

**PERSUASIVE IMAGINATIONS: THREE ESSAYS ON THE ROLE OF
MENTAL IMAGERY IN PRODUCT EVALUATION**

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ABSTRACT

Mental imagery—the process by which sensory information is represented in working memory (Macinnis and Price 1987)—plays an important, yet not fully understood role in persuasion. In three essays, this dissertation contributes to the study of mental imagery as a means of persuasion.

Essay I investigates how the effectiveness of imagery-evoking messages can be enhanced through priming procedures. Two studies suggest that performing a task that elicits mental imagery (e.g., reading imagery-evoking product descriptions), as opposed to an abstract one (e.g., reading product ratings), may activate an imagery mindset that increases the persuasiveness of subsequently presented imagery-evoking advertisements. Two additional studies provide evidence that this effect is moderated by one's ability to imagine (i.e., dispositional imagery vividness) and the presence of imagery instructions.

Essay II studies the persuasiveness of self-related imaginations (e.g., imagining oneself on vacations) by distinguishing between *being focus*—when people focus on the dispositional characteristics of their future selves (e.g., abilities, traits, social roles)—and *experiencing focus*—when people focus on the subjective experience of their future selves (e.g., thoughts, feelings, sensations, emotions). Three studies suggest that self-images in an experiencing focus are more persuasive when visualized through a first-person perspective (i.e., imagining through the eyes of one's future self) than a third-person perspective (i.e., imagining through the eyes of an observer), whereas the opposite holds for self-images in a being focus.

Essay III focuses on the relation between imagination and beliefs, and proposes that imagery-evoking messages may induce implicit beliefs that are independent from the credibility of the message's source. In line with this prediction, two studies provide evidence that *i*) when no information about the source credibility is provided, imagery-evoking product claims are considered more believable than abstract ones, and *ii*) imagination may induce beliefs even when processing resources are constrained. Three additional studies show that attitudes generated by imagery-evoking messages may be

more resistant than those induced by abstract ones, and that their resistance may be attenuated when the discrediting cue is provided before rather than after the message.

RÉSUMÉ

L'imagerie mentale, soit le processus par lequel l'information sensorielle est représentée dans la mémoire de travail (Macinnis et Price 1987), joue un rôle important en persuasion, même s'il n'est pas encore pleinement compris. En trois essais, cette dissertation contribue à l'étude de l'imagerie mentale comme moyen de persuasion.

L'essai I étudie comment l'efficacité de messages évoquant une imagerie peut être renforcée à l'aide de procédures d'amorçage. Deux études suggèrent que le fait d'effectuer une tâche qui élicite une image mentale (ex.: lire une description de produit qui évoque une imagerie), contrairement à une tâche abstraite (ex.: lire des évaluations d'un produit), peut activer un état d'esprit qui augmente l'effet persuasif de publicités subséquentes qui évoquent une imagerie. Deux études additionnelles fournissent des preuves que cet effet est modéré par l'habilité à imaginer (c.-à.-d. la vivacité des images dispositionnelles) et la présence de directives pour l'imagerie.

L'essai II étudie l'effet persuasif de s'imaginer soi-même (ex.: s'imaginer en vacances) en distinguant entre le fait d'être centré sur l'être, soit quand les gens se concentrent sur les caractéristiques dispositionnelles de leurs soi futurs (ex.: habiletés, traits, rôles sociaux), et le fait d'être centré sur l'expérientiel, soit quand les gens se concentrent sur l'expérience subjective de leurs soi futurs (ex.: pensées, sentiments, sensations, émotions). Trois études suggèrent que les images de soi centrées sur l'expérientiel sont plus persuasives lorsque visualisées sous une perspective à la première personne (c.-à.-d. d'imaginer à travers les yeux de son soi futur) que d'une perspective à la troisième personne (c.-à.-d. d'imaginer à travers les yeux d'un observateur), alors que l'opposé vaut pour les images de soi centrées sur l'être.

L'essai III se concentre sur la relation entre l'imagination et les croyances, et propose que les messages évoqués par le moyen de l'imagerie induisent des croyances implicites qui sont indépendantes de la crédibilité de la source du message. En lien avec cette prédiction, deux études fournissent des preuves que i) lorsque aucune information au sujet de la crédibilité de la source est fournie, les allégations de produits qui évoquent une imagerie sont considérées comme étant plus crédibles que celles qui sont abstraites,

et ii) l'imagination peut induire des croyances même quand les ressources de traitement sont limitées. Trois études additionnelles démontrent que les attitudes générées par des messages évoquant une imagerie peuvent être plus résistantes que celles induites par des messages abstraits, et que leur résistance peut être atténuée quand un signal de discrédit est fourni avant plutôt que après le message.

CHAPTER I — INTRODUCTION

“Imagine yourself in Italy, sitting in an elegant outdoor bistro under the summer evening sky, enjoying great authentic Italian cuisine, sipping a wine that perfectly complements dinner and catching up with good friends.” *Capri Italian Restaurant, 1301 West Sunset Road, Henderson, NV 89014*

What happens when we read an imagery-evoking advertisement such as the one presented above? When asked this question, most people¹ report seeing “images” in their mind’s eyes. Imagery-evoking advertisements—those including stimuli such as concrete words, instructions to imagine, and pictures (Lutz and Lutz 1978 for a review) that are intended to prompt or facilitate mental imagery—play an important role in persuasion. In fact, past research has shown that imagining consumption-related behaviors can increase product evaluations (e.g., MacInnis and Price 1987; McGill and Anand 1989; Petrova and Cialdini 2005, 2007; Shiv and Huber 2000) as well as purchasing behavior (Gregory, Cialdini, and Carpenter 1982). This thesis contributes to the study of the persuasiveness of mental imagery evoked by advertising.

Mental imagery² is the process by which sensory information is represented in working memory (MacInnis and Price 1987, p. 473). This definition highlights the distinction between the specific knowledge about the to-be-imagined scenario (e.g., the content of the advertisement) and the cognitive process (i.e., mental imagery) that generates mental images. For example, one might form a mental image of the Capri restaurant by retrieving relevant memories, such as familiar memories of an Italian restaurant, and modifying them

¹In a pilot study, seventeen people rated on a seven-point scale (1 = “not at all”; 4 = “somewhat”; 7 = “a great deal”) whether they experienced mental images while reading the Capri Restaurant ad. All but one participant reported experiencing from “somewhat” to a “great deal” of imagination (average = 5.29, *SD* = 1.49).

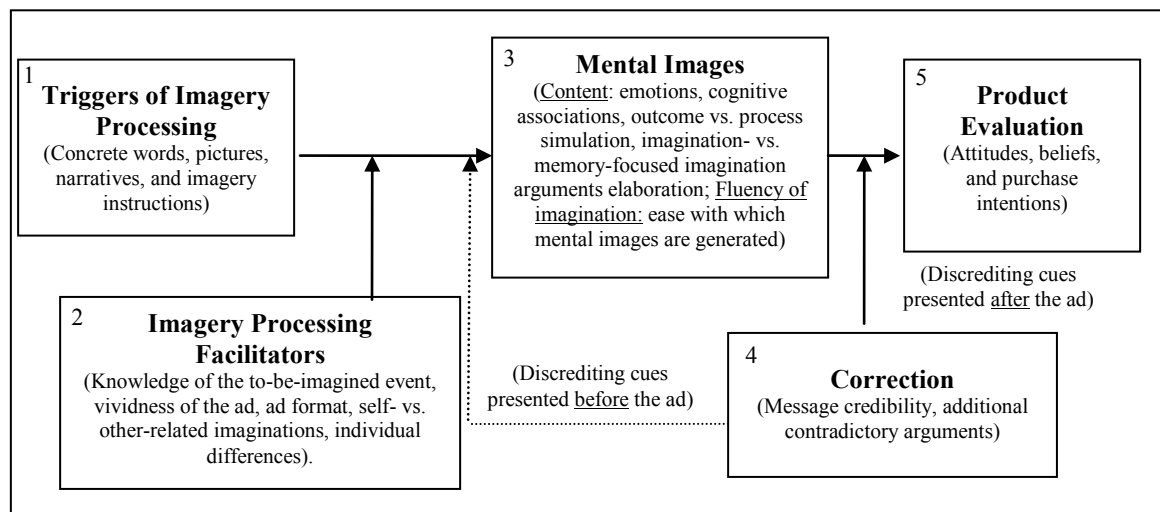
²In this dissertation, the term mental imagery refers only to the generation of visual information and thus it does not include other types of sensory stimulations of an audio, olfactory, or hepatic nature. The words mental imagery, imagination, mental simulation, and visualization are used synonymously.

according to the content of the advertisement by, for instance, combining said images with the image of a summer evening sky (e.g., Kosslyn, Ganis, and Thompson 2001) .

Mental imagery is only one of the possible mental processes that can be used to evaluate a product (e.g., Keller and McGill 1994). Behavioral (e.g., Jessen et al. 2000; Kiehl et al. 1999; Paivio 1990; Strain, Patterson, and Seidenberg 1995) and fMRI (e.g., Binder et al. 2005; Jessen et al. 2000) studies suggest the existence of two different cognitive subsystems that might be activated during the processing of a stimulus (Paivio 1990): An imagery subsystem responsible for representing and processing sensory information such as images, smell, and sound, and a verbal subsystem responsible for representing and processing abstract information (e.g., numbers, abstract words). Hence, one might evaluate the Capri restaurant using either an imagery processing mode, by forming a mental image of the place, or a verbal, non-imagery processing mode, by considering each attribute separately (e.g., food, ambience), weighing them according to their importance, and forming a composite evaluation of the restaurant (e.g., this restaurant is “four stars”). In general, the use of a non-imagery processing mode, as opposed to an imagery processing mode, would lead to different evaluations of the restaurant—because no sensory information is reproduced in working memory (Keller and McGill 1994; Petrova and Cialdini 2005; Thompson and Hamilton 2006). From a marketing perspective, it is therefore important to understand when imagery processing is more persuasive than is its non-imagery counterpart.

The following section provides a selective overview of past work on the effectiveness of mental imagery in order to situate this thesis within the relevant literature. More extensive literature reviews on the topic have been provided elsewhere (Lutz and Lutz 1978; MacInnis and Price 1987; Petrova and Cialdini 2007).

To understand when imagery-evoking advertisements are an effective means of persuasion, we have to consider the four domains of research shown in Figure 1.1 (adapted from MacInniss and Price 1987).



The first two domains of research concern the identification of imagery processing triggers and facilitators (boxes 1 and 2): To understand the effectiveness of imagery-evoking advertisements, we first need to understand how imagery processing can be activated (i.e., the features of an ad that activate imagery processing) and which variables facilitate or inhibit a consumer's ability to imagine. Besides identifying the factors that trigger and facilitate mental imagery, we need to understand how mental images affect attitudes, beliefs, and purchasing intentions as well as the mechanisms underlying these effects (box 3). The fourth domain of research examines the resistance of impressions (i.e., beliefs and attitudes) generated by imagery processing (box 4). This is an important domain of research because impressions generated by mental images frequently need to be corrected or even discounted to account for information not included in the imagination. For example, after having pictured the Capri restaurant, one might decide to revise his or her evaluation of the place to account for the fact that advertisements might not always be reliable. Note that discrediting information

can also be provided before mental images are experienced when, for example, one is informed about the unreliability of an imagery-evoking message before processing it. As will be discussed later, discrediting cues encountered before an imagery-evoking advertisement might affect one's motivation to imagine the scene as described in an advertisement. The dotted arrow in Figure 1.1 has been drawn to take into account this possibility.

Triggers of Imagery Processing

Imagery processing can be activated through concrete words, imagery instructions, pictures (Lutz and Lutz 1978; MacInnis and Price 1987; Petrova and Cialdini 2007), or a combination of the above. Concrete words (i.e., those words with direct reference to sense experiences [Paivio, Yuille, and Madigan 1968]) are more likely to elicit mental images than are more abstract ones. For instance, upon reading the word “McDonald,” we might experience a mental image of a hamburger with fries (or perhaps of an obese person, Ronald McDonald, balloons, or whatever image we associate with that word), whereas more abstract words such as “belief” or “criterion” (see Paivio et al. 1968 for concreteness ratings of different words) are less likely to elicit mental images. Narratives can similarly evoke mental imagery (e.g., Green and Brock 2000), especially when they contain concrete words and/or describe events that are spatially and temporally bound (Wyer, Hung, and Jiang 2008).

Imagery processing can also be prompted by an imagery instruction which consists of a “statement to the learner that directs him or her to form a mental picture of the concept to be learned” (Lutz and Lutz 1978, p. 612). As in the Capri advertisement, consumers can, at request, generate mental images by elaborating on the stimulus at hand (e.g., the content of the ad) and/or recalling their own relevant past experiences.

Imagery processing can be activated through pictures as well (e.g., Babin and Burns 1997; Lutz and Lutz 1978; Walters, Sparks, and Herington 2007). Pictures are especially effective in evoking imagery processing when they provide

rich details about the to-be-imaged scenario (i.e., easily identifiable persons, places, or objects) from which imagination can be generated (Babin and Burns 1997).

Facilitators of Imagery Processing

Activating imagery processing by, for example, asking consumers to imagine a given situation might not be sufficient for an advertisement to produce the desired effect, as the fluency (i.e., ease) with which one experiences mental imagery is influenced by several factors. One such factor is a person's prior knowledge of the to-be-imagined scenario (e.g., Lutz and Lutz 1978; MacInnis and Price 1987). A familiar object/scenario (or a scenario composed of familiar elements) is generally easier to imagine than an unfamiliar one because relevant information can be accessed from memory and used to generate mental images (e.g., MacInnis 1987; Wyer et al. 2008).

Fluency of imagination for unfamiliar scenarios can be enhanced by using concrete pictures (Lutz and Lutz 1978). More generally, the conjoint use of different imagery eliciting strategies can facilitate imagery processing. For example, the effectiveness of imagery instructions can be enhanced by including either a picture or a concrete narrative within the ad (Adaval and Wyer 1998; Walters et al. 2007). Additionally, when imagery processing is prompted, pictures might provide a way for different elements of a product description to be grouped together visually (Wyer et al. 2008). Multiple imagery-evoking strategies, however, are effective only when they provide complementary visual information (i.e., different details about a scene). Adding a picture to an advertisement, for example, does not facilitate imagery processing when the content portrayed in the picture overlaps with the content of an imagery-evoking text (e.g., description of a scene) elsewhere presented in the ad (Unnava and Burnkrant 1991).

Fluency of imagination is also affected by the format of an ad as well as the vividness of its content. Advertisements that compare two brands along

different attributes (i.e., comparative advertisements) require consumers to process information in a piecemeal fashion. This information processing mode is incompatible with imagery processing and thus inhibits the generation of mental images (Thompson and Hamilton 2006). Fluency of imagination is also affected by the vividness with which a product is described in an ad. Low fluency of imagination is generally reported when an ad prompts consumers to imagine a scene (e.g., a vacation) portrayed in a blurry picture or whose description contains nonexperiential, abstract information such as product ratings (Petrova and Cialdini 2005).

Fluency of imagination might also be affected by the subject of the imagination; that is, whether the action being imagined is performed by oneself or someone else. Dahl and Hoeffler (2004) showed that imagining oneself performing a behavior is easier than imagining someone else performing the same behavior, but only when the behavior is related to a familiar product/scenario (e.g., using a computer). The authors suggest that autobiographical memories associated with self-images facilitate the imagination of familiar scenarios—since they provide relevant information to imagine the scene—but inhibit the imagination of novel ones. The opposite holds true when imagining an unfamiliar behavior (i.e., using a radically new product) since others-related images are free from the constraints imposed by personal memories which inhibit the imagination of novel situations (Dahl and Hoeffler 2004).

Finally, it is worth noting that the effectiveness of different imagery-evoking strategies can be moderated by individuals' imagery ability. When prompted to imagine, individuals who are higher in dispositional imagery vividness (i.e., the ability to generate vivid mental images) report higher process fluency, as opposed to those who are lower (Petrova and Cialdini 2005). Differences in preferences for using an imagery (vs. a non-imagery) processing mode might also moderate people's responses to imagery-evoking stimuli (e.g., Childers, Houston, and Heckler 1985; Wyer et al. 2008).

Mental Images and Persuasion

A great deal of research suggests that consumers' product evaluations are determined not only by the content of a message but also by the fluency with which the message is processed (e.g., Schwarz 2004). Thus, to understand when imagery-evoking ads are persuasive, we have to consider both the content of one's imagination (e.g., emotions elicited by a mental image) as well as the fluency with which mental images are generated (Petrova and Cialdini 2005).

Content of imagination. The content of a consumer's imagination can enhance the persuasiveness of an advertisement by either strengthening its positive attributes or weakening its negative ones. Imagery processing can strengthen the positive attributes of an ad/product in several ways. First, it increases the number of message-relevant associations available in memory that are activated by a message (e.g., Paivio 1990). When the message-relevant associations activated have a positive valence, imagery-evoking stimuli lead to more positive attitudes than do abstract ones, whereas when the message-relevant associations have a negative valence, mental imagery might be ineffective or even counterproductive (Kisielius and Sternthal 1986). In addition to cognitive associations, feelings and emotions are also more likely to be evoked by imagery processing (e.g., Escalas 2004a; Holmes and Mathews 2005; Phelps 2004).

Imagery processing can also strengthen the benefits associated with the use of radical new products, as the perceived value of these products might be affected by the content of one's imagination and, in particular, by its novelty. Zhao and colleagues (2009) compare imagination-focused visualization (i.e., the imagination of new product usages) with memory-focused visualization (i.e., the imagination of past product usages) and found that imagination-focused, as opposed to memory-focused, visualization highlights the perceived value of the benefits of new products (e.g., new activities that are made possible by the product) and leads to higher product evaluations.

Imagery processing can also weaken the negative attributes an ad/product might have. When people use imagery processing to evaluate a product they may become absorbed in the story being imagined (e.g., imagining oneself experiencing the benefits of the advertised product) and thus become less likely to analyze critically the content of the advertisement (Escalas 2004a, 2007; Escalas and Luce 2003; Green and Brock 2000). For instance, asking people to imagine, as opposed to elaborate analytically on, the benefits of a pair of running shoes increases attitudes toward the product independently from whether the product description contains weak arguments, such as a positive description of unimportant product features, or strong arguments, such as a positive description of important product features (Escalas 2007). These effects, however, might depend on how people imagine a future event.

More specifically, recent research has distinguished between *process simulation*, the imagination of how to achieve an objective (i.e., getting a good grade on an exam), and *outcome simulation*, the imagination of the benefits associated with achieving an objective (Pham and Taylor 1999). The effectiveness of the two types of imaginations may depend on the strength of the message and the level of involvement of the consumer with the product/ad. Under conditions of low involvement, process simulation leads to more positive attitudes and higher purchasing intentions when the argument of the advertisement is strong as opposed to weak. Process simulation spontaneously elicits thoughts about how a product can deliver the advertised benefits; under low involvement, one's ability to generate these thoughts is determined mainly by the strength of the arguments presented (Escalas and Luce 2004). On the other hand, outcome simulation is unaffected by the strength of the argument when involvement is low (Escalas and Luce 2004).

The effects mentioned above, however, are reversed under conditions of high involvement (Escalas and Luce 2004). Under high involvement, the persuasiveness of outcome simulation (i.e., focusing on the benefits of consumption) is moderated by the strength of the arguments, whereas the

persuasiveness of process simulation is unaffected by the strength of the arguments. When involvement is high, consumers who engage in process simulation become insensitive to argument strength by, presumably, becoming absorbed into their imagination; a process that reassembles the effect of narrative transportation discussed above. It is noteworthy that, as suggested by the authors, process simulation contradicts the predictions made by traditional models of persuasion such as the elaboration likelihood model.

Finally, when consumers use imagery processing to evaluate a product, their preferences are less affected by product attributes that are difficult to imagine (Keller and McGill 1994) or whose valence contrasts with the valence of the overall product description (i.e., an overall favorable product description that contains few undesirable product features [Adaval and Wyer 1998]). Abstract and contradictory product features are less likely to be included in the imagination and thus to influence consumers' judgments.

Fluency of imagination. The fluency with which a particular scenario is imagined can affect judgments and product evaluations. The ease with which an event is imagined increases the subjective estimated likelihood of its occurrence (Carroll 1978; Gregory, Burroughs, and Ainslie 1985; Gregory et al. 1982; Sherman et al. 1985) as well as product evaluations (Petrova and Cialdini 2005) and purchase behaviors (Gregory et al. 1982). For instance, one study shows how university students believed themselves more likely to contract a new virus when its symptoms were easy to imagine as opposed to difficult to imagine (Sherman et al. 1985). Similarly, participants from another study who were led to imagine themselves being arrested for petty theft or shop lifting thought, when questioned 30 minutes later in an unrelated context, that they would be more likely to commit these crimes in the future than participants who read an unrelated scenario (Gregory et al. 1982). Imagination can also affect one's behavior; Gregory et al. (1982), in fact, found that imagining the benefits of a cable TV service, as opposed to reading the equivalent information, increased the likelihood that

consumers would subscribe to the service a few months later (Gregory et al. 1982).

Fluency of imagination can be enhanced by asking people to imagine a scenario multiple times. Imagining performing a behavior, in fact, increases the cognitive accessibility of that particular behavioral script which, in turn, affects the fluency with which the behavior is later imagined (Anderson and Godfrey 1987; Gregory et al. 1982) These findings have been explained through the *simulation heuristic* (Kahneman and Tversky 1982) which suggests that decision makers generate relevant scenarios and mentally unfold them to make judgments or choices. The ease with which a particular scenario comes to mind may be used to “judge the propensity of the (real) system to produce that state” (Kahneman and Tversky 1982, p. 210)³.

Recently, it has been shown that fluency of imagination can also affect attitudes and behavioral intentions (Petrova and Cialdini 2005), and that imagery-evoking advertisements can backfire (i.e., lead to low product evaluations) when consumers cannot easily generate mental images (Petrova and Cialdini 2005).

Finally, it is worth noting that fluency of imagination may, at times, be affected by the content of one’s imagination. As previously discussed, the subject of one’s imagination (self vs. others) and the novelty of the scene imagined can affect the fluency of imagination and, in turn, product evaluations (Dahl and Hoeffler 2004): Imagining oneself performing a behavior, as opposed to someone else, increases fluency of imagination and product evaluations when the imagining is about a familiar product (e.g., using a computer), whereas the opposite holds true when the imagination is about an unfamiliar product (i.e., using a radically new product). Hence, fluency and content of the imagination

³ The simulation heuristic represents a specification of the more general availability heuristic proposed by the same authors (Tversky and Kahneman 1973) which discusses two types of mental operations that “bring things to mind: the retrieval of instances and the construction of examples or scenarios”(Kahneman and Tversky 1982, p. 201).

might not always be considered to be independent constructs, as the former might affect the later.

Correction

As previously mentioned, consumers' impressions about products (e.g., attitudes and beliefs) derived from imagery processing often need to be adjusted, or even discounted, to take into consideration information that is not included in the imagination. This includes cases in which a consumer's imagination is prompted by a message that is later found to be unreliable, as well as cases in which consumers are required to integrate contradictory evidence presented either in an imagery-evoking or abstract format (e.g., advertising vs. consumer reports), or make decisions under conditions of uncertainty where imagination might be used to evaluate the payoff of the decision, such as buying a lottery ticket (e.g., the dream of buying a sports car with the money won), and abstract information (e.g., the probability of winning the lottery) may be used to assess its risks.

It is worth noting that herein I refer to cases in which the discrediting cue (e.g., information about the reliability of a message) is provided either before or after one's attempt to imagine, and thus it is not embedded within the message itself as it may be for considerations about the strength of a message's argumentation. That is, the imagery-evoking ad and the discrediting cue are processed at different times. When the discrediting cue is not embedded in the message, psychological mechanisms other than those already discussed in the literature (e.g., consumers becoming absorbed into their imaginations) might underlie the resistance of attitudes and beliefs generated by mental imagery.

Several theories of decision making imply (either explicitly or implicitly) that product inferences derived from one's imagination can be adjusted and/or discounted in order to account for additional information, at least when consumers are able and motivated to do so. Along this line of reasoning, Gilbert and colleagues (2002) suggested that decisions are often based on one's hedonic

reaction to an *atemporal* imagining of an event which is deliberately adjusted to take into consideration the event's temporal location, a relatively abstract feature of the imagined scene. For instance, to predict the extent to which one will enjoy a spaghetti dish the following morning, consumers might form a mental image of the particular dish, observe their present affective reaction to the mental image generated, and then correct—when able and motivated to do so—their responses to account for the fact that the event will take place the following morning (Gilbert et al. 2002). From an empirical point of view, however, it is not clear to what extent beliefs and attitudes generated by imagery processing can be at all discounted. In particular, it is left to be determined whether beliefs and attitudes induced by imagery processing are more resistant than those generated by non-imagery processing.

Evidence that imagery-evoking messages might generate beliefs stronger than those generated by abstract ones comes from a study by Green and Brock (2000) which showed that reading an overtly fictional imagery-evoking narrative (e.g., concerning the murdering of a little girl by a psychiatric patient) affected people's attitudes toward related issues (e.g., the confinement of psychiatric patients). The authors suggested that people immersed into a narrative judge the veracity of the story more on the basis of the vividness of the details provided than on the information about its source. Contrary evidence, however, is also available. Escalas (2007), in fact, found that being skeptical about the content of an imagery-evoking advertisement—i.e., prompting people to be critical and analytical—reduces the amount of mental imagery experienced as well as brand evaluations⁴. This result suggests that discrediting information preceding a message may reduce one's propensity to imagine the content of an imagery-evoking ad (see dotted path in Figure 1.1) and consequently the resistance of

⁴ It is worth noting that this result might not provide definitive evidence that attitudes generated by imagery-evoking messages can be corrected. These findings, in fact, might have been partially determined by the use of instructions that explicitly prompted an analytical processing mode (“[...] We ask you to think analytically, relating the features described by the ad to you personally in order to evaluate them” [Escalas 2007 p. 426]). Thus, these findings might not entirely be because of the participants' skepticism about the ad, but rather to the change in information processing mode prompted by these instructions.

beliefs and attitudes generated by it. In the light of these considerations, more research is needed to clarify whether, and under which conditions, inferences derived from imagery processing are more resistant to refutation than those derived from non-imagery processing.

How does Imagery Processing Persuade?

The above discussion reveals that the effectiveness of imagery-evoking advertisements depends on several interrelated factors. These might include the content (e.g., process vs. outcome, self- vs. others-related) and quality (e.g., vividness) of an advertisement, a consumer's knowledge of the to-be-imagined scenario, and one's dispositional imagery vividness. Although it might be impractical to enumerate all the situations in which imagery processing might or might not be an effective means of persuasion, we can at least identify three circumstances that underlie the success of imagery-evoking advertisements:

1. Imagery processing is fluent: To be effective, imagery processing elicited by an ad must be fluently (easily) experienced by a consumer. Fluency of imagination is a function of one's knowledge, dispositional imagery vividness, the vividness and the type (i.e., comparative vs. non-comparative) of the advertisement presented as well as its content (i.e., self- vs. others-related imaginations). Fluency of imagination is a necessary but not sufficient condition for an imagery-evoking ad to be effective; when fluency of imagination is high, the persuasiveness of imagery-evoking advertisements might be driven mainly by the content of one's imagination.
2. Imagery processing strengthens the positive attributes of an ad/product. Imagery processing, as opposed to non-imagery processing, can increase the number of positive associations activated by the message and lead to more intense affective reactions. When the cognitive and affective associations are positively valenced, imagery processing strengthens the positive features of a given product description and increases its evaluation (Kisielius and Sternthal

- 1986). Imagery processing can also heighten the perceived benefits of new products by simulating innovative product usages (Zhao et al. 2009).
3. Imagery processing weakens the attributes of an ad/product: Imagery processing can increase the persuasiveness of imagery-evoking ads by diminishing the effect of weak arguments as well as the effect of negative product attributes that are either abstractly presented or that contradict an overall positive product description (Escalas 2004a; Keller and McGill 1994). When any of these conditions occur, negative or weak product arguments are not included in one's imagination, thus reducing their impact on product evaluation.

Hence, the success of an imagery-evoking advertisement depends on whether one or more of the three aforementioned conditions (i.e., fluency of imagination, strengthening positive ad/product attributes, and weakening negative ad/product attributes) are met. As discussed, inferences generated by imagery processing might also be more resistant to refutation than those generated by non-imagery processing. This suggests that imagery-evoking messages, as opposed to abstract ones, might also be more effective when their credibility is discredited.

The Present Research

The three essays presented in this thesis investigate: *i*) whether imagery processing can be triggered and facilitated through priming procedures, *ii*) how self-images (e.g., imagining oneself engaging into a specific action) persuade, and *iii*) whether and to what extent beliefs and attitudes induced by mental imagery can be corrected. The contribution of the three essays is shown in Figure 1.2: Essay I provides new insights on the activation and facilitation of imagery processing, Essay II studies ways to increase the effectiveness of self-images (i.e., mental images of oneself) and, finally, Essay III compares the resistance of

attitudes and beliefs induced by imagery processing to those generated by non-imagery processing.

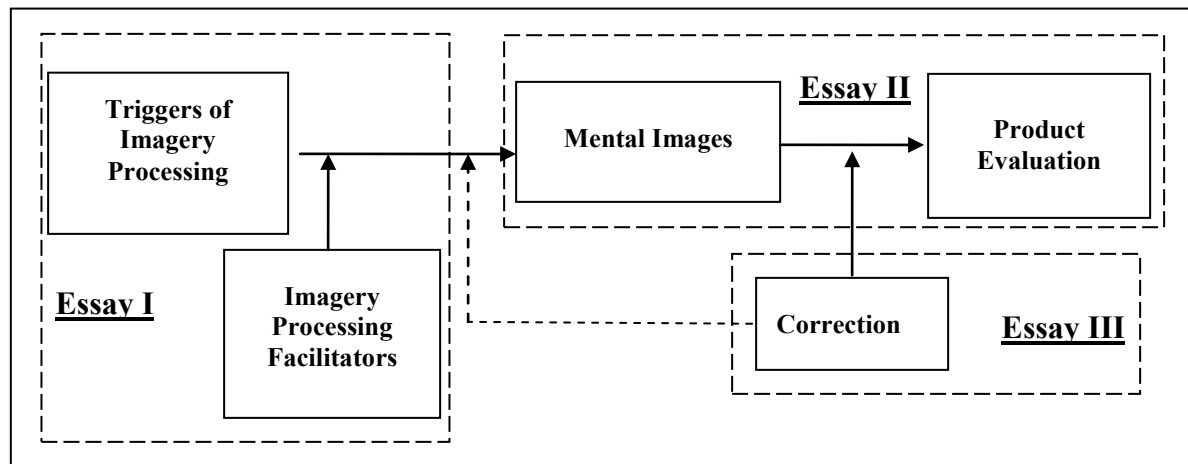


Figure 1.2. Contribution to the literature.

Can Priming Facilitate Imagery Processing (Essay I)?

As discussed above, imagery-evoking advertisements are not always persuasive. Their effectiveness depends on both a consumers' propensity to imagine and ability to generate vivid mental images. The propensity to imagine can be increased through imagery instructions (Keller and McGill 1994; Thompson and Hamilton 2006), whereas the ability to imagine depends, amongst other factors, on one's dispositional imagery vividness (MacInnis and Price 1987; Petrova and Cialdini 2005). Asking people to imagine may increase the persuasiveness of imagery-evoking advertisements when dispositional imagery vividness is high, but it may backfire when dispositional imagery vividness is low (Petrova and Cialdini 2005). For this reason, imagery-evoking advertisements are a risky option from an advertiser's point of view given that their persuasiveness is ultimately determined by the information processing mode used by consumers and their dispositional ability, two variables that might not be fully under the control of advertisers.

In the first essay, I suggest that the activation of an imagery mindset can reduce the risk associated with the use of imagery-advertisements. Specifically, I draw on the literature on procedural priming (e.g., Kolers and Perkins 1975; Kolers and Roediger III 1984; Roediger III, Buckner, and McDermott 1999; Shen and Wyer 2007; Smith 1989, 1994; Xu and Wyer 2008) to suggest that tasks evoking mental imagery may activate an imagery mindset (defined as a state of enhanced accessibility of an imagery processing mode) which simultaneously increases a consumer's propensity to imagine and facilitates imagery processing for advertisements subsequently presented.

From a managerial point of view, this work suggests that advertisers may be able to enhance the persuasiveness of imagery-evoking advertisements by placing them after stimuli that prompt imagery processing, such as narratives, as opposed to non-imagery processing, such as Sudoku puzzles.

How Do Self-Images Persuade (Essay II)?

To make a decision, we often imagine ourselves engaging in a given behavior (e.g., moving to a new city, getting a new job, going on a vacation). For this reason, self-images are likely to play a major role in consumer decision making; yet, little is known about the factors moderating the persuasiveness of this type of imagination. Even though a few studies have suggested that imagining oneself, as opposed to someone else, can (under certain circumstances) increase behavioral intentions and product evaluations (e.g., Anderson 1983b; Dahl and Hoeffler 2004), little research has investigated the ways in which self-images persuade (see Vignoles et al. 2008 for a contribution in this direction).

In this essay, I draw on James's (1982) classical dichotomy between the "Me" and the "I" to propose that consumers can imagine themselves in the future either with a *being focus*—when they focus on the dispositional characteristics of their future selves (e.g., abilities, traits, social roles)—or an *experiencing focus*—

when they focus on the subjective experience of their future selves (e.g., thoughts, feelings, sensations, emotions).

To persuade people to engage in the imagined behavior (e.g., moving to a new city, starting a diet), future self-images in a being focus have to successfully convey how the scene pictured (e.g., working in a prestigious office, becoming athletic) enhances one's sense of self (i.e., being a successful student, an athlete, a caring parent), whereas future self-images in an experiencing focus have to transmit the positive feelings and emotions (e.g., the excitement of kayaking through a beautiful canyon) that could be experienced in the future. In this essay, I propose that the persuasiveness of both being focus and experiencing focus depend on the visual perspective through which a scene is imagined.

Future selves can be imagined through a first-person perspective, when a scene is conceived from the visual perspective one would have if actually living the event, or a third-person perspective, when the scene is visualized through the point of view of an external observer (e.g., Nigro & Neisser, 1983). Empirical findings indicate that the visual perspective can determine the inferences people make about their future selves. The third-person perspective leads to more dispositional attributions (e.g., Frank & Gilovich, 1989) and highlights the broader meaning of an imagined situation (Libby & Eibach, 2004 cited in Libby et al. 2005; Vasquez & Buehler, 2007). The first-person perspective discloses more information about the affective reactions, physical sensations, and psychological states that might be experienced by a person (McIsaac & Eich, 2002).

On the basis of these findings, I suggest that a third-person perspective enhances the persuasiveness of future self-images in a being focus by highlighting the broader meaning of a behavior and its dispositional consequences, whereas a first-person perspective enhances the persuasiveness of future self-images in a experiencing focus by disclosing more information about one's affective reactions.

How Resistant Are Beliefs and Attitudes Induced by Mental Imagery (Essay III)?

The third essay examines the resistance of beliefs and attitudes generated by imagery-evoking, as opposed to abstract, messages. Drawing on theoretical and empirical evidence suggesting that implicit beliefs can be derived from spontaneous and unconscious inferences generated by perceptual experiences (e.g., Gilbert, Krull, and Malone 1990; Sperber 1997), I propose that imagery-evoking messages may induce both deliberate beliefs—because of the strength of the arguments and/or the credibility of the source—and implicit beliefs—due to the experience of mental images generated by the message—, while abstract messages may induce only deliberate beliefs.

For example, an abstract consumer review stating that “dialing with this cell phone is a tiring, error-filled process” might be believed only through deliberation (e.g., I trust the reviewer, therefore I believe that the phone is bad), as it may be difficult for most people to elicit a mental image from such an abstract description. On the other hand, an imagery-evoking product description, such as “the buttons of this cell phone are too small so our fingers are always pushing the wrong button” may, in addition to deliberate beliefs, lead to the generation of implicit beliefs due to the experience of mental images (e.g., a person experiencing difficulty while dialing a phone number).

Since beliefs derived from abstract messages are held deliberately, they should be relatively easy to discard. Once the credibility of a message has been questioned, or the arguments deemed unreliable, a consumer has no reason to purposely maintain these beliefs. Yet, implicit beliefs induced by the experiencing of mental images should be more difficult to discount. Once generated, the mental image of a product will be available in memory, even if the message itself has been deemed unreliable; this image will in turn provoke implicit beliefs and affect product evaluations.

Studying the resistance of impressions generated by mental imagery has a wide range of implications for marketing practice because people often imagine consumption-related behaviors in order to make product evaluations that may need to be adjusted or even discounted.

