advert-video/>

## Appendix 1.3

### Study 1: New Product Ad Female Version



The advertisement features a woman's torso in the background, with a glowing 'SHAPE!' logo on her midsection. In the foreground, a black bottle of Shape! Fat Burner is shown with a red cap and label. The label includes the text 'SHAPE!', 'Get Noticed Today!', 'Dietary Supplement', and '60 Capsules'. To the right, an alarm clock is depicted with the text '24 HOURS' above it and 'Fat Burner' below it. The clock face shows a small bottle of Shape! Fat Burner.

**SHAPE!**

**Get Noticed Today!**  
Dietary Supplement  
60 Capsules

**SHAPE!**

**24 HOURS**  
**Fat Burner**

**Shape! Highlights :**

- Shape! has combined with the newest generation of natural and high-tech supplements into a scientifically engineered fat burning powerhouse!**
- Shape! formula maximizes fat burning while helping sustain the high performance energy levels you need for an effective workout!**
- Shape! is designed especially for young people like you!**

To Learn More At [www.Shape123.com](http://www.Shape123.com)

## Appendix 1.4

### Study 1: New Product Ad Male Version



**24 HOURS**  
**Fat Burner**

**SHAPE!**  
Get Noticed Today  
Dietary Supplement  
60 Capsules

**Shape! Highlights :**

- Shape! has combined with the newest generation of natural and high-tech supplements into a scientifically engineered fat burning powerhouse!*
- Shape! formula maximizes fat burning while helping sustain the high performance energy levels you need for an effective workout!*
- Shape! is designed especially for young people like you!*

*Shape*

To Learn More At [www.Shape123.com](http://www.Shape123.com)

## Appendix 2.1

### Study 2: Gender Identity Survey Items

Self-reliant	Yielding	Helpful
Defends own beliefs	Cheerful	Moody
Independent	Shy	Conscientious
Athletic	Affectionate	Theatrical
Assertive	Flatterable	Happy
Strong Personality	Loyal	Unpredictable
Forceful	Feminine	Reliable
Analytical	Sympathetic	Jealous
Has leadership abilities	Sensitive to needs of others	Truthful
Willing to take risks	Understanding	Secretive
Makes decisions easily	Compassionate	Sincere
Self-sufficient	Eager to soothe hurt feelings	Conceited
Dominant	Soft spoken	Likeable
Masculine	Warm	Solemn
Willing to take a stand	Tender	Friendly
Aggressive	Gullible	Inefficient
Acts as a leader	Childlike	Adaptable
Individualistic	Does not use harsh language	Unsystematic
Competitive	Loves Children	Tactful
Ambitious	Gentle	Conventional
(Masculine items)	(Feminine items)	(Neutral items)
All the items were randomly presented in the experiment.		

## Appendix 2.2

### Study 2: Brand Stimuli (Improving Masculinity vs. Not Improving Masculinity)

Improving masculinity condition	Not improving masculinity condition
<p><b>2 target brands</b></p>	<p><b>2 target brands</b></p>
 <p><a href="http://www.zcars.com.au/images/volkswagen-touareg-r501.jpg">http://www.zcars.com.au/images/volkswagen-touareg-r501.jpg</a></p>	 <p><a href="http://www.seriouswheels.com/pics-2008/r-z-0-9/2008-Volkswagen-New-Beetle-Convertible-Driver-Side-Angle-1280x960.jpg">http://www.seriouswheels.com/pics-2008/r-z-0-9/2008-Volkswagen-New-Beetle-Convertible-Driver-Side-Angle-1280x960.jpg</a></p>
 <p><a href="http://www.schmiemann.de/index.php?cat=WG1.72_HUGO_BOSS&amp;lang=ENG&amp;product=1512404">http://www.schmiemann.de/index.php?cat=WG1.72_HUGO_BOSS&amp;lang=ENG&amp;product=1512404</a></p>	 <p><a href="http://www.chanelbagscheap.com/viewsbig.asp?picsrc=http://www.chanelbagscheap.com/pic/20105147333151291.jpg">http://www.chanelbagscheap.com/viewsbig.asp?picsrc=http://www.chanelbagscheap.com/pic/20105147333151291.jpg</a></p>

