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### Negativity and Positivity Biases in Product Evaluations: The Impact of Consumer Goals and Prior Attitudes

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*“Brand-Driven Business Performance”*

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# Negativity and Positivity Biases in Product Evaluations: The Impact of Consumer Goals and Prior Attitudes

BY

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## ABSTRACT

A fairly widespread phenomenon identified in the literature is the greater weighing of negative over positive attributes of equivalent intensity in the formation of evaluations (*the negativity effect*). Some conditions favoring *the positivity effect* (the greater weighing of positive over negative attributes of equal intensity) have also been identified. However, the literature is silent on how consumer goals and their prior attitudes towards the brand influence product evaluations, given negative and positive attributes of equal extremity. In this dissertation, I propose that based on their goals or attitudes, consumers engage in *selective hypothesis testing* while evaluating products. For example, consumers who have a goal of buying a good product test a positive hypothesis (e.g., this product is good), whereas those who have goals of avoiding a bad product test a negative hypothesis (e.g., this product is bad). In their hypothesis testing activities, consumers have been shown to give more weight to hypothesis consistent than to hypothesis inconsistent evidence. Hence, consumers testing a positive hypothesis are likely to weigh positive attributes greater than negative attributes (i.e., a positivity effect), whereas the opposite is true for those testing a negative hypothesis.

Evidence consistent with selective hypothesis testing, but inconsistent with extant theories of the negativity and positivity effects is provided, and four experiments are conducted to systematically test this explanation against the extant theories of negativity and positivity effects. Results indicate that selective hypothesis testing is a viable explanation of negativity and positivity effects, and that its effects occur independently of the other theories in the literature. Results also shed light on how consumer goals and their prior attitudes influence product evaluations. Contributions, limitations, and directions for future research are discussed.

*Dedicated to my parents, wife, and son*

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## CHAPTER 1: INTRODUCTION

Consumers often need to evaluate products described with multiple attributes. These attributes may be positive, neutral or negative in valence. For example, a person reading *Consumer Reports* may find that the automobile she is interested in has great ratings for interior, neutral ratings for price, but low ratings for miles per gallon of gas. Another consumer examining a computer finds that it has a powerful processor and a large working memory, but it received a low score on PC magazine's durability tests, and is less reliable.

How do consumers form overall product evaluations, given positive, negative, and neutral information about products? Normatively, when the positive and negative attributes are equal in number, intensity, and importance to consumers, the overall product evaluations should be neutral (i.e., neither positive nor negative). Hence, consumers' evaluations of a computer that has above average monitor and mouse, but below average keyboard and speakers should not be positive or negative, assuming the relative importance of the monitor and mouse to them is equivalent to that of the keyboard and speakers.

### THE NEGATIVITY EFFECT

Yet, many studies in psychology, marketing, and political science suggest that people often weigh negative information greater than positive information of equal intensity (e.g., Ahluwalia 2002; Herr, Kardes and Kim 1991; Klein 1996; Lutz 1975; Wyer 1974). For example, Mizerski (1982) found that product attributes rated unfavorably exert greater influence than those rated favorably on consumers' attributions, beliefs and attitudes. Herr et al. (1991) gave participants positive and negative attribute information of equal extremity about several

products, and asked them to form overall evaluations. Results indicated that negative attribute information was accorded greater weight than positive attribute information. These and other similar findings have led researchers to conclude that negative information exerts greater influence on judgments than equivalent positive information. This phenomenon has been termed the *negativity bias*. For the purpose of this dissertation, the terms negativity (or positivity) bias and negativity (or positivity) effect mean the same thing and would be used interchangeably.

### **Boundaries to the Negativity Effect**

This section examines conditions in marketing where the negativity effect has been shown not to hold, or where the opposite *positivity effect*, the greater weighing of positive over negative information has been observed. Knowledge of the conditions where the negativity effect may be attenuated or reversed is important because it may help marketers to tailor their messages for different constituencies or conditions. For example, as reviewed later, Ahluwalia found that less committed consumers show the negativity effect, whereas highly committed consumers show the positivity effect. Hence, marketers may be more forthright and candid about the shortcomings of their products with highly committed consumers than with less committed consumers.