INTRODUCTION TO ESSAY I

As discussed in the first chapter, several domains of research are central to the understanding of when and how imagery-evoking advertisements may be effective. These include the study of: *i*) the triggers and facilitators of imagery processing, *ii*) how mental images affect brand evaluations as well as the mechanisms underlying this effect, and *iii*) the resistance of impressions (i.e., beliefs and attitudes) generated by imagery processing. The three essays of this dissertation contribute to each of these areas of research. In particular, Essay I investigates how imagery processing can be activated and facilitated through priming procedures.

CHAPTER 2 — ESSAY I

UNLEASHING THE IMAGINATION THROUGH PRIMING: PROMPTING AND FACILITATING EFFECTS OF AN IMAGERY MINDSET

“Imagine yourself in Italy, sitting in an elegant outdoor bistro under the summer evening sky, enjoying great authentic Italian cuisine, sipping a wine that perfectly complements dinner and catching up with good friends.”

Capri Italian Restaurant, 1301 West Sunset Road, Henderson, NV 89014

The tagline above is just one of the many examples in which an imagery-evoking advertisement is used to promote products and services. The widespread use of imagery-evoking advertisements—ads that prompt and/or facilitate the generation of mental images (for a review see Lutz and Lutz 1978)—is justified by a great deal of evidence suggesting that imagining consumption-related behaviors can lead to more favorable product evaluations (e.g., MacInnis and Price 1987; McGill and Anand 1989; Petrova and Cialdini 2005, 2007; Shiv and Huber 2000; Zhao et al. 2009) and increase purchase intentions (Gregory et al. 1982).

Imagery-evoking ads, however, are not always effective. Their persuasiveness depends on both a consumer’s propensity to imagine and ability to generate vivid mental images. Propensity to imagine can be increased through imagery instructions (Keller and McGill 1994; Thompson and Hamilton 2006), whereas ability to imagine is influenced by individual differences and, in particular, by one’s dispositional imagery vividness (i.e., the disposition to

generate vivid mental images; Petrova and Cialdini 2005)⁵. Therefore, imagery instructions and high dispositional imagery vividness together can increase the persuasiveness of imagery-evoking advertisements: Asking people to imagine may increase the persuasiveness of imagery-evoking ads when dispositional imagery vividness is high, but it may backfire when dispositional imagery vividness is low (Petrova and Cialdini 2005). Thus, the effectiveness of imagery-evoking advertisements can be enhanced by prompting imagery processing and targeting consumers with high dispositional imagery vividness.

I propose that the persuasiveness of an imagery-evoking ad may be also determined by the momentary mindset activated by the tasks a consumer performs before encountering the ad. Four studies provide evidence that tasks eliciting mental imagery activate an imagery mindset that increases the persuasiveness of subsequently presented imagery-evoking ads. These findings suggest that the effectiveness of an imagery-evoking advertisement can be enhanced by placing the ad after an imagery-evoking stimulus, such as a narrative, as opposed to an abstract one, such as a Sudoku puzzle.

Preliminary evidence in favor of the existence of an imagery mindset has been provided by Adaval and Wyer (1998) who, unexpectedly, found that evaluating an imagery-evoking (i.e., a narrative), as opposed to an abstract (i.e., a bullet-style description), brochure of a vacation destination led to more favorable evaluations of a second vacation destination described in an imagery-evoking format. In a post-hoc explanation of these findings, the authors suggested that evaluating an imagery-evoking message might activate an information processing mode that affects the evaluation of successive messages. Despite this evidence and the compelling explanation, no formal account of the notion of an imagery mindset has been provided yet. The next section addresses this gap in the literature.

⁵ The characteristics of an ad, such as its vividness, can also facilitate the generation of mental images (Petrova and Cialdini 2005).

Imagery Processing Mode and Imagery Mindset

Mental imagery is the process by which sensory information is represented in working memory (MacInnis and Price 1987 , p. 473). This definition highlights the distinction between the specific knowledge about the to-be-imagined scenario (e.g., the content of the advertisement) and the cognitive process (i.e., mental imagery) that generates mental images (MacInnis and Price 1987). For example, while reading the ad about the Capri Restaurant, one might have formed a mental image by retrieving relevant memories (e.g., a familiar bistro restaurant) and have modified them according to the content of the ad by combining said images with those of a summer evening sky (e.g., Kosslyn et al. 2001). Mental imagery is the process that generated a mental image of the restaurant, starting from the information presented in the ad and available in one's memory.

Mental imagery is only one of the possible cognitive processes a person can use to process an ad and evaluate a product. In this regard, behavioral (e.g., Jessen et al. 2000; Kiehl et al. 1999; Paivio 1990; Strain et al. 1995) and fMRI (e.g., Binder et al. 2005; Jessen et al. 2000) studies have provided support for the existence of two different cognitive subsystems (Paivio 1990): An imagery-based subsystem responsible for representing and processing sensory information such as images, smell, and sound, and a analytical⁶ subsystem responsible for representing and processing abstract symbols (e.g., numbers, abstract words). The same ad can be evaluated through either cognitive subsystem (Keller and McGill 1994). For instance, the Capri restaurant ad might be evaluated through a non imagery-based processing mode by considering each attribute separately, weighing them according to their importance, and forming a composite evaluation of the restaurant (e.g., this restaurant is “four stars”).

The persuasiveness of an ad is enhanced when consumers adopt an information processing mode that matches the format of the advertisement (Lee

⁶ Paivio's original dichotomy distinguishes between non-verbal (imagery) and verbal subsystems. In this essay, I use the terms analytical and non-imagery to refer to the verbal subsystem and its processing mode.

and Aaker 2004). More specifically, imagery-evoking advertisements are more persuasive when processed through an imagery, as opposed to an analytical, processing mode. When consumers evaluate a product using an imagery processing mode, as opposed to an analytical processing mode, imagery-evoking product attributes have a greater impact on choice (Keller and McGill 1994). Second, the fluency (i.e., ease) with which an imagery-evoking ad is processed might increase when consumers use an imagery processing mode, and this, in turn, may enhance its effectiveness (Petrova and Cialdini 2005; Thompson and Hamilton 2006). Thus, prompting an imagery processing mode through imagery instructions has the potential to increase the effectiveness of imagery-evoking advertisements (Petrova and Cialdini 2005; Thompson and Hamilton 2006).

However, there are two reasons why imagery instructions may be ineffective in enhancing the persuasiveness of imagery-evoking ads. First, consumers might try to resist the persuasive attempts of advertising (e.g., Friestad and Wright 1994) by not complying with imagery instructions⁷. Second, the fluency with which an imagery-evoking ad is processed also depends on a person's dispositional imagery vividness. Individuals vary in their ability to generate mental images (Marks 1973) and this, in turn, affects their responses to imagery-evoking ads (Petrova and Cialdini 2005). When prompted to imagine the content of an imagery-evoking message, individuals high in dispositional imagery vividness report higher process fluency and more favorable evaluations than those low in dispositional imagery vividness (Petrova and Cialdini 2005). Therefore, prompting an imagery processing mode can increase product evaluations when dispositional imagery vividness is high, but it may have the opposite effect when dispositional imagery vividness is low (Petrova and Cialdini 2005). For these reasons, imagery-evoking ads are a risky option from an advertiser's point of view since their success is ultimately determined by the information processing mode used by consumers and their dispositional differences.

⁷ In addition, individuals vary in their preferences and predispositions to adopt an imagery processing mode (Childers et al. 1985) and this might also moderate the effectiveness of imagery-evoking ads (Rossiter and Percy 1978).

In this essay, I suggest that the persuasiveness of imagery-evoking ads might also be affected by the accessibility of an imagery (vs. non-imagery) processing mode in working memory. Controlling for individual differences, the accessibility of an information processing mode is determined by the recency of its activation (Shen and Wyer 2007; Smith 1994) which depends on the tasks performed beforehand. More specifically, tasks inducing mental imagery (e.g., narrative, concrete words) may prime an *imagery mindset*—defined as a state of enhanced accessibility of an imagery processing mode—which may affect the evaluation of subsequently presented advertisements.

An imagery mindset, so defined, is an instance of *procedural priming* (Forster, Liberman, and Friedman 2007; Shen and Wyer 2007; Smith 1994), namely the activation through priming of mental procedures that “store, retrieve, or make inferences based on declarative knowledge” (Smith 1994, p. 101). Procedural priming is conceptually different from the more established notion of declarative priming (i.e., the activation of semantic concepts, stereotypes, or traits [Shen and Wyer 2007; Smith 1994]) and goal priming (Forster et al. 2007 for a discussion on the difference between the three types of priming), and it has received limited attention in the marketing literature.

Consequences of Imagery Mindset Activation

On the basis of the literature on procedural priming reviewed below, I suggest that the activation of an imagery mindset *i*) prompts the adoption of an imagery processing mode when performing a subsequent, unrelated task and *ii*) facilitates the execution of imagery processing, once this processing mode has been activated. Both effects, in turn, are expected to increase the persuasiveness of imagery-evoking ads.

Prompting Effect

Tasks activating a specific information processing mode may increase one's propensity to adopt the activated processing mode when performing a subsequent, unrelated task. For example, a person who ranks a series of stimuli (e.g., the attributes of a hypothetical job) from best to worst, compared to from worst to best, evaluates more favorably subsequently presented, unrelated product descriptions (i.e., a vacation and a personal computer) that include both positive and negative features (Shen and Wyer 2007). The ranking procedure performed in the first task activates an information search strategy that focuses one's attention on the positive (vs. negative) product attributes when performing the second, unrelated choice task. Likewise, making comparative judgments, such as stating which of two animals is faster, activates a comparative-mindset that increases one's willingness to endorse one of the two choice options presented in an unrelated domain, as opposed to forego both of them (e.g., choice between two vacation destinations; Xu and Wyer, 2007, 2008). In this case, people approach the second task with the same choice strategy used in the comparative judgments task (e.g., which of the two options is better?), thus focusing on which of the two options should be chosen (comparative mindset) rather than deferring the decision (i.e., considering whether to forego both options). Along this line of evidence, I suggest that tasks that activate an imagery processing mode (i.e., those evoking mental images) increase people's propensity to imagine when presented with a subsequent, unrelated task.

Facilitating Effect

The activation of a mental procedure accelerates future uses of the same procedure (Anderson 1987). More generally, practice on a task facilitates subsequent tasks that share similar mental processes (e.g., Kolers and Roediger III 1984; Roediger III, Buckner, and McDermott 1999; Roediger III, Gallo, and Geraci 2002). For example, judging whether a given behavior (e.g., winning an argument) implies a trait (e.g., intelligence) increases the speed with which

subsequent judgments about different behavior-trait pairs are made (Smith 1989). Presumably, making judgments about traits increases the accessibility of a “trait judgment” procedure, not specific to the particular behavior-trait pair at hand, that facilitates subsequent judgments. This facilitating effect can occur even when the two tasks are radically different. For instance, within the domain of skills transfer, it has been shown that reading an inverted text increases reading speed of different, rotated texts (Kolars & Perkins, 1975). The activation of a mental procedure can also inhibit task performance. This has been shown by research on the overshadowing effect, namely the phenomenon that verbalizing a stimulus (e.g., a face) impairs its subsequent recognition (Brown and Lloyd-Jones 2003). This effect may occur even when the verbalization and recognition tasks involve different stimuli such as faces and cars; the verbalization task activates a processing orientation that can interfere with the subsequent, visual recognition task (Macrae and Lewis 2002; Schooler 2002). In light of this evidence, I suggest that priming an imagery mindset facilitates the processing of imagery-evoking ads and increases their effectiveness. That is, when an imagery processing mode is activated (e.g., when one imagines the benefits of a product), the ease with which mental images are generated depends on the tasks one has previously performed and, in particular, on the amount of mental imagery these tasks elicited. This, in turn, should increase the persuasiveness of imagery-evoking ads (Petrova and Cialdini 2005).

The empirical evidence discussed above suggests that the prompting effect activates an imagery processing mode—as imagery instructions do—, whereas the facilitating effect facilitates imagery processing—as dispositional imagery vividness does. Thus, the combined effect of the prompting effect and facilitating effect should increase the effectiveness of imagery-evoking ads. Moreover, given that the effect of an imagery mindset on product evaluations occurs outside one’s awareness, consumers should be less likely to perceive it as a persuasive attempt and thus try to discount its effect as they might do with imagery instructions. More formally, I suggest that:

H1: The activation of an imagery mindset increases the persuasiveness of imagery-evoking advertisements.

Study 1

Imagine that you are evaluating three different products presented in sequence. Will the amount of mental imagery evoked by the first two product descriptions affect your preference for the third one? Study 1 answers this question by testing H1 in the domain of sequential product evaluations.

Method

Subjects and design. The study had a 2 (prime: imagery vs. abstract) \times 2 (product description: imagery-evoking vs. abstract) between-subjects experimental design. Seventy-five participants (48 females, one missing value on age; average age 21.8 yrs, $SD = 3$ yrs), who partook in a series of unrelated studies, evaluated three different products whose descriptions were presented in sequence. Each product was separated by a page showing the number of the product being evaluated (e.g., “Product # 2”). The first two product descriptions functioned as the priming task and the last one as the evaluation task. Participants took part in the study either as part of a marketing class ($n = 28$) or for a monetary compensation ($n = 47$).

Procedure. In the priming task, participants evaluated an apartment and a restaurant described either in an imagery-evoking (i.e., narrative) or abstract (ratings of different attributes) format (see Appendix 2.1). The imagery-evoking description of the apartment stated: “Picture a large living room, with varnished wooden floor, high ceiling, and a real fireplace in front of you; imagine how it would feel spending the cold winter evenings in front of the fireplace [...]”, whereas the non imagery-evoking description consisted of a series of short sentences, bullet-style about the attributes of the apartment (e.g., state of the

apartment: excellent (rating of 8/10); quality of the building: average (rating of 5/10) [...]). After each product description, participants reported their behavioral intentions (intention to consider the apartment/restaurant, intention to live in the apartment/visit restaurant)⁸.

In the evaluation task, participants saw either an imagery-evoking or an abstract description of a tropical resort. The imagery-evoking description consisted of a narrative that prompted respondents' imaginations by stating: "Imagine yourself relaxing on soft, warm, white sand enjoying a sunbath while drinking a refreshing cocktail. Picture an almost deserted beach in front of you, the sun shining in a blue sky, and a fresh breeze coming from the ocean. Imagine swimming in crystal clear waters. This is Blue Bay!" The abstract description presented the ratings of six product attributes in a matrix format (seashores, landscapes, day attraction, accommodation, nightlife, and price), supposedly given by the consumers of the resort. Participants evaluated the resort by reporting their purchase intentions (intention to visit the resort, likelihood of considering going to the resort, and intention to recommend the resort to a friend, $\alpha = .92$). All items were answered on 11-point scales.

Results

Manipulation check. Nineteen participants from the same population as the main study rated the amount of mental imagery elicited by the four product descriptions presented in the priming task (imagery-evoking description of the apartment, abstract description of the apartment, imagery-evoking description of the restaurant, and abstract description of the restaurant; the four product descriptions were presented in this order) on a three-item scale (whether they experienced mental imagery, whether they imagined the product described, and whether the product description was easy or difficult to imagine; α 's $> .93$). As expected, the imagery-evoking descriptions elicited more mental imagery than did

⁸These questions were asked to be consistent with the cover story of the study (i.e., obtaining people's evaluation of three different products) without being interested in the participants' evaluations of the products presented in the priming task.

the abstract ones (apartment: $M_{\text{imagery}} = 5.18$, $M_{\text{abstract}} = 2.58$, $t(18) = 6.38$, $p < .01$; restaurant: $M_{\text{imagery}} = 5.68$, $M_{\text{abstract}} = 2.53$, $t(18) = 5.94$, $p < .01$), thus suggesting that the manipulation was successful.

Purchase intentions. As shown in Figure 2.1, purchase intentions were affected by both the type of description and the priming task. Results from an ANOVA showed a significant main effect of the evaluation task ($F(1,70) = 9.79$, $p < .01$) and a non-significant effect of prime ($F(1,70) = .33$, $p = .57$) qualified by a significant interaction term ($F(1,70) = 8.13$, $p < .01$; one observation with studentized residuals greater than 3.0 was eliminated).

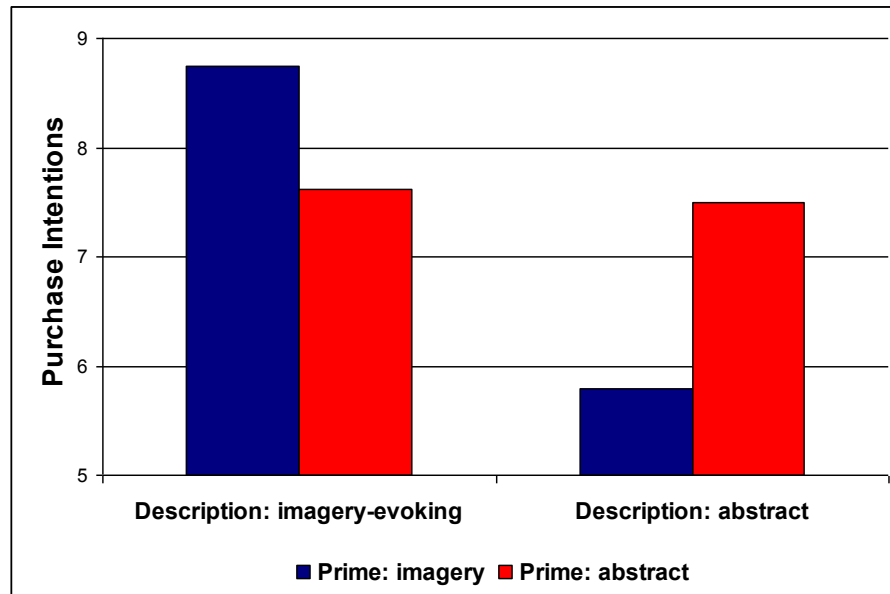


Figure 2.1. Mean values of purchase intentions as a function of prime condition and product description.

The imagery-evoking description led to more favorable evaluations of the resort when participants were assigned to the imagery priming ($M = 8.75$, $SD = 1.49$) instead of the abstract priming task ($M = 7.63$, $SD = 2.41$, $t(34) = 1.71$, $p_{1-tailed} < .05$)⁹, whereas the opposite was true for the abstract description of the resort

⁹ Two separate t -test analyses were performed to investigate further the impact of the imagery priming on attitudes. I conducted this analysis instead of a planned contrast tests because the estimate for the imagery-evoking description had a lower standard error.

($M_{\text{imagery-prime}} = 5.79$, $SD_{\text{imagery-prime}} = 2.09$; $M_{\text{abstract-prime}} = 7.49$, $SD_{\text{abstract-prime}} = 2.43$, $t(36) = 2.31$, $p = .03$).

Discussion

Findings from Study 1 suggest that the activation of an imagery mindset can bias the evaluation of products that are subsequently presented. Reading two imagery-evoking, as opposed to abstract, product descriptions increased purchase intentions for a tropical resort when its description was imagery-evoking (i.e., narrative with imagery instructions) and decreased purchase intentions when its description was abstract (i.e., product rating). These results build upon previous findings (Adaval and Wyer 1998) showing that evaluating an imagery-evoking brochure of a vacation can lead to more favorable evaluations of a second imagery-evoking vacation description. Because the imagery priming affected purchase intentions despite the fact that different products were used in the priming (i.e., apartment and restaurant) and in the evaluation task (i.e., tropical resort), this study suggests that the effect of an imagery mindset is not product-specific. The next study aims to replicate these results using a different priming manipulation and rule out possible alternative explanations for these findings.

Study 2

The objective of Study 2 was twofold. First, I wanted to prime an imagery mindset with a task that does not explicitly ask participants to imagine. Doing so, I can rule out a possible alternative explanation for the findings discussed in Study 1. When the priming task explicitly instructs one to imagine, participants might assume that such a request also applies to the subsequent evaluation task. Hence, the results from Study 1 might have been determined by the participants' deliberate attempt to follow the instructions provided in the priming task rather than by the activation of an imagery mindset. To rule out this possibility, participants in Study 2 were presented with pairs of words referring to objects

and/or animals and asked either to make size judgments (imagery prime) or to select the item with the higher number of vowels (control). To make size judgments, a person has to visualize the items to be compared (Paivio 1975). For example, to judge whether a camel is bigger than a cow, one might produce a mental image of the “prototypical camel” and compare it with a mental image of the “prototypical cow.” Size judgments, therefore, should activate an imagery processing mode without explicitly asking one to imagine.

A second objective of Study 2 was to show that an imagery mindset increases the effectiveness of imagery-evoking ads even when participants are instructed to imagine while performing the evaluation task. To this end, participants were presented with either an imagery-evoking description (i.e., narrative) of a tropical resort preceded by imagery instructions adapted from Keller and McGill (1994) or an abstract description (i.e., attribute ratings) of the same resort preceded by instructions to be logical and analytical (Zhao et al. 2009). The imagery instructions placed before the imagery-evoking description have been shown to activate an imagery processing mode (Keller and McGill 1994; Shiv and Huber 2000; Thompson and Hamilton 2006) and thus should equate participants’ propensity to imagine across the two prime conditions (i.e., when evaluating the imagery-evoking product description, participants are encouraged to imagine irrespective of the priming task performed before). Hence, an effect of the priming manipulation on product evaluations would provide support for the facilitating effect.

Method

Participants and design. Eighty participants (55 females, average age 20.8 yrs, $SD = 2.7$ yrs) took part in a computer based study which had a 2 (prime: imagery vs. control) \times 2 (product description: imagery-evoking vs. abstract) between-subjects experimental design.

Procedure. Participants were informed that they were taking part in a study consisting of two independent parts: A comparison task, which functioned as the priming task, and a product evaluation task. Participants in the imagery prime condition were presented with 21 pairs of names of objects/animals (Appendix 2.2) and asked to choose, for each pair, the item that is larger in real life (i.e., select the item that is larger in real life: Camel/Cow). Participants in the control prime were presented with the same pairs of items and asked to choose the word with more vowels (i.e., select the word with more vowels: Camel/Cow). Participants then reported the difficulty of the task on a single item (very difficult/very easy) and, as a manipulation check, the amount of mental imagery experienced while making the judgments (did you mentally picture the objects/animals you were comparing, did you visualize the objects/animals you were comparing, $\alpha = .99$). In the second part of the study, participants evaluated a tropical resort presented either in imagery-evoking or in abstract ways. The imagery-evoking description was a brief narrative describing the resort:

If you want to know what the Clare Resort looks like, imagine white sand beaches, the sun shining in a blue sky, and warm, crystal-clear waters that show different shades of blue. You will have a great time there. You can spend the days sunbathing with your favorite cocktails, playing volleyball and tennis, and scuba diving. In evenings, you can enjoy the vibrant nightlife of dance clubs, open-air cafes, and incredible restaurants. The food is very good. The selection is always varied with fresh ingredients and exotic seasonings from across the Caribbean ... in particular, the fruit, picked at its peak ripeness, is delicious. The rooms are large and clean with a big ocean-view balcony from which you can enjoy breathtaking sunsets. The service is professional.

The abstract description consisted of a matrix reporting the ratings of six attributes (location, day activities, nightlife, meal options, accommodations, and service). Participants were explicitly asked to use their imagination to evaluate the imagery-evoking description and to be logical without letting their imagination get the better of them while evaluating the abstract description (adapted from Keller and McGill 1994). Attitudes toward the resort were measured on a semantic differential scale (negative/positive, poor/excellent, bad/good; $\alpha = .95$)

along with the extent of imagination experienced while making their evaluations (whether they imagined the resort, whether they tried to visualize the resort, and whether the description aroused mental images of the resort, $\alpha = .95$). All items were answered on 7-point scales.

Manipulation Check

Product description. The imagery-evoking description of the resort elicited more mental imagery ($M = 6.36$, $SD = .59$) than did the abstract description ($M = 3.35$, $SD = 1.59$), $t(78) = 11.10$, $p < .01$. Moreover, the imagery-evoking description elicited more mental imagery when preceded by the imagery priming ($M = 6.61$, $SD = .50$) than the control prime ($M = 6.14$, $SD = .58$), $t(37) = 2.66$, $p = .01$. However, there was no difference in the amount of mental imagery elicited by the abstract product description in the imagery prime condition ($M = 3.32$, $SD = 1.59$) and in the control prime condition ($M = 3.40$; $SD = 1.65$), $t(39) = -.15$, $p = .88$ ¹⁰.

Prime. Size judgments generated more mental imagery ($M = 6.30$, $SD = .81$) than did vowel judgments ($M = 1.60$, $SD = 1.00$), $t(78) = 22.40$, $p < .01$, thus suggesting that the priming manipulation was successful. Also, size judgments ($M = 4.55$) were considered to be more difficult than vowel judgments ($M = 6.55$; higher scores indicate less difficulty), $t(78) = 7.66$, $p < .01$. To control for possible confounding effects, difficulty was included as covariate in the analyses reported below.

Results

As shown in Figure 2.2, when controlling for the effect of the difficulty of the priming task ($\beta = .31$, $t(35) = 3.24$, $p < .01$), the imagery-evoking description of the vacation was more persuasive when preceded by the imagery prime ($M = 6.58$) than the control prime ($M = 5.85$), $t(35) = 2.67$, $p = .01$ (one observation

¹⁰ The overall analysis of covariance is not reported because of a violation of the homogeneity of variance as indicated by a Levene's Test ($F(3,76) = 10.94$, $p < .01$).

with studentized residual greater than 3.0 was eliminated). Similar results were obtained when controlling for the different amount of mental imagery elicited by the imagery-evoking description in the two prime conditions, thus providing evidence that the prompting effect might not be responsible for the difference in attitudes.

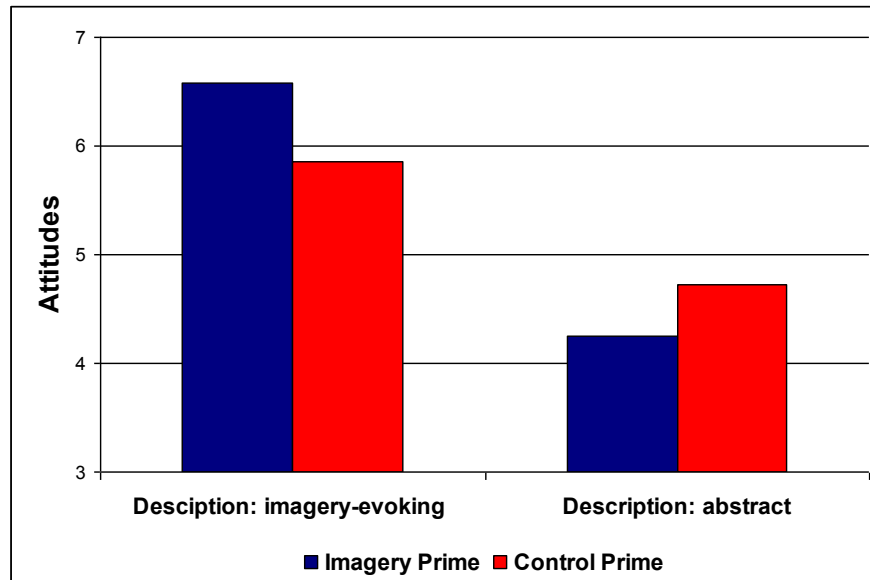


Figure 2.2. Adjusted mean values of attitudes as a function of prime condition and product description.

On the other hand, the abstract description was evaluated directionally (but not significantly) less persuasive when preceded by the imagery prime ($M = 4.25$) instead of the control prime ($M = 4.72$), $t(38) = 1.07$, $p = .29$ ¹¹. Difficulty of the priming task was included in the analysis as covariate ($\beta = -.24$, $t(38) = -.83$, $p = .07$).

¹¹ The overall analysis of covariance is not reported because of a violation of the homogeneity regression slope (i.e., there was a significant interaction between evaluation task and prime difficulty).

Discussion

Making judgments about the size of two items, as opposed to the number of vowels, increased positive attitudes toward a tropical resort when its description was imagery-evoking but not when its description was abstract. The priming manipulation affected product evaluation in spite of the fact that participants were instructed to use their imagination to evaluate the resort. Since these instructions increased participants' propensity to imagine, findings from this study provide preliminary support for the facilitating effect. The priming manipulation is another contribution of this study. It suggests that an imagery mindset can be activated without explicitly asking individuals to imagine. Furthermore, since the same set of words was used in both priming and control conditions, the procedure used in this study also controlled for possible semantic priming effects that may have been caused by the specific stimuli used in the tasks (e.g., concreteness of the words used in the task).

Imagery Mindset, Dispositional Vividness, and Imagery Instructions

As shown in the previous two studies, tasks that activate an imagery mindset can increase the persuasiveness of imagery-evoking ads that are subsequently presented. Based on the previous theoretical discussion, these findings are driven by the prompting of an imagery processing mode and the facilitation of imagery processing. These effects may increase process fluency by matching the information processing mode with the format of the ad (prompting effect) and making the generation of mental images easier (fluency effect). Process fluency, in turn, may enhance the persuasiveness of imagery-evoking ads.

If this is indeed the case, the effect of an imagery mindset on persuasion should be moderated by both the presence of imagery instructions and a person's dispositional imagery vividness. Imagery instructions increase one's propensity to imagine (Keller and McGill 1994; Thompson and Hamilton 2006) and thus

should weaken the prompting effect (i.e., a person adopts an imagery processing mode regardless of the activation of an imagery mindset). Dispositional imagery vividness facilitates mental imagery processing (Petrova and Cialdini 2005) and thus should weaken the facilitating effect (i.e., a person high in dispositional imagery vividness can generate easily mental images regardless of the activation of an imagery mindset). Figure 2.3 gives a graphical summary of the conceptual model.

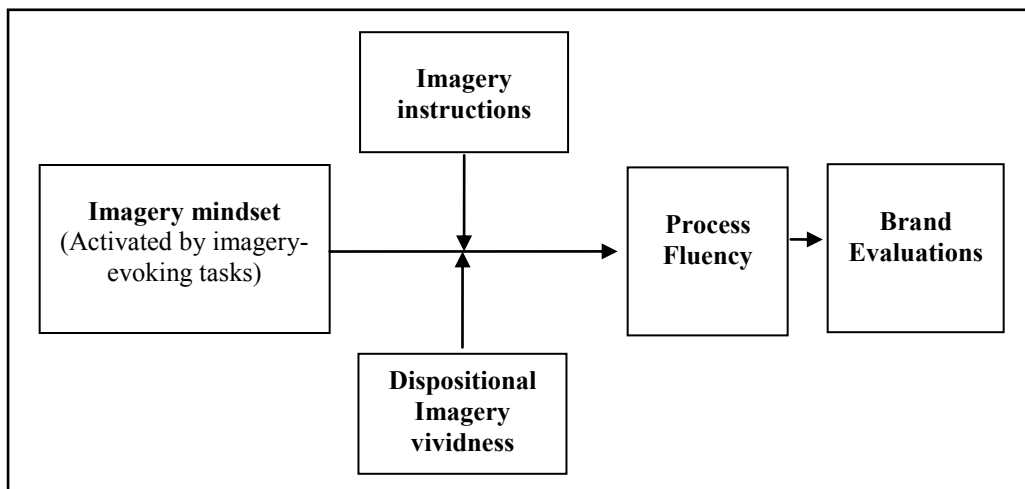


Figure 2.3. The conceptual model of the effect of imagery mindset, imagery instructions, and dispositional imagery vividness on brand evaluations.

Table 2.1 summarizes the differential effects of an imagery mindset—compared to a control condition of a non-imagery processing mode—on the persuasiveness of imagery-evoking ads as a function of: *i*) a person’s dispositional imagery vividness and *ii*) the presence of imagery instructions.

Table 2.1. *Differential Effects of an Imagery Mindset on the Persuasiveness of Imagery-Evoking Ads as a Function of Imagery Instructions and Dispositional Imagery Vividness*

		Dispositional Imagery Vividness	
		<i>High</i>	<i>Low</i>
Imagery Instructions	<i>Absent</i>	Cell 1 <u>Prompting Effect</u> : Positive <u>Facilitating Effect</u> : Null Net Impact on Persuasion: Positive	Cell 2 <u>Prompting Effect</u> : Negative <u>Facilitating Effect</u> : Positive Net Impact on Persuasion: Null
		Cell 4 <u>Prompting Effect</u> : Null <u>Facilitating Effect</u> : Null Net Impact on Persuasion: Null	Cell 3 <u>Prompting Effect</u> : Null <u>Facilitating Effect</u> : Positive Net Impact on Persuasion: Positive
	<i>Present</i>		

In the absence of imagery instructions, the prompting effect activates an imagery processing mode that increases the persuasiveness of imagery-evoking ads for individuals high in dispositional imagery vividness—who experience high fluency of imagination—but decreases the persuasiveness of imagery-evoking messages for individuals low in dispositional imagery vividness—who experience low fluency of imagination (Petrova and Cialdini 2005). Hence, the prompting effect has a positive impact when dispositional imagery vividness is high (see cell 1) and a negative impact when dispositional imagery vividness is low (see cell 2). The “facilitating effect,” on the other hand, has a null impact for individuals high in dispositional imagery vividness (see cell 1)—who already experience high fluency of imagination—and a positive impact for individuals low in dispositional imagery vividness (see cell 2)—who otherwise would experience low fluency of imagination. Altogether these considerations suggest that in the presence of imagery instructions an imagery mindset has a positive net effect on the persuasiveness of imagery-evoking messages for individuals high in dispositional imagery vividness and a null effect for individuals low in dispositional imagery vividness.

In the presence of imagery instructions, consumers' propensity to imagine is high regardless of the activation of an imagery mindset. For this reason, the prompting effect should be influential (see cells 4 and 3). The "facilitating effect," however, should increase process fluency for individuals low in dispositional imagery vividness and, in turn, the persuasiveness of imagery-evoking messages (see cell 3). However, the facilitating effect should have a null effect for individuals high in dispositional imagery vividness (see cell 4)—who can easily generate mental images regardless of the activation of an imagery mindset. Altogether these considerations suggest that in the presence of imagery instructions the activation of an imagery mindset has a positive effect on the persuasiveness of imagery-evoking messages for individuals low in dispositional imagery and a null effect for individuals high in dispositional imagery.

In summary, an imagery mindset prompts an imagery processing mode (prompting effect) and facilitates imagery processing (facilitating effect). The prompting effect increases process fluency in the absence of imagery instructions, whereas the facilitating effect increases process fluency when dispositional imagery vividness is low. Process fluency, in turn, increases the effectiveness of imagery-evoking advertisements. More formally, I propose that:

H2: The effect of an imagery mindset on the persuasiveness of imagery-evoking messages is moderated by the presence of imagery instructions and individuals' dispositional imagery vividness such that:

H2a: In the absence of imagery instructions, an imagery mindset increases the persuasiveness of imagery-evoking messages for individuals high, but not low, in dispositional imagery vividness.

H2b: In the presence of imagery instructions, an imagery mindset increases the persuasiveness of imagery-evoking messages for

individuals low, but not high, in dispositional imagery vividness.

H3: Process fluency mediates the effect of an imagery mindset, dispositional imagery vividness, and imagery instructions on persuasion.

Study 3

Study 3 examined the effect of an imagery mindset and dispositional imagery vividness in the absence of imagery instructions (H2a). After the priming manipulation described in Study 2, participants indicated their preferences between two models of cell phones. One of the models had favorable imagery-evoking features and unfavorable abstract features (imagery-evoking option), whereas the second option had unfavorable imagery-evoking features and favorable abstract features (abstract option). Previous research (Keller and McGill 1994; Shiv and Huber 2000) has shown that activating an imagery processing mode, by asking people to form mental images of the product to be evaluated, shifts preferences toward products with positive imagery-evoking features. This shift in preferences, however, should be more pronounced for individuals high in dispositional imagery vividness. When prompted to imagine, respondents high, as opposed to low, in dispositional imagery vividness should find it easier to imagine (Petrova and Cialdini 2005), and their choices should be primarily determined by the positive imagery-provoking features of the products (Keller and McGill 1994). Thus, in the absence of imagery instructions, an imagery prime should shift preferences toward the imagery-evoking option when respondents have high, but not low, dispositional imagery vividness.

Method

Participants and design. Thirty-seven participants (29 females, average age 20.5 yrs, $SD = 2.4$ yrs) partook in a computer based study which had a 2 (prime: imagery vs. control) \times 2 (dispositional imagery vividness: high vs. low) experimental design. Prime was manipulated between subjects and dispositional imagery vividness was a measured variable.