**2 filler brands in both conditions**



<http://www.devicedaily.com/laptops/the-cool-and-chic-colors-of-sony-vaio-w.html>



<http://www.mustangevolution.com/2007050835/>

### Appendix 3.1

#### Study 3: Difficult Version of Remote Association Test

<b>Triad</b>	<b>Solution</b> (won't be shown to the participants)
mate/shoes/total	running
self/attorney/spending	defense
board/blade/back	switch
land/hand/house	farm
hungry/order/belt	money
forward/flush/razor	straight
shadow/chart/drop	eye
way/ground/weather	fair
cast /side/jump	broad
back/step/screen	door
reading/service/stick	lip
over/plant/horse	power

## Appendix 3.2

### Study 3: Easy Version of Remote Association Test

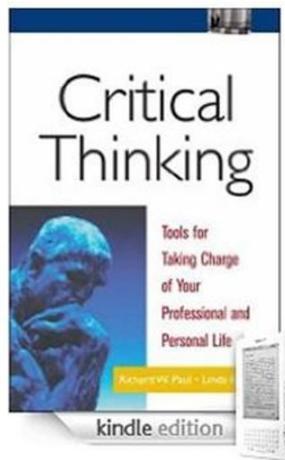
<b>Triad</b>	<b>Solution</b> (will not be shown to the participants)
cottage/swiss/cake	cheese
cream/skate/water	ice
loser/throat/spot	sore
show/life/row	boat
night/wrist/stop	watch
duck/fold/dollar	bill
rocking/wheel/high	chair
dew/comb/bee	honey
fountain/baking/pop	soda
preserve/ranger/tropical	forest
aid/rubber/wagon	band
flake/mobile/cone	snow

### Appendix 3.3

#### Study 3: Product Stimulus – Product with High Affirmation Value

##### **Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life – Hardcover**

*Critical Thinking* is about becoming a better thinker in every aspect of your life—as a professional, as a consumer, citizen, friend, parent, and even as a lover. Drs. Richard W. Paul and Linda Elder, leaders of the Center for Critical Thinking, identify the core skills of effective thinking, then help you analyze your own thought processes so you can identify your weaknesses and overcome them.



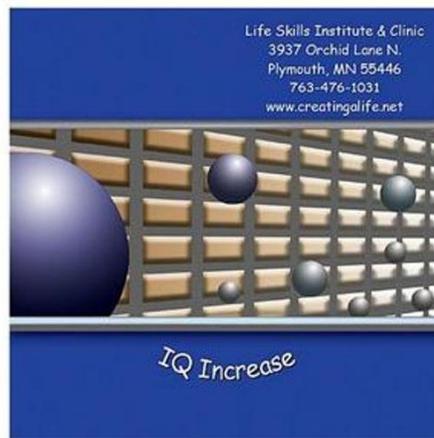
<http://www.criticalthinking.org/store-page.cfm?P=products&ItemID=145&catalogID=214&cateID=132>

## Appendix 3.4

### Study 3: Product Stimulus – Product with Low Affirmation Value

#### **IQ/ Intelligence Increase Brain Entrainment Session (CD)**

Sharpen your brain! Beware – this CD may cause dramatic increases in intelligence. Make your dreams a reality with increased cognitive functioning and intelligence capabilities. Improve your thinking speed and focus. Learn new things and explore your world with a renewed understanding!



[http://lifeskillsclinic.com/focus\\_learning.html](http://lifeskillsclinic.com/focus_learning.html)

## Appendix 4.1

### Study 4: Cognitive Task Reading Materials

#### Reading Comprehension # 1: (for answering Questions 1 – 3)

Economic growth and territorial expansion in medieval and early modern times depended on urbanization, trade, colonization, conquest, and the clearing of land. But the increase in human contact established by these endeavors carried enormous risks of infection by disease. By adopting the concept of the unification of the globe by disease, we can discern the relationships between, and therefore better understand, phenomena seemingly very diverse. For example, we can see a connection between the outbreaks of plague in Western Europe, which recurred from the fourteenth through the sixteenth centuries, and beginning in the sixteenth century, the drastic depopulation of the New World by the spread of disease among its population.