Skowronski and Carlston (1987; 1989) proposed that negative information often receives greater weight than equivalent positive information (i.e., negativity effect) because of its higher diagnosticity. They further proposed that when positive information is more diagnostic than negative information, a positivity effect is likely. Skowronski and Carlston (1987; 1992) studied two domains: morality and intelligence of people. In the former, they predicted and found a negativity effect because immoral behavior is more diagnostic than moral behavior, whereas for

the latter, they predicted and found a positivity effect because intelligence is more diagnostic than stupidity. (The precise arguments and results of Skowronski and Carlsion are elaborated in the next chapter. In the marketing context, these findings imply that more diagnostic attributes are likely to receive more weight than less diagnostic attributes in the formation of evaluations (see Herr et al. 1991).

In a continuing stream of work, Ahluwalia (1996; Ahluwalia, Burnkrant and Unnava 2000; Ahluwalia and Klein 2004) shows that whereas consumers low in commitment to a brand weigh negative information more than positive information (i.e., these consumers are prone to a negativity effect), consumers highly committed to a brand weigh positive information greater than negative information (i.e., these consumers are prone to the opposite – positivity effect). Ahluwalia argues that highly committed consumers are likely to be “psychologically attached” to a brand. Hence, they counter argue against negative brand information as it conflicts with their beliefs (Wright 1975). On the other hand, less committed consumers are more likely to have had negative prior experiences with the brand, and they are likely to find negative information more diagnostic than positive information, leading them to place greater weight on negative than positive brand information.

These findings indicate that although the negativity effect is a widespread phenomenon, it is by no means all pervading. Sometimes, the opposite positivity effect has also been observed. However, lacking is an understanding of how certain consumer and product characteristics influence the processing of negative and positive attribute information. These characteristics are outlined in the next section.

## **Research Objectives**

The purpose of this dissertation is to investigate the role of several consumer and product characteristics in influencing the negativity effect. As discussed below, and in greater detail in the next chapter, these factors have not been examined previously. First, the literature on negativity and positivity biases has not examined how consumer goals influence the processing of positive and negative information. Several researchers attest to the importance of studying consumer goals. For example, Bagozzi and Dholakia (1999, p. 19) indicate that “much of consumer behavior is goal directed,” and Bettman, Luce, and Payne (1998, p. 188) suggest that product evaluations “depend critically on the goals of the decision maker.” However, researchers also lament the dearth of knowledge pertaining to goals and how they influence consumer behavior (e.g., Bargh 2002; Bargh et al. 2001; Bettman et al. 1998).

To address this research gap, I will examine how consumer goals influence the processing of negative and positive attribute information. For example, a consumer who has had a bad prior experience with a computer may be trying to avoid buying a bad computer, but a first time buyer may be looking for a good computer. These goals may instantiate different processing of product information by differentially focusing on negative or positive attribute information, respectively (Bagozzi and Dholakia 1999; Bettman et al. 1998). This differential focus may disproportionately influence the weights assigned to the attributes, resulting in negativity or positivity effects. Therefore, the first objective of this research is to examine how consumer goals influence the processing of negative and positive product information.

Second, the study of consumer behavior is intriguing partly because of the inherent variability among consumers, their different tastes, and preferences. Consumers also differ in their attitudes towards brands. Whereas considerable research has examined how consumer

attitudes form and influence judgments and choice, no research has explored how consumer attitudes towards brands influence the processing of negative and positive brand information. A second objective of this research is to examine whether consumers with favorable and unfavorable attitudes towards brands differ in their evaluations, given the same product information. It is noteworthy that although Ahluwalia (1996) investigated the moderating role of commitment to the brand in negativity effects, she controlled for the influence of attitudes to the brand. Hence, it is not clear whether and how attitudes to the brand may influence negativity effects in product evaluations.

Third, even though consumers have been shown to use diagnostic product information more than non-diagnostic information in their judgments and choice (e.g., Ahluwalia 1996; 2000; Ahluwalia, Burnkrant, and Unnava 2000; Herr, Kardes, and Kim 1991; also see Nisbett, Zukier, and Lemley 1981; Skowronski and Carlston 1987; 1989), it is not clear whether the effects of selective hypothesis testing occur independently of diagnosticity. Accordingly, this is the third question I examine in this dissertation.