Procedure. Participants were informed that the study consisted of two independent parts. In the first part, they were presented with 21 pairs of items (Appendix 2.2) and asked to indicate either which item was bigger in real life (imagery prime) or which item had more vowels (control). After the priming task, participants reported the difficulty and the amount of imagery experienced while making the judgments on the same items used in the previous study ($\alpha = .98$). Participants were then introduced to the second part of the study where they reported on a 7-point scale (anchored on definitely cell phone A/ definitely cell phone B) their preferences between the following models of cell phones:

Cell phone A. Display: average screen resolution, bland colors; style: somewhat bulky; network connection: excellent; durability: excellent. [Abstract option]

Cell phone B. Display: superior screen resolution, excellent colors; style: very sleek phone, beautiful curves and edges; network connection: average; durability: below average. [Imagery-evoking option]

The abstract product option had unfavorable imagery-evoking features and favorable abstract features, and the imagery-evoking option had favorable imagery-evoking features and unfavorable abstract features. Participants' dispositional imagery vividness was then measured through the Marks's (1973) Vividness of Visual Imagery Questionnaire (VVIQ). The instructions used to introduce the VVIQ did not mention whether participants should have kept their

eyes open or closed¹². Item scores were reversed so that higher values of VVIQ implied higher dispositional imagery vividness.

Manipulation Check

Prime. Judgments about the size of two items generated more mental imagery ($M = 6.53$, $SD = .67$) than did judgments about the number of vowels ($M = 1.40$, $SD = .97$), $t(35) = 18.08$, $p < .01$, thus suggesting that the priming manipulation was successful. As in Study 2, size judgments were considered more difficult ($M = 4.94$, $SD = 1.84$; lower values suggest greater difficulty) than vowel judgments ($M = 6.71$, $SD = .46$), $t(35) = 4.26$, $p < .01$. Difficulty did not affect the dependent variable ($\beta = .03$, $t(35) = .19$, $p = .85$) nor interact with any of the independent variables and consequently was not included in the analyses reported below.

Dispositional imagery vividness. Measures of dispositional imagery vividness ($M = 55.3$, $SD = 7.7$) were not affected by the priming manipulation ($p = .88$).

Mental imagery evoked by the product attributes. Twenty people rated, after taking part in Study 2, the ease with which the features of the cell phones could be imagined (easy to picture or imagine/difficult to picture or imagine). As expected, the attributes “display” ($M = 6.25$) and “style” ($M = 6.35$) were considered more imagery-evoking than the attributes “network connection” ($M = 4.35$) and “durability” ($M = 4.95$), all p 's $< .01$.

Results

Choice. Preferences were regressed onto the mean-centered values of dispositional imagery vividness, a dummy variable indicating whether the prime

¹² The original formulation of the VVIQ requires participants to complete the items reported in the scale twice, once with open eyes and the second with close eyes. The two scores are averaged to compute an index of a person's dispositional imagery vividness. Evidence suggests that the scores obtained with the two methods may not differ (Dowling 1973 cited in MacInnis 1987).

was imagery-evoking or not (control), and their interaction term. Results, shown in Figure 2.4, revealed a non significant effect of the priming manipulation ($\beta = .74, t(33) = 1.63, p = .11$) and a non-significant effect of dispositional imagery vividness ($\beta = -.03, t(33) = -.74, p = .46$) qualified by a significant interaction term ($\beta = .21, t(33) = 3.36, p < .01$).

For individuals low in dispositional imagery vividness (i.e., one standard deviation below the mean), the prime did not affect preferences between the two product options (difference = $-.87, t(33) = -1.31, p = .20$). However, for individuals high in dispositional imagery vividness (i.e., one standard deviation above the mean), the prime shifted preferences toward the imagery-evoking option (difference = $2.34, t(33) = 3.58, p < .01$).

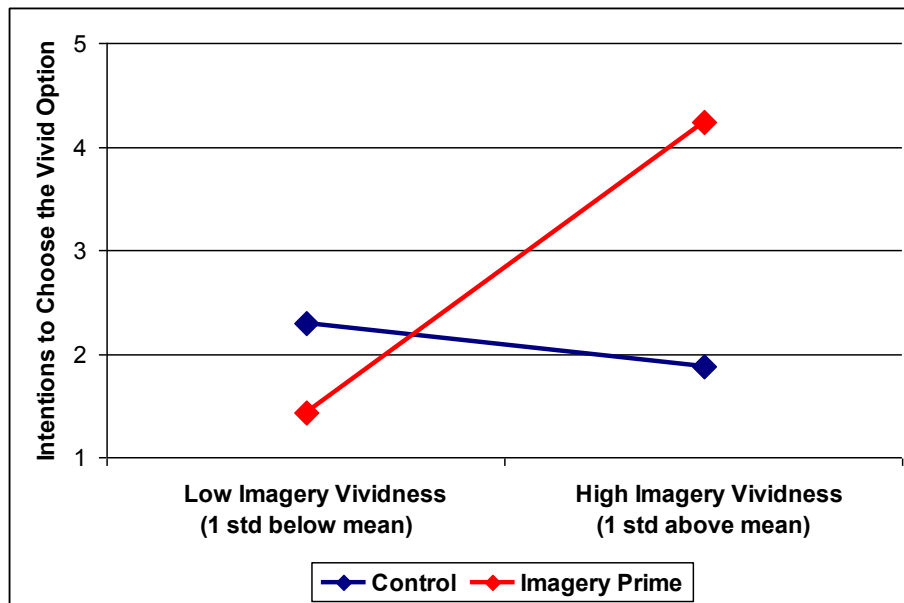


Figure 2.4. Intentions to choose the vivid product option as a function of prime condition and dispositional imagery vividness.

Discussion

In the absence of imagery instructions, an imagery mindset shifted preferences toward the product option with positive imagery-evoking attributes, as opposed to positive abstract attributes, but only for participants high in

dispositional imagery vividness. This finding is consistent with previous research showing that when prompted to imagine, respondents base their choices primarily on the positive imagery-provoking features of a product (Keller and McGill 1994), an effect that should be stronger for individuals high, as opposed to low, in dispositional imagery vividness who may find it easier to generate mental images (Petrova and Cialdini 2005).

It is worth noting that this finding seems to contradict the results from a previous work by Pham, Meyvis, and Zhou (2001; Study 1) suggesting that individuals high, as opposed to low, in dispositional imagery vividness are less influenced by the attractiveness of vivid (i.e., imagery-evoking) attributes when choosing between two product options (Study 1). One possible explanation for this difference is that Pham et al. did not manipulate the information processing mode used to process the messages. As a result, participants might have used different information processing strategies; when one uses an analytical processing mode to make a choice, dispositional imagery vividness should not affect the persuasiveness of vivid attributes. Following up on this explanation, Figure 2.4 shows that participants high and low in dispositional imagery vividness were equally affected by the attractiveness of vivid product attributes in the control prime condition ($\beta = -.03$, $t(19) = -.89$, $p = .38$). However, when prompted to imagine by the priming manipulation, participants high in dispositional imagery vividness may have experienced it easier to imagine vivid product attributes than participants low in dispositional imagery vividness. This ease experience could account for their preferences for the vivid product alternative.

The next study investigates the simultaneous effect of an imagery mindset, imagery instructions, and dispositional imagery vividness on the persuasiveness of imagery-evoking ads.

Study 4

The objective of Study 4 was to investigate how dispositional imagery vividness and imagery instructions moderate the effect of an imagery mindset on product evaluation (H2). In the imagery prime condition, participants memorized and retrieved a set of four pictures—a task that was expected to activate an imagery processing mode (e.g., Lutz and Lutz 1978)—,whereas in the control condition participants performed a numeric, analytical test. After the priming task, participants read an imagery-evoking restaurant review preceded either by imagery instructions or no instructions at all. In the absence of imagery instructions, the imagery priming was expected to increase attitudes toward the restaurant for individuals high, compared to low, in dispositional imagery vividness (H2a), whereas the opposite effect was expected in the presence of imagery instructions (H2b).

Method

Participants and design. Participants partook in a study that had a 2 (prime: imagery vs. analytical [i.e., control]) x 2 (imagery instructions: present vs. absent) x 2 (dispositional imagery vividness: high vs. low). Prime and imagery instructions were manipulated between subjects, and dispositional imagery vividness was a measured variable. Because the restaurant review described meat and fish dishes, only observations from participants who reported being non-vegetarians were included in the study¹³; two additional participants were not included in the analysis because of missing data on one of the dependent measures. The final sample consisted of 102 participants (81 females, average age 20.5 yrs, $SD = 2.5$ yrs). Participants took part in the study in exchange for credits toward the fulfillment of their psychology degree ($n = 31$), as part of a marketing class ($n = 16$), or for a monetary compensation of \$6 ($n = 55$).

¹³ After having collected a few observations, I realized that several participants reported being vegetarians (these subjects were not included in the analysis). Afterwards, only non-vegetarian participants were recruited for the study.

Procedure. Participants were informed that they were taking part in a series of unrelated studies, the first of which functioned as the priming manipulation. After being informed the objective of the first study was to determine how easy or difficult it was to memorize a set of pictures that were to be used in a future study, participants saw four black-and-white pictures shown one at the time (none of the pictures were related to the product used in the evaluation task). After being instructed to take a close look at each image and to memorize it by taking a mental picture, participants were asked to reproduce the picture in their mind's eyes, rate the quality of their mental images, and answer two questions about each picture (e.g., did the picture show any birds? How many trees were shown in the picture?; these questions were asked as an additional, indirect request to retrieve a mental image of the pictures). In the analytical prime condition, respondents were informed that the objective of the study was to determine the difficulty of a series of problems that were to be used in a future study. Eleven 3x3 tables were then presented. Each cell of the tables contained a number, and participants had to identify the two numbers of each table that added up to 10 (from Mazar, Amir, and Ariely 2008). After completing the imagery priming or the analytical manipulation, participants reported the difficulty of the task on a single item (very difficult/ very easy) along with the extent to which they were experiencing pleasant (happy and cheerful) and unpleasant emotions (nervous and tense) at that particular moment. Participants were then introduced to the second, supposedly unrelated, study and told that its objective was to examine how people evaluate restaurants on the basis of limited information. The imagery-evoking restaurant review used in Pham et al. (2001) was then presented. Before reading the review, participants were randomly assigned to either receive imagery instructions (adapted from Keller and McGill 1994) or no instructions at all. Attitudes toward the restaurant were then measured on a 7-point semantic differential scale (negative/positive, poor/excellent, bad/good; $\alpha = .90$) along with process fluency (difficult to process/easy to process, difficult to understand/easy to understand [Lee et al., 2004], $\alpha = .75$). Participants also answered on a dichotomous scale (yes/no) whether they were asked to imagine and whether they

were vegetarians. After a filler task consisting of 10 of the size judgments used in Studies 2 and 3¹⁴, participants completed the Vividness of Visual Imagery Questionnaire with eyes-closed instructions (Marks 1973) and the style of processing scale (SOP) which measures people's preferences and predisposition for imagery processing (Childers et al. 1985). Item scores of the VVIQ scale were reversed so that higher values imply higher dispositional imagery vividness.

Manipulation Check

Mental imagery elicited. Fifty-three people from the same population as the main study performed either the imagery or the analytical priming task and reported the amount of mental imagery experienced on a two seven-point items scale (whether they experienced mental imagery, whether several mental images came to their mind; $\alpha = .92$). As expected, the imagery priming elicited more mental imagery ($M = 4.78$) than did the analytical prime ($M = 2.24$), $t(51) = 5.77$, $p < .01$, thus suggesting the priming manipulation was successful.

Dispositional imagery vividness. Three observations were detected as outliers (more than 2.35 standard deviations below the mean) on the measure of dispositional imagery vividness and were consequently eliminated from the analysis. The final sample consisted of 99 participants. Measures of dispositional imagery vividness ($M = 58.81$, $SD = 8.98$) were not affected by the priming manipulation ($p = .48$).

Style of processing. The participants' style of processing was not affected by the priming manipulation, imagery instructions, dispositional imagery vividness, nor the two- or three-way interaction terms (all p 's $> .29$). Lacking specific hypotheses about the effect of this variable, I did not include it in subsequent analyses.

¹⁴ The objective of the filler task was to prime an imagery mindset to all participants in order to reduce differences in the accessibility of an imagery processing mode.

Prime difficulty. The analytical priming task was considered more difficult ($M = 4.30$; higher scores indicate less difficulty) than the imagery priming task ($M = 5.12$), $t(97) = 2.77, p < .01$. Note that in Studies 2 and 3, the opposite was true (i.e., the imagery priming task was considered more difficult than the control priming task). A series of regression analyses, having prime difficulty as independent variable, suggested that prime difficulty did not affect attitudes ($\beta_{\text{imagery}} = .08, t(50) = 1.24, p = .22$; $\beta_{\text{analytical}} = -.08, t(45) = -.90, p = .37$) nor fluency of processing ($\beta_{\text{imagery}} = -.01, t(50) = .01, p = .92$; $\beta_{\text{analytical}} = -.14, t(45) = -1.78, p = .08$) and consequently was not included in the subsequent analyses.

Emotions. The two priming tasks did not elicit different pleasant ($M_{\text{imagery}} = 6.47$ vs. $M_{\text{analytical}} = 6.40$), $t(97) = .24, p = .81$ nor unpleasant emotions ($M_{\text{imagery}} = 5.06$ vs. $M_{\text{analytical}} = 4.47$), $t(97) = 1.08, p = .28$. Moreover, pleasant and unpleasant emotions were not affected by the priming manipulation, imagery instructions, dispositional imagery vividness, or the two- and three-way interactions terms (all p 's $> .11$).

Imagery instructions. When imagery instructions were provided, 95% (53/56) of the participants reported being asked to imagine, whereas 12% (5/43) reported being asked to imagine when imagery instructions were not provided, $\chi^2(1) = 69.09, p < .01$.

Results

Attitudes. The second hypothesis suggests that the effect of an imagery mindset on the persuasiveness of imagery-evoking messages is moderated by dispositional imagery vividness and the presence of imagery instructions. To test this hypothesis, attitudes toward the restaurant were regressed onto the mean-centered values of dispositional imagery vividness, a dummy variable for whether the prime was imagery-evoking or analytical, a dummy variable for whether imagery instructions were present or absent, the three two-way interaction terms, and the 3-way interaction term. The mean-centered value of age and a dummy

variable indicating a participant's gender were included as covariates. Results reported in Table 2.2 showed that—as hypothesized—the three-way interaction term was significant.

Table 2.2. *The Effect of Imagery Prime, Dispositional Imagery Vividness, and Imagery Instructions on Attitudes and Process Fluency*

Parameter	Attitudes			Process Fluency		
	β	t-value	p-value	β	t-value	p-value
Intercept	5.25	20.68	<.01	5.69	20.46	<.01
Prime	.53	2.16	.03	.23	.85	.40
Vividness	-.05	-1.93	.06	-.02	-.79	.43
Instructions	.57	2.35	.02	.44	1.65	.10
Prime x Vividness	.04	1.31	.19	.06	1.70	.09
Prime x Instructions	-.37	-1.22	.23	-.25	-.76	.45
Vividness x Instructions	.09	2.99	<.01	.05	1.47	.14
Prime x Vividness x Instructions	-.10	-2.57	.01	-.09	-2.18	.03

As shown in Figure 2.5, in the absence of imagery instructions, the imagery prime increased attitudes toward the restaurant for individuals high in dispositional imagery vividness (one standard deviation above the mean; difference = .90, $t(89) = 2.13$, $p = .04$) but not for those low in dispositional imagery vividness (one standard deviation below the mean; difference = .16, $t(89) = .48$, $p = .63$). The opposite pattern of results was found in the presence of imagery instructions: An imagery mindset increased attitudes for individuals low in dispositional imagery vividness (difference = .65, $t(89) = 2.47$, $p = .02$) but not for those high in dispositional imagery vividness (difference = -.33, $t(89) = -1.29$, $p = .20$).

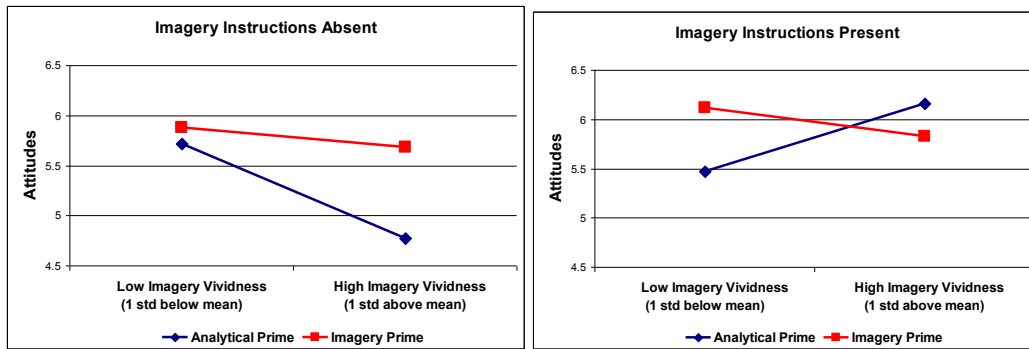


Figure 2.5. The effect of the “imagery prime” by “dispositional imagery vividness” by “imagery instructions” interaction on attitudes.

It is worth noting that, although the results discussed above provide support for H2a, they do not entirely parallel the results from Study 3¹⁵. When primed with the non-imagery prime (i.e., analytical/control) individuals low in dispositional imagery vividness reported higher product evaluations than did those high in dispositional imagery vividness. No difference, however, was found in Study 3 (see Figure 2.4). One possible explanation for this incongruity is that the two studies used different types of non-imagery priming tasks. Study 4 utilizes a non-imagery prime that may have activated an analytical mindset (i.e., evaluating the restaurant feature by feature), whereas Study 3 utilized vowel judgments, a relatively neutral task which is unlikely to prime an analytical mindset. Given that the ability to generate vivid mental images may hinder the processing of analytical tasks (Hegarty and Kozhevnikov 1999), it is possible that individuals high in dispositional imagery vividness found it more difficult to process the description of the restaurant through an analytical processing mode and, subsequently, lowered their product evaluation because of this difficulty experience. The results on process fluency discussed below provide indirect support for this explanation.

Process fluency. The same regression model described above was used to test the effect of imagery prime, dispositional imagery vividness, and imagery

¹⁵ I thank Darren W. Dahl, the external examiner, for drawing attention to this point.

instructions on process fluency. Figure 2.6 provides a graphical representation of the results.

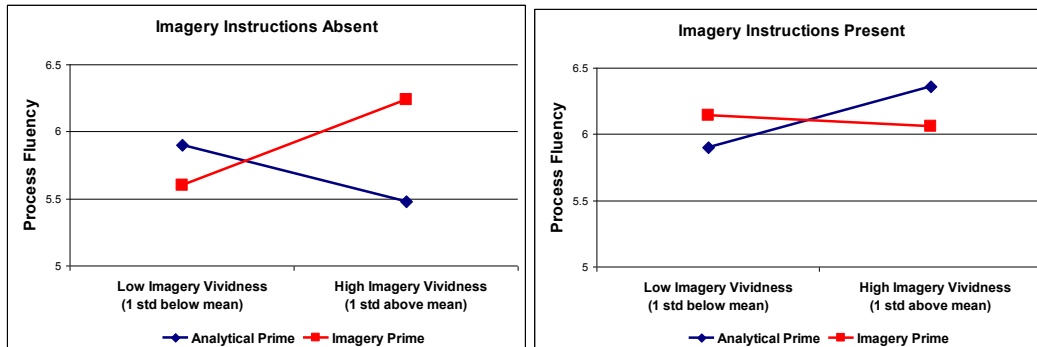


Figure 2.6. The effect of the “imagery prime” by “dispositional imagery vividness” by “imagery instructions” interaction on process fluency.

In the absence of imagery instructions, the imagery prime marginally increased process fluency for individuals high in dispositional imagery vividness (difference = .76, $t(89) = 1.64$, $p_{1-tailed} = .052$) but not for those low in dispositional imagery vividness (difference = -.30, $t(89) = -.86$, $p = .39$). This pattern of results parallels the pattern of attitudes discussed above and is consistent with H2a.

In the presence of imagery instructions, there was no difference between the point estimates of low and high dispositional imagery vividness (all p 's > .29). However, as shown in Figure 2.6, dispositional imagery vividness had a different effect on process fluency depending on the prime condition. In the analytical prime condition, dispositional imagery vividness had a positive effect on process fluency ($\beta = .03$, $t(89) = 1.68$, $p_{1-tailed} < .05$). This finding is in line with Petrova and Cialdini's (2005) work showing that dispositional imagery vividness increases process fluency when one is prompted to imagine the content of an imagery-evoking ad. In the imagery prime condition, however, process fluency did not differ between individuals high and low in dispositional imagery vividness ($\beta = -.005$, $t(89) = -.29$, $p = .77$). This finding is consistent with the prediction that priming an imagery mindset facilitates imagery processing, thus equating process fluency among individuals with different levels of dispositional imagery ability.

Altogether, these results are in line with H2a, which was also supported by findings from Study 3.

Mediation analysis. To test whether process fluency moderates the effect of prime, dispositional imagery vividness, and imagery instruction on attitudes (H3), I followed the procedure suggested by Baron and Kenny (1986) in which the three-way interaction was considered as the initial variable (i.e., “X”) and the lower level interaction terms along with the simple effects were treated as covariates. As for the previous analyses, age and gender were also included as covariates. Results, presented in Figure 2.7, satisfied the three requirements for mediation. First, the interaction term affected process fluency ($\beta = -.09, t(89) = -2.18, p = .03$). Second, process fluency affected attitudes ($\beta = .39, t(88) = 4.37, p < .01$) when controlling for the simple effect of the three-way interaction of imagery mindset, dispositional imagery vividness, and the covariates. Finally, the effect of the three-way interaction on attitudes was reduced when controlling for the effect of process fluency ($\beta = -.06, t(88) = -1.76, p = .08$).

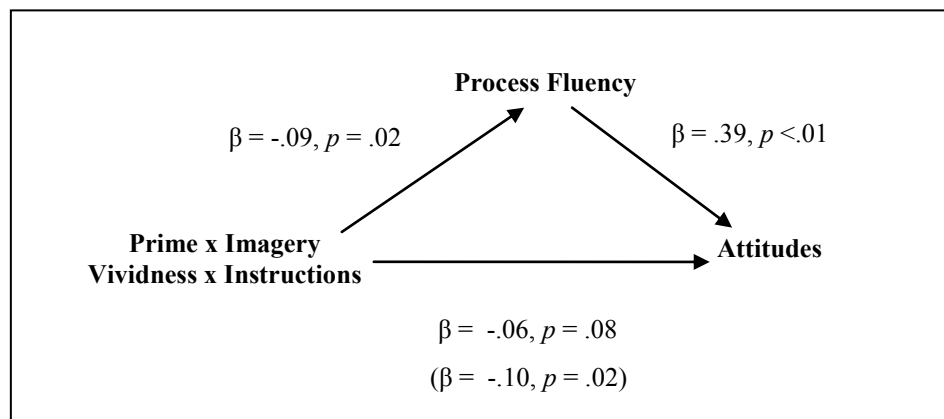


Figure 2.7. Mediation analysis.

Discussion

Results from the fourth study suggest that the effect of an imagery mindset on product evaluations is moderated by differences in dispositional imagery vividness and the presence or absence of imagery instructions. In the absence of imagery instructions, an imagery mindset increased attitudes toward the restaurant

for individuals high in dispositional imagery vividness, whereas in the presence of imagery instructions an imagery mindset increased attitudes toward the restaurant for individuals low in dispositional imagery vividness. It is worth noting that the activation of an imagery mindset did not lower product evaluations, nor process fluency, for individuals low in dispositional imagery vividness. As discussed before, previous research has shown that activating an imagery processing mode can reduce product evaluations when individuals are unable to generate vivid mental images (Petrova and Cialdini 2005). Since the activation of an imagery mindset did not backfire, these findings provide support for the facilitating effect and suggest that the activation of an imagery mindset may reduce the risk associated with the usage of imagery-evoking advertisements. Furthermore, the impact of an imagery mindset on product evaluation was mediated by the fluency with which an imagery-evoking ad is processed, thus providing preliminary support for the underlying process proposed in H3.

General Discussion

Four studies provided evidence that tasks inducing mental imagery may activate an imagery mindset that can increase the persuasiveness of imagery-evoking messages that are subsequently presented. In Study 1, reading imagery-evoking, as opposed to abstract, descriptions of an apartment and a restaurant increased (decreased) purchase intentions toward a tropical resort whose description was imagery-evoking (abstract). In Study 2, making size judgments, as opposed to vowel judgments, led to more favorable evaluations of a resort described in an imagery-evoking way. Two additional studies provided evidence that the effect of an imagery mindset on product evaluations is moderated by one's dispositional imagery vividness and the presence of imagery instructions. Specifically, Study 3 showed that making size judgments shifted preferences toward a cell phone with favorable imagery-evoking features, as opposed to favorable abstract features, when dispositional imagery vividness was high and

imagery instructions were not present. Finally, Study 4 showed that memorizing and retrieving a series of pictures, as opposed to performing a numerical task, affected the evaluation of a restaurant described in a imagery-evoking way: In the absence of imagery instructions, an imagery mindset increased attitudes toward the restaurant for individuals high in dispositional imagery vividness, whereas in the presence of imagery instructions an imagery mindset increased attitudes toward the restaurant for individuals low in dispositional imagery vividness.

It is worth noting that the conceptualization of an imagery mindset provided in this work differs from other forms of mindsets discussed in the literature and, in particular, from the *valuation by feelings* mindset introduced by Hsee and Rottenstreich (2004). Drawing on the notion of dual processing systems, the authors have suggested that performing an analytical task, such as solving math problems, primes a valuation approach based on the use of an algorithm (evaluation by calculation), whereas making evaluative judgments (e.g., when you hear the word baby, what do you feel?) primes a valuation approach based on the feelings elicited by a stimulus. The imagery mindset and the valuation by feelings mindset differ because experiencing feelings and emotions is not necessary to prime an imagery mindset. In fact, Studies 2 and 3 primed an imagery mindset by asking participants to make a series of comparative judgments that were unlikely to evoke emotions (i.e., select the item that is larger in real life: Camel/Cow). More importantly, the imagery priming and the analytical priming used in Study 4 did not differ in the amount of pleasant and unpleasant emotions elicited.

From a theoretical point of view, these results contribute to the still limited literature on procedural priming (i.e., the priming of mental procedures). Despite the great deal of attention paid to the effects of semantic (i.e., the priming of constructs, traits, and stereotypes) and goal priming, only a handful of contributions have investigated the effects of procedural priming on product evaluation and choice (Hsee and Rottenstreich 2004; Shen and Wyer 2007; Xu and Wyer 2008; Xu and Wyer 2007). The present work not only adds to this scant literature but also shows that procedural priming goes beyond the activation of a

given information processing mode. This finding distinguishes this work from previous studies, which have investigated the effects of procedural priming prevalently in terms of prompting effect (i.e., priming activates a processing mode that is unconsciously used to perform a subsequent, unrelated task). Studying how procedural priming facilitates information processing may provide new insights into this phenomenon. Consider Shen and Wyer's findings (2007) that ranking a series of stimuli from best to worst increased the evaluations of unrelated product descriptions that included both positive and negative attributes. The authors have suggested that the priming task activated an information processing mode that focused participants' attention on the favorable attributes of the products. According to this perspective, the "ranking" priming would be ineffective if consumers were instructed to focus deliberately on the favorable attributes before making their evaluation. The facilitating effect, however, would suggest that the activation of a mindset may affect information processing beyond the activation of a specific processing mode. This essay, in fact, provided evidence that an imagery mindset facilitates information processing even when controlling for the information processing mode used to evaluate an advertisement. In Studies 2 and 4, an imagery mindset increased preferences toward products described in an imagery-evoking way even when participants were instructed to evaluate the products using their imaginations.

The findings presented in this essay also add to recent work that has suggested matching the information processing mode to the format of an ad leads to more favorable product evaluations (Lee and Aaker 2004; Thompson and Hamilton 2006). As shown in Studies 2 and 4, even when the information processing mode matches the format of an ad (i.e., participants were instructed to use mental imagery to evaluate an imagery-evoking ad), the effectiveness of the ad was influenced by the tasks participants had performed previously.

From a managerial point of view, this work suggests implications of interest for the placement of print advertisements. For example, an advertisement that asks consumers to imagine themselves "sitting in an elegant outdoor bistro

under the summer evening sky,” as done in the Capri restaurant example, may be more persuasive when presented after an imagery-evoking narrative than an analytical puzzle. In addition, activating an imagery mindset may reduce the risk associated with the use of imagery-evoking advertisements. As mentioned before, previous research has shown that asking consumers to imagine could backfire when consumers lack the ability to generate vivid mental imagery (Petrova and Cialdini 2005). However, as shown in Study 4, there was no evidence that the activation of an imagery mindset can backfire for individuals low in dispositional imagery. This suggests that the activation of an imagery mindset, when possible, may be used to increase the persuasiveness of imagery-evoking ads either in the presence or absence of imagery instructions.

INTRODUCTION TO ESSAY II

The first essay showed that fluency of imagination and the activation of imagery processing may be affected by the tasks consumers perform before processing an imagery-evoking ad. These findings contribute to our understanding of the triggers and facilitators of imagery processing and suggest that the effectiveness of an imagery-evoking advertisement may be enhanced by placing the ad after an imagery-evoking stimulus, as opposed to an abstract one. The activation and facilitation of imagery processing, however, may be only a necessary but not sufficient condition for the persuasiveness of an imagery-evoking ad. When fluency of imagination is high, the persuasiveness of imagery-appeals may also depend on the content of one's imagination. Essay II aims to provide a contribution in this direction by studying ways to enhance the persuasiveness of a particular type of mental image, namely, self-images (i.e., mental images of oneself).

CHAPTER 3 — ESSAY II

FUTURE SELF-IMAGES: THE EFFECT OF SELF-FOCUS AND VISUAL PERSPECTIVE ON PERSUASION

People often make decisions by imagining their future selves (e.g., 1987; Markus and Ruvoilo 1989; Petrova and Cialdini 2007; Shiv and Huber 2000). As an example, consider John who is thinking whether he should move to Pittsburgh to start a new career. To evaluate the outcome of this decision, John can picture himself two years from now living in the new city and see what this mental image “looks like.”

While holding this mental image in his mind, John can focus on different aspects of his future self: He can focus on who he might become by moving to the new city (e.g., a successful professional) or the feelings he might experience while living there (e.g., enjoying outdoor activities, the discomfort of commuting). More specifically, I propose that consumers can imagine themselves in the future either with a *being focus*, when they focus on the dispositional characteristics of their future selves (e.g., becoming a more efficient student, an expert, a caring parent), or with an *experiencing focus*, when they focus on the thoughts, sensations, feelings, and emotions experienced by their future selves (e.g., the taste of a delicious food, the excitement of a snowboard ride, the relaxation of a spa). In this essay, I investigate when future self-images in the two foci are persuasive.

This is an important topic from a marketing perspective because advertising can prompt either type of focus. For example, *imaginepittsburgh.com* prompts people to imagine how moving to Pittsburgh could make them become a more “successful” person (being focus)—“Imagine making a difference in a region that has a history of changing the world”—or what they could be experiencing while living in the city (experiencing focus)—“Imagine kayaking, hiking, biking,

in-line skating, or fly-fishing, just minutes from your home.” In this essay, I propose that the persuasiveness of being focus and experiencing focus depends on visual perspective through which a scene is imagined.

For instance, John can imagine his future self living in Pittsburg through either a first-person perspective, by seeing the scene as if he was actually living the event (e.g., looking outside the window of his office at the 50th floor or seeing the tip of a kayak gliding on wavy water) or a third-person perspective, by seeing the scene as an external observer would see it (e.g., visualizing himself in an office at the 50th floor or in a kayak). Drawing on recent findings suggesting that the two visual perspectives disclose different information about the self (e.g., Frank and Gilovich 1989; Libby, Eibach, and Gilovich 2005; Nigro and Neisser 1983; Vasquez and Buehler 2007), I propose that future self-images (i.e., mental images of one’s future self) in a being focus are more persuasive when visualized through a third-person perspective, whereas, future self-images in an experiencing focus are more persuasive when visualized through a first-person perspective. That is, if John focuses on how moving to Pittsburg might make him a successful professional, his imagination should be more persuasive (e.g., he will be more willing to move to Pittsburg) when visualized through a third- rather than a first-person perspective. However, the opposite should hold true when John focuses on the feelings he might experience while kayaking.

This essay contributes to the understanding of the role played by future self-images in consumption decision-making. Research investigating the relation between consumption and the self has focused largely on the role of consumption as a way to express one’s identity (e.g., Escalas and Bettman 2005; Kleine III, Kleine, and Kernan 1993; Reed 2004; Richins 1994). Although past research has contributed to a better understanding of the role of the self as a driver of consumption (i.e., I buy brand X because it communicates my (desired) identity), it paid little attention to factors determining the attractiveness of a future self-image (i.e., why do I like becoming the person I have imagined?). This work aims to fill this gap in the literature by showing that visual perspective through which a

scene is imagined and one's future self-focus moderates the persuasiveness of self-images.

This essay also contributes to a deeper understanding of the role of mental imagery in product evaluation. The importance of mental imagery has been widely acknowledged in the area of consumer psychology (e.g., Bone and Ellen 1992; Burns, Biswas, and Babin 1993; Dahl and Hoeffler 2004; Escalas 2004a, 2007; MacInnis and Price 1987; Petrova and Cialdini 2005, 2007; Shiv and Huber 2000; Zhao et al. 2009), yet relatively little is known about the features of self-images that affect persuasion. I have focused on visual perspective in imagination as a possible moderator since this variable has been shown to impact different psychological phenomena such as memory recall (e.g., D'Argembeau, Comblain, and Van der Linden 2003), self-attribution (e.g., Libby et al. 2005; Pronin and Ross 2006), and motivation (Libby et al. 2007; Vasquez and Buehler 2007).

The remainder of this work is organized as follows. In the first section, I provide the theoretical foundation underlying the notion of future self-focus (i.e., being focus vs. experiencing focus) followed by a discussion of how visual perspective might moderate the persuasiveness of future self-images in different self-foci. After presenting two studies designed to test the first hypothesis of this essay, I investigate what drives visual perspective by reviewing theoretical and empirical evidence suggesting that familiarity with the imagined consumption experience might affect visual perspective in imagination and present a third study that provides support for this hypothesis. In the final section, I argue and provide preliminary evidence that future self-focus is independent from visual perspective, thus suggesting that marketers can manipulate self-focus and visual perspective separately to enhance the persuasiveness of future self-images.

Future Self-Focus and Visual Perspective

Future Self-Focus

Future self-images can provide a concrete representation of the end state (e.g., graduating, losing 10 pounds, winning a race, getting married) that a person might reach in the future (Hoyle and Sherrill 2006). These representations can persuade people to make specific choices and/or engage in specific behaviors such as applying to a graduate program, start a diet, exercising, or subscribing to an online dating service (Hoyle and Sherrill 2006; Markus and Nurius 1986). In this essay, I propose that future self-images can represent different “kinds” of end states, depending on which aspect of one’s future self a person focuses on. Specifically, I distinguish between a *being focus*—when one focuses on the dispositional characteristics of one’s future self (e.g., abilities, traits, social roles)—and *experiencing focus*—when one focuses on the subjective experience of one future self (e.g., thoughts, feelings, sensations, emotions).

Future self-focus (i.e., being focus versus experiencing focus) determines how the imagined scene is appraised by the imager (see Markus and Nurius 1986 for a similar discussion on how one’s possible self might affect the interpretation of current behaviors). In a being focus, a scene is appraised in terms of its significance for one’s sense of self (i.e., who will I become?), whereas in the experiencing focus the same scene is appraised in relation to one’s subjective experience (i.e., how will I feel?). Put differently, in a being focus, one’s future self becomes the object of the imagination (e.g., the “athletic Me”), whereas in an experiencing focus, one’s future self becomes the subject of the imagination (e.g., myself enjoying a delicious meal).

The conceptualization of future being focus and future experiencing focus is rooted in James’ (1892) distinction between the “Me” self (to which the notion of being focus refers to), and the “I” self (to which the notion of experiencing

focus refers to)¹⁶. Put simply, the “Me” self is defined as one’s reflection on her/his possessions, where the term “possession” takes a broader meaning to indicate anything to which a person can relate him/herself to (James 1892). The notion of “Me” includes the “material Me” (i.e., one’s body, clothes, family, home, and property), the “social Me” (i.e., the recognition one gets from others), and the “spiritual Me” (i.e., one’s psychic faculties and dispositions). In a nutshell, the “Me” self is represented by one’s knowledge about her/himself (who I am) or, as suggested by Rosenberg (1979, p. 7), “the totality of the individual’s thoughts and feelings having reference to himself as an object.” The “I” is identified with the state of consciousness (e.g., thoughts, sensations, emotions, feelings) experienced at a particular point in time; each single thought can then be understood as an “independent being” (Barresi 2002), thus suggesting that our sense of “I” self is constantly changing over time.