- This “community of disease” came about as the large populations of the world — the Chinese, the European, the Native American — expanded, and travel and trade among them greatly increased. The trade routes (traveled by armies of rats and fleas as well as humans) stretched across many disease-ridden areas. The danger became acute the moment traders from Genoa crossed the Black Sea and arrived in Central Asia, newly unified by the Mongols; and then once again, when Christopher Columbus, also Genoese, set sail westwards. Ultimately a large part of the world’s population perished from disease.
- So great is the role of demography as something that shapes the development of human civilization that these devastating losses of life and the painfully slow recoveries from them influenced much of world history.

- 1) In using the phrase "community of disease" in line 14 (Reading Comprehension # 1), the author of the passage most likely intends to indicate that
  - a. members of a particular society generally develop resistance to diseases that occur frequently in their society.
  - b. only members of the same society are likely to be susceptible to certain diseases.
  - c. the exposure of diverse peoples of the world to the same diseases constitutes a link between these peoples.
  - d. the devastating effect of a disease is a unifying factor among the people who suffer it.
  
- 2) In Reading Comprehension # 1, the author's discussion in the passage presupposes that, before expanded trade routes linked Europe, China, and the Americas, which of the following was the case?
  - a. The large populations of the world did not suffer from disease.
  - b. Infectious diseases were found only in Western Europe.
  - c. Infectious diseases were unlikely to spread between the large populations of the world.
  - d. The traders of Genoa contributed to the spread of the disease.
  
- 3) Which of the following is the best revision of "So great is the role of demography as something that shapes the development of human civilization that" in lines 25-26 (Reading Comprehension # 1)?
  - a. So great is the role of demography in shaping the development of human civilization that
  - b. Of such greatness is the role of demography to shape the development of human civilization,
  - c. The role of demography is of such greatness in shaping the development of human civilization,
  - d. The role of demography is great enough to shape the development of human civilization such that

Reading Comprehension # 2: (for answering Questions 4 – 5)

The influence of the color of the coat of an animal on its ability for absorbing solar radiation is a subject of debate between biologists. Surface coloration arises from differential reflection or transmission of light waves by fur or feathers. Light that is not reflected or transmitted is absorbed, resulting in heat generation. Biologists have generally accepted the view that animals with dark-colored fur or feathers, and hence greater absorptivity for light waves, gain more heat from solar radiation than do animals with light-colored coats. Recent findings suggest, however, that properties of the coat other than color are important in determining how effectively an animal can use the Sun's energy.

The amount of light that penetrates the coat of an animal and reaches the skin is an important determinant in the relation between solar heat gain and coat color. Light penetration is affected by the structure of an animal's coat and by the optical properties of fur or feathers. It has been found that different animals with similar coloring have coats that vary greatly in the density and arrangement of hairs or feathers. The amount of light that passes through the coats of these animals also varies greatly. Furthermore, some light-colored animals, such as the polar bear, have hollow, transparent hairs that allow light to pass through to the skin. Such animals might be able to use the Sun's energy more effectively than animals with dense coats of solid hairs.

- 4) The passage (Reading Comprehension # 2) indicates that the coloration of an animal's coat
- a. is totally independent of the animal's habitat
  - b. is determined by the optical properties of the animal's fur or feathers
  - c. changes in response to cold weather
  - d. has evolved in response to the need to retain heat energy from sunlight
- 5) If previously accepted view described in lines 6-10 (Reading Comprehension # 2) were correct, then
- a. arctic species would have to sacrifice camouflage to capture the maximum heat from sunlight falling on them
  - b. dark-colored birds would retain body-generated heat in high wind-speed conditions better than light-colored birds species living in hot desert
  - c. habitats would tend to be dark-colored, rather than colored to match their environments
  - d. relative body size of 2 dark-colored species would not affect their relative loss of body heat in cold sunny conditions