This dissertation attempts to fill the gaps identified above by examining how consumer characteristics such as their goals and attitudes towards the brand, and product characteristics like attribute diagnosticity, influence the processing of positive and negative information. Previous researchers have offered four different explanations for the negativity effect. First, negative information has been claimed to carry greater weight than positive information because it contrasts with expectations (e.g., Simpson and Ostrom 1976). Second, negative product information exerts greater influence than positive product information because it is *novel* and *unexpected* (e.g., Fiske 1980). Third, negative information has been claimed to carry greater weight because it is less ambiguous than positive information (e.g., Birnbaum 1972; Wyer 1973).

The fourth explanation hinges on the notion that negative information is more diagnostic than positive product information (e.g., Reeder and Brewer 1979; Skowronski and Carlston 1987; 1989; 1992). (These explanations will be elaborated in the next chapter).

This dissertation advances a novel explanation for the negativity effect based on the concept of selective hypothesis testing (Sanbanmatsu, Posavac, Kardes, and Mantel 1998; Sanbanmatsu, Posavac, Kardes, and Stasney 1997). It is argued that when consumers are exposed to positive and negative information about a product, they test a hypothesis based on their goals or prior attitudes. Consumers who are looking for a good product, and those with positive attitudes towards the brand test a positive hypothesis (e.g., this product/brand is good). People trying to avoid buying a bad product and people with negative prior attitudes toward the brand or product test a negative hypothesis (e.g., this product/brand is bad). It is further argued that these hypotheses guide the processing of brand information such that greater weight is accorded to hypothesis-consistent than to hypothesis-inconsistent information, leading to positivity or negativity effects, respectively.

It is further argued that in the absence of goals or attitudes, consumers are more likely to test a negative hypothesis (e.g., the product is bad) because of the lesser frequency, and greater salience of negative over positive information. Consumers may then selectively search for information supporting this hypothesis and place greater weight on the confirming than disconfirming evidence, resulting in negativity effects. This argument is consistent with that of Bettman et al. (1998) who suggest that “individuals will devote more effort to examining information they believe will help them attain whichever goals are more heavily weighted in that situation” (p. 193).

The expected contributions of this research are as follows:

- 1) Although consumer goals have been shown to be important in various domains (see Bagozzi and Dholakia 1999 for a comprehensive review), how these goals influence the processing of negative and positive product information is not known. This dissertation sheds some light on this by showing that consumers who have goals of buying a good product weigh positive information more than negative information, whereas consumers who have a goal of avoiding a bad product weigh negative information more than positive information.
- 2) Previous research suggests that consumers who have favorable attitudes towards a target are more influenced by negative information than people who have unfavorable attitudes (e.g., Lau 1985). In contrast, I show that consumers with favorable dispositions toward a product are more influenced by positive information than those with unfavorable dispositions.
- 3) Previous research indicates that people weigh diagnostic information more than non-diagnostic product information in their judgments. Hence, when negative information is more diagnostic than positive information, a negativity effect is predicted, whereas when positive information is more diagnostic, a positivity effect is predicted. I propose that the effects of consumer goals are independent of the effects of attribute diagnosticity. For instance, consumers who have positive goals are likely to evaluate a product as superior, and those with negative goals are likely to evaluate a product as inferior irrespective of attribute diagnosticity.

## SIGNIFICANCE OF THE RESEARCH

As outlined earlier, this dissertation suggests that consumer goals are important drivers of negativity and positivity effects. This knowledge would enable marketers to better tailor their communications to different consumers. For example, it is predicted that consumers who have goals of buying a good product would be more resilient to negative product information than those who have goals of avoiding a bad product. Hence, marketers may be more forthright and candid about undesirable product features with the former group of consumers than with the latter group of consumers; likely earning the marketers better goodwill and higher equity. A somewhat similar implication is suggested for consumers differing in their prior attitudes towards the brand. Those with favorable prior attitudes are likely to be more resilient to the negative information than those who have unfavorable prior attitudes.