More recently, James’s idea (1892) of the self has been put into a narrative framework which helps understand the relation between imagination and future selves. In this framework, the “I” takes the role of the author of a story—the voice that narrates the story—and the “Me” plays the role of the actor of a story (e.g., Hermans, Kempen, and van Loon 1992; Hermans, Rijks, and Kempen 1993; McAdams 1996). In this view, people can use their imagination to make sense of future experiences by imagining stories about their future selves (e.g., McAdams, 1996). While doing so, they can focus on different aspects of their future selves. In the previous example, John might imagine the story of himself working for a prestigious company in Pittsburg to evaluate whether moving to the new city can make him the successful professional he has always wanted to be (being focus). People can also use their imagination to “read” their future selves’ mind (Cooper 2003); under this view, John might use his imagination to anticipate how he might feel while paddling the North Park Lake in Pittsburgh.

¹⁶ The notion of “Me” self has also been referred to as “self-as-known” or “self-as-object”, and the notion of “I” self has also been referred to as “self-as-knower” or “self-as-subject” (e.g., Leary 2004).

The case in which one's future subjective experience (experiencing focus) entails self-reflection (being focus) deserves particular attention as, at first, it might seem to invalidate the distinction between the two self-foci. Consider, for example, Émelie who is debating whether to move to another country to join a post-graduate program. To make this decision, she might imagine her future self, after having finished her postdoctoral program, reflecting on the type of person she had become at that point in time (e.g., a successful, independent researcher respected by her peers). This example might be seen as an instance of both experiencing focus, since Émelie is anticipating her future self's subjective experience (i.e., what she will be thinking and experiencing), and being focus, since this subjective experience entails a reflection on her future self's abilities and skills. This example is not at odds with James' distinction between the "Me" and the "I" suggesting that the self-reflection (Me self) is part of one's subjective experience (e.g., Legrand 2007; Reed II 2002). Thus, despite Émelie's self-reflection taking place in the future (right now she is imagining her future self reflecting on what she has become), rather than in the present (at the present moment she is reflecting on what she might become), this example is an instance of being focus since Émelie's future self becomes the object of her imagination.

Related theories. To understand better the conceptualization of future self-focus, it is useful to contrast it with other theories dealing with related topics. Below, I discuss several of these theories to highlight the unique contribution the notion of future self-focus provides to the study of future self-images. Table 3.1 summarizes the main differences between being focus and experiencing focus.

First, the dichotomy introduced by the future self-foci differs from the distinction between cognitive and affective appraisals of one's future self. It might be suggested that a being focus involves mostly a cognitive appraisal of one's future self, whereas an experiencing focus involves mostly an affective appraisal of one's future self. This, however, is not necessarily the case because a being focus may also elicit feelings and emotions (i.e., I feel happy when imagining myself becoming a skillful tennis player). Imagining one's future self as a

successful person might evoke positive feelings and reduce negative ones (e.g., Oyserman et al. 2004). Yet, the two foci elicit emotions in different ways: A being focus evokes emotions through self-reflection (e.g., I am happy because I can become a good tennis player), whereas an experiencing focus evokes emotions by anticipating one's future subjective experience (e.g., I will be excited while kayaking through a canyon). Moreover, because self-reflection is a prerequisite for experiencing self-conscious emotions, such as pride, guilt, and shame (e.g., Lewis 2000; Tracy and Robins 2004), being and experiencing foci might elicit different emotions. Basic emotions (e.g., happiness, sadness) and self-conscious emotions can both be generated through self-reflection, (e.g., Lewis 2000; Tracy and Robins 2004), but self-conscious emotions might not be experienced in the absence of self-reflection. Thus, a being focus, which entails self-reflection, might elicit both basic and self-conscious emotions, but an experiencing focus might elicit only basic emotions.

Table 3.1. *Differences Between Being Focus and Experiencing Focus*

	Experiencing Focus	Being Focus
Definition:	The imager focuses on the subjective experience of her/his future self (e.g., thoughts, feelings, senses, emotions) —how will I feel?	The imager focuses on the dispositional characteristics that define her/his future self—who will I become?
Output of the imagination:	Anticipation of feelings, emotions, sensations, and thoughts experienced by one's future self.	Reflection on one's future self-concept (e.g., traits, abilities, social roles, possessions).
Role of the future self in the imagination:	Subject of the experience.	Object of the experience.
Emotions elicited:	Basic emotions (e.g., joy, sadness, fear).	Basic and/or self-conscious emotions (pride, guilt, shame).
Persuades by:	Anticipating pleasure or pain.	Projecting images of self-realization, fulfillment, and accomplishment.
Activated by:	Hedonic consumptions, individual differences (e.g., public self-consciousness).	Consumptions that offer opportunities for self-improvement and achievement, individual differences (e.g., internal state awareness).

The dichotomy between being and experiencing foci also differs from the distinction between process simulation, the imagination of how to achieve an objective (i.e., climbing a mountain), and outcome simulation, the imagination of the benefits associated with achieving an objective (Pham and Taylor 1999). Both self-foci can be applied to either type of simulation. For example, to evaluate whether to invest the energy and resources to climb to the top of a mountain, one might engage in an outcome simulation by imagining the moment that s/he reaches the summit of the mountain. This image can be evaluated through either a being focus, by reflecting on the significance of this achievement for one's "alpinist-identity," or experiencing focus by anticipating the sensations that s/he might experience at that particular moment (e.g., the excitement of the view). Alternatively, the same person can engage in a process imagination by picturing herself/himself climbing the mountain. Also in this case, both future self-foci are possible. In a being focus, one may focus on the traits and abilities demonstrated during the hiking (e.g., determination, resistance), whereas in an experiencing focus, one may focus on what one's future self might experience (e.g., muscular pain).

Future self-focus differs also from the notion of possible selves which represent those "selves the person could become, would like to become, or is afraid of becoming" (Cross and Markus 1994, p. 424). A first point of differentiation is that possible selves entail both imagery and semantic representations (Markus and Nurius 1986), whereas here I am only concerned with the imagery representations of future selves (i.e., self-images). Second, possible selves are generally conceptualized as aspects of a self-concept that are considered possible for one's future self and, as such, have been internalized by a person. Instead, I am interested in understanding when self-images are persuasive and I am less concerned about whether or not these images are part of one's present self-concept and/or considered possible representation of one's future self (e.g., can I become a successful student?), though these aspects might also moderate the persuasiveness of self-images.

The notion of future self-focus differs also from theories of self-awareness and, in particular, from objective self-awareness theory and self-consciousness theory. Objective self-awareness theory distinguishes between subjective and objective self-awareness where “‘Subjective self awareness’ is a state of consciousness in which attention is focused on events external to the individual’s consciousness, personal history, or body, whereas ‘objective self awareness’ is exactly the opposite conscious state” (Duval and Wicklund 1972, p 2). The first obvious difference is that objective self-awareness theory— and, in general, other theories of self-awareness—are concerned with one’s present rather than future self. More important, objective self-awareness distinguishes between the case in which one’s attention is focused on the self (e.g., one’s ability, appearance) as opposed to non self-related stimuli (e.g., the outside world), whereas the dichotomy between self-foci suggests that self-focused attention can be further separated in being and experiencing foci. In this view, objective self-awareness theory takes a broader view by only discriminating between self-focused and non self-focused attention. Furthermore, objective self-awareness theory considers only when one’s attention is focused on the self as an object of reflection, thus overlooking the role of one’s subjective experience (i.e., I am aware of myself as a feeling being) as a component of self-awareness.

Self-consciousness distinguishes between public self-consciousness—which entails features of oneself that are exposed to others, such as one’s body and appearances—and private self-consciousness which entails hidden and covert features of the self, such as attitudes, thoughts, feelings, and emotions (Scheier and Carver 1981). The notion of public self-consciousness, which refers to aspects of the self that are visible to others, taps into the definition of being focus. However, private self-coconsciousness, which takes into consideration one’s subjective experience as a dimension of self-awareness, overlaps with the notion of both being and experience focus since it does not distinguish whether the self is the object or the subject of such an experience. The measure of private self-consciousness (Fenigstein, Scheier, and Buss 1975), in fact, includes items such

as “I’m generally attentive to my inner feelings,” in which the self is the subject of one’s consciousness as well as items such as “I reflect about myself a lot”, in which the self is the object of one’s consciousness. Supporting this consideration, a subsequent analysis of the self-consciousness scale (Fenigstein et al. 1975) showed that the original items designed to measure private self-consciousness load on two factors which have been named internal state awareness and self-reflectiveness (Burnkrant and Page 1984). The internal state awareness factor is the construct that resembles more closely the notion of experiencing focus (although it refers to a present rather than one’s future self) and includes the following three items: “I am generally attentive to my inner feelings,” “I am alert to changes in my mood,” and “I am aware of the way my mind works when I work through a problem.” In this view, dispositional differences in public self-consciousness might be correlated with one’s propensity to adopt a being focus, whereas dispositional differences in internal state awareness might be correlated with one’s propensity to adopt an experiencing focus. I will discuss this possibility more in detail in the last section of this essay.

The notion of self-focus provides a unique contribution to the study of the self, and self-images in particular, because no other theory can fully capture the distinction between being and experiencing foci. Yet, most of the theories discussed above help to clarify the distinction between the two self-foci. The distinction between self-conscious and simple emotions, for instance, is helpful in clarifying the different emotional reactions elicited by self-images in the two self-foci. This theoretical perspective, however, does not provide indications on the cognitive implications of different self-foci (i.e., different appraisal of a behavior). Self-awareness theory helps to define the notion of being focus but ignores the role of one’s subjective experience. Self-consciousness theory instead provides the theoretical justification for the multidimensionality of self-focused attention by distinguishing between public and private self-consciousness; however, this distinction does not map into the notion of being and experiencing foci since private self-consciousness includes covert aspects of the self, such as emotions

and thoughts, that may focus on the self both as an object and a subject of the experience.

Future self-focus and persuasion. Being focus and experiencing focus drive consumption through different routes. An experiencing focus motivates consumption by anticipating future pleasure (Holbrook and Hirschman 1982) or future pain, whereas a being focus motivates consumption by projecting images of self-realization, fulfillment, and accomplishment derived from the “extension” and “enhancement” of one’s self-concept (e.g., Belk 1988; Sedikides and Strube 1997). To persuade people to engage in the imagined behavior (e.g., moving to Pittsburgh, starting a diet), future self-images in a being focus have to successfully convey how the scene pictured (e.g., working in a prestigious office, becoming athletic) enhances one’s sense of self (e.g., being successful, fit), whereas future self-images in an experiencing focus (e.g., kayaking through a beautiful canyon, enjoying jogging) have to transmit the positive feelings and emotions (e.g., the excitement) that could be experienced in the future. In this essay, I measure the persuasiveness of future self-images through attitudes and behavioral intentions toward the brand that can make the imagined future self possible. For example, if a student imagines herself becoming more successful as the consequence of reading a self-improvement book, her attitudes toward the book should reflect the persuasiveness of the future self-images she visualized (i.e., I like the book because thanks to it I can become a successful student). Measuring brand attitudes and behavioral intentions, as opposed to alternative constructs such as attitudes toward one’s future self, has more direct implications to marketing practice.

Future-self focus across consumption experiences. The relevance of being focus and experiencing focus might vary across products; hedonic consumptions (e.g., an exotic vacation) may be more likely to activate an experiencing focus (e.g., what will I experience?) than a being focus, whereas products designed for enhancing one’s abilities or for developing new traits (e.g., workshops, education, self-help books) may be more likely to activate a being focus (i.e., who will I

become?) than an experiencing focus. Many products can, nevertheless, give rise to equally important future experiencing and being foci; for instance, a new pair of running shoes might be seen either as a way to enjoy a different running experience (experiencing focus) or as a way to become a better runner (being focus). In fact, almost any product can be promoted by drawing consumers' attention on either or both aspects of their future selves. For this reason, identifying possible moderators of self-focus has implications for both product positioning and advertising. To this end, the following section discusses how visual perspective in imagination may moderate the persuasiveness of future self-images in different self-foci.

Visual Perspectives

Events can be imagined through a *first-person* perspective, when people visualize a scene from the visual perspective they would have if they were living the event, or a *third-person* perspective, when they visualize a scene through the point of view of an external observer (e.g., Nigro and Neisser 1983). The adoption of a specific vantage point can determine the inferences people make about their future selves. In particular, the third-person perspective leads to more dispositional inferences (e.g., Frank and Gilovich 1989) and highlights the broader meaning of the situation imagined (Vasquez and Buehler 2007), whereas the first-person perspective discloses more information about the inner, affective components of a situation (e.g., Berntsen and Rubin 2006; McIsaac and Eich 2002). Below, I review findings, mostly derived from research on memory, showing that visual perspective affects inferences people make about their selves. Since imagination and recall share similar cognitive mechanisms (e.g., Schacter and Addis 2007), the review focuses on the role of visual perspective in imagination. Table 3.2 summarizes the main differences between the two visual perspectives discussed below.

Table 3.2. *Differences Between First- and Third-Person Perspective*

	First-person perspective	Third-person perspective
Definition:	The scene is visualized from the visual perspective one would have if s/he was living the event.	The scene is visualized through the point of view of an external observer.
Content of the imagination:	The surroundings seen by one's future self.	The appearance of one's future self, the actions performed by it, and the spatial relationships.
Consequences:	Increases the affective reactions and physical sensations associated with the imagined event.	Increases the perceived relevance of the task imagined, leads to dispositional inferences, and emphasizes the broader personal meaning of the imagined behavior.
Matches with:	Experiencing focus, by anticipating the subjective experience of one's future self.	Being focus, by highlighting the implications that the imagined event has for one's future self-concept.

Drawing on the idea that the actor and the observer of an event have access to different information (e.g., Jones and Nisbett 1972), Frank and Gilovich (1989) found that the third-person perspective, by focusing attention on the behavior performed, rather than its situational determinants, leads to more dispositional and less situational attributions than does the first-person perspective. The third-person perspective also highlights the broader personal meaning of an imagined situation by representing a behavior in terms of high-level construals (Libby and Eibach 2004 cited in Libby et al. 2005; Vasquez and Buehler 2007); for instance, imagining success in an academic task from a third-person, as opposed to a first-person perspective, increases the perceived relevance of the task and emphasizes the broader personal meaning of an imagined behavior (Vasquez and Buehler 2007).

Visual perspective also affects the phenomenological quality of recall. Memories from a first-person perspective are rated higher on richness of the details and emotionality (Berntsen and Rubin 2006) and include more information about affective reactions and physical sensations (McIsaac and Eich 2002), whereas memories from a third-person perspective contain more information about the participant's appearance, the action performed, and spatial relationships (McIsaac and Eich 2002).

So far, little is known about the role visual perspective plays in persuasion. A limited number of studies suggested that the third-person perspective enhances motivation and attitudes toward an imagined behavior. Specifically, Libby and colleagues (2007) showed that imagining oneself voting through a third-person perspective leads to a greater pro-voting mindset and actual behavior. Similarly, Vasquez and Buehler (2007) provided evidence that the third-person perspective leads to greater motivation toward academic achievement. Because both studies used imagination tasks (i.e., voting and succeeding in an academic task) that might have activated a being focus (e.g., being a good citizen/student), these contributions, although very important, might tell only one part of the story. Since the two visual perspectives provide different information about one's future self, their effect on persuasion might depend on whether a person is in a being focus or experiencing focus. More specifically, the persuasiveness of future self-images should be enhanced when the visual perspective *matches* one's self-focus; that is, when the information about one's future self made available by the visual perspective is relevant to the specific self-focus a person is in.

The third-person perspective, by highlighting the broader personal meaning of a behavior and its dispositional consequences, should enhance the persuasiveness of self-images in a being focus, whereas the first person-perspective, by disclosing more information about one's state of consciousness, should enhance the persuasiveness of self-images in an experiencing focus. That is, the third-person perspective "extracts" the higher implications from an imagined event (Vasquez and Buehler 2007) which, in turn, has a greater potential to define one's self-concept (Vallacher and Wegner 1987); along this reasoning, imagining oneself working in a new office at the 50th floor from a first-person perspective might be perceived simply as sitting at a desk, whereas the same scenario visualized through the eyes of an observer might be perceived as a symbol of one's success. On the other hand, the first-person perspective provides the sensorial stimulation needed to anticipate the feelings and emotions that might be experienced in a future situation; for instance, imagining oneself snowboarding

may be more exciting when seeing a thrilling slope under one's feet than visualizing the same scene from an external point of view.

To summarize, imagination might be seen as a “simulator” of possible consumption experiences: To evaluate a product, consumers imagine themselves engaging in a particular behavior. While doing so, they might focus either on the type of person they can become or on the feelings they might experience. The persuasiveness of a particular self-focus depends on the visual perspective through which the scene is imagined. The third-person perspective effectively communicates the broader implications of a situation when people are in a being focus, but results in a rather dull and cold imagination when people are in an experiencing focus. On the other hand, the first-person perspective is effective in anticipating the subjective experience of one's future self when people are in an experiencing focus, but it fails to highlight the broader implications of the imagined situation when people focus on their being focus. More formally, I state the following hypotheses:

H1: The persuasiveness of future self-images depends on both visual perspective and future self-focus such that:

H1a: In a being focus, future self-images are more persuasive when imagined through a third-person perspective than a first-person perspective.

H1b: In an experiencing focus, future self-images are more persuasive when imagined through a first-person perspective than a third-person perspective.

Study 1

Study 1 was designed to test the interaction effect between self-focus and visual perspective on the persuasiveness of future self-images (Hypothesis 1). Participants evaluated a book presenting techniques to improve their school performance. They were asked to imagine through different visual perspectives to either become a better student (being focus) or to experience the feelings of getting a good grade (experiencing focus). In an experiencing focus, participants should evaluate more favorably the book when their future selves are imagined through a first- rather than a third-person perspective, whereas the opposite should hold true when in a being focus. A second objective of the study was to gain a better understanding of the process underlying the matching effect between self-focus and visual perspective.

Method

Design and participants. Seventy-six participants, who participated in a series of unrelated studies, partook in a 2 (visual perspective: third-person vs. first-person) \times 2 (future self-focus: being vs. experiencing) between-subjects factorial design and 70 provided complete data¹⁷; 46 of them (32 females, average age 22.67 yrs, $SD = 3.46$ yrs) were recruited through a message posted on the University website and the remaining 24 (10 females, average age = 20.67 yrs, $SD = 1.34$ yrs) were students enrolled in an introductory marketing class.

Procedure and measures. Participants were presented with a short description of a new book that supposedly provided techniques to improve school performance and subsequently asked them to use their imagination to evaluate the

¹⁷ Note on the observations eliminated. Observations from four participants were eliminated for not reporting their GPAs, one for a missing value on one of the attitude items, and one for both reporting inconsistent answers (e.g., only 11's and 10's) as well as for not reporting his/her GPA. Since the study was about improving one's performance at school, the missingness of GPA values may not be at random. For example, the missingness may indicate less involvement with one's school performance or that a participant was not a student at the time of the study. Also, additional analysis showed that three of the four respondents who did not report their GPAs gave extreme values on measures of vividness (see below). In addition, one participant who did not report her/his age was not excluded from the analysis.

benefits of the book either through a first- or third-person perspective. The following instructions, taken from Libby et al. (2007), were used to manipulate visual perspective: “We ask you to visualize this scene from a first-person [third-person] visual perspective. With the first-person [third-person] visual perspective you see the event from the visual perspective you [an observer] would have if the event were actually taking place. That is, you are looking out at your surroundings through your own eyes [you see yourself in the image, as well as your surroundings]”. Moreover, participants imagined either having a better way of studying, mastering course material, and becoming an expert in a subject domain (being focus), or the feelings they would experience after getting a good grade (experiencing focus). Specifically, the following instructions were provided in the being focus condition: “It is very important that you imagine from a first-person [third-person] perspective having a better way of studying, mastering your course material, and becoming an expert in your subject domain and have that picture in your mind. Imagine what being a more successful student looks like”. Whereas participants in the experiencing focus condition were presented with the following instructions: “It is very important that you imagine from a first-person [third-person] perspective getting higher grades and have that picture in your mind. Imagine how you would feel at the moment you discover that you got an excellent grade on a difficult exam”.

Participants were asked to describe the mental images, thoughts, and feelings they had experienced in order to ensure that they imagined the scene described. Respondents then reported their attitudes toward the book on a four-item, semantic differential scale (not interesting at all/very interestingly; bad/good; not useful at all/very useful; not effective at all/very effective; $\alpha = .93$), the vividness of their mental imagery (clear, detailed, vivid; $\alpha = .89$), and the ease of imagination on Ellen and Bone’s (1991) scale ($\alpha = .92$). Finally, participants reported their current GPA which was not significantly correlated with any of the three variables mentioned above (all p ’s $> .81$). In all cases, 11-point item scales were used.

Results

Manipulation check. Two raters rated on two five-point scales (anchored on definitely no/definitely yes) the extent to which respondents described the thoughts, feelings, or emotions experienced at a particular point in time (experiencing focus) and the extent to which respondents described the skills, attributes, or qualities demonstrated in a particular situation (being focus); according to the interclass correlation coefficient (ICC with the following SPSS's specifications: absolute agreement, two-way random effects model, and absolute measures), raters agreement was good (ICC = .72) for both the being focus conditions and the experiencing focus (ICC = .80) conditions (for the interpretation of ICC values: Cicchetti 1994). As expected, respondents were more likely to focus on their future selves' thoughts, feelings, and emotions in the experiencing ($M = 4.59$) than in a being focus ($M = 1.91$), $t(33) = 8.69$, $p < .001$ (coding for the thought list of one participant was missing). Also, they were more likely to focus on their future selves' dispositional characteristics in the being focus condition ($M = 4.19$) than in the experiencing focus condition ($M = 2.66$), $t(34) = 4.26$, $p < .001$).

To ensure the event was imagined through the intended visual perspective, participants were asked to confirm, after having described the content of their imagination, the visual perspective through which they imagined the event ("while imagining, I have seen [myself in] the scene from the visual perspective I [an observer] would have as if the event were actually taking place: strongly disagree/strongly agree"). Results suggest that participants imagined the scene through the intended visual perspective (i.e., both values were significantly different from the scale midpoint; $M_{\text{third}} = 8.19$, $t(36) = 6.17$, $p < .001$; $M_{\text{first}} = 8.45$, $t(32) = 6.15$, $p < .001$). To control for individual differences in imagery ability, observations from four participants who scored more than two standard deviations below the vividness mean of their experimental condition (i.e., participants who could not visualize the scene) were not included in the analysis (outliers were identified through a recursive procedure). The final sample

consisted of 66 observations (40 females, average age = 21.80 yrs, $SD = 2.72$ yrs, one missing value on gender).

Attitudes. The main effects of visual perspective ($F(1, 62) = 0.97, p = .328$) and self-focus ($F(1, 62) = 2.63, p = .110$) on attitudes were non-significant. However, as shown in Figure 3.1, these results were qualified by a significant interaction ($F(1, 62) = 4.46, p = .039$).

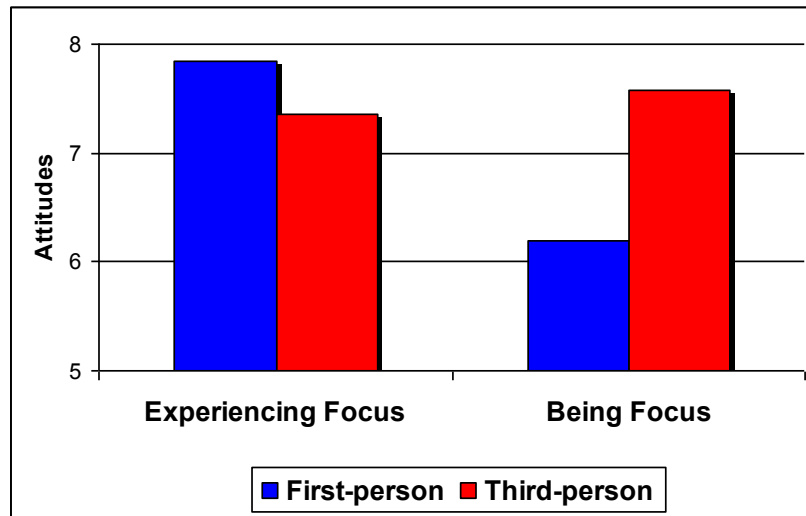


Figure 3.1. The self-focus by visual perspective interaction.

In the being focus led to more favorable attitudes toward the book when the scene was visualized through a third- ($M = 7.57, SD = 1.50$) than a first-person perspective ($M = 6.20, SD = 1.99$), $t(62) = 2.22, p = .030$, whereas the experiencing focus led to directionally, but not significantly, more favorable attitudes when the scene was visualized through a first-person ($M = 7.85, SD = 1.44$) than a third-person perspective ($M = 7.35, SD = 2.12$), $t(62) = .78, p = .436$ ¹⁸. These findings provide support for H1a but not for H1b. I will come back to this point in the discussion section.

¹⁸ Interestingly, the interaction between the visual perspective and self-focus also reduced the variance of the attitudes score; a Levene's test for homogeneity of variance showed that in the first/experiencing and third/being cells, the pooled variance of attitudes was significantly lower ($F(1, 64) = 5.52, p = .022$) than the pooled variance of the other two cells (i.e., third/experiencing, first/being); overall, the assumption of homogeneity of variance required by ANOVA was not

Mediated moderation analysis. To shed light on the process underlying the results presented above, I analyzed whether the self-focus by visual perspective interaction was mediated by the vividness of imagination. As discussed before, the third-person perspective highlights the broader meaning of a behavior and its dispositional consequences and, therefore, should be more suitable for imagining the dispositional characteristics of one's future self (i.e., having a better way of studying, mastering course material, and becoming an expert). The first-person perspective discloses more information about one's state of consciousness and, therefore, should be more appropriate for imagining the subjective experience of one's future self (i.e., feelings one would experience after getting a good grade). Hence, when people imagined becoming a better student, the third-person perspective should lead to greater vividness and clarity of imagination than does the first-person perspective. The opposite, however, should hold true when participants imagined the feelings of getting a good grade¹⁹.

To test this possibility, I followed the procedure proposed by Muller and colleagues (2005), which requires testing three regression models. The first of these models showed that the self-focus by visual perspective interaction effect on attitudes was significant ($\beta = .47$, $t(62) = 2.11$, $p = .039$). The second model showed that the effect of the self-focus by visual perspective interaction on vividness was also significant ($\beta = .55$, $t(62) = 2.60$, $p = .012$); in a experiencing focus, future self-images were more vividly imagined through a first- ($M = 8.71$, $SD = 1.43$) than a third-person perspective ($M = 7.06$, $SD = 1.60$), whereas in

violated ($F(3, 62) = 1.14$, $p = .341$). This finding strengthens these results by suggesting that the match between visual perspective and self-focus makes responders' attitudes more homogenous. 19 Here, I am not proposing that vividness of imagination always mediates the interaction between future self-focus and visual perspective. Instead, I suggest that visual perspective discloses information (i.e., dispositional characteristics vs. subjective experience) whose relevance varies according to one's future self-focus. Since in this study participants were asked to imagine a particular aspect of their future selves (i.e., dispositional characteristics vs. subjective experience), the match between visual perspective and self-focus should result in a more vivid imagination (e.g., I can clearly picture how getting an A will make me happy/ a better student). This, however, might not always be the case. When a person focuses on a specific aspect of her future self after a self-image has been experienced, the match between visual perspective and self-focus is unlikely to affect the vividness of imagination (since the future self-focus manipulation follows the imagination); self-focus, however, might still affect the persuasiveness of future self-images by determining how consumers may evaluate these images.

being focus, future self-images were more vividly imagined through a third- ($M = 7.91$, $SD = 1.69$) than a first-person ($M = 7.35$, $SD = 2.09$). Finally, the third model showed that, controlling for the simple effect of self-focus, the simple effect visual perspective, the visual perspective by self-focus interaction, and the vividness by self-focus interaction, the effect of vividness on attitudes was significant ($\beta = .37$, $t(60) = 2.87$, $p = .006$) and the self-focus by visual perspective interaction became non-significant ($\beta = .21$, $t(60) = .93$, $p = .354$). Sufficient conditions to demonstrate mediated moderation in the present context are: (1) significant effect of the self-focus by visual perspective interaction on vividness imagination, (2) significant effect of vividness of imagination on attitudes, and (3) significant self-focus by visual perspective interaction on attitudes in the first but not in the third model (Muller et al. 2005).

To rule out the possibility that the fluency of imagination could account for these results, the same analysis was repeated for ease of imagination. Results showed that although the self-focus by visual perspective interaction had a significant effect on the ease of imagination ($\beta = .84$, $t(62) = 3.07$, $p = .003$), ease of imagination did not predict attitudes in the third model ($\beta = .07$, $t(60) = .69$, $p = .495$). Thus, as summarized in Figure 3.2a and 3.2b, the mediated moderation analysis suggested that vividness, but not ease of imagination, fully mediates the interaction effect between self-focus and visual perspective on attitudes.

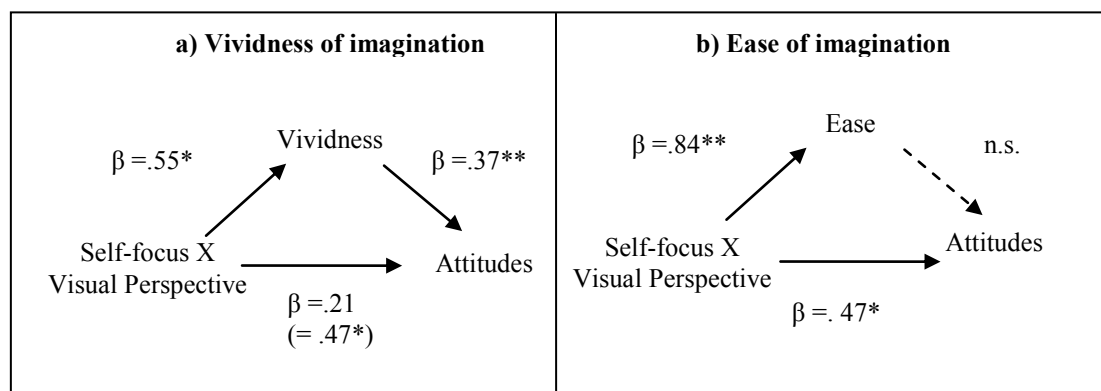


Figure 3.2. Mediated moderation analysis.

Note. **: $p < .01$; *: $p < .05$

Discussion

Respondents who imagined becoming a better student (being focus) evaluated more positively the book when they visualized the scene from a third-person perspective rather than a first-person perspective, thus providing support for H1a. Respondents who imagined the feelings after receiving a higher grade (experiencing focus) evaluated directionally more positively the book when the scene was visualized through a first- rather than a third-person perspective. Also, I found that participants in a being focus imagined more vividly their future selves through a third- than a first-person perspective, whereas the opposite was true for respondents in an experiencing focus; this, in turn, mediated the visual perspective by self-focus interaction. On the other hand, the ease by which self-images were generated did not account for the effects of visual perspective and self-focus on attitudes.

The result that book evaluations were not significantly reduced when participants in the experiencing focus adopted a third-person perspective deserves careful consideration, since it fails to support H1b. One possible explanation for this finding is that the product used in the study might have affected participants' self-foci. As discussed in the theoretical section, products designed for enhancing one's abilities or for developing new traits (e.g., workshops, education, self-help books) may be more likely to activate a being focus (i.e., who will I become?), whereas hedonic consumptions (e.g., an exotic vacation) may be more likely to activate an experiencing focus (e.g., what will I experience?). Since imagining improving one's school performance can be associated with one's "student-identify" and achievement in general, the participants of this study might have partially focused on the significance of this event for their "student" self-concepts (i.e., being focus), even when asked to imagine the feelings they would experience after getting a good grade (i.e., experiencing focus). In line with this explanation, results from the manipulation check showed how even in the experiencing focus condition participants focused to some extent on their future

selves' dispositional characteristics ($M = 2.66$ out of 5). Similarly, results from Study 4 (discussed later) shows how people tend to focus more on their being selves than experiencing selves when imagining the benefits of a self-help book. Because the participants of this study maintained a certain amount of being focus in the experiencing focus condition, it is not surprising that they did not significantly discount the evaluation of the book when imagining through a third person perspective as this visual perspective might have highlighted the benefits of the book associated with the being focus.

To provide empirical evidence for this explanation, the next study investigates the effect of visual perspective on the evaluation of a hedonic consumption experience that should activate an experiencing focus (i.e., a tropical vacation). If the third-person perspective significantly reduces the evaluation of the imagined vacation destination, the next study will provide support for the justification discussed above and, more in general, for H1b.

Study 2

The objective of Study 2 was to provide evidence that future self-images in an experiencing focus are more persuasive when visualized through a first- than a third-person perspective (Hypothesis 1a). To test this hypothesis, participants imagined experiencing a tropical vacation from either visual perspective and reported their behavioral intentions toward the imagined vacation. Since imagining a tropical vacation should draw attention to one's future subjective experience (i.e., experiencing self), the first-person perspective was expected to increase behavioral intentions.

Method

Design and participants. The experiment had a one factor (visual perspective: first-person vs. third-person) between-subjects factorial design.

Thirty-seven participants were recruited through a message posted on the University website.

Procedure and measure. After completing a series of unrelated studies and answering the Vividness of Visual Imagery Questionnaire with eyes-closed instructions (Marks 1973)²⁰, participants were introduced to a “Creativity In Imagination Process” study in which they were asked to imagine enjoying a tropical vacation either from a first or a third-person perspective. Visual perspective was manipulated through the same instructions used in Study 1 (Libby et al 2007). Participants were then required to close their eyes, imagine the scene in as much detail as possible, and be prepared to answer a few questions about their imaginations. As a manipulation check, participants reported their visual perspective in their imagination by selecting one of the following two options: A) I imagined the scene from my own eyes (not as an external observer would see it). I did not see myself in the image, since it was as though I was looking at the event through my own eyes; B) I imagined the scene as an observer might see it (not from my original point of view). I saw myself in the image, since it was as though I was looking at the event through the eyes of an observer (adapted from Pronin and Ross 2006). Participants also reported the experienced ease of imagination (how difficult was it to imagine the scene, how quickly the images were aroused; from Ellen and Bone [1991], $\alpha = .93$) and, as a measure of self-focus, the extent to which the imagination elicited positive feelings (whether the mental images experienced evoked positive feelings and emotions, whether they experienced positive feelings and emotions, $\alpha = .79$), and whether the imagination led to positive evaluations of their future selves, (whether engaging in the activity imagined would give them a sense of self-esteem, and whether engaging in the imagined activity would make them a “good” person, $\alpha = .90$); these two measures may represent a proxy of the extent to which participants adopted an experiencing versus a being focus. Respondents also reported the extent to which they experienced self-conscious emotions (proud, accomplished)

²⁰ Item scores of the VVIQ scale were reversed so that higher values imply higher dispositional imagery vividness.

and basic emotions (enthusiastic, happy, relaxed), and their behavioral intentions toward the imagined vacation (likelihood to go on a tropical vacation, motivation to go on a tropical vacation, intention to receive more information about topical destinations, likelihood to go on a tropical vacation in the future, and whether they would regret not going on a tropical vacation destination; $\alpha = .89$). After these measures, they described in detail the scene visualized and completed the style of processing scale which measures people's preferences and predispositions for imagery processing (Childers et al. 1985). Observations from one participant in the first-person condition were detected as outliers (more than 2.1 standard deviations below the condition mean) on the measure of behavioral intentions and consequently eliminated from the analysis. The final sample consisted of 36 participants (22 females, average age = 21.56 yrs, $SD = 3.4$ yrs).

Manipulation Check

Visual perspective. Of the participants in the third-person condition, 76% (13/17) adopted a third-person perspective whereas only 32% (6/19) of those in the first-person condition adopted a third-person perspective, $z = 2.95$, $p < .01$, thus suggesting that the manipulation of visual perspective was successful.

Ease of imagination. The manipulation of visual perspective did not affect the ease with which mental images were experienced ($M_{\text{first}} = 5.71$, $M_{\text{third}} = 5.53$, $t(34) = .41$, $p = .69$).