I also predict that the effect of hypothesis testing on product evaluations occur independently of attribute diagnosticity. Hence, marketers who are concerned about the negativity effect because negative product attributes are more diagnostic than positive product attributes would be advised to attempt to change consumer goals via advertisements. Hoch and Ha (1986; also see Ha and Hoch 1989) show that consumers treat advertising claims as tentative hypotheses to be verified upon product inspection and use. To the extent that an advertisement encourages a person to buy a product, it may be said to set a positive goal (e.g., buy this product because it is good). On the other hand, advertisements that discourage people from buying a product or engaging in a behavior (e.g., cigarettes, liquor) may be setting a negative goal (e.g., don't buy this product because it is bad or not good). Hence, advertising is one means by which marketers may be able to change consumer goals and thereby reduce consumers' reliance on the diagnosticity of product attributes in forming evaluations.

## OVERVIEW OF DISSERTATION

The remainder of this dissertation is organized as follows. In Chapter 2, I review the extant explanations for the negativity effect, propose a new explanation based on the concept of selective hypothesis testing (Kardes et al., 2004; Sanbonmatsu et al. 1997; 1998; Snyder and Swann 1978), and outline the hypotheses to be tested. Chapter 3 covers the methodology, and Chapter 4 concludes the dissertation by discussing the theoretical, substantive, and managerial implications of the findings. Chapter 4 also covers limitations of the studies and suggests directions for future research.

## CHAPTER 2: THEORETICAL BACKGROUND

The bulk of the literature on negativity and positivity biases shows that when consumers judge products described with negative and positive information of equal intensity, negative information is accorded greater weight (the negativity effect). In this chapter, I review extant theories of the negativity effect, and propose that these theories are not able to account for some recent findings in the area (or in some cases, the same phenomenon can be accounted for by multiple explanations). Further, these theories are silent on how consumer goals and attitudes might influence the weights assigned to positive and negative product information. I then propose a heretofore ignored theory based on the literature on “selective hypothesis testing” to account for these recent findings, and to predict how consumer goals and attitudes may result in negativity or positivity effects. Finally, I attempt to reconcile past research with this new account and examine how participants in previous research may have been engaging in selective hypothesis testing while forming overall impressions, given positive and negative information about the target being evaluated.

### OVERVIEW OF PREVIOUS RESEARCH

Before reviewing the relevant literature, it would be helpful to formally denote the evaluation function. This function would serve as a guide to understand the assumptions inherent in past research and their strengths and limitations, as well as the proposed contribution of this dissertation. In simple mathematical terms, the overall evaluation  $E$  of a product or person may be represented as (Anderson 1982):

$$E = I + (\alpha X_1 + \beta X_2) / (\alpha + \beta) \dots\dots\dots(1)$$

where  $I$  is the intercept (or initial impression),  $X_1$  and  $X_2$  are the values associated with the positive and negative stimuli respectively (if the positive and negative stimuli are equal in extremity, these are equal), and  $\alpha$  and  $\beta$  are the weights associated with these attributes.

Considerable research has investigated how people form overall evaluations from different product attributes. Most popular among these are in the tradition of Fishbein's multiattribute model, which proposes that a consumer's overall evaluation of a product is a weighted sum of the beliefs the consumer has about the attributes and their importance (also see Anderson 1982). However, for our purposes, little insights can be gained from these models because they did not control for the extremity of positive and negative information or examine the impact of consumer goals and prior attitudes. In fact, many researchers applying the Fishbein model were not concerned about whether the attributes were positive or negative in valence. Their major concern seems to be to provide participants attributes that may be perceived as ecologically valid (e.g., Solomon 1999).

This is not to say that there is a dearth of studies controlling for the extremity of negative and positive attributes. An impressive body of research in psychology<sup>1</sup> has investigated how positive and negative attributes of equal intensity may be combined to arrive at an overall evaluation or judgments of anonymous people, political candidates and objects (for reviews, see Skowronski and Carlston 1987; 1989). Early researchers predicted that given positive and negative attributes, people would simply add them or average them using equal weights (e.g., Anderson 1965; 1968; Birnbaum 1972). In other words, they assumed that in (1) above,  $\alpha$  and  $\beta$  would be equal, and  $I$  would equal zero. Hence, if a computer with a "powerful processor" elicits a +4 quality rating, and "not reliable" elicits a -4 quality rating, the overall evaluation elicited by

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<sup>1</sup> Much of the work on negativity effects has been conducted in psychology. Hence, all the theories, and many examples mentioned in this chapter have been borrowed from that discipline.

the combination (a computer that has a fast processor but is not reliable) would be neutral (or near zero). However, this hypothesis was not supported by the data. Instead, these researchers (and a bulk of later researchers) found that negative information was accorded greater weight than positive information of *equal intensity* in the formation of overall impressions (i.e., in equation 1,  $\beta$  was greater than  $\alpha$ ). This phenomenon was termed the *negativity effect*, and the findings have since been replicated consistently across a wide range of stimuli, including in the domains of person impressions, brand judgments, and political candidate evaluations (though some exceptions exist, e.g., Ahluwalia et al. 2000; Folkes and Patrick 2003; Skowronski and Carlston 1989).

In consumer behavior, Lutz (1975) was perhaps the first to find evidence of the negativity effect. In two experiments, Lutz gave adult women positive and negative attribute information about a laundry detergent and asked them to form overall evaluations. Results suggested that negative product information exerted greater influence than positive product information on cognitive structure and attitudes (i.e.,  $\beta$  was greater than  $\alpha$ ). On somewhat similar lines, Mizerski (1982) gave student participants favorable and unfavorable information ostensibly provided by other students about an automobile and asked them to make attributions (i.e., factors relating to or not relating to the automobile) about the student's opinions, beliefs, and affect toward the automobile. His results confirmed that unfavorable information carried greater weight than favorable information in the formation of all three dependent measures.

Herr, Kardes and Kim (1991) gave participants anecdotal information in a face-to-face (vivid) manner or in a printed (pallid) format, along with detailed information about a computer from *Consumer Reports*. Results indicated that negative information about the computer was perceived to be more informative than positive information, irrespective of the format of

anecdotal information. In another experiment, the same authors found that negative product information about an automobile carried greater weight in evaluations than positive information, irrespective of whether participants were instructed to form an impression of the automobile or to memorize its attributes. These findings attest to the greater impact of negative over positive product information across a range of conditions and stimuli.

### **Explanations for the Negativity Effect**

The theories most commonly cited as explanations for negativity effects fall into four classes: expectancy-contrast theories, frequency-weight theories, range theories, and category-diagnostics theory. The reader will find it helpful to note that all these theories implicitly assume that the intercept in equation 1 equals 0, an assumption that may not always hold. For example, when consumers process product information with specific goals in mind, or when they have positive or negative prior attitudes towards the target, the value of the intercept may be non-zero and may significantly influence the evaluations. This point will be discussed in detail later.

#### *Expectancy-Contrast Theories (also called figure-ground theories)*

These theories contend that the psychological anchor for many different dimensions of judgment (e.g., judgments of people, brands, objects, life in general) is on the positive end of the judgment scale<sup>2</sup> (Singh and Teoh 2000; see Matlin and Stang 1978, for a review). Consequently,

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<sup>2</sup> Empirical evidence supports the notion that people view most things positively. (Kaplan 1973, 1976; Parducci 1963, 1965, 1968). For example, the results of a well-known series of studies by Parducci (1963; 1965; 1968) indicate that the psychological anchor point is slightly to the positive side of true neutral for many different types of judgment. Other supporting research is reported by Kaplan (1973, 1976), who found that 80% of all participants in a study of "people in general" used positive words to describe unknown others and gave unknown others positive ratings. Further, positive words are used much more frequently than negative words (Boucher and Osgood, 1968); most people both expect and report high levels of personal happiness (Bradburn and Caplovitz 1965); and people tend to evaluate other people, including strangers, quite favorably (Sears and Whitney 1973). Results with similar implications have been reported by many other researchers (Frauenfelder, 1974; Greenberg, Saxe, and BarTal, 1978;

negative stimuli deviate from this positive anchor, and “stand out” (i.e., they are psychologically contrasted from the anchor). Hence, negative stimuli receive greater weight than positive stimuli in the formation of judgments. Stated differently, these theories assume that the anchor point is on the positive end of the scale and negative information is judged as more extremely negative than if the anchor were at true neutral.

Hence, if a consumer is exposed to a number of products that have positive attributes, the consumer’s perceptual anchor will shift toward the positive end of the internalized evaluative judgment scale. A subsequently encountered product with negative attributes would be perceived as more negative than it would have been under unadapted conditions (i.e., if the consumer had not been exposed to the products with positive attributes) because of the comparison of this product with the perceptual anchor (Skowronski and Carlston 1989). Because they rely on contrast effects in judgments, these theories are also referred to as figure-