Self-focus. Imagining a vacation evoked more positive feelings and emotions ($M = 5.28$) than positive evaluations of the participants' future selves ($M = 3.21$), $t(35) = 6.82$, $p < .001$. Also, the imagination elicited more basic emotions ($M = 5.92$) than self-conscious emotions ($M = 3.89$), $t(35) = -7.42$, $p < .001$. Moreover, I coded participants' descriptions of their imagination for any word indicating that a person focused on the sensations (e.g., listening to the waves, enjoying the sun, enjoying the warm sand), and/or feelings (e.g., I am relaxed, I feel happy) experienced by her/his future selves. Twenty-five out of the remaining

36 participants (69%) included at least one of these words in their descriptions, which is significantly greater than chance (i.e., 50%), $z = 2.26, p = .02$. Altogether, these results suggest that participants were in an experiencing focus while imagining the tropical vacation.

Individual differences. Measures of dispositional imagery vividness ($M = 59.53, SD = 7.6$) were not affected by the visual perspective manipulation ($p = .96$). However, the participants' style of processing differed across conditions; participants assigned to the first-person perspective ($M = 53.42$) reported lower preferences/predispositions toward imagery processing than those assigned to the third-person perspective ($M = 57.29$), $t(34) = -2.30, p = .03^{21}$. To control for this difference, measures of style of processing were included as covariate in the analysis reported below.

Behavioral Intentions

Results from an ANCOVA showed that participants were more willing to go on a tropical vacation when the scene was imagined via a first-person perspective ($M = 5.33$) as opposed to a third-person perspective ($M = 4.28$), $t(33) = 2.16, p = .04$. The style of processing was included as covariate ($\beta = .14, t(33) = 3.02, p < .01$), and the interaction between visual perspective and style of processing (not included in the final model) was not significant.

Discussion

Participants who imagined enjoying a tropical vacation from a first-person perspective reported higher behavioral intentions toward the vacation than did those who imagined the same experience from a third-person perspective, thus supporting H1b. These findings expand on previous research suggesting that the third-person perspective enhances motivation and intention to engage in an

²¹ It is unclear whether this finding resulted from the random assignment of participants to the conditions, or whether it was caused by the visual perspective manipulation which was administered before collecting this measure.

imagined behavior (Libby et al. 2007; Vasquez and Buehler 2007). Moreover, Studies 1 and 2 altogether provide evidence that future self-images in a being focus may be more persuasive when imagined through the third-person perspective (H1a), whereas future self-images in a experiencing focus may be more persuasive when imagined through a first-person perspective (H1b).

Familiarity and Visual Perspective

Although people can deliberately decide to adopt a specific visual perspective, as shown in the previous studies and suggested by the literature (Nigro and Neisser 1983), several characteristics of an event can affect the vantage point in imagination. Among the different variables affecting visual perspective, temporal distance is the one that has received the most empirical support with evidence showing that distant-future events tend to be imagined (Pronin and Ross 2006) or recalled (e.g., D'Argembeau and Van der Linden 2004; Nigro and Neisser 1983; Pronin and Ross 2006) through a third-person perspective. Similarly, visual perspective might also be affected by perception of self-change; for instance, university students asked to recall high-school memories related to aspects of themselves that changed the most since then were more likely to adopt a third-person perspective than those recalling high-school memories of stable aspects of themselves (Libby and Eibach 2002). Another variable affecting visual perspective is the emotional content of an event; emotionally laden events are more likely recalled through a first-person perspective than neutral ones (e.g., D'Argembeau et al. 2003). This relationship, however, might be reversed for traumatic events which tend to be recalled through a third-person perspective, probably in an attempt to reduce the emotional burden associate with the recall (e.g., Berntsen and Rubin 2006; McIsaac and Eich 2004).

Research has not yet identified the psychological mechanisms driving the adoption of a specific visual perspective. Nigro and Neisser (1983) proposed

Freud's (1960) notion of "screen memories" as possible explanation. According to this perspective, the third-person perspective is a symptom of the reconstructive processing underlying recall of an episode; since an event is likely to be encoded through a first-person perspective (i.e., from the perspective it is perceived). Recalling an event through a third-person perspective suggests that the memory has undergone some sort of reconstructive processing instead of simply being retrieved in its original form.

More recently, it has been argued that the type of information available at the moment of recall (i.e., cognitive vs. affective, episodic vs. semantic) might determine the visual perspective through which memories are retrieved (Heather 2007; Robinson and Swanson 1993). This explanation seems to be in line with the reconstructive hypothesis. Both episodic memories as well as affectively laden memories (see Holmes and Mathews 2005 for evidence suggesting that imagery processing is more likely to evoke emotions than non-imagery processing) may make visual information about an event readily accessible in memory. When visual information about an event (i.e., a mental image) is highly accessible in memory, people may simply retrieve this information from the visual perspective with which this information was encoded, likely a first-person perspective. When visual information about the event is not accessible in memory, a mental image has to be (re)constructed (e.g., Kosslyn et al. 2001). For instance, to imagine a new, never-experienced-before situation, such as using an e-book reader in a airport while waiting for a connection, one has to form a mental image by integrating different memories (e.g., an airport's waiting room, an e-book reader, reading a book, etc.) and/or generate images from non-visual information (e.g., a description of the activities that can be performed with an e-book reader). This process might draw attention to the spatial relationship between one's future self and other elements of the mental picture (e.g., myself in the middle of the waiting room), thus leading to a third person perspective. The more elements of the scene have to be constructed (e.g., integrated, manipulated, transformed), the higher the probability of adopting a third-person perspective. Thus, when the mental images

of a to-be-imagined scenario are readily accessible in memory, future self-images may be more likely visualized through a first-person rather than a third-person perspective.

Support for this hypothesis can be found in a study by Rubin and colleagues (2003) in which participants watched videotapes of different scenes (e.g., cooking, going to a horse race) played either with both audio and visual inputs or only audio input (no images). When later asked to imagine taking part in these scenes, participants were more likely to imagine the scene through a first-person perspective when the video was played with both audio and visual inputs than with the audio input only. A possible explanation for this finding is that participants in the audio-only condition did not have a mental image of the scene accessible/available in memory and thus engaged in a constructive imagination which might have then determined their visual perspective.

Following this reasoning, consumers' familiarity with the to-be-imagined scenario might be an important determinant of visual perspective in imagination. Familiar consumption situations, such as using a laptop, are most likely associated with mental images of everyday behaviors. Since these mental images are highly accessible in memory, familiar events should be imagined through a first-person perspective (i.e., a person retrieves a memory encoded with a first-person perspective). However, when a consumer tries to imagine an unfamiliar consumption experience, such as using an e-reader book at the airport, a mental image of the scene may not be readily available (e.g., Zhao et al. 2009) and must be constructed by integrating images from one's own past experiences (e.g., waiting at the airport, reading a book, etc.), advertisements, movies, and so forth (e.g., Kosslyn et al. 2001), which results in a third-person perspective. More formally, I suggest that:

- H2:** Unfamiliar events are more likely imagined through a third-person perspective than are familiar ones which, in turn, increases the persuasiveness of self-images in a being focus, as opposed to in an experiencing focus.

Study 3

Study 3 analyzed the impact of scenario familiarity on visual perspective in imagination (Hypothesis 2). As an experimental stimulus, I selected a new e-book reader (supposedly called *Libro*) that could facilitate the imagination of both familiar and unfamiliar scenarios. In contrast to the previous two studies, self-focus was manipulated after the imagination task. That is, participants first imagined using the Libro and then evaluated the product both in a being focus and in a experiencing focus. I expected unfamiliar scenarios to prompt a third-person perspective, which then leads to a more favorable evaluation of the product under a being focus than an experiencing focus.

Method

Design and participants. Eighty-four participants, who took part in a series of unrelated studies, completed²² one of the two conditions of a one between-subjects factor (scenario: familiar vs. unfamiliar) and one within-subject factor (future self-focus: being vs. experiencing) experimental design. Note that self-focus is a repeated-factor here since each participant had to report her/his evaluations of the product twice: In an experiencing focus (e.g., time 1) and in a being focus (e.g., time 2). The two sets of questions were counterbalanced.

Procedure and measures. Participants read that the study was about the evaluation of a new e-book reader and that they will be asked to imagine either

²² Two participants were not included in the analysis: one for not answering one of the questions used to manipulate self-focus (see below) and the other for having been disrupted by a technical problem during the experiment.

incorporating the new product into their daily routine (familiar scenario) or an original use of the new product (unfamiliar scenario) through the following instruction whose first sentence was adapted from Zhao et al. (forthcoming):

When evaluating a product, many people use their imagination to form visual images (pictures in the mind) of the use of the product and its benefits. For this reason, we would like you to imagine using the Libro to evaluate its benefits. In particular, we are interested in understanding **how the Libro can be incorporated in your daily routine. [original uses of the Libro you can foresee (e.g., activities that you cannot perform with other existing products)]**.

Respondents were then given a one-page description of the e-reader which included a picture of the product (Appendix 3.2 adapted from Zhao et al.[2009], followed by a detailed description of the imagination task. In the usual scenario, participants were asked to “take a moment to think of your typical day on campus. Close your eyes, and imagine how you would incorporate the Libro into your daily routine” whereas, those in the “unfamiliar scenario” condition were asked to “take a moment to imagine new activities you can perform thanks to the Libro. Think of new places and situations in which you can use the Libro; close your eyes, and imagine an original way of using it”. Participants then described the scene imagined and reported their visual perspective on the same dichotomous scale used in Study 2 (adapted from Pronin and Ross 2006)²³.

Because I was interested in the persuasiveness of positive future selves, I eliminated from the analysis six (five from the familiar scenario and one from the unfamiliar scenario) participants who, in their thought list, focused predominantly

²³Participants also answered the same question on a continuous scale anchored on definitely A [first person-perspective]/definitely B [third-person perspective]. Eight participants did not provide an answer on the dichotomous scale measuring visual perspective. These missing values were replaced accordingly to the answers given on the continuous scale (i.e., a third person perspective was recorded when the participant’s score was above the scale midpoint and a first-person perspective was reordered when the answer was below the midpoint scale). All eight answers were either above or below the scale midpoint. Only the dichotomous measure of visual perspective was used in the analyses reported below.

on negative characteristics of the product (e.g., the screen is too small) or on actions that could not be performed with it (e.g., it might be difficult to take notes). Seven participants (three from the familiar scenario and four from the unfamiliar scenario) who focused on the generic benefits of the product instead of imagining its use were discarded; specifically, only participants who described performing an action (e.g., taking notes, listening to music, etc.) in a specific location (e.g., subway, campus, etc.) and/or time (e.g., in the morning before going to school) were considered for further analysis (description of actions with adverbs of time and place such as bringing the Libro everywhere were also considered acceptable). The final sample consisted of 71 observations (60 females, one missing value on gender, average age = 21.41 yrs, $SD = 3.22$ yrs).

After having described their imagination, participants were asked to evaluate the e-book reader either in a being- or in an experiencing focus (within-subject factor). In the being focus, respondents were first asked to consider the extent to which the e-book reader made them more efficient (“In my imagination, the Libro made me more effective/efficient in what I was doing”; strongly disagree/strongly agree) and then evaluate the product while focusing on that particular aspect of their imagination (“as you evaluate the product, think of the scene you have imagined and focus only on how the Libro could make you more effective/efficient in your study/work/free time”) on a semantic differential scale (bad/good, unfavorable/favorable, negative/positive, $\alpha = .97$). Similarly, in the experiencing focus, respondents were asked to consider the extent to which they experienced positive emotions and feelings while using the product (“in my imagination, I experienced positive feelings/emotions of using the Libro”; strongly disagree/strongly agree), and to evaluate the product while focusing on that particular aspect of their imagination (“as you evaluate the product, think of the scene you have imagined and focus only on the feelings/emotions you might experience while using the Libro”) on a semantic differential scale (bad/good, unfavorable/favorable, negative/positive, $\alpha = .97$). The two sets of questions were presented in a counterbalanced order; the difference between the two measures of

attitudes was not affected by the order of presentation ($p = .185$). Finally, participants rated the vividness ($\alpha = .92$) and ease ($\alpha = .95$) of imagination on the same scale used in the previous studies, and the familiarity of the imagined scenario on a three-item formative scale (familiarity with the scenario, likelihood to engage in the imagined activity without the product, and innovativeness of the activities imagined).

Results

Manipulation check. Participants rated the imagined scenario as more familiar when asked to visualize routine uses of the e-book reader ($M = 8.59$, $SD = 1.85$) than original uses of the product ($M = 7.37$, $SD = 1.70$), $t(69) = 2.89$, $p = .005$. The two conditions did not differ in vividness nor in the ease of imagination (all p 's $> .94$).

Familiarity and visual perspective. As expected, participants who imagined an unfamiliar scenario were more likely to adopt a third-person perspective than those who imagined a familiar scenario: 58% (23/40) of the respondents assigned to the unfamiliar condition adopted a third-person perspective and 35% (11/31) of those assigned to the familiar condition adopted a third-person perspective (58% vs. 35%, $z = 1.98$, $p < .05$).

Visual perspective and attitudes. An ANOVA with visual perspective and familiarity (control factor) as between-subjects factors and self-focus as within-subject factor revealed a significant interaction between self-focus and visual perspective (Wilks' Lambda $F(1, 68) = 4.92$, $p = .03$). The e-book reader was evaluated more positively in the being focus than in the experiencing focus when the scene was visualized through a third-person perspective ($M_{\text{being-experiencing}} = .68$, $t(68) = 3.30$, $p = .002$) but not when the scene was visualized through a first-person perspective ($M_{\text{being-experiencing}} = .04$, $t(68) = .20$, $p = .84$).

As shown in Figure 3.3, this finding suggests that the attractiveness of future being focus over experiencing focus was enhanced by the adoption of a

third-person perspective. Although the direct effect was not significant, a mediation analysis conducted through the distribution of products test (MacKinnon et al. 2002)²⁴ showed that familiarity had a significant indirect effect on attitudes via visual perspective (distribution of products test: $z_\alpha z_\beta = 4.40$ ($= 1.98 * 2.22$)²⁵, $p < .05$).

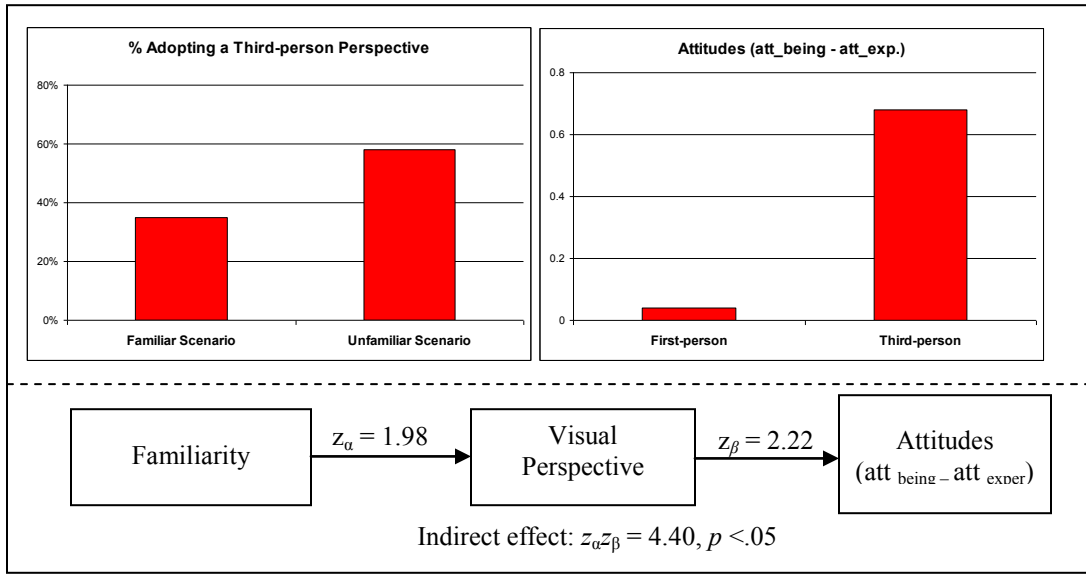


Figure 3.3. Familiarity, visual perspective, and attitudes.

Note. The upper-left panel shows the percentage of respondents who adopted a third-person perspective as function of scenario familiarity condition. The upper-right panel shows the difference between attitudes toward the product in the being-focus and the attitudes toward the product in the experiencing focus as a function of visual perspective, which represents the self-focus (being vs. experiencing) by visual perspective (first-person vs. third person) interaction. The lower panel depicts the indirect effect of familiarity on attitudes via visual perspective.

²⁴ The distribution of products test used here entails testing the product of two normal distributions: z_α , the pathway coefficient of the relation between the independent variable (familiarity) and the mediator (visual perspective) divided by its standard error, and z_β , the pathway coefficient of the relation between the mediator (visual perspective) and the dependent variable (attitudes) divided by its standard error. The product of the two variables is then compared against critical values derived from the distribution of two random variables with $|z_\alpha z_\beta| > 2.18$ suggesting that the product of the two variables is different from zero at a significance value of .05. The distribution of products test is statistically more powerful than traditional mediation analyses, including the Sobel test, and does not require that the product of the two pathways is normally distributed (MacKinnon et al. 2002), an assumption that, by default, is violated (i.e., the product of two normally distributed variables is never normally distributed).

²⁵ This coefficient was obtained by regressing an index of attitudes—computed as the difference between attitudes in the being-focus and attitudes in the experiencing-focus— into visual perspective and familiarity. This coefficient is identical to the interaction coefficient between self-focus and visual perspective estimated through the repeated measure analysis reported above.

Discussion

Study 3 showed that unfamiliar consumption experiences were more likely imagined through a third-person than a first-person perspective and this, in turn, enhanced the persuasiveness of future self-images in a being focus, as opposed to an in experiencing focus. Moreover, a mediation analysis conducted through the distribution of products test (MacKinnon et al. 2002) showed that familiarity had a significant indirect effect on attitudes via visual perspective. Altogether, these results suggest that unfamiliar consumption imaginations, such as the use of a new product, might be more effectively promoted by activating a being focus (e.g., becoming more efficient) rather than an experiencing focus (e.g., experiencing positive feelings).

Self-Focus and Visual Perspective as Independent Constructs

The proposed framework relies on the assumption that future self-focus and visual perspective in imagination are independent; that is, one construct does not activate the other. This implies that being focus and experiencing focus can be visualized through either a first- or a third-person perspective. This hypothesis challenges the common belief that reflecting on oneself (e.g., thinking what I am or will be) leads to/requires the adoption of a third-person perspective (Rosenberg 1979). Since a being focus also entails self-reflection, one might argue that future self focus determines one's visual perspective in imagination.

Traceable to Mead's idea that reflecting on oneself entails seeing the self from the perspective of a generalized observer (Mead 1934), this belief suggests that a being focus might lead to a third-person perspective and vice versa. If this were the case, the model I presented would have limited practical implications because consumers would, by default, adopt the most appropriate visual perspective to imagine their future selves (i.e., first-person/experiencing focus and third-person/being focus), thus leaving no opportunities for marketers to enhance

the persuasiveness of a future self-image by “matching” self-focus to visual perspective and vice versa.

I argue against this possibility by suggesting that self-focus and visual perspective are independent because they follow from different cognitive processes. Specifically, future self-focus depends on whether people direct their attention to the subjective experience or the dispositional characteristic of their future selves. As such, future self-focus might be determined by one’s self-consciousness (i.e., what aspect of their current self people focus on).²⁶ More precisely, high public self-consciousness (e.g., Burnkrant and Page 1984) – individuals’ predisposition to reflect on their self-concept—should lead to a being focus (i.e., who will I become), whereas internal state awareness (e.g., Burnkrant and Page 1984)—individuals’ predisposition to reflect on their inner experience – should lead to an experiencing focus (e.g., how will I feel?). In contrast, visual perspective, which depends on processes underlying the generation of mental images, should not be determined by self-awareness. As discussed before, visual perspective in imagination should be determined mainly by the accessibility of visual information of the to-be-imagined scenario.

Empirical evidence on recall, especially from the normal population (i.e., non-phobic subjects), seems to support this conclusion. In fact, Nigro and Nisser (1983, p. 477), despite expecting the opposite results, found that events high in objective self-awareness (e.g., giving a presentation) were not more likely to be recalled through a third-person perspective than other events. Similarly, instructing people to focus on their feelings while recalling a series of events did not affect visual perspective when compared to the control condition in which no such instructions were provided (Nigro and Neisser 1983). Robinson and Swanson (1993) found a marginally significant difference in public self-consciousness (Fenigstein et al. 1975) among people who recalled most

²⁶Here, I take into consideration the role that dispositional self-consciousness (i.e., stable individual differences in self-consciousness) plays in determining future self-focus. This argument can be extended to the case of situational self-consciousness (i.e., when self-consciousness is situationally induced).

autobiographical memories through a third-person perspective; however, because these memories might actually have been encoded through a third-person perspective—that is, people high in public self-consciousness might imagine how they look from an external perspective, as they experience a particular situation (Nigro and Neisser 1983)—these results provide only little support for a correlation between self-awareness and visual perspective in imagination. Finally, self-conscious emotions (e.g., pride, guilt, and shame), which require self-appraisal (Tracy and Robins 2004), are not more likely to be recalled through a third-person perspective than other emotions (Berntsen and Rubin 2006).

It is worth noting that providing statistical evidence in favor of the independence hypothesis between the constructs may not be simple. That is, finding a non-significant relationship between visual perspective and self-focus is not sufficient to support the claim that the two constructs are independent. However, if I can show that self-awareness affects future self-focus but not visual perspective in imagination, I might provide a stronger case for my proposition since this finding would suggest that visual perspective and self-focus follow from different processes. In light of these considerations, I propose that:

H3a: High public self-consciousness leads to a being focus but does not affect the visual perspective in imagination.

H3b: High internal state awareness leads to an experiencing focus but does not affect the visual perspective in imagination.

Study 4

The objective of Study 4 was to provide evidence that different processes underlie self-focus and visual perspective in imagination. This consideration has significant practical implications as it suggests that self-focus and visual perspective can be independently manipulated by advertisers. To meet this

objective, I analyzed the relation between dispositional self-awareness, self-focus, and visual perspective across different product offerings.

Method

Eighty-eight participants completed an online survey consisting of three sections; only observations from participants who completed the survey within more than 10 and less than 100 minutes were retained for the subsequent analysis. The final sample consisted of 81 participants (59 females, average age = 21 yrs, $SD = 2.92$ yrs).

Section one measured respondents' self-focus across nine product offerings. Participants were first informed that "when we imagine the benefits of a product we can consider feelings and emotions that we may experience with the product but also how the product may affect or change us". Moreover, it was stated that in one case "we focus on the feelings and emotions that come with the benefits of the product," whereas in the other case "we consider the type of person we can become by improving a specific aspect of ourselves". A few examples were provided with each description. For each of nine consumption experiences (a documentary, a bike ride along a river, cultural tour across Europe, a magazine about international politics and economy, an exclusive restaurant, a humorous fiction, a self-help book, and a Caribbean vacation), participants rated the extent to which they would adopt a being focus ("imagining the type of person I can become by consuming/using this product is useful to evaluate it") and an experiencing focus ("imagining the feelings and emotions I may experience while consuming/using this product is useful to evaluate it") on a seven-point scale anchored on strongly disagree/strongly agree. The order by which the two concepts were introduced was counterbalanced and the nine products were presented in a randomized sequence.

In the second section of the survey, the modified version of the self-consciousness scale (Burnkrant and Page 1984)—which is more parsimonious

and shows a better internal consistency than its original formulation (Fenigstein et al. 1975)—was used to measure respondents’ dispositional inner state awareness and public self-consciousness. The internal state awareness subscale ($\alpha = .67$) is a three-item measure of an individual’s tendency to focus on transitory internal states and contains items such as “I am generally attentive to my inner feelings”. The modified public self consciousness subscale ($\alpha = .87$) is a five-item scale measuring awareness of the self as a social stimulus (Duval, Silvia, and Lalwani 2001; Fenigstein et al. 1975) and contains items such as “I usually worry about making a good impression” and “I am concerned about my style of doing things”. In both cases, I used 7-point item scales anchored on strongly agree/strongly disagree (the original items are anchored on extremely characteristic/extremely uncharacteristic).

In the last section of the survey, respondents were asked to imagine nine consumption experiences, to briefly describe their imagination, and to report their vantage point in imagination on a continuous scale²⁷ (adapted from Pronin and Ross 2006). The nine imagination tasks were presented in two counterbalanced sequences.

Results

Self-focus and visual perspective across products. Results from a series of paired t-tests, reported in Table 3.3, suggested that respondents were more likely to adopt a being than an experiencing focus when products offered the opportunity to enhance one’s abilities/competences (i.e., such as magazines, documentary, and self-help books), whereas the opposite was true when products were associated to hedonic experiences (e.g., exclusive restaurants, funny comedy, Caribbean vacations). On the other hand, visual perspective did not vary across products (with the exception of documentary and cultural trip across Europe; it is noteworthy that these two consumption experiences had different

²⁷ Respondents were presented with the same descriptions of first- and third-person perspectives shown in Studies 2 and 4 but instead of endorsing one of the two options they used a continuous scale anchored on definitely A [first person-perspective]/definitely B [third-person perspective].

self-foci but both were more likely visualized through a third-person person perspective), as suggested by results from a series of one sample *t*-tests, testing the hypothesis that each continuous score of visual perspective was equal to the scale mid-point, and a series of one sample *z*-tests, testing the hypothesis that each dichotomized score of visual perspective was equal to chance (i.e., 50%). Although no specific hypothesis was formulated in this regard, this finding provides preliminary evidence that self-focus and visual perspective have different antecedents (i.e., the type of consumption affects self-focus but not visual perspective).

Table 3.3. *Self-Focus and Visual Perspective Across Products*

Consumption Experience	Self-Focus			Visual Perspective		
	Being	Exp.	Difference (t-value)	Mean ¹	1 st person ²	3 rd person ²
Funny comedy movie	2.80	5.14	-10.22***	3.80	53%	42%
Caribbean vacation	3.64	5.67	-9.60***	3.65	53%	40%
Exclusive restaurant	2.85	4.80	-9.39***	4.19	43%	54%
Humorous fiction	2.98	4.84	-9.04***	4.00	49%	44%
Bike ride	4.02	5.05	-5.02***	4.47	40%	58%
Cultural trip in Europe	5.47	5.88	-3.16**	3.53	56%	36%**
Documentary	4.72	4.17	2.77**	3.46*	58%	36%**
Self-help book	4.51	3.64	3.98***	4.28	40%	53%
Magazine politic and economy	4.40	3.46	4.70***	3.69	51%	43%

Note. *: < .05; **: < .01; ***: < .001; 1: Visual perspective was measured through a 7-point continuous scale (1 = first-person; 7 = third-person); 2: measures of visual perspective were dichotomized (< 4 = first-person, > 4 = third-person).

Self-focus and self-awareness. A hierarchical regression was used to estimate the relation between self-awareness and self-focus (Hox 2002) because Study 4 resulted in a cross-classified design—where each observation (y_{sp}) was nested both in subjects (s) and products (p). As shown in the equation below, the regression model specified two error components in addition to the residual error term (e_{sp}): one (u_s) to account for the intercept's variability across subjects and the second (v_p) to account for the intercept's variability across products.

$$Y_{sp} = \beta_0 + \beta_1 \text{inner} + \beta_2 \text{public} + \gamma_s + \gamma_p + \gamma_{sp}^{28}$$

Results, presented in Table 3.3, suggest that dispositional internal state awareness predicted experiencing focus ($\beta_{1(\text{experiencing})} = .36$, $t(640) = 4.00$, $p < .001$) but not being focus ($\beta_{1(\text{being})} = .06$, $t(640) = .66$, $p = .511$), whereas dispositional public self-consciousness significantly predicted being focus ($\beta_{2(\text{being})} = .13$, $t(640) = 2.09$, $p = .037$) but not experiencing focus ($\beta_{2(\text{experiencing})} = .11$, $t(640) = 1.65$, $p = .10$). When compared to the model without covariates, internal state awareness accounted for 27% in the between-subjects variability of experiencing focus and public self-consciousness accounted for 11% in the between-subjects variability of being focus. The analysis also showed that both the between-subjects and the between-product variance were significantly different from zero, thus suggesting the existence of both individual and product differences in self-focus.

Table 3.4. *Self-Focus and Visual Perspective as a Function of Internal State Awareness and Public Self-Consciousness*

	Being self-focus	Experiencing Self-focus	Visual Perspective ¹
Fixed part			
Intercept	2.99***	2.30***	4.55***
Internal state awareness	.06	.36***	-.10
Public self-consciousness	.13*	.11	-.02
Random part			
σ_s^2	.27***	.31***	1.99***
σ_p^2	.75*	.60*	.08

Note. *: $p < .05$; **: $p < .01$; ***: $p < .001$; 1: visual perspective was measured through a 7-point continuous scale (1 = first-person; 7 = third-person).

²⁸This model provided the best goodness of fit statistics (based on deviance, AIC, and AICC criteria) when experiencing focus and visual perspective were entered as dependent variables. In the best-fit model predicting being-self focus, the coefficient of internal state awareness was allowed to vary across products (i.e., it was modeled as a random effect) and the intercept was not allowed to vary across products (i.e., the γ_p error term was not included in the model); the conclusions drawn from this model are identical to the ones reported in this study. To increase the comparability of the analyses across different dependent variables, the same model (i.e., the one shown in the equation) was used to predict experiencing focus, being focus and visual perspective.

Visual perspective and self-consciousness. For each consumption experience, Table 3.3 reports the percentage of people adopting a first- and a third-person perspective (i.e., those who scored below or above the scale mid-point); overall, 358 (49%) imagination tasks were visualized through a first-person perspective, 329 (45%) with a third-person perspective, and 42 (6%) scored on the mid-point. These results are in line with previous studies (e.g., D'Argembeau et al. 2003; Nigro and Neisser 1983) showing that, on average, about 40% of the imagination tasks are visualized through a third-person perspective. Using the regression model specified in the equation presented above, I found that neither internal state awareness ($\beta_{1(\text{visual perspective})} = -.10, t(640) = -.52, p = .606$) nor public self-consciousness predicted visual perspective ($\beta_{2(\text{visual perspective})} = -.02, t(640) = -.16, p = .872$). Supporting findings from previous studies (Berntsen and Rubin 2006; Nigro and Neisser 1983), I found significant between-subjects variability which indicates the existence of individual differences in visual perspective in imagination. On the other hand, between-product variability was non-significant, suggesting that visual perspective did not vary substantially across consumption experiences.

Visual perspective and self-focus. I tested the relationship between self-focus and visual perspective using a hierarchical regression model in which visual perspective was predicted by both being and experiencing focus. The random components of the final model, specified on the basis of the model deviance, AIC, and AICC criteria, were as follows: the intercept was allowed to vary across subjects ($\sigma^2 = 1.42, z = 3.49, p_{1\text{-tailed}} < .001$), the experiencing focus coefficient was allowed to vary across subjects only ($\sigma^2 = .031, z = 2.18, p_{1\text{-tailed}} = .02$), and the being focus coefficient was allowed to vary across product ($\sigma^2 = .004, z = 1.25, p_{1\text{-tailed}} = .10$). As expected, neither being-focus ($\beta = -.09, t(8) = -1.68, p = .13$) nor experiencing-focus ($\beta = -.01, t(78) = -.26, p = .80$) predicted visual perspective in imagination. Moreover, the fact that the estimate for the being focus coefficient was negative and small in value provides further evidence against the hypothesis that a third-person person is driven by higher level of being focus.

Discussion

Results from Study 4 showed that, across different consumption experiences, dispositional self-awareness predicted future self-focus but not visual perspective. Similarly, I found that consumption experiences with a particular significance for one's self-concept (e.g., self-help book) draw attention to one's being focus but do not determine visual perspective in imagination. Furthermore, no relation was found between visual perspective and self-focus. These results provide evidence that visual perspective and self-focus are independent constructs, as they result from different underlying psychological mechanisms.

Altogether, these findings suggest that exogenous interventions can be used to match self-focus with visual perspective and vice versa. For example, marketers can activate a being (experiencing) focus when future self-images are imagined through a third-(first) person perspective. Alternatively, marketers can match visual perspective to self-focus by prompting consumers to visualize self-images in a being (experiencing) focus through a third (first)-person perspective.

General Discussion

Every day, consumers imagine future consumption experiences by focusing either on what they might feel or on who they might become in the future. For example, to decide whether to attend a public speaking seminar, one might visualize her/himself confidently giving a talk and reflect on the abilities and traits contradistinguishing her/his future self (being focus). On the other hand, the same consumer might decide whether to spend a week in Cancun by imagining the feeling of relaxation s/he will experience while drinking a mojito under a palm tree (experiencing focus). Findings from this essay suggest that future self-images in a being focus may be more persuasive when visualized through a third- rather than a first-person perspective, whereas the opposite may hold true for future-self images in an experiencing focus.

In Study 1, respondents who imagined becoming a better student (being focus) evaluated more positively a book that provided tips to improve school performance when the scene was visualized from a third- rather than a first-person perspective, whereas those who imagined the feelings after receiving a higher grade (experiencing focus) evaluated directionally (but not significantly) more positively the book when the scene was visualized through a first- rather than a third-person perspective. These findings were complemented by Study 2 in which a first-person perspective, as opposed to a third-person perspective, increased behavioral intentions toward a tropical vacation destination (experiencing focus). Study 3 showed that unfamiliar consumption experiences, as opposed to usual ones, were more likely imagined through a third-person perspective which, in turn, enhanced the persuasiveness of future self-images in a being focus, as opposed to in an experiencing focus. Finally, Study 4 provided empirical evidence suggesting that visual perspective in imagination is independent of future self-focus.

This research contributes to two streams of the literature. First, although a significant amount of research has explored the role of self-images in product evaluation and decision-making (e.g., Dahl and Hoeffler 2004; Escalas 2004a; Escalas and Bettman 2003), this is, to my knowledge, the first work to introduce and examine the role of future self-focus in marketing research. Second, this essay contributes to the literature on mental imagery by introducing the role of visual perspective as a moderator of the persuasiveness of future self-images.

Direction for Future Research

Future-self-focus: trait or psychological state? This work provides evidence that future self-focus may systematically vary across individuals (Study 4) and that experiencing focus and being focus can be activated either at will (Study 1) or by the particular consumption experience considered (Studies 2 and 4). Future self-focus can, therefore, be conceptualized either as a disposition of a consumer or as a psychological state triggered by situational cues. In view of this

result, future research might develop scales to assess both situational and dispositional orientation toward being focus and experiencing focus.

New manipulations of self-focus and visual perspective. A promising area of research concerns the identification of new ways to activate being and experiencing foci. Previous research has shown that priming achievement motivation induces a productivity mindset (Keinan 2007), which is conceptually related to the notion of being focus. Similarly, making salient unique aspects of oneself can increase objective self-awareness, which is also conceptually related to the notion of being focus (Silvia and Eichstaedt 2004). I look at these results as preliminary evidence supporting the possibility of priming future self-focus.

Future research might also explore new unobtrusive manipulations of visual perspective. In addition to testing the effect of variables affecting the amount of constructive processing underlying the generation of mental images (e.g., consumers' experience), researchers might investigate how pictures can be used to prompt a specific visual perspective in imagination, a topic that has important practical implications for advertising. I have tackled this issue with a preliminary online study in which eighty-three participants (55 females, mean age = 22.04 yrs, $SD = 3.59$ yrs; observations from two participants were not included in the analysis because it took them more than 20 minutes to completed the online survey) were presented with one of the two pictures (found through "Google Images") about a beach scene (Appendix 3.3), asked to imagine being in the scenery depicted, described the content of their imagination, and reported their visual perspective in imagination. Both pictures portrayed a similar image with the difference that one picture showed a chair facing the ocean, whereas no subject was shown in the other picture. I expected that the presence of the chair would induce people to imagine themselves sitting on it and this, in turn, would lead to a third-person perspective (i.e., seeing oneself sitting in the chair). Consistent with this expectation, I found that 36% (15/42) of the respondents exposed to the picture featuring a chair adopted a third-person perspective, whereas only 17% (7/41) adopted a third-person perspective when exposed to the other (no-chair) picture ($z = 2.01, p < .05$). This

finding provides preliminary evidence suggesting that visual perspective in imagination may be manipulated through the inclusion of objects inviting specific actions; while imagining themselves performing the action afforded by a particular object (e.g., sitting on a chair), people visualize themselves interacting with the object, thus adopting a third-person perspective.

Implications for Practitioners and Policy-Makers

The present work has two main implications for product positioning and advertising. First, marketers can manipulate visual perspective to match a future self-focus. When a consumption situation activates a being focus, future self-images may be more attractive if visualized through a third- rather than a first-person perspective and vice versa. This might be the case for collectable experiences (Keinan 2007), defined as memorable and unconventional experiences that afford the opportunity to enhance one's self-concept. For instance, imagining oneself staying at an Ice Hotel through a first-person perspective might highlight the unpleasantness of the experience, whereas seeing one's future self from an observer perspective highlights the significance that the situation has for one's (future) self-concept (e.g., I am a person who tries new things). On the other hand, marketers can activate a specific future self-focus to match visual perspective in imagination. In this regard, Study 3 showed that unfamiliar behaviors tend to be imagined through a third-person perspective which, in turn, enhances the persuasiveness of future self-images in a being focus. This finding suggests that new products, which enable new behaviors, might be more effectively promoted by highlighting their implications for one's future being- rather than experiencing-self.

A mismatch between future self-focus and visual perspective also has important implications for personal well-being. Every day, we are forced to make tradeoffs about our future selves; in some cases, we give up on future enjoyment for the sake of what we may become, whereas in other cases, we compromise future accomplishments for the sake of future pleasures. The third-person

perspective, by underestimating the enjoyment associated with future situations, may lead to hyperopic choices (Kivetz and Keinan 2006), whereas the first-person perspective, by underestimating the importance of self-realization over enjoyment, may lead to myopic decisions. Thus, adopting different visual perspectives may help people make better choices.

INTRODUCTION TO ESSAY III

The first two essays provided insights onto how the persuasiveness of imagery-evoking advertisements may be enhanced by activating an imagery processing mode and increasing the fluency of imagination (Essay I), and by matching future self-focus and visual perspective (Essay II). However, to have a more complete picture of the benefits mental imagery may provide as a strategy of influence, we have to understand not only how imagery-evoking advertisements persuade but also the resistance of the impressions (i.e., attitudes and beliefs) they generate. This is an important domain of research because impressions generated by mental imagery frequently need to be corrected or even discounted to account for information that is not included in the imagination. Essay III addresses this topic and provides evidence that imagery-evoking advertisements may generate beliefs that are independent from the credibility of a message's source and generate attitudes that, compared to those generated by abstract messages, are more resistant to discrediting cues presented after the message is processed.

CHAPTER 4 — ESSAY III

BELIEVING OUR IMAGINATION: THE ROLE OF MENTAL IMAGERY IN BELIEF GENERATION AND RESISTANCE

Consider Peter, an undergraduate student reading the following story in his University newspaper: “While driving home one day, Sara pulled into her local Taco Bell and ordered a burrito. When she woke up the next day, her tongue felt sore and a little swollen. Days later, her tongue swelled up noticeably and became very sore. Sara went to see a doctor who decided to perform a minor surgery. When the doctor had cut open her tongue, he found a cyst among her taste buds filled with cockroach eggs. The doctor traced the eggs back to the burrito from her fast food dinner”. John, also a student, reads in the local newspaper a much less imagery-evoking version of the same story stating that Sara, after eating a Taco Bell burrito, was infected with *Periplaneta Americana*’s eggs—the scientific and less concrete name for cockroaches. After reading the articles, they both find out that Sara’s story is just an urban legend (actually adapted from www.snopes.com). Will the two students’ attitudes toward Taco Bell burritos be different?

In this essay, I try to answer this question by examining the relation between imagining (i.e., mental imagery) and believing. I propose that the imagery-evoking version of Sara’s story induced two kinds of beliefs: a *deliberate belief*, due to the credibility of the message—e.g., I trust the university newspaper, therefore I believe that the story is true—and an *implicit belief*, because of the experience of mental imagery (a Taco Bell store, a burrito, cockroach eggs, etc.). In contrast, the second version of the story, being less detailed and concrete (after all, who can picture a *Periplaneta Americana*?), unlikely evoked any mental images and thus might have induced only deliberate beliefs: The local newspaper is trustworthy, therefore I believe the story.

Deliberate beliefs are typically purposively held (i.e., I believe Sara's story because the university newspaper is trustworthy) and thus should be easy to discard once the reasons underlying them have been discredited. Hence, the beliefs about Taco Bell burritos induced by the abstract version of Sara's story may be discounted once John is informed that the story is an urban legend. However, the beliefs generated by imagery-evoking messages may be more resistant to refutation because their implicit component may be held without awareness—i.e., people may not be aware they believe something simply because they have imagined it—and may not be completely under the control of the believer (e.g., Bargh 1994). Deliberate attempts to discredit the message, in fact, may not change beliefs generated by imagination because the mental images generated by the message (e.g., cockroach eggs popping out of Sara's taste buds) may be available in a consumer's mind even after the message has been discredited, thus affecting one's beliefs.

Since the generation of implicit beliefs depends on experiencing mental imagery, factors undermining consumers' willingness or ability to imagine should reduce the resistance of beliefs induced by imagery-evoking messages. One such factor may be the order in which the discrediting information is provided. When the discrediting information is provided before, as opposed to after, the encoding of an imagery-evoking message, consumers may be less motivated to imagine a product's benefits and this may weaken the resistance of beliefs induced by the message.

The remainder of this essay is organized as follows. The next section discusses the theoretical background suggesting that beliefs induced by imagery-evoking messages differ from those induced by abstract ones, followed by two empirical studies supporting this proposition. The second theoretical section suggests that beliefs induced by imagery-evoking messages may be stronger than those induced by abstract ones when the discrediting cue is presented after a message. Three studies supporting this claim are then presented. The concluding

section reviews the practical implications of this work and discusses possible alternative explanations of the findings reported.

Two Ways of Believing: Deliberate Versus Implicit Beliefs

Theoretical evidence suggests the existence of a deliberate and an implicit route to believing. Deliberate beliefs are purposively held through a validating frame (explicit argumentation or source credibility), whereas implicit beliefs are derived from spontaneous and unconscious inferences generated by perceptual experiences (Sperber 1997). This distinction is akin to the one discussed by Gilbert and colleagues (Gilbert 1989, 1991, 1993; Gilbert et al. 1990) concerning the Cartesian approach—which suggests that people mentally represent (i.e., comprehend) ideas and then deliberately decide whether to accept them as true or false—and the Spinozan approach—which suggests that, once comprehended, ideas are automatically endorsed as true and deliberation is, eventually, needed to discard them.

In accordance with the Spinozan approach, Gilbert and colleagues have found that when presented with statements declared as either true or false, respondents who are interrupted during the encoding phase are more likely to later judge false propositions as true than to judge true propositions as false (Gilbert et al. 1990). This finding, along with evidence provided by other studies (e.g., Gilbert 1991, 1993; Gilbert, Tafarodi, and Malone 1993), suggests that statements are automatically encoded as true and deliberation is needed to disbelieve them. When deliberation is inhibited by the interruption task, it becomes more difficult to discount information as false. According to this perspective, mental representations are not considered passive representations of the world but rather as belief-inducing states. In Gilbert's words, "understanding a proposition puts a person in a state of belief" (Gilbert 1993, p. 63).

Furthermore, Gilbert has suggested that the Spinozan view (i.e., beliefs as an automatic process) may be particularly indicated to account for the nature of beliefs generated by concrete, perceptual experiences, whereas the Cartesian view (i.e., beliefs as deliberation) may be more indicated to account for the nature of beliefs generated by abstract information. Optical illusions, such as the Mueller-Lyer illusion, provide intuitive support to this proposition (Gilbert et al. 1990). In this illusion, our deliberate belief that the length of the two lines is the same contrasts with our implicit belief derived from perception that one of the two lines is longer than the other. The acceptance of perceptual experiences as true would be both efficient from an evolutionary perspective (Gilbert et al. 1990) and ecologically valid given that, with the exception of optical illusions perhaps, people view their perception as factual—for example, seeing a snake implies the existence of a snake.

The idea that abstract and perceptual information are represented differently also finds support from a cognitive perspective. The Dual Coding theory (e.g., Paivio 1990, 1991a; Paivio 1991b), in particular, postulates the existence of two functionally independent but interconnected cognitive subsystems: A verbal subsystem dedicated to the representation and processing of abstract information and a nonverbal (imagery) subsystem dedicated to the representation and processing of visual information. The imagery system is activated directly by perceptual objects or pictures and indirectly by concrete, imagery-evoking stimuli or specific instructions. For example, reading the concrete word “apple,” a cognitive operation carried through by the verbal system, may generate a mental image that is processed by the imagery system. Supporting this consideration, evidence from functional Magnetic Resonance Imaging (fMRI) studies showed mental imagery and perception share similar neurological processes (e.g., Binder et al. 2005; Ganis, Thompson, and Kosslyn 2004).

In light of the similarities between perception and imagination, I suggest that implicit beliefs may be induced not only by perception (e.g., seeing

cockroach eggs) but also by imagination (e.g., imagining cockroach eggs). Mental images may generate an implicit belief about the truth state of the imagined scene (i.e. the event actually took place); for example, imagining Sara’s tongue filled with cockroach eggs may make one believe that eating Taco Bell burritos can infect one’s tongue with cockroach eggs.

If so, imagery-based beliefs—those generated by high imagery-evoking messages—can entail both a deliberate component, because of the credibility of the source, and an implicit component, because of the generation of mental images associated with the message (see “imagery-based beliefs” in Figure 4.1). Moreover, this implicit belief may be automatic, according to Bargh’s (1994) definition, because its generation does not require deliberation (i.e., once mental images of cockroaches eggs infecting one’s tongue are experienced, we may spontaneously believe in this possibility), it occurs outside people’s awareness (i.e., people may not know that imagination affects their beliefs), and it may not be controllable (i.e., once experienced, mental images may affect beliefs despite one’s attempt to discount them). In contrast, abstract beliefs—those generated by abstract, low imagery-evoking messages—may be held mainly through deliberation (see “abstract beliefs” in Figure 4.1).

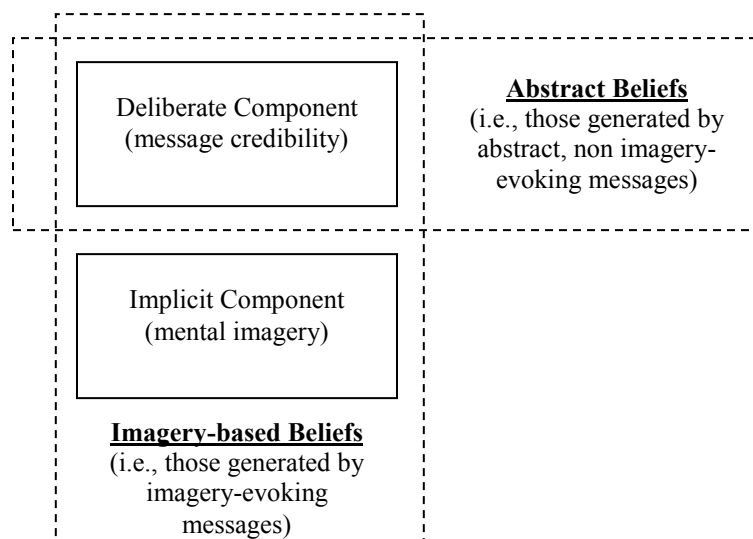


Figure 4.1. Components of imagery-based and abstract beliefs.

For instance, a consumer review stating that “dialing with this cell phone is a tiring, error-filled process” is, for many people, unlikely to generate mental images (see Study 1) and therefore may only be believed through deliberate reasoning (e.g., I trust the reviewer, therefore I believe that the phone is bad). However, more imagery-evoking statements such as “the buttons of this cell phone are too small so our fingers are always pushing the wrong button” may—on top of deliberate beliefs—induce implicit beliefs due to the generation of mental images (e.g., a person experiencing difficulty while dialing a number).

The model shown in Figure 4.1 suggests that when consumers cannot deliberately assess the credibility of a message through, for instance, information about the source reliability, they may be more likely to believe in an imagery-evoking than abstract statement. When the deliberate component is absent, the abstract belief box would be “empty,” whereas the imagery-based belief box would have an implicit component. This may occur when consumers do not have information about the source credibility²⁹ of a message or lack the cognitive resources to process that information. When no information about the source credibility is provided, people cannot form deliberate beliefs; therefore, imagery-evoking statements should be considered more believable than abstract ones because of their additional implicit components. Similarly, restricting mental processing research should inhibit deliberation, thus attenuating the effect of the deliberate component of beliefs, without affecting the implicit component of beliefs generated by mental imagery. More formally, I suggest that:

H1a: When no information about the source credibility is provided, people evaluate imagery-evoking product claims as more believable than abstract ones.

²⁹ According to Sperber’s view (1997), deliberate beliefs can also be generated through argumentation (e.g., a logical proof).

H1b: Limiting processing resources reduces the effect of the source credibility on believability judgments but not the effect of message imaginability on believability judgments.

Study 1

Study 1 examined the relationship between imaginability and believability (Hypothesis 1a) for different product claims. Participants were asked to evaluate the believability and the imaginability of 20 product statements without having any information about the source credibility of the claims. The imaginability of the product claims was expected to predict their believability.

Method

Forty-three participants (27 females, average age = 21.9 yrs, $SD = 3.3$ yrs) partook in an online study, part of a series of unrelated studies, where they evaluated the perceived believability of 20 product claims supposedly taken from online consumer reviews. The following instruction was used to inform participants that, although some of the claims were true and some false, there was no objective reason to infer their veracity: “[...] you will be presented with a list of statements obtained from online consumers’ reviews. While many online customer reviews are sincere, there are also consumer reviews written by individuals that hold particular interests in the product reviewed—such as the owner or competitors— thus raising concerns about their reliability.” In light of this instruction and given that no information about the source of the message was provided, respondents could not deliberately assess the veracity of the claims presented.

Four statements for each of five products (travel book, cell phone, laptop, orange juice, and shoes) were then presented. For each product, two positive and two negative statements were presented (see Appendix 4.1). Respondents were

invited to use their intuition and “gut feeling” to determine which claims were trustable (i.e., whether the claim was true) and which were not (“according to your gut feeling, the following statements are: definitely not trustable/definitely trustable”). On the following page, participants were presented again with the same 20 claims and asked to evaluate their imaginability (very hard to picture or imagine/ very easy to picture or imagine; adapted from Keller and McGill [1994]). In both cases, the 20 product claims were presented in a random order. Seven-point scales were used in all cases. Overall, the dataset included 860 observations.

Model Specification

Since respondents rated multiple claims and each claim was linked to a given product, Study 1 resulted in a cross-classified design where each observation (i_{sc}) was nested both in subjects (s) and in product claims (c). For this reason, a hierarchical regression was used to estimate the relation between imaginability and believability (Hox 2002).

$$\begin{aligned}
 \text{Believability}_{sc} &= \beta_{0c} + \beta_{1s} \text{Imaginability}_{sc} + e_{sc} \\
 \beta_{0c} &= \gamma_{00} + \sum_{p=1}^p \gamma_{p} \text{Product_type}_c + \gamma_{05} \text{Claim_length}_c + \gamma_{06} \text{Valence}_c + u_c \\
 \beta_{1s} &= \gamma_{10} + v_s
 \end{aligned}
 \tag{Equation 1}$$

where :

$$\begin{aligned}
 E(u_c) &= 0, \quad \text{var}(u_c) = \sigma^2(u_c); \\
 E(v_s) &= 0, \quad \text{var}(v_s) = \sigma^2(v_s); \\
 E(e_{sc}) &= 0, \quad \text{var}(e_{sc}) = \sigma^2(e_{sc});
 \end{aligned}$$

As shown in the equation above, the believability rating given by subject (s) on claim (c) was predicted by the intercept (β_{0c}) and a coefficient (β_{1s}) multiplied by the imaginability rating given by subject (s) on claim (c). The specification of the final model, defined on the basis of the model goodness of fit (i.e., model deviance, AIC, and AICC), was as follows: the intercept (β_{0c}) was allowed to vary across product claims but not across people, whereas the

imaginability regression coefficient (β_{1s}) was allowed to vary across subjects but not across product claims. Due to these specifications, the hierarchical regression model included two error-components in addition to the residual error term (e_{sc}), one (u_c) to account for the between-claims variability of the intercept (β_{0c}) and the other (v_s) to account for the between-subjects variability in the imaginability coefficient (β_{1s}).

To account for possible confounding effects, I included in the analysis three claim-level covariates: statements length (i.e., the word count of each statement), statements valence (positive vs. negative), and product type (travel book, cell phone, laptop, orange juice, and shoes). The Satterthwaite method was used to determine the exact number of degrees of freedom of the parameters (Littel et al. 1996).

Results

As expected, the imaginability ratings significantly predicted claims believability ($\gamma_{10} = .37$, $t(270) = 11.18$, $p < .001$). The variance estimate of this regression coefficient ($\sigma^2(v_s) = .01$, $z = 3.38$, $p_{1-tailed} < .001$) suggests that the relation between imaginability and believability varied across respondents (i.e., for some participants imagination exerted a stronger effect on believability than for others). The between-product variability of the intercept coefficient was also significant ($\sigma^2(u_c) = .12$, $z = 2.25$, $p_{1-tailed} = .01$), suggesting that, independently of the imaginability rating and the covariates, some claims were more believable than others.

I analyzed further the relation between believability and imaginability at the product claim-level by averaging both scores across respondents. Figure 4.2 plots the mean scores (i.e., averaged across subjects) of claim-believability against the mean scores of claim-imaginability. As illustrated in the figure, the average imaginability ratings were strongly correlated with the average believability ratings ($r = .76$, $p < .001$): 58% of the variability in claim-

believability was accounted for by the average imaginability rating. A regression analysis showed that the statement's length (i.e., the word count of each statement), the statement's valence (positive vs. negative), and the type of product (travel book, cell phone, laptop, orange juice, and shoes) did not predict the mean believability rating (all p 's > .28)³⁰. The product claim-level analysis also provided evidence that high imagery-evoking product claims (i.e., those that, on average, elicit more mental imagery) are more believable than low imagery-evoking ones when consumers are uncertain about the credibility of a message.

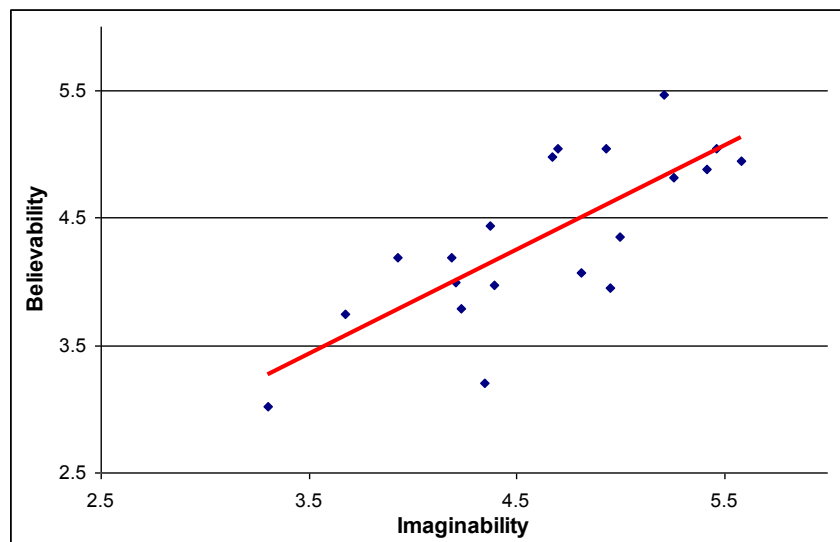


Figure 4.2. Product claim believability as a linear function of product claim imaginability.

Alternative Explanations

Fluency effect. A possible alternative explanation of these results is that the ease of imagination may be associated with the fluency of processing which, in turn, can affect the claims' believability (e.g., Schwarz 2004). To account for this possibility, I asked a different sample of 32 participants (11 females, average age = 20.4 yrs, $SD = 2.2$ yrs) to rate both the imaginability (very hard to picture or

³⁰ The effects on believability of imaginability and the control variables were tested with two separated analyses. A regression analysis having believability as dependent variable, imaginability and the control variables as predictors led to identical conclusions ($\beta_{\text{imaginability}} = .78$, $t(12) = 3.93$, $p < .01$, remaining p 's > .17).

imagine/ very easy to picture or imagine) and the fluency of processing measured by the ease of reading (very difficult to read/very easy to read; Novemsky et al., 2007) of the 20 product claims. The correlation between the two indexes was non-significant ($r = -.30, p = .20$), thus suggesting that the fluency effect may not account for these results.

“Within-subject” effect. It may also be argued that the strength of the relationship between the believability and imaginability ratings was inflated by the fact that the believability and imaginability ratings were provided by the same participants. Given each product claim, respondents might have had a tendency to endorse items as higher or lower independently of their content and this, in turn, might have inflated the relationship between the two variables. To test this possibility, I correlated the believability ratings (averaged at the product level) provided by the sample of participants used in the main study with the imaginability ratings given by the additional sample of 32 participants (who did not rate the believability of the product claims). The relation between the believability and the imaginability rating of the product claims was still significant, $r = .54, p = .01$. The correlation coefficients obtained for the two samples were statistically indistinguishable, as shown by a Fisher’s z-test, $z = 1.14, p = .25$.

Discussion

Results from Study 1 suggest that imagining and believing are strongly related. Despite knowing that there was no “objective” reason to infer the reliability of a product claim, the extent of mental imagery elicited by a product claim predicted its believability: High imagery-evoking product claims were judged as more believable than low imagery-evoking ones.

Results from Study 1 are correlational in nature, and as such, preclude any inference on causality. Therefore, it could be argued that the believability of a product claim determines its imaginability and not *vice versa*. Although this

argument cannot be ruled out empirically at this point, it seems improbable that participants based their evaluations of claim imaginability on the (perceived) believability of the claims. Such a step would require that when asked to judge the imaginability of the product claims, respondents evaluated their believability first and from this inferred the claims' imaginability (e.g., I believe it, therefore I can imagine it). Alternatively, imaginability and believability could have been jointly caused by a third, unspecified variable. This possibility also appears to be unlikely given that I have statistically controlled for possible confounding effects such as the valence of a claim, product type, and the length of a statement. The objective of the next study is therefore to further explore the effect of imaginability on beliefs judgments, and, specifically, to show that this effect occurs effortlessly, thus providing evidence for its automatic nature.

Study 2

The objective of Study 2 was to provide evidence that the deliberate components of beliefs (i.e., due to the information about the source credibility) require processing resources, whereas their implicit counterparts (i.e., due to mental imagery) are automatic (Hypothesis 1b). Participants were presented first with product claims which were declared either true or false and later asked to rate the believability and the imaginability of each statement under either low or high cognitive load. The cognitive load manipulation reduces the amount of processing resources available (Shiv and Fedorikhin 1999) and this, in turn, was expected to attenuate the effect of the source credibility on believability judgments (i.e., deliberate belief) but not the effect of the imaginability on believability judgments (i.e., implicit belief) .

Method

The study had a 2 (source credibility: believable vs. non believable) x 2 (cognitive load: high vs. low) experimental design. Under the guise of a memory test, 67 participants were: *i*) informed that they would be presented with 20 product claims obtained from online consumers' reviews, *ii*) told which of these were true and which were false, and *iii*) later asked to rate the believability of each statement.

In the first step of the study, participants were presented with the 20 product claims used in Study 1 (Appendix 4.1). Each statement was shown on a separate screen followed by a screen stating whether the statement was true or false (i.e., the statement you have just read is: false [true]). Each claim was randomly presented as true to some participants and as false to others. To prevent participants from developing sophisticated visual mnemonic strategies (e.g., Paivio 1990), they were asked to read each statement in less than 10 seconds and to read the information about the veracity of the statement in less than 5 seconds. This procedure was repeated for all product claims. The statements were always shown in the same order (Appendix 4.1). One statement was mistakenly not included in the list and a second statement (number 7 in Appendix 4.1) was mistakenly presented a second time at the end of another product. These two statements were not considered in the analysis.

After the statements were presented—but before being asked to rate their believability and imaginability—, participants received the cognitive load manipulation (Shiv and Fedorikhin 1999) which involved memorizing either an eight-digit number (high cognitive load) or a two-digit number (low cognitive load). Next, the 20 statements were presented in a randomized order. Participants rated whether they believed each statement was true or false on a seven-point scale (definitely false/definitely true), while being told again to keep in mind the number shown before. Participants then moved to the next screen where they rated (on the same scale used in the previous study) the imaginability of the 20

claims that, once again, were presented in a randomized order. Respondents then reported the number they memorized and rated how difficult it was for them to retain that number in their mind (anchored at not at all difficult/very difficult; adapted from Zemborain and Johar, 2007), these items served as a check for the cognitive load manipulation. Five³¹ participants failed to report the correct number and were consequently eliminated from the analysis. The final sample consisted of 62 participants (41 females; average age 20.5 yrs, $SD = 2$ yrs) for 1116 observations.

Model specification

Fixed effects. Equation 2 shows the model used to test the second hypothesis. The believability rating given by each participant (s) on each claim (c) was regressed on a dummy variable indicating whether the claim was stated as true or false (β_{1c}), a dummy variable indicating whether the participant was under high or low cognitive load (β_2), the imaginability rating (β_3) given by each participant on each claim, the interaction term between source credibility and cognitive load (β_4), and the interaction between imaginability and cognitive load (β_5). The model also controlled for the order in which the information about source credibility was presented, as this might have affected respondents' ability to recall the believability of different statements (i.e., the first claims might have been easier or more difficult to remember than those presented later in the list). The three-way interactions terms of order, source credibility, and cognitive load was significant and thus retained in the model, along with the lower order interaction terms involving these variables. No other interaction term was significant.

³¹ Overall, nine participants did not recall the correct number they were asked to memorize as part of the cognitive load manipulation. Four participants reported the correct digits, but in a scrambled order. These participants were retained in the analysis. The remaining five participants forgot one of the digits and/or reported a digit that was not shown in the original sequence and were eliminated from the analysis.

$$\begin{aligned} \text{Believability}_{sc} = & \beta_0 + \beta_{1c} \text{Status}_{sc} + \beta_2 \text{Load}_s + \beta_{3s} \text{Imaginability}_{sc} + \\ & \beta_4 \text{Status}_{sc} * \text{Load}_s + \beta_5 \text{Imaginability}_{sc} * \text{Load}_s + \\ & \beta_6 \text{Order}_c + \beta_7 \text{Status}_{sc} * \text{Order}_c + \beta_8 \text{Status}_{sc} * \text{Order}_c * \text{Load}_s + e_{sc} \end{aligned} \quad \text{Equation 2}$$

$$\beta_{0c} = \gamma_{00} + \gamma_{1c}$$

$$\beta_{1c} = \gamma_{10} + \gamma_{1c}$$

$$\beta_{3s} = \gamma_{30} + \gamma_{3s}$$

where:

$$E(u_c) = 0, \text{ var}(u_c) = \sigma^2(u_c);$$

$$E(v_c) = 0, \text{ var}(v_c) = \sigma^2(v_c);$$

$$E(r_s) = 0, \text{ var}(r_s) = \sigma^2(r_s);$$

$$E(e_{sc}) = 0, \text{ var}(e_{sc}) = \sigma^2(e_{sc});$$

Random effects. As in the previous case, Study 2 resulted in a cross-classified design where each observation (i_{sc}) was nested both in subjects (s) and product claims (c). Therefore, a hierarchical regression model (Hox 2002) was used to test H1b. The specification of the final model, defined on the basis of the model goodness of fit (i.e., AIC, and AICC, BIC), was as follows: the intercept (β_{0c}) and the source credibility coefficient (β_{1c}) were allowed to vary across product claims but not across subjects, and the imaginability regression coefficient (β_{1s}) was allowed to vary across subjects but not across product claims. Since no other random term was significant, the remaining variables were modeled as fixed parameters. The Satterthwaite method was used to determine the exact number of degrees of freedom of the error terms (Littel et al. 1996).

Results

Manipulation check (cognitive load manipulation). Participants found it more difficult to retain the eight-digit number ($M = 2.43$) than the two-digit number ($M = 1.76$), $t(58) = 1.73$, $p_{1-tailed} < .05$. Although these results suggest that participants did not find it particularly difficult to memorize the eight-digit number ($M = 2.43$ out of 7), the cognitive load manipulation was effective.

Believability. As shown in Table 4.1, the information about the source credibility of the statements significantly predicted believability judgments ($\gamma_{10} = 2.28$, $t(32.6) = 4.13$, $p < .001$). Not surprisingly, participants were more inclined

to report that a claim was believable when previously told that the statement was true than when told that the statement was false. The imaginability ratings also predicted believability judgments ($\gamma_{30} = .12$, $t(656) = 2.33$, $p = .02$), thus replicating the findings from Study 1³².

Table 4.1. *Product Claim Believability as a Function of Source Credibility, Cognitive Load, and Statement Imaginability*

Independent variables	Parameters		
	β	<i>S.E.</i>	<i>p-value</i>
Intercept	2.37	.41	< .01
Source	2.28	.55	< .01
Imaginability	.12	.05	.02
Load	.57	.53	.28
Source*Load	-1.52	.60	.01
Imaginability*Load	.02	.07	.83
Order	.03	.03	.36
Order*Source	-.07	.05	.17
Order*Load	-.04	.04	.32
Order*Source*Load	.12	.05	.02

More interestingly, the interaction between source credibility and cognitive load was significant ($\beta_4 = -1.52$, $t(1036) = -2.51$, $p = .01$), suggesting that participants in the high cognitive load condition were less affected by the information about the source credibility than those in the low cognitive load condition. On the other hand, the interaction between imaginability and cognitive load was not significant ($\beta_5 = .02$, $t(654) = .22$, $p = .83$), suggesting that the cognitive load manipulation did not reduce the effect exerted by mental imagery on believability judgments. This finding provides evidence that the impact of imagination on beliefs is effortless. That is, imagery-evoking claims tend to be believed without, or with only limited, cognitive processing (i.e., the simple

³² The between-products variability of the intercept coefficient was not significant ($\sigma^2(u_c) = .10$, $z = .98$, $p_{1-tailed} = .16$), the between-products variability of the source credibility coefficient (β_{1c}) was significant ($\sigma^2(v_c) = .59$, $z = 1.87$, $p_{1-tailed} = .03$), suggesting that the effect of the source credibility on believability differed across products, and the between-subjects variability of the vividness coefficient (β_{3s}) was not-significant ($\sigma^2(r_s) = .003$, $z = 1.24$, $p_{1-tailed} = .11$).

generation of a mental image induces a belief about the veracity of the statement), thus qualifying the process as automatic according to Bargh's criteria (1994).

As anticipated, the order of presentation also affected the believability judgments. Specifically, the three-way interaction between source credibility, cognitive load, and order was significant ($\beta_8 = .12$, $t(1027) = 2.27$, $p = .02$), suggesting that the moderating effect of cognitive load was reduced for the statements presented later in the list. This result indicates that the cognitive load manipulation had less effect on the last statements, perhaps because these were already more difficult to remember than those presented earlier in the list (primacy effect). No other effect was statistically significant.

Discussion

Study 2 suggests that the imaginability of a product claim affects believability judgments and this effect may not require (or require only limited) processing resources. In fact, the impact of imaginability did not change as a function of the cognitive load manipulation, whereas the effect of source credibility on believability (at least for the claims provided in the initial phase of the study) was greater when participants were under low, as opposed to high, cognitive load. Restricting processing resources might have inhibited participants' deliberate attempt to retrieve the information about the source credibility of the claim, but it did not reduce the effect of imaginability. Altogether, Studies 1 and 2 provide evidence that imagery-evoking product claims may induce implicit beliefs and that this process may be automatic. The next section focuses on the resistance of beliefs and attitudes generated by imagery-evoking messages and the boundary conditions characterizing this effect.

Unbelieving

Little is known about the resistance of imagery-based beliefs, yet this topic is of great importance to consumer research. Previous work on belief resistance has investigated topics such as the impact of different refuting cues on people's ability to discount information (e.g., Johar and Simmons 2000; Schul and Burnstein 1985; Schul and Mazursky 1990), but it has remained silent on the role mental imagery plays in that process. In this section, I propose that beliefs derived by imagery-evoking messages are stronger than those derived by abstract ones.

Beliefs derived from abstract messages, being held deliberately, should be easier to discard than those generated by imagery-evoking messages (all else being equal, other factors such as the fluency with which a stimulus is processed can affect the believability of a product claim [e.g., Schwarz 2004]). Once the credibility of a message has been questioned, there is little incentive to maintain purposely an abstract belief. In contrast, mental images, once generated, may become associated with a particular product (i.e., they become available in the mind of a consumer) and automatically triggered by it in a conditioning paradigm (e.g., Dadds et al. 1997)—e.g., the word Taco Bell triggers an image of cockroach eggs. For this reason, mental imagery may affect product evaluation even when the message that originated them has been discounted as unreliable—e.g., knowing that Sara's experience with Taco Bell burritos is an urban legend does not cancel the images of cockroach eggs. This may be seen as an instance of mental contamination, the process by which nonconscious mental processing can cause unwanted judgments (Wilson and Brekke 1994). People may be unaware that imagining can lead to beliefs and therefore do not discount its effect. Moreover, as shown by optical illusions, people may not even have control over the implicit component of their beliefs, even when aware of their existence. Thus, imagery-based beliefs, compared to abstract ones, should be more resistant to deliberate attempts to discard the credibility of the message. More formally, I propose that:

H2: Mental imagery generated by a message reduces the effect of discrediting cues on product evaluation.

Similarly, imagery-based beliefs should be more resistant to challenging arguments. A challenging piece of information can affect the deliberate component of a belief, which is under the control of the believer, more than its implicit counterpart, which is beyond the believer's control. Consistent with this reasoning, empirical evidence suggests that beliefs generated through imagination are particularly resistant to abstract counterarguments (e.g., probability values). Epstein and Pacini (2001), for example, showed that when asked to imagine drawing a winning red jelly bean from either a tray containing one red and nine white jelly beans or a tray containing 10 red and 90 white, undergraduate students preferred the bigger tray, despite knowing that—from a rational standpoint—both trays offered the same chance of winning. Presumably, participants found it easier to imagine drawing a winning bean from the larger tray because it contained more red beans (i.e., 10) than the smaller one (i.e., 1). More interestingly, the impression formed through imagination persisted even when participants were explicitly prompted to discount it. Accordingly, I propose that:

H3: Attitudes generated by imagery-evoking messages are more resistant to challenges than those generated by abstract messages.

Since the resistance of beliefs induced by imagery-evoking messages depends on the experience of mental imagery, factors undermining consumers' willingness or ability to imagine should reduce the resistance of these beliefs. One of these factors may be consumers' expectations about the credibility of a message. Being suspicious about the trustworthiness of a message (before its encoding) should reduce one's willingness to imagine product-related behaviors (e.g., why should I imagine product benefits that are not true?). Escalas (2007), for example, found that being skeptical about an ad reduces narrative transportation—a construct that overlaps with the imagery-evoking property of a text (Green and Brock 2000). For this reason, the timing at which the information

about the source credibility is provided may be critical in determining the resistance of beliefs induced by an imagery-evoking message. More formally, I propose that:

- H4:** The resistance of beliefs induced by imagery-evoking messages is reduced when discrediting cues (e.g., information about the source credibility) are presented before rather than after the encoding of the message.

Study 3

Study 3 examined whether mental imagery generated by a message reduces the effect of discrediting cues on product evaluations (Hypothesis 2). Mental imagery generated by a message should induce implicit beliefs that are not affected by discrediting cues, thus increasing the resistance of attitudes generated by imagery evoking messages. To test this hypothesis, participants were presented with a positive product description which was afterwards declared either trustable or non trustable. When the message is discredited, participants who experience high mental imagery should keep holding positive (implicit) beliefs about the product—because of the experience of mental imagery—and therefore report more favorable attitudes toward the product. Participants who experience little imagery, however, should be able to discount the information provided by the message because their beliefs are mainly held consciously.

Method

Design and participants. The study manipulated source credibility (credible vs. non-credible) in a between-subjects design and measured the amount of mental imagery experienced. After being presented with a description of a pair of running shoes featuring a new technology (adapted from a new brand not commercially available at the time of the study), the Active Cushioning

Technology, and a picture showing the functioning of the new technology, thirty-two participants (21 females; average age = 23 yrs, $SD = 3.3$ yrs) were asked to imagine experiencing the product's benefits through the following instructions adapted from Escalas (2007):

“To better understand the benefits of the new technology, we ask you to **close your eyes and take a moment to imagine yourself experiencing the benefits of Sprint-XT running shoes**. Picture yourself running through a park. You look down and see a pair of Sprint-XT running shoes on your feet. They feel remarkably light, comfortable, and stable. You notice a spring in your step. You feel the active cushioning system making your run exceptionally smooth. You feel the thrust coming from the front of your shoes transforming the impact of your footsteps into forward propulsion. Ultra-light and ultra-breathable, Sprint-XT is the perfect choice to improve the comfort and the quality of your run.”

After describing their imagination and reporting the extent of mental imagery experienced, participants were informed that the product description was either credible or non-credible. In the credible condition, participants read that: “The description you have just read is an extract from an article published in a famous sport magazine. The article, written by an independent journalist, has been based on results from lab tests conducted by the magazine”. In the non-credible condition, participants read that “the description you have just read is an extract from a promotional brochure prepared by the marketing department of Sprint. However, results from a test on the Sprint -XT performed by an independent magazine suggest that the Active Cushioning Technology does not provide any tangible benefit.” It is noteworthy that this credibility manipulation used a *refute cue* (i.e., a disclaimer that explicitly states that a product claim is faulty, rather than simply saying that the product claim is unsupported), a cue particularly effective in discrediting beliefs (Schul and Mazursky 1990).

Measures. After describing their imagination—but before receiving the credibility manipulation—participants evaluated the extent of mental imagery experienced (have you experienced mental images of Sprint –XT, have you experienced mental images of yourself wearing or using Sprint–XT, $\alpha = .88$).

Participants then received the credibility manipulation and subsequently evaluated the new pair of running shoes by reporting their attitude toward the product on a semantic differential scale (bad/good, undesirable/desirable) and their behavioral intention (intention to try the new shoes, chance to consider buying the shoes). An index of brand evaluation was formed by averaging the four items ($\alpha = .89$). As a manipulation check, respondents also reported the perceived credibility of the message (non credible/credible, untrustworthy/trustworthy, $\alpha = .97$; one participant failed to answer this question). Finally, involvement with the product was measured by asking how often participants go jogging (never/very often). In all cases, 11-point scales were used.

Results

Manipulation check. Participants in the non-credible condition thought that the message was less credible ($M = 5.57$) than those assigned to the credible condition ($M = 7.63$), $t(29) = -2.42$, $p = .022$, thus suggesting that the credibility manipulation was effective.

Brand evaluations. Brand evaluations were regressed onto the mean-centered value of the extent of imagination, a dummy variable for whether the message was credible or non-credible, and their interaction term. Results showed a significant effect of message credibility ($\beta = 1.42$, $t(28) = 2.23$, $p = .03$) and a significant effect of mental imagery ($\beta = .90$, $t(28) = 4.48$, $p < .001$), qualified by a significant negative interaction term ($\beta = -.63$, $t(28) = -2.14$, $p = .04$). As shown in Figure 4.3, when the mental imagery experienced was low (i.e., one standard deviation below the mean), discrediting the message reduced the evaluation of the running shoes (difference = 2.81, $t(28) = 3.07$, $p < .01$). However, when the mental imagery experienced was high (i.e., one standard deviation above the mean), discrediting the message had no effect on the evaluation of the running shoes (difference = .03, $t(28) = .03$, $p = .98$).

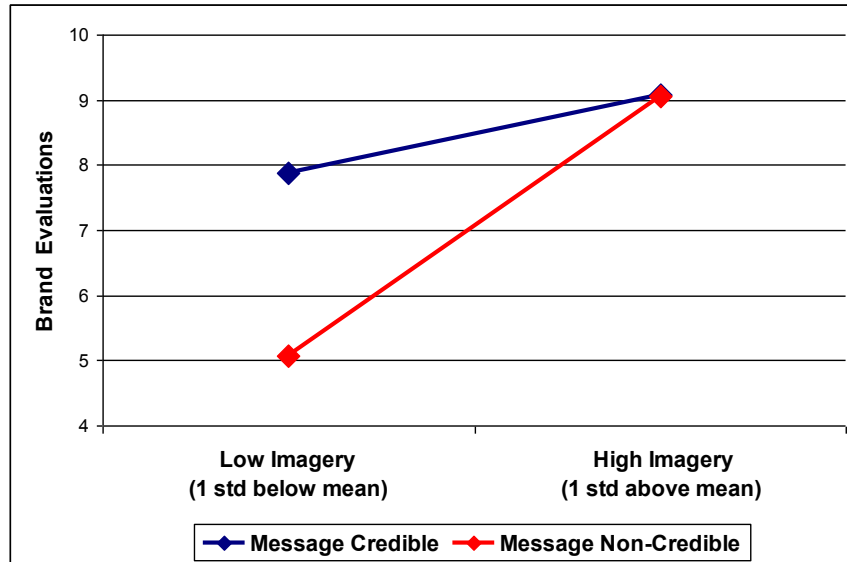


Figure 4.3. Brand evaluations as a function of message credibility and mental imagery.

Discussion

This study showed that knowing that a message is unreliable reduced brand evaluations among respondents who reported low imagination, but it had no impact among those who reported high imagination. This finding suggests that participants who experienced mental imagery kept holding their beliefs in the positive product attributes despite knowing that the message was unreliable. These findings provide evidence that imagery-evoking messages induce attitudes—and indirectly beliefs—more resistant than those induced by abstract messages.

One possible alternative explanation of this finding is that a third variable, namely involvement with the product, might have caused both the generation of mental imagery and belief resistance. High involvement might have motivated participants to both imagine and maintain positive beliefs about the product attributes even when the message was discredited. Against this possibility, I found no significant relationship ($r = .12, p = .53$) between the extent of imagination and the amount of running reported by participants, which is a plausible proxy for their involvement with the product used in this study.

An important implication of Study 3 is that imagery-appeals may be more persuasive than abstract ones when the source credibility is discredited. As shown in Figure 4.3, the experience of mental imagery affected product evaluation only when the message was not credible. When the message was deemed reliable, product evaluation was not affected by mental imagery, $\beta = .27$, $t(14) = 1.46$, $p = .17$. This finding, along with the results from the previous studies, suggests that imagery appeals are most effective when consumers cannot deliberately assess the validity of a claim, either because the claim has been discounted, no information about the message's reliability is provided, or processing resources have been constrained. The next study aims to show that beliefs induced by imagery-evoking message are also more resistant to challenging information.

Study 4

Study 4 investigated the resistance to challenging arguments of attitudes, and indirectly beliefs, generated by imagery-evoking messages (Hypothesis 3). Participants evaluated a restaurant after reading two contradictory reviews presented either in an imagery-evoking or an abstract manner. Due to their implicit components, beliefs induced by the imagery-evoking reviews are expected to have a stronger effect on product evaluation than those induced by the abstract reviews.

Method

Design and participants. The study had a 2 (first review: imagery vs. abstract) x 2 (valence order: 'positive-negative' vs. 'negative-positive') x 2 (second review: imagery vs. abstract) between-subjects experimental design. One hundred-and-fifty-two participants were asked to assume they were looking for a restaurant for an upcoming date and presented with a review, supposedly made by a food critic, of a restaurant that was mentioned to them by a friend. This review was unexpectedly followed by a second contrasting review, supposedly made by

five customers of the restaurant whose age happened to range between 50 and 60 (for the imagery-evoking consumer review, participants were informed that the review was representative of the opinion of five customers). The valence of the two reviews was also manipulated. In the “positive-negative” condition, the critic review—the first review—was positive and the customer review—the second review—negative. In the “negative-positive” condition, the food critic was negative and the consumer review positive (Appendix 4.2).

The two reviews provided information about the same restaurant attributes (atmosphere, quality of meat dishes, quality of seafood, and service). In the imagery-positive condition, I used the restaurant review created by Pham et al. (2001) which was rated as high imagery-evoking ($M = 6.09$ out of 7). In the abstract-positive condition, I used a modified version of the rating scheme proposed by Petrova and Cialdini (2005) that was designed to be low imagery-evoking. Two negative versions of the restaurant critique (one abstract³³ and one imagery-evoking) were created for this study. Before reading the imagery-evoking reviews, participants were asked to rely on their imagination to mentally picture the content of the description and to evaluate the restaurant, whereas participants were asked to be “careful” and “well-reasoned” in their reading and evaluation of the abstract restaurant review (adapted from Keller and McGill 1994).

33 The first (critic review) and the second (customer review) abstract reviews provided the same evaluation of the restaurant’s attributes. The former also provided details of each rating whereas the second review only reported the aggregated evaluation for each attribute. For example, the critic review provided an overall rating for the attribute atmosphere: 8/10, further detailed in subattributes: intimacy: 9/10 and elegance: 7/10”, whereas the customer review provided only the overall rating for the attribute atmosphere: 8/10 (Appendix 4.2). The four experimental conditions in which the second review was imagery-evoking were run at the second time. Since the structure of the positive and the negative imagery reviews was very similar (e.g., similar sentences, same order of presentation of the attributes), I made some minor changes to the negative review used in the “imagery vs. imagery” conditions (Appendix 4.2). This was done to avoid participants from noticing these similarities which might have induced doubts about the authenticity of the reviews. For example, the sentence “This place reminds me of a tacky little restaurant [...]”—which paralleled the positive review “This place reminds one of an elegant bistro [...]”—was replaced by “La Madeleine looks like a tacky little restaurant [...]”. One sentence was changed to ensure that the two reviews did not disagree on the objective description of the restaurant. The sentence “The dining room, with its old vinyl floor and stark white walls is bathed [...]” was changed with the similarly negative and vivid descriptions “With its creaking wooden floor and peach color walls, the dining room is bathed [...]”.

After being exposed to the first evaluation, participants in the imagery condition were asked to describe the mental images experienced, whereas participants in the abstract condition were asked to list any thoughts they had while reading the restaurant review. To ensure that participants did imagine the scene described in the consumer review (second evaluation), participants were asked to describe the content of their imagination. Respondents were not asked to report their thoughts on the abstract consumer review³⁴. To control for the possibility that imagery-evoking information is more attention-grabbing than abstract information (Herr, Kardes, and Kim 1991), both reviews were presented a second time on the same page just before respondents evaluated the restaurant, thus ensuring that both messages were equally accessible at the moment of the evaluation. Since all descriptions included meat dishes, observations from two vegetarian participants were not included in the analysis. The final sample consisted of 150 observations (103 females, 2 missing values on gender, 3 missing values on age; average age = 20.7 yrs, $SD = 3$ yrs).

Measures. After having described their mental imagery (when the first review was imagery) or thoughts (when the first review was abstract) while reading the review, respondents evaluated the degree to which they mentally represented the restaurant (“I imagined [thought] what it would be like to be in the restaurant”). After being presented with both reviews, respondents rated the restaurant on a five-item semantic differential scale (bad/good, not likeable/likeable, poor/excellent, undesirable/desirable, unpleasant/pleasant; $\alpha = .96$), the credibility of the food critic review and the consumer review on a two-item scale (reliable, trustable; $\alpha_{\text{food critic}} = .94$, $\alpha_{\text{consumer}} = .90$), and the perceived diagnosticity of each review on a two-item scale (“the evaluation made by the food critic [customers] is valuable to me,” “I took the evaluation made by the

³⁴ It is unclear whether not having asked participants to report their thoughts about the consumer abstract review (i.e., the second review) might have affected the results presented in this study. However, it is worth noting that any effect this procedure might have had would not change the conclusions drawn about the resistance of imagery-evoking messages because the critic imagery-evoking and the critic abstract reviews were both contrasted with the same abstract consumer review (see condition “imagery vs. abstract” and “abstract vs. abstract” in Table 4.2).

food critic [customers] into consideration in evaluating the restaurant, $\alpha_{\text{consumer}} = .90$, $\alpha_{\text{food critic}} = .81$).

Results

Manipulation check. Seventy-one participants from the same population as the main study were asked to evaluate one of the four versions of the restaurant review (observations from four participants were excluded; two because of missing data and two because detected as outliers, being more than 2.33 standard deviations above the mean of their condition). Results revealed that the attitudes elicited by the imagery and the abstract reviews were statistically indistinguishable ($M_{\text{imagery-positive}} = 7.36$, $M_{\text{abstract-positive}} = 7.64$, $t(33) = .99$, $p = .33$; $M_{\text{imagery-negative}} = 2.97$, $M_{\text{abstract-negative}} = 2.43$, $t(30) = 1.51$, $p = .14$). As expected, participants assigned to the imagery condition were more likely to generate a mental representation of the restaurant—i.e., imagining [thinking] of being in the restaurant—($M = 7.35$, $SD = 2.01$) than those assigned to the abstract condition ($M = 5.8$, $SD = 1.57$), $t(148) = -5.32$, $p < .001$. In addition, consumer and expert reviews were considered equally credible, $t(149) = -.55$, $p = .58$, and diagnostic, $t(149) = -.65$, $p = .52$.

Resistance of imagery-based beliefs (Hypothesis 3). The third hypothesis suggests that attitudes generated by imagery-evoking messages are more resistant to challenging arguments than are those generated by abstract ones. Accordingly, the evaluation of the restaurant should be biased in the direction of the imagery-evoking review. The average respondents' evaluation of the restaurant across the four conditions is presented in Table 4.2. Results from a full factorial ANOVA showed a significant order effect ($F(1,142) = 10.04$, $p < .01$), suggesting that the “positive-negative” order led to more favorable attitudes ($M = 5.35$) than the “negative-positive” order ($M = 4.60$). This effect was qualified by a two-way interaction with the “first review” ($F(1,142) = 10.24$, $p < .01$) and a two-way interaction with the “second review” ($F(1,142) = 4.09$, $p < .05$). The interaction

between the “first review” and the “second review” ($F(1,142) = 2.10, p = .15$) and the three-way interaction ($F(1,142) = .06, p = .81$) were not significant.

Table 4.2. Attitude Means as a Function of Review Type and Valence Order

Review Type	Valence Order	
	Pos.-Neg.	Neg.-Pos.
Imagery vs. Imagery	5.52 _a (n = 20)	4.43 _b (n = 15)
Imagery vs. Abstract	5.93 _a (n = 12)	3.99 _b (n = 18)
Abstract vs. Imagery	4.37 _a (n = 26)	4.92 _a (n = 26)
Abstract vs. Abstract	5.59 _a (n = 15)	5.06 _a (n = 18)

Note. Message type indicates whether the reviews were imagery-evoking or abstract. Valence order indicates whether the reviews were “positive vs. negative” or “negative vs. positive.” For means in the same row, different letters denote a significant difference at $p < .05$.

More specifically, the order in which positive and negative reviews were presented had a significant impact on the evaluation of the restaurant when the first evaluation was imagery-evoking ($M_{\text{pos_neg}} = 5.73, M_{\text{neg_pos}} = 4.21, t(142) = 4.25, p < .001$) but not when the first evaluation was abstract ($M_{\text{pos_neg}} = 4.98, M_{\text{neg_pos}} = 4.99, t(142) = -.02, p = .98$). This suggests that impressions formed by the imagery reviews were more resistant (i.e., the initial attitudes changed less) to the subsequent challenges than those formed by the abstract reviews. On the other hand, presentation order had a significant effect on attitude when the second review was abstract ($M_{\text{pos_neg}} = 5.76, M_{\text{neg_pos}} = 4.52, t(142) = 3.43, p < .001$) but not when the second review was imagery-evoking (attitude $M_{\text{pos_neg}} = 4.95, M_{\text{neg_pos}} = 4.67, t(142) = .88, p = .38$). This suggests that the second imagery-evoking review led to more change in the initial attitude (i.e., contrasted the impression generated by the first review) than did the second abstract review³⁵.

³⁵ As shown in Table 4.2, the imagery-evoking review did not change attitudes generated by the abstract review (abstract vs. imagery condition: 4.37 vs. 4.92). This result contradicts the conclusion drawn from the two-way interaction between “second review” and “message type”. One possible explanation for this finding is that the first abstract review might have activated an analytical processing mode that reduced the amount of mental imagery elicited by the second review, an explanation in line with the findings discussed in the first essay of this dissertation (i.e., an abstract stimulus might activate an analytical, non-imagery mindset).

Are imagery-based beliefs consciously held? To prove respondents' unawareness of the stronger effect exerted by the imagery review, I tested whether the diagnosticity of the two reviews differ across conditions. A full factorial MANOVA with diagnosticity of the consumer and critic review as dependent variables and first review, second review, and valence order as factors showed no significant effects (all p 's > .16). Similarly, a full factorial MANOVA with trust in the consumer and trust critic review as dependent variables also revealed no significant effects (all p 's > .12). These findings—along with the fact that the different reviews were considered equally trustable and diagnostic (reported in the manipulation check section)—suggest that participants were not aware of the effect of imagination on their beliefs/attitudes.

Discussion

Results from Study 4 suggest that, when contrasted with each other, imagery-evoking messages exert a stronger impact on product evaluation than do abstract ones. Although a great deal of research has studied the impact of imagery-evoking information on judgments and decision-making, only few studies have investigated the resistance of attitudes and beliefs generated by imagery-evoking messages (Herr et al. 1991; Reyes, Thompson, and Bower 1980; Shedler and Manis 1986). One of the most significant contributions in this direction has been provided by Herr and colleagues (Herr et al. 1991) who drew on the accessibility-diagnostics model to suggest that vivid information—being more attention-grabbing—is more likely to be used to form an evaluation of a product than is abstract information (thus biasing product evaluation), unless more diagnostic evidence becomes available. This study builds on this work in three ways. First, Herr and colleagues (1991) contrasted information provided through a face-to-face communication (i.e., a confederate telling that s/he had previous positive/negative experience with the product) with pallid information provided on paper. For this reason, their findings might have been due to the different media (i.e., face-to-face vs. paper), rather than differences in the imagery-evoking quality of the messages. Second, by presenting both imagery-

evoking and abstract reviews on the same page, I controlled for the different accessibility of the two types of information at the moment of evaluation, thus providing evidence that the advantage of imagery-evoking messages goes beyond their ability to grab consumers' attention. Furthermore, the effects of imagery-evoking messages on implicit beliefs could not be explained by the different diagnosticity of the reviews. Altogether, these considerations suggest that the accessibility-diagnosticity model cannot account fully for these results.

Another possible explanation for these findings is that the imagery-evoking review might have induced more self-generated causal explanations of why the restaurant was either good or bad (e.g., French restaurants in the downtown area are not good) and these explanations persisted despite the challenging review (Anderson 1983a). To rule out this possibility, the next study control for the amount of message elaboration elicited by different types of messages.

Study 5

Study 5 tested whether the resistance of imagery-based beliefs is reduced when discrediting cues are presented before rather than after the encoding of the message (Hypothesis 4). Participants were presented with one of two negative consumer reviews of the spa Luce, a fictional spa resort supposedly located in the campus area. One review "required" participants to imagine the spa (by means of imagery instructions and a vivid description of the resort), whereas the other gave participants the opportunity—but not the obligation—to imagine the spa. The customer reviews were always deemed unreliable. However, some participants received the information discrediting the message before reading the review (cue-before conditions) and others received the same information after reading the message (cue-after conditions).

In the cue-before conditions, participants should be less motivated to imagine the spa (i.e., why should I imagine a product description that is not trustworthy?) and show greater discounting of the consumer review. This, however, should occur only when participants have the opportunity to adopt either an imagery or an analytical processing mode when evaluating the review (i.e., in the “imagination optional” condition). No difference between the “cue-before” and the “cue-after” conditions was expected when respondents were explicitly required to imagine the spa since instructions to imagine should “force” participants to generate mental images despite knowing that the review may not be reliable.

Method

Design and participants. Seventy-five participants completed³⁶ an online study in which they were assigned to one of the conditions of a 2 (message type: imagination required vs. imagination optional) x 2 (discrediting order: cue before vs. cue after) between-subjects experimental design. In the “imagination required” condition, participants were asked to rely on their imagination to experience and evaluate a new spa while reading an imagery-evoking consumer review describing the atmosphere, the quality of the treatment, and the post-treatment benefits of the resort (see Appendix 4.3; imagery instructions were adapted from Keller and McGill [1994]). In the “imagination optional” condition, participants were presented with ratings for the same attribute accompanied by a short description (see Appendix 4.3). In this condition, respondents had the option of evaluating the spa either by imagining the place—through the short attribute descriptions— or by being analytical—through the rating scheme.

The message credibility was manipulated by stating that 80% of the reviews posted on the website from which the review was taken were completely

³⁶ Observations from participants who did not answer all the questions of the online survey were excluded from the analysis. Among these participants, one was excluded for not having reported demographic (i.e., age and gender) and contact information needed for compensation purposes. Also, this participant described a positive imagining of the spa that contradicted the resort description presented in the experiment.

unrepresentative of the product described, and thus should be discarded (see Appendix 4.4). In the “cue before” conditions, the discrediting information was provided before the review, whereas in the “cue after” condition, the discrediting information followed the consumer review. At the beginning of the study, participants were informed that, at the end of the study, they would be asked a few questions about the consumer review. Observations from three participants who could not recall any of the attributes presented in the review and/or reported attributes that obviously contradicted the review (e.g., customer service is good) were eliminated from the analysis (two observations from the imagination optional/cue after condition and one observation from the imagination required/cue before condition). Observations from a fourth participant in the imagery required/cue before condition were eliminated because his/her imagination was not coherent with the description of the spa (i.e., s/he reported experiencing positive images of the spa). The final sample consisted of 71 observations (54 females, average age = 22.1 yrs, $SD = 3.7$ yrs; one missing value on age due to a participant’s typo).

Measures. After reading the consumer review, participants reported the extent to which they pictured or imagined the spa (I have pictured/imagined the spa: strongly disagree/strongly agree) and their attitudes toward the spa on a semantic differential scale (bad/good, not likable/likable, poor/excellent, undesirable/desirable, $\alpha = .96$). In the two “imagery required” conditions, participants also reported the vividness of their mental imagery (clear, detailed, vivid; $\alpha = .90$), and the experienced difficulty or ease in creating the mental image(s) (anchored on extremely difficult/extremely easy; adapted from Ellen and Bone’s, 1991).

To test for possible alternative explanations, respondents listed, after evaluating the spa, all the reasons they could think of why the review should not be trusted, and all the reasons why the review should be trusted. Ten lines for each type of reason appeared on two separate web pages; after reporting all the reasons against the credibility of the message, participants moved to the next

screen and reported their reasons favoring the message credibility. As a manipulation check, participants also recalled the “objective” probability that the consumer review was not reliable (i.e., 80%). Respondents’ general trust toward online consumers review was also measured (In general, do you trust online consumer reviews? not at all/very much). Seven-point scales were used in all cases but for the measure of objective probability recall, which was measured on a 10-point scale (10%-100%).

Manipulation Check

Mental imagery elicited by the two messages. Forty-three³⁷ participants from the same population as the participants of the main study read (after completing this study, these participants partook in Study 1) either the “imagination required” or the “imagination optional” review without being exposed to the discrediting cue and reported the extent of mental imagery elicited (I have pictured/imagined the spa: strongly disagree/strongly agree). Observations from four participants (two in the “imagination required” and two in the “imagination optional” condition) who could not recall any of the attributes described in the customer review and/or reported attributes that obviously contradicted the review were eliminated from the analysis along with observations from a fifth participant from the “imagination required” condition whose imagination was not coherent with the description of the spa. The final sample consisted of 38 observations (25 females; average age = 21.9 yrs, $SD = 3.4$ yrs). The two reviews were judged as equally imagery-evoking ($M_{\text{required}} = 5.91$, $M_{\text{optional}} = 5.38$, $t(35) = 1.28$, $p = .21$) even when controlling for participants general trust toward online reviews ($\beta = .11$, $t(35) = .67$, $p = .51$). However, in the main study the extent of mental imagery generated by the consumer reviews was affected by both the type of message and the order with which the discrediting cue was presented. An ANCOVA with general trust toward online consumers review

³⁷ Participants who did not terminate the online survey were excluded from the analysis. One participant was not included in the analysis for not providing information on general trust toward consumer reviews, which was used as a covariate in the analysis reported below, as well as demographic and contact information.

as the covariate, revealed a significant main effect of message type ($F(1, 66) = 18.41, p < .001$) and a marginally significant effect of discrediting order ($F(1, 66) = 3.18, p = .08$) qualified by a significant interaction ($F(1, 66) = 4.00, p = .05$). When participants were required to imagine the Spa, no difference was found between the “cue before” ($M = 5.94$) and “cue after” condition ($M = 5.87$), $t(66) = 0.17, p = .87$; the order manipulation did not affect vividness of imagination ($p = .32$) nor ease of imagination ($p = .22$). However, in the “imagination option” condition, the “cue before” elicited less mental imagery ($M = 3.87$) than did the “cue after” conditions ($M = 5.11$), $t(66) = -2.56, p = .01$. General trust toward online customer reviews was positively associated to the extent of mental imagery experienced, $\beta = .33, t(66) = 2.47, p = .02$.

Probability recall. Recalls of the probability that the review was unreliable (i.e., 80%) were not affected by message type, order effect, nor their interaction (all p 's $> .28$), as revealed by an ANCOVA with general trust toward online consumers review as covariate ($p = .15$).

Results

The fourth hypothesis states that the resistance of beliefs generated by imagery-evoking statements is reduced when the discrediting information is provided before, rather than after, the encoding of the message. Receiving the discrediting information before the imagery-evoking review should decrease participants' motivation to imagine, but only when they are not requested to imagine. For this reason, no order effect should be found in the “imagination required” conditions. Respondents' evaluations of the spa across the four conditions are presented in Figure 4.4. An analysis of variance having product evaluation as a dependent variable revealed a significant interaction between the

type of message and the order of presentation of the cue, $F(1, 67) = 3.93, p = .05^{38}$.

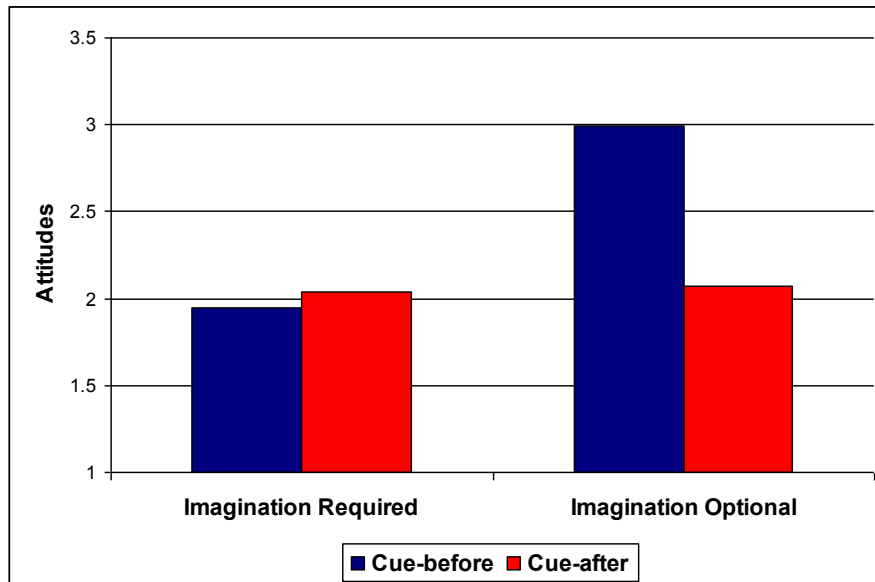


Figure 4.4. Mean values of attitudes as a function of type of message (imagination optional vs. imagination required) and discrediting order (cue before vs. cue after).

When participants had the opportunity, but not the obligation to imagine, the spa was evaluated less negatively in the “cue-before” condition ($M = 2.99$) than in the “cue after” condition ($M = 2.07$), $t(67) = 2.45, p = .02$. This suggests that respondents discounted the negative review (i.e., reported less negative attitudes) when the discrediting cue was presented before. However, there was no difference between the “cue-before” ($M = 1.95$) and the “cue-after” conditions ($M = 2.04$), $t(67) = -.26, p = .79$, when participants were requested to imagine, thus suggesting that the order of presentation of the discrediting cue did not affect participants’ evaluations of the spa.

³⁸ General trust was not included in this analysis since there was a marginally significant ($p = .06$) three-way interaction among order of presentation, type of message, and general trust which violated the homogeneity of regression assumption required by ANCOVA. The inclusion of general trust as a covariate does not change the conclusions drawn from the results here reported (the interaction effect between order of presentation and type of message is significant at a p -value of .056).

Alternative Explanations

Amount of elaboration. The different amount of message elaboration elicited in the four conditions (e.g., reasons to believe that the message was reliable) provides a possible alternative explanation for these findings. The “imagination optional” review may have elicited a heuristic information processing strategy that led respondents to completely ignore the message in the “cue-before” conditions. Thus, respondents in the “imagination optional” conditions may have generated fewer reasons supporting the credibility of the message when the discrediting cue was presented before rather than after the review. In turn, this—and not mental imagery per se—may have caused the different evaluations of the spa when respondents read the “imagination optional” review.

Table 4.3 shows the number of thoughts generated by respondents across the four conditions. A planned contrast revealed that in the “imagination optional” conditions, the number of reasons favoring the message credibility was not affected by the order with which the discrediting cue was presented ($M_{\text{cue-before}} = 1.65$, $M_{\text{cue-after}} = 1.64$, $t(66) = .03$, $p = .98$), hence providing evidence against the elaboration explanation. Trust toward online consumer reviews was used as covariate in the above analysis.

Table 4.3. *Adjusted Number of Thoughts as a Function of Message Type and Order of Presentation*

	Imagination Optional		Imagination Required	
	<i>Cue-before</i>	<i>Cue-after</i>	<i>Cue-before</i>	<i>Cue-after</i>
# Thoughts against credibility	4.16 _a	3.21 _{a,b}	3.86 _a	2.65 _b
# Thoughts pro credibility	1.67 _a	1.66 _a	2.63 _a	2.52 _a
Believability index [(#against -#pro)/ total # thoughts]	.46 _a	.30 _{a,b}	.22 _{b*}	.01 _{c*}

Note: Means in the same row that do not share the same subscript differ at p -value $< .05$; * denotes a p -value of .054.

Different types of elaboration. The order of presentation of the disclaimer might have affected the type of elaboration elicited by message (e.g., the favorability of the number of message relevant thoughts) and, in turn, product evaluations. Previous research has shown that, under high systemic processing, expectancies about the credibility of a message can bias the way in which people process information. Knowing that a message is not reliable can affect the number and valence of the thoughts elicited by the message (Chaiken and Maheswaran 1994; Tormala, Brinol, and Petty 2007). This effect, however, occurs only when the message is ambiguous; source credibility, in fact, does not affect the processing of extremely strong or extremely weak arguments (Chaiken and Maheswaran 1994). Following this reasoning, the “imagination optional” review might have been perceived as more ambiguous than the “imagination required” one that provided a more detailed description of the spa. Hence, presenting the discrediting cue before the “imagination optional” message might have elicited more thoughts against the credibility of the message and/or fewer thoughts favoring the credibility of the message. To test this alternative explanation, I created a “believability index” (adapted from Tormala et al. 2007) by subtracting the number of thoughts favoring the reliability of the message from the number of thoughts against the reliability of the message and dividing this difference by the total number of thoughts generated. Positive values of the index denote that a respondent generated more thoughts against the reliability of the review than thoughts favoring it. Contrary to the “type of elaboration” explanation, the believability index in the “imagination optional” conditions was not affected by the order with which the discrediting cue was presented ($M_{\text{cue-before}} = .46$, $M_{\text{cue-after}} = .30$, $t(66) = 1.39$, $p = .17$). Moreover, the order under which the discrediting cue was presented did affect the believability index in the “imagination required” conditions ($M_{\text{cue-before}} = .22$, $M_{\text{cue-after}} = .01$, $t(66) = 1.96$, $p = .05$), an effect that, as shown in the table above, was mainly driven by the generation of thoughts against the credibility of the review. This result also speaks against the “type of elaboration” as an alternative explanation since the order with which the cue was

presented did not affect attitudes in the “imagination required” conditions. Trust toward online consumer reviews was used as covariate in the above analysis.

Discussion

Results from Study 5 shed light on the boundary conditions qualifying the resistance of the beliefs generated by imagery-evoking claims. Knowing that a message is not reliable discourages consumers from imagining product-related behaviors (e.g., experiencing the spa) and reduces attitude resistance. When “forced” to imagine, however, a participant’s ability to discount the content of the message is compromised. This finding suggests that the extent of imagination generated by a message may increase belief resistance. Hence, inducing doubts in an imagery-evoking product claim before the encoding of the message may be the most effective way to reduce the resistance of beliefs generated by imagery-evoking appeals.

It is worth noting that these findings do not imply that overtly fictional imagery-evoking messages cannot be persuasive. Green and Brock (2000), in fact, showed that reading an overtly fictional imagery-evoking narrative (e.g., about the murder of a little girl by a psychiatric patient) can affect people’s attitudes toward issues related to the content of the narrative (e.g., confinement of psychiatric patients). These beliefs were induced by participants’ transportation into the narrative (Green and Brock 2000)—a construct that overlaps with the imagery-evoking property of a text. Hence, people may be motivated to imagine a scenario despite knowing that it is fictional. However, in the context of promotional messages, where imagination is used to evaluate the benefits of a product, consumers are likely to have no motivation to engage in the imagination—or they may even be likely to actively disengage from the imagination (Escalas 2007)—when a message is known to be unreliable. The fact that the messages presented in this study were designed to persuade people might explain the difference between the results presented here and those found in Green and Brock’s work.

Finally, it is worth noting that respondents' reasons to trust or not to trust the reviews could not account for the findings discussed above. This provides further evidence that the resistance of beliefs generated by imagery-evoking messages may be because of the generation of implicit beliefs.

General Discussion

A growing number of studies documented the impact of mental imagery on attitudes and behavioral intentions (e.g., Escalas 2004a; Escalas 2007; Gregory et al. 1985; Gregory et al. 1982; Keller and McGill 1994; McGill and Anand 1989; Petrova and Cialdini 2005, 2007; Shiv and Huber 2000; Thompson and Hamilton 2006). This essay adds to this literature by providing evidence that imagination induces beliefs and attitudes that may not depend on the credibility of the message source. This work also contributes to the literature on belief correction (e.g., Johar and Simmons 2000; Schul and Burnstein 1985; Schul and Mazursky 1990) by showing that beliefs induced by imagery-evoking product claims may be more resistant than those generated by abstract ones.

Specifically, Study 1 suggested that high imagery-evoking product claims are considered more believable than abstract ones when no information about the credibility of a message is provided. Study 2 provided evidence that the effect of imagination on beliefs does not require processing resources. Study 3 showed that the extent of mental imagery elicited by a message may reduce the effect of source credibility on product evaluation, and Study 4 indicated that impressions derived from imagery-evoking messages may be more resistant to challenges than those derived from abstract ones. Finally, Study 5 investigated the boundary conditions of these findings by showing that the resistance of attitudes induced by imagery-evoking messages may be attenuated when discrediting cues are provided before rather than after the encoding of the message.

Overall, these results suggest that the effect of mental imagery on beliefs and attitudes may be automatic. Study 2, in fact, provided evidence that the impact of imaginability on believability judgments occurred without (or with only limited) cognitive processing. In Study 4, the advantage of the imagery-reviews over abstract ones could not be explained by neither their perceived trustworthiness nor their diagnosticity. Similarly, Study 5 showed that respondents' (deliberate) reasoning about the credibility of a consumer review (i.e., number of reasons for discounting versus reasons for not discounting the review) could not account for the greater resistance of attitudes induced by mental imagery. These findings provide evidence that the generation of imagery-beliefs may occur effortlessly and outside one's awareness, thus qualifying the underlying process as automatic according to Bargh's (1994) criteria.

Links to Existing Theories

Imagination and probability estimates. Previous research has shown that imagining an event increases the subjective estimated likelihood of its occurrence (Carroll 1978; Gregory et al. 1985; Gregory et al. 1982; Sherman et al. 1985). In one of such studies (Gregory et al. 1982), for example, participants who imagined being arrested for petty theft or shop lifting thought, when questioned 30 minutes later in an unrelated context, that they would be more likely to commit these crimes in the future than participants who read an unrelated scenario. In another study (Sherman et al. 1985), university students imagined contracting a disease whose symptoms were either easy or difficult to imagine and rated the probability of contracting the disease. Participants thought that they were more likely to contract the disease when the symptoms were easy, as opposed to difficult, to imagine. These results have been explained through the simulation heuristic (Kahneman and Tversky 1982) which suggests that the ease with which an event is mentally simulated affects likelihood estimates. Imagining an event increases its cognitive availability which, in turn, affects ease of imagination and likelihood judgments about the imagined event (Carroll 1978). Similarly, the vividness with

which an event is described can increase its ease of imagination (Petrova and Cialdini 2005).

Although empirically similar to the work presented in this essay, these findings do not necessarily postulate (nor provide evidence for) the existence of implicit imagery-based beliefs. Imagination can, in fact, be used as a deliberate strategy to simulate how a given event (i.e., committing a crime, contracting a disease) may unfold (Kahneman and Tversky 1982). For example, to estimate the probability of having a bike accident, one may imagine different ways in which one can get hit by a car while riding a bike to work. The ease with which these images are generated may be *deliberately* used as a proxy of the likelihood of being involved in such an accident. Thus, this essay builds upon this stream of the literature by showing that the effect of imagination goes beyond the estimation of probability and that the effect of imagination on believability judgments may be automatic.

Narrative transportation and message strength. Previous research has shown that imagining oneself enjoying the benefits of a product can lead to positive evaluations, independently of the strength of the argument of the message (Escalas 2007). This effect is believed to be because of the reduction of negative cognitive responses, the realism of the experience imagined, and the eliciting of affective responses (Escalas 2007; Green and Brock 2000) promoted by the imagination. When imagining, people are more affected by the quality of their imagination than the objective features of the product (Keller and McGill 1994; Petrova and Cialdini 2005). This essay builds upon these findings by showing that the advantage of imagination goes beyond the encoding phase of an imagery-evoking message. Since the refutation cues (Study 3) and the challenging arguments (Study 4) were presented after the message was encoded, the findings presented here cannot be accounted for by the way in which the message was processed (e.g., more positive feelings and fewer counterarguments).

What about emotions? In this work, I did not control for the effect of emotions elicited by imagery-evoking messages. Consequently, it may be argued that the resistance of imagery-based beliefs is caused by the feelings and emotions generated by imagery-evoking stimuli rather than the experiencing of mental images per se. This is one of the limitations of this work; future research is therefore needed to rule out empirically this alternative explanation. However, there are two reasons to suggest that emotions may not account for the presented results. First, results from Study 1 and Study 2 suggest that imagery-evoking claims are more believable than abstract ones. Since the statements used in these studies (see Appendix 4.1) appear to not be (or be scarcely) affective-laden, it may be concluded that the relationship between imagination and beliefs cannot be explained by affect. Second, the results found in this essay contradict previous research providing evidence for a matching effect between the base of attitudes and the nature of the challenging arguments. That is, affectively based messages are more effective in changing affectively based attitudes (i.e., those generated by feelings and emotions associated with a stimulus) than cognitively based ones, whereas the cognitively based messages are more effective in changing cognitively based attitudes (Fabrigar and Petty 1999). If affect were responsible for these results, imagery-evoking messages should be more effective in changing attitudes generated by other imagery-evoking messages—which presumably would have an affective base—than those generated by abstract messages, which presumably would have a cognitive base, and abstract messages should be more effective in changing attitudes generated by other abstract messages. In Study 2, however, there was no evidence for a matching effect. The significant two-way interaction between type of review and valence order suggested that the imagery-evoking reviews were—on average—more effective than abstract ones in changing initial attitudes, independently of whether the first review was imagery-evoking or abstract. In light of these findings, it seems unlikely that the resistance of imagery-based beliefs can be explained by the effect of feelings and emotions elicited by a message.

Implications for Practitioners and Policy-Makers

Findings from this essay have two main implications. On the one hand, these results suggest that imagery-evoking appeals are more believable than abstract ones when consumers cannot deliberately decide to hold a belief. One important implication of this result is that imagery-evoking appeals may be especially effective when consumers lack the knowledge or the competencies to assess the validating of a claim; examples might include the promotion of radically new products, whose benefits may be uncertain to consumers, or the introduction of new brands that do not have an established reputation.

On the other hand, consumers often need to adjust or even discount beliefs about products. To support this process, regulations have been implemented to ensure that product disclaimers, such as health warnings and nutrition labels, are adequately processed by consumers. These regulations fix the size of disclaimers and require them to be placed in proximity of a product claim (Johar and Simmons 2000). This essay suggests that even when properly encoded, product disclaimers may be ineffective in changing beliefs generated by imagery-evoking messages. However, ensuring that disclaimers are encoded before the presentation of imagery-evoking appeals may be an effective approach to reduce the pervasiveness of imagery-evoking appeals.

The topic discussed in this work has wide implications for marketing practice as people often imagine consumption-related behaviors (e.g., MacInnis and Price 1987; Petrova and Cialdini 2007; Shiv and Huber 2000) to form impressions about products that may need to be adjusted or even discounted. As shown in the five studies, these findings apply not only to the case of imaginations prompted by messages that are later found to be unreliable but also to cases in which consumers need to integrate contradictory pieces of evidence presented either in an imagery-evoking or pallid format (e.g., advertising vs. consumer reports). Similarly, in the context of decisions under uncertainty, imagination may be used to evaluate the positive consequences of a decision (e.g.,

winning a lottery) and abstract information may be used to assess its risk (e.g., the probability losing money), a combination where consumers may find themselves giving into imagined temptations, partially because of the experienced ease in refuting abstract beliefs.

CHAPTER 5 — SUMMARY AND CONCLUSION

Mental imagery plays an important role in marketing practice both because consumers spontaneously use their imagination to evaluate the benefits of a product (e.g., MacInnis and Price 1987; Markus and Ruvolo 1989; Petrova and Cialdini 2007; Shiv and Huber 2000) and because advertising prompts consumers' imagination as a strategy of influence (e.g., Petrova and Cialdini 2007). For these reasons, understanding when and how imagery processing is an effective means of persuasion is critical to marketing research. Although our understanding of the phenomenon has radically improved over the last few decades, many questions remain unanswered. This thesis provides a contribution in this direction by investigating *i*) the use of priming procedures to prompt and facilitate imagery processing, *ii*) the persuasiveness of self-images, and *iii*) the resistance of beliefs and attitudes induced by mental imagery. In this last chapter, I summarize the main findings and contributions of the three preceding essays and discuss future avenues of research.

Summary of the Findings and Contributions

In Essay I, I suggested and provided evidence that imagery-evoking tasks may activate an imagery mindset that can increase the persuasiveness of imagery-evoking advertisements subsequently presented, an effect that may be because of a simultaneous increase in one's propensity to imagine—the *prompting effect*—and a facilitation of imagery processing—the *facilitating effect*.

In the first study, reading imagery-evoking, as opposed to abstract, descriptions of an apartment and a restaurant increased (decreased) purchase intentions toward a tropical resort whose description was imagery-evoking (abstract). In Study 2, making judgments about the size of two items—a task that

activates imagery processing (Paivio 1975)—led to more favorable evaluations of a resort described in an imagery-evoking way.

The first essay also examined how the activation of an imagery mindset interacts with the presence of imagery instructions and a person's dispositional imagery vividness. In the absence of imagery instructions, the activation of an imagery mindset should prompt imagery processing that increases the persuasiveness of imagery-evoking advertisements for individuals high in dispositional imagery vividness (Petrova and Cialdini 2005). Study 3 supported this prediction by showing that in the absence of imagery instructions, activating an imagery mindset increased preferences toward a cell phone with positive vivid attributes, as opposed to positive abstract attributes, but only for participants high in dispositional imagery vividness. As expected, activating an imagery mindset had no effect on choices when participants were low in dispositional imagery vividness.

In the presence of imagery instructions, consumers' propensity to imagine should be high regardless of the activation of an imagery mindset because imagery instructions prompt people's imaginations despite the activation of an imagery mindset. Therefore, the prompting effect should not have a differential effect on persuasion. The activation of an imagery mindset, however, should facilitate imagery processing and increase the persuasiveness of imagery-evoking advertisements when dispositional imagery vividness is low. The activation of an imagery mindset, however, should have no effect for individuals high in dispositional imagery vividness—who can easily generate mental images regardless of the activation of an imagery mindset. Study 4 supported this prediction. Memorizing and retrieving a series of pictures, as opposed to performing a numerical task, increased attitudes toward an imagery-evoking restaurant review (preceded by imagery instructions) for individuals low in dispositional imagery vividness, but it had no effect on individuals high in dispositional imagery vividness.

Altogether, these findings provide evidence that an imagery mindset may increase the persuasiveness of imagery-evoking advertisements and, at the same time, may reduce the risk that imagery processing will backfire when consumers have low dispositional imagery vividness. From a managerial point of view, this work suggests that the placement of an imagery-evoking advertisement can determine its persuasiveness. For example, an ad that asks consumers to imagine a tropical vacation might be more persuasive when presented after an imagery-evoking narrative than after, for example, a Sudoku puzzle (a low imagery-evoking task).

In Essay II, I suggested that the persuasiveness of future self-images depends on whether consumers focus on the dispositional characteristics of their future selves—being focus—or the subjective experience of their future selves—experiencing focus—and the visual perspective through which a scene is imagined. In an experiencing focus, future self-images may be more persuasive when imagined through a first-person perspective than a third-person perspective, whereas the opposite may hold true in a being focus.

Study 1 showed how respondents who imagined becoming a better student (being focus) evaluated a book that provided tips to improve school performance more positively when the scene was visualized from a third- rather than a first-person perspective, whereas those who imagined the feelings after receiving a higher grade (experiencing focus) evaluated directionally (but not significantly) more positively the book when the scene was visualized through a first-person perspective. Study 2 complemented these findings by showing that a first-person perspective increased behavioral intentions toward a tropical vacation destination (experiencing focus). Study 3 showed that unfamiliar consumption experiences, as opposed to usual ones, may tend to be imagined through a third-person perspective which, in turn, enhance the persuasiveness of future self-images in a being focus, as opposed to in an experiencing focus. Finally, Study 4 provided empirical evidence suggesting that visual perspective may be independent from future self-focus.

This essay provides two main guidelines to improve the effectiveness of advertisements prompting self-images. First, marketers can manipulate visual perspective to match one's future self-focus. Future self-images that activate a being focus (e.g., future achievements, symbolic consumption) might be more persuasive when visualized through a third- rather than a first-person perspective, whereas the opposite may hold true for self-images associated with consumption situations that activate an experiencing focus. Second, marketers can activate either a being or experiencing focus to match a consumer's visual perspective. In this regard, Study 3 suggested that unfamiliar consumption situations, such as the use of a new product, tend to be visualized through a third-person perspective that may increase the persuasiveness of self-images in a being focus (e.g., imagining oneself becoming more efficient) as opposed to in an experiencing focus (e.g., imagining oneself experiencing positive feelings).

In Essay III, I suggested that imagery-provoking messages (e.g., narratives) induce implicit beliefs that are independent from the message's credibility. In line with this prediction, participants in Study 1 considered high imagery-evoking product claims to be more believable than low imagery-evoking ones when uncertain about the credibility of a message. Study 2 provided evidence that the effect of imagination on beliefs may not require processing resources.

In addition, I proposed that attitudes and beliefs generated by imagery-provoking messages, being held implicitly, may be more resistant to change than those induced by abstract ones. Supporting this consideration, Study 3 showed how the extent of mental imagery elicited by a message may reduce the effect of source credibility on product evaluation, and Study 4 provided evidence that the impressions derived from imagery-evoking messages may be more resistant to challenges than those derived from abstract ones. Finally, Study 5 suggested that the resistance of imagery-evoking messages might be attenuated when the discrediting cues are provided before rather than after the encoding of a message.

Given that people often imagine certain consumption-related behaviors when forming product impressions, these findings have significant implications for marketing practice, where impressions are often subject to adjustments. This essay also suggests that imagery-evoking advertisements may be more persuasive than abstract ones when the credibility of a source is uncertain (Studies 1 and 2) or is discredited after the encoding of the message (Study 3).

As discussed in the first chapter, literature on mental imagery proposes that imagery-evoking advertisements persuade when the mental imagery evoked *i)* is fluently experienced, *ii)* strengthens the effects of positive product attributes on product evaluation (i.e., positive cognitive and affective associations elicited by the content of the imagination), or *iii)* weakens the effect of negative product attributes on product evaluation (i.e., weak arguments and negative product attributes that are either abstract or contradict the overall product description). The contributions of this dissertation can be summarized in terms of the three conditions outlined above. The first essay showed that fluency of imagination and the activation of imagery processing may be affected by the tasks performed by consumers before encountering the advertisement. This contributes to our understanding of the triggers and facilitators of imagery processing. The second essay showed that the positive attributes of self-images may be enhanced by matching future self-focus and visual perspective (i.e., first-person and experiencing focus /third-person and being focus). Finally, the third essay provided evidence that imagery-evoking advertisements are more resistant to discrediting cues presented after the message has been processed.

Challenges and Limitations

The study of imagery processing poses several challenges, most of which are related to the nature and measurement of imagery processing. These challenges must be acknowledged to better understand the implications and the

limitations of the work presented here and, more generally, of this line of research.

The first challenge is that mental imagery is an idiosyncratic experience. As such, the extent and quality (e.g., vividness) of imagery processing might not be entirely determined by an advertisement. The quality and the content of the mental images evoked by an advertisement are effected by individual differences (e.g., dispositional imagery vividness) as well as person-stimulus variables (e.g., Paivio 1971). This might include one's general imagery ability (e.g., vividness, control) but also one's knowledge of, familiarity with, and attitudes toward the to-be-imagined scenario (MacInnis and Price 1987). Since the same stimulus might elicit imagery processing for some but not all consumers, we cannot always make a clear-cut distinction between imagery- and non-imagery-evoking advertisements.

There are also methodological consequences to the idiosyncratic nature of mental imagery. First, since a response to an imagery-evoking ad may be subject to many influences, it is not surprising that I discovered a significant proportion of outliers in the studies reported —individuals whose responses depart systematically from the population's average response. In addition, high variability in participants' responses to a stimulus can inflate the error term and reduce the power of the statistical analyses. To overcome this limitation, it is important to control for dispositional individual differences in imagery abilities and predisposition. However, although such controls alleviate the problem, they have two disadvantages. First, measures of dispositional imagery differences are not always psychometrically valid (e.g., Bagozzi 2008) and thus may not serve their intended purpose. Also, controlling for dispositional differences cannot account for the variability generated by person-stimulus contingencies. For example, people who have visited a Caribbean Island can probably generate more vivid images of a tropical vacation than those who have not had such an experience (since the former have relevant visual memories that can be retrieved to generate mental images), an effect that is independent from people's general

imagery abilities. Another solution might be to adopt a within-subject design where self-reported measures of mental imagery (e.g., vividness, quantity, ease) are correlated with the dependent variables (e.g., attitudes). This solution, however, is also limited, as it does not allow for inferences about causality.

Asking participants to use their imaginations might generate a demand effect. A participant who is required to imagine the benefits of a product might feel compelled to exaggerate the effect and the quality (e.g., vividness) of her/his imagination, in order to comply with the study's requests/aims. To overcome this problem, in many of the studies reported I asked participants to describe their mental experiences before filling out the manipulation check and responding to the dependent variables, a solution often used in other studies of mental imagery. Although describing one's mental imagery can force respondents to imagine, this approach might have some drawbacks. Writing about one's mental images might activate non-imagery processing which affects the dependent variable (e.g., Brown and Lloyd-Jones 2003). In addition, reporting one's mental imagery might give a participant the opportunity to elaborate analytically on the content of her imagination (e.g., is what I have imagined realistic?), an effect that may reduce the persuasiveness of mental imagery.

Mental imagery often triggers other psychological phenomena, such as the experience of emotions (e.g., Holmes and Mathews 2005) and the retrieval of related memories (e.g., Kisieliu and Sternthal 1986), possibly confounding the effect of imagination on persuasion. This problem is especially evident in Essay III where I did not control for the effect of emotions elicited by imagery-provoking messages. For this reason, I cannot not empirically rule out the possibility that feelings and emotions, rather than the experiencing of mental images per se, were responsible for the resistance of beliefs generated by imagery-evoking stimuli. Similarly, imagination is a multi-sensorial phenomenon, and yet literature on mental imagery has largely focused only on its visual component. When imagining ourselves on a tropical vacation, for example, we are likely to imagine the various sensations we associate with the scene, such as the

temperature of the sand or the sound of the ocean. The extent to which these non-visual stimulations affect persuasion is currently an overlooked topic in the marketing literature. At the moment, we lack both the measuring instruments and the theoretical background to answer such questions. In spite of these challenges, the study of mental imagery affords several opportunities to improve our understanding of consumer decision making. I outline some of these streams for future research in the next section.

Directions for Future Research

Although recently the study of mental imagery has become a central topic in the field of consumer research, our understanding of how and when imagery-evoking advertisements are an effective means of persuasion is, at best, incomplete. Hence, there are many opportunities to contribute to this domain of research (e.g., MacInnis and Price 1987; Petrova and Cialdini 2007). In this section, I provide an overview of possible research opportunities I have identified while working on the three essays presented. These ideas aim both at developing as well as extending the work discussed in my dissertation.

One possible direction for future research is to study the role of motivated imagination in the persuasiveness of imagery-evoking advertisements. Literature on mental imagery has, for the most part, used a stimulus-response paradigm to identify the triggers of imagery processing. These studies (as well as this thesis) assume that being exposed to certain stimuli (such as concrete words or instructions to imagine) increases the likelihood of activating an imagery processing mode. This approach fails to appreciate the role a consumer's motivation to imagine might play in this process. For example, Keller and McGill (1994) showed that imagery processing is more likely activated by positive than by negative product descriptions; the authors suggested that fantasizing about a positively valenced consumption experience should be intrinsically more pleasurable (and thus motivating) than fantasizing about a negative one. More

generally, people might engage in the imagination of consumption experiences not only to anticipate their affective reactions but also for the sake of the pleasure that accompanies the imagination (d'Astous and Deschenes 2005).

Motivation may play a particularly important role in predicting when one engages in self-related imaginations (e.g., imagining oneself becoming a better student, an athlete, a successful professional) since this type of imagination has important affective implications for the imaginer (e.g., I enjoy imagining myself playing for AC Milan). One direction for future research may be to explore the joint effect of self-concept and self-efficacy on one's motivation to engage in self-related imaginations. Self-relevant imaginations might be encouraged when a consumer's (current) self-concept is chronically (i.e., individual differences) or situationally (i.e., priming) in line with the domain of the imagined self (e.g., the "myself as a friend" self-concept is salient when I try to imagine myself successfully hosting a party) and when self-efficacy is high (e.g., I believe I can throw a successful party). On the other hand, a misalignment of one's self-concept with the imagined self (e.g., the "myself as a student" self-concept is salient when I try to imagine hosting a party) may reduce the importance of the imagined self (Reed 2004) and consequently one's motivation to imagine. When the activated self-concept is in line with the imagined self but self-efficacy is low (e.g., my "friend self-concept" is salient, but I believe I cannot be a successful host), self-related imaginations may elicit negative feelings (e.g., Higgins 1987) and coping strategies (e.g., hosting parties is a lot of work) that reduce the relevance and attractiveness of the imagination (Silvia and Duval 2004).

Another avenue for future research is to study the persuasiveness of different types of imaginations (e.g., Richardson 1983; Roedelein 2004). Roekeling (2004), for example, proposed ten categories to classify mental imagery, including very different phenomena such as after-imagery (post simulation perception), imagination imagery (imagination of scenes never experienced before), and memory imagery (imagination of scenes experienced in the past). Important contributions in this directions have been provided by Escalas

(2004a, b, 2007), who has extensively examined the effects of process vs. outcome imaginations, and Zhao and colleagues (2009) who have examined the effect of imagination-focused visualization (i.e., the imagination of new product usages) versus memory-focused visualization (i.e., the imagination of usual product usages). Despite their work, however, several types of mental imagery have not yet been considered in consumer research. A particularly fruitful direction for future research might be to examine the distinction between *deliberate imagination*—which is an active form of imagination controlled by the imaginer—and *spontaneous imagination*—which is not fully under the control of the imaginer (for a discussion of these two types of imaginations see Richardson 1983). It would be interesting to consider whether these two types of imaginations have different diagnostic values for consumers. One might speculate that spontaneous imaginations, as opposed to deliberate ones, are more indicative of one's "true" needs because their origin cannot be easily rationalized (e.g., images of a tropical resort keep popping up in my mind, but I don't know why. Maybe I really need a vacation!) and, for this reason, they may have a stronger effect on behavior.

Future research might also aim to investigate the impact of the frequency with which a scene is imagined on consumers' judgments and behavioral intentions. In the experiments presented in this thesis, participants were asked to imagine a given consumption scenario and report their attitudes or behavioral intentions. In a real setting, however, consumers are likely to imagine a future event several times before making a decision. This might be especially true when the decision is an important or financially substantive one. To evaluate whether to buy a sports car, for example, one might repeatedly fantasize about an exciting drive in the countryside. Previous research showed that the frequency with which a behavior is imagined increases the cognitive accessibility of the imagined behavioral script and consequently one's intention to perform that behavior (e.g., Anderson 1983b). The relation between frequency of imagination and behavioral intentions, however, might become more complex when we consider one's

affective responses to the imagined scenario. In fact, literature on affective forecasting shows that once an emotionally laden event has been experienced (e.g., winning a lottery, getting a promotion) a series of automatic, non-conscious processes are activated to make sense of, and regulate one's emotional reactions to the event (e.g., Wilson, Gilbert, and Centerbar 2003). Imagination, by simulating one's affective reaction to a future event, may activate "sense making" processes similar to those activated by the actual experience. It follows that the affective reactions evoked by the imagined scenario may be weakened when the imagination is experienced several times. Hence, frequency of imagination might have a twofold impact on behavioral intentions. On the one hand, it increases behavioral intentions by increasing the accessibility of a behavioral script, and, on the other, it may reduce behavioral intentions by dampening the affective responses elicited by the imagination. This suggests that, after a few repetitions, the positive impact of imagination on behavioral intentions might reach a peak and start diminishing. Furthermore, this effect would likely be particularly pronounced for hedonic as opposed to utilitarian products.

Finally, future research could extend the study of mental imagery beyond the realm of persuasion. One interesting possibility is to study the role of imagination on the regulation of desire. Desire plays an ambivalent role in people's well-being as it can both jeopardize the attainment of important goals by inducing uncontrollable impulses toward short-term pleasures, as well as support goal pursuing by energizing one's actions towards a desired end state. Given that desire may incite behaviors that can be either detrimental (e.g. smoking, overeating, etc.) or beneficial (e.g. exercising, studying, etc.) to a consumer's welfare, it is important to understand how desire can be regulated so as to increase or decrease its behavioral consequences. In this regard, empirical evidence suggests that imagination is not only central to the experience of desire, but also plays a role in its regulation. On the one hand, imagination can be an effective way of inducing desire (e.g., Harvey, Kemps, and Tiggemann 2005; Kavanagh, Andrade, and May 2005). Recent research suggests that desire may be instigated

by intrusive thoughts about pleasurable targets, these thoughts are then consciously elaborated upon through the generation of mental imagery, which forces one's attention on the object of the desire (Kavanagh et al. 2005). On the other hand, repeatedly imagining the attainment of a goal or indulging in a positive fantasy about the future can actually reduce one's desire/motivation for a particular goal (Oettingen and Mayer 2002; Oettingen, Pak, and Schnetter 2001). The regulatory effect of imagination on desire might depend on the way in which people elaborate on the desired object. Specifically, repeatedly imagining fulfilling a desired consumption experience might reduce desire, whereas repeatedly generating mental snapshots from the same consumption experience might augment it. This prediction draws on the literature on the Zeigarnik effect, which suggests that failure to attain an important goal activates goal-related information until the goal is either met or discarded (e.g., Martin, Tesser, and McIntosh 1993); that is, when one fails to satisfy an urge, one becomes more likely to focus on one's desire and possible ways to satisfy it. Vicarious consumption might activate mental processes similar to those activated by the (real) attainment of a goal, thus reducing the salience of an unfulfilled desire. On the other hand, the generation of sporadic mental images related to a consumption experience might also increase the salience of the uncompleted goal. Thus, the desire to fulfill important long-term goals (e.g., losing weight) might be sustained by engaging in sporadic imaginations (e.g., mental images of oneself fitting into smaller sized jeans) and avoiding images related to the complete attainment of one's objective (e.g., attending a party after having lost 20 pounds). More pressing and short-term desires (e.g., impulsive consumption), however, might be attenuated by vicarious indulgence. In this way, understanding the role of imagination in the regulation of desire can provide new guidelines for health communications along with a new theoretical perspective to address maladaptive behaviors such as impulsive consumption.

Appendix 2.1. Priming Task Used in Study 1

Imagery Prime

Apartment

Spacious 4 and ½ apartment for rent. Picture a large living room, with varnished wooden floor, high ceiling, and a real fireplace in front of you; imagine how it would feel spending the cold winter evenings in front of the fireplace. Each room has very big windows that make the apartment particularly bright and sunny. On the large, front balcony, at the 15th floor of the building, you can entertain your friends or simply relax yourself while enjoying the spectacular view of the river in the nearby park. The apartment is completely furnished and the kitchen is fully equipped with all the appliances you need. Take a moment to imagine what living in this apartment would be like!

Restaurant

Chez Pierre Restaurant

Chez Pierre reminds one of an elegant bistro that would be found in a small city close to Paris. The dining room, with its old wooden floor and peach color walls, basks in a soft gentle light, giving the place a very intimate feeling. Imagine yourself sitting at a table of the restaurant looking at the menu. The food looks exquisite. Picture yourself enjoying meat so tender that you can feel it melt on your tongue. Imagine having exceptional seafood like fresh, juicy oysters on the half-shell. Imagine enjoying a perfect dinner. Welcome to *Chez Pierre*!

(adapted from Pham et al. 2001)

Analytical Prime

Apartment

Spacious 4 and ½ apartment for rent

- State of the apartment: excellent (rating of 8/10)
- Quality of the building: average (rating of 5/10)
- Atmosphere: good (rating of 6/10)
- Security of the building: excellent (rating of 9/10)
- Quality of the hallway: good (rating of 6/10)
- View: poor (rating of 3/10)

Evaluation of *Chez Pierre* Restaurant made by a Food Critic (max rate = 10)

Criteria	Rate
Atmosphere	6
Intimacy	6
Elegancy	7
Meat	7
Meat dishes	7
Meat sauces	6
Seafood	6
Oysters	5
Mussels	7
Service	7

(Adapted from Petrova Cialdini 2005)

Appendix 2.2. Priming Task Used in Studies 2 & 3

Select the item that is larger in real life: (imagery priming)	
Select the word with more vowels: (control)	
Camel / Cow	Stove / Dishwasher
Moose / Lion	Spoon / Tomato
Dime / Quarter	Elephant / Bear
Snail / Peanut	Watermelon / Squirrel
Pencil / Watch	Pillow / Fox
Tire / Penguin	Mule / Piano
Purse / Coffeepot	Shoe / Football
Lamp / Ashtray	Giraffe / Horse
Tent / Goat	Goose / Cat
Bee / Cherry	Bus / Alligator
Toaster / Duck	

(Adapted from Paivio 1975)

Appendix 3.1. Stimulus Used in Study 1

St. Croix Island: How Can So Much Beauty Be Found In One Place?

A gentle trade wind wakes you. You wiggle your toes in the soft, golden sand. The rhythmic surf ebbs and flows against the shore as you nod off once again. Welcome to a typical day in St. Croix Island (Virgin Islands).

Sunbathe, drift down a river in a kayak, or let a slack-key guitar soothe your spirit. Lounge at a café as you nurse a freshly roasted cup of coffee. No matter how you choose to unwind, St. Croix Island is the perfect haven in which to refresh, relax, and rejuvenate.

If the beauty of the island sounds irresistible, wait until you try the food. Fresh ingredients and exotic seasonings from across the Pacific Rim meet with their European counterparts. From fine dining to the casual comfort food of the local-style "plate lunch," the food tantalizes the senses and nourishes the soul. Make St. Croix your next vacation destination.

(Adapted from <http://www.gohawaii.com>)

Appendix 3.2. Stimulus Used in Experiment 3

Introducing the Libro: For People on the Go!



The Libro is a new e-book reader that offers a unique, on-the-go reading experience. Everything you like to read, like books, newspapers and documents, you can now take along on a device smaller and lighter than a single book.

- ✓ **A library in your hand.** Libro holds up to 100 eBooks at a time and offers up to 14 hrs of reading with a single charge battery.
- ✓ **Take it anywhere.** Thanks to its compact and lightweight design, you can take it anywhere you want (smaller than an A4 paper, it weighs only 9 oz. and is ½ inch thin).
- ✓ **Perfect readability.** The display of the Libro offers you perfect readability both in the dark and in bright sunlight; its paper-like display produces a stable image, unlike a flickering PC screen.
- ✓ **More than just reading.** With the stylus pen, you can take notes, underline text, and write comments in documents. You can also play music and see pictures.
- ✓ **Faster access to your material.** With the “Find-it” option, you can search for key-words through all your documents, eBooks, and papers.
- ✓ **Always connected.** Through the built-in wireless capability, you can share and download documents, check your email, and browse the internet.

Appendix 3.3. Pictures and Visual Perspective in Imagination

Picture 1



Picture 2



Appendix 4.1 Product Claims Used in Studies 1& 2

Product Claims	Believ.*	Imag.*	Order of presentation in Study 2
The organization of this travel book is awful. It made traveling that much harder.	3.98	4.40	1
This travel book is useless. The information on one locale is in a section of the book describing a completely different place. We were constantly flipping pages and got very frustrated.	5.47	5.21	15
The pictures of the historical sites are full of wonderful details, the colors were so animated that it is hard to tell the difference between the pictures and the real objects. This travel book gives wonderful descriptions of all the best places to visit.	4.07	4.81	18
This travel book has more than enough description and information on the regions it talked about. The amount of knowledge on the different sites is impressive.	5.05	4.70	10
This orange juice is so overly sweet that it causes you to blush when you taste it.	3.02	3.30	7
This orange juice tastes quite bad.	4.44	4.37	16
This juice is made from juicy, red oranges.	3.21	4.35	5
This orange juice is 100% natural.	3.79	4.23	14
The screen of this phone has excellent brightness so you can always tell who's calling.	4.35	5.00	2
This phone has a very good display.	5.05	4.93	13
The buttons on this phone are all too small so your fingers are always pushing the wrong number. The buttons are also too hard and you must press forcefully to get them to work.	4.88	5.42	6
Dialing with this phone is a tiring, error-filled process.	3.74	3.67	3
This laptop is great with numerous applications open. While surfing the Internet and opening big files like movies it does not stutter or miss a beat.	4.81	5.26	19
This laptop works at a very high performance. A great purchase	4.19	4.19	8
This laptop is way too heavy and is annoying to carry around. This is in addition to the poor shape design that doesn't allow it to fit well anywhere.	4.95	5.58	17
The size of this laptop is extremely inefficient.	4.00	4.21	12
These shoes are incredibly comfortable, they cushion every step you take so it is like you are walking on air.	3.95	4.95	11
This is a great pair of shoes, very comfortable.	4.98	4.67	4
This shoe is crap, the heel quickly collapses and the seams attaching all the components rapidly loosen causing the shoe to fall apart.	5.05	5.47	9
This shoe is very fragile, it is not sturdy and not recommended.	4.19	3.93	--

* scores averaged across participants.

Appendix 4.2. Restaurant Reviews Used in Study 4

Imagery-evoking/positive

“This place reminds one of an elegant bistro that would be found in a small city close to Paris. The dining room, with its old wooden floor and peach color walls, basks in a soft gentle light, giving the place a very intimate feeling. The food is exquisite. The meat is so tender that you can feel it melt on your tongue. The various meat dishes come with distinctive sauces, all smooth and flavourful. The seafood is exceptional, especially the fresh and the juicy oysters on the half-shell and the classic steamed mussels in dry vermouth. The service is good, professional and discrete.”

(from Pham et al. 2001)



Imagery-evoking/negative

“This place reminds me of a tacky little restaurant that you would find in the suburbs of some second-rate town. The dining room, with its old vinyl floor and stark white walls is bathed in rather harsh light giving the place a rather impersonal feeling. The food is mediocre. The meat is so tough, that you can hardly chew it. The limited selection of meat comes with fairly generic sauces that lack flavor and texture. The seafood is nondescript, particularly the dry oysters on the half-shell and the insipid steamed mussels. The service is overall bad, amateurish and intrusive.”

Imagery-evoking/negative (used in the “imagery vs. imagery” conditions)

“*La Madeleine* looks like a tacky little restaurant that you would find in the suburbs of some second-rate town. With its creaking wooden floor and peach color walls, the dining room is bathed in rather harsh light giving the place a rather impersonal feeling. Overall, the food is mediocre. The seafood is nondescript, particularly the dry oysters on the half-shell and the insipid steamed mussels. The meat is so tough, that you can hardly chew it. The limited selection of meat comes with fairly generic sauces that lack flavor and texture. Amateurish and intrusive, the service is overall bad.”

Abstract consumers review/positive

Atmosphere	 (8/10)
Meat	 (8/10)
Seafood	 (9/10)
Service	 (7/10)
Overall Rating	 (8/10)

Abstract consumers review/positive

Atmosphere	★ ★ ★ ☆ ☆ ☆ ☆ ☆ ☆ ☆ (3/10)
Meat	★ ★ ★ ☆ ☆ ☆ ☆ ☆ ☆ ☆ (3/10)
Seafood	★ ★ ★ ★ ☆ ☆ ☆ ☆ ☆ ☆ (4/10)
Service	★ ★ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ (2/10)
Overall Rating	★ ★ ★ ☆ ☆ ☆ ☆ ☆ ☆ ☆ (3/10)

Abstract food critic review/positive

Criteria	Rate
Atmosphere	8
Intimacy	9
Elegancy	7
Meat	8
Meat dishes	7
Meat sauces	9
Seafood	9
Oysters	9
Mussels	9
Service	7
Overall	8

1-2
Very poor

3-4
Poor

5-6
Average

7-8
Good

9-10
Excellent

(Adapted from Petrova and Cialdini 2005)

Abstract food critic review/negative

Criteria	Rate
Atmosphere	3
Intimacy	3
Elegancy	3
Meat	3
Meat dishes	3
Meat sauces	3
Seafood	4
Oysters	4
Mussels	4
Service	2
Overall	3

1-2
Very poor

3-4
Poor

5-6
Average

7-8
Good

9-10
Excellent

(Adapted from Petrova and Cialdini 2005)

Appendix 4. 3. Consumer Review Used in Study 5

Imagery-required condition

When evaluating a product, many people use their imagination to form visual images (pictures in the mind) of the use of the product and its benefits. For this reason, we ask you **to rely on your imagination to experience and evaluate the Spa** while reading the following customer review. Close your eyes, and use the power of your imagination to visualize **yourself in the scene described on the next page**.

"I've recently attended a spa for the first time. As I entered the spa, I thought I had the wrong address. The walls were cracked and the lighting was very poor and to top it off there was this horrible, loud music from the 80's being played at the front desk. There was a smell of burnt rubber and an overall oppressive feeling inside the place. I went for my massage and was surprised to meet my masseuse, who scared the hell out of me. The masseuse was such an eye sore that I was nervous to have those hands touching me. Unfortunately my fears were validated. From the second I lay down, I felt uncomfortable and nervous. There was an awkward silence the whole time. My muscles were in pain with every move or massage style attempted. The masseuse pulled and tugged roughly on my muscles. My skin was being pinched constantly and my muscles kept tensing up until cramping shortly ensued. I tried to adjust myself to ease the pain but the more I twisted and turned the harder he pressed and the more uncomfortable I got. For the next couple of days my body felt like crap. My body felt stiffer than it ever had before. My muscles ached with every movement and I was confined to my bedside for hours."

Please take a moment to visualize the description and use the power of your imagination to mentally **picture YOURSELF in the spa**. Close your eyes and **try to imagine the atmosphere of the spa and how you might feel during and after the treatment**. When you are finished visualizing, open your eyes and move on to the next screen where you will be asked to describe the scene you have imagined.

Imagery-optional condition

We ask you to be **careful and well-reasoned while reading and evaluating the following customer review**. Please make a logical assessment that's right for you; on the next screen you will be asked to describe the thoughts you experienced while reading the evaluation.

ATMOSPHERE - RATING: 3/10

- Room: wall in bad condition and poor lighting (Rating: 3/10)
- Music: loud, horrible music (Rating : 3/10)
- Smell: bad smell (Rating: 3/10)

QUALITY OF THE TREATMENT - RATING: 2/10

- Masseuse: The masseuse was rough on my muscles;
I felt uncomfortable and nervous (Rating: 2/10)
- Feeling: my muscles were in pain (Rating: 2/10)

POST-TREATMENT BENEFITS - RATING: 2/10

- I was unable to move properly for hours (Rating: 2/10)

Rating scheme

- 1-2: Very poor;
- 3-4: Poor;
- 5-6: Average;
- 7-8: Good;
- 9-10: Excellent.

Appendix 4.4. Credibility Manipulation Used in Study 5

We all know that online customer reviews could be written by individuals that hold particular interests in the product reviewed, such as the owner or competitors, thus raising concerns about their reliability.

In an attempt to tackle this problem, the website from which we have obtained the review launched a project to assess the reliability of its customers' reviews. It was discovered that 80% of the reviews posted on the website are completely unrepresentative of the product described, and thus should be discarded.

This means that out of 10 reviews posted on the website, 8 should not be trusted or—equivalently—only 2 out of 10 reviews provide a reliable description of the product.

We do not know whether the review you have read can be trusted or not; we only know that there is a 80% probability that this review is not reliable.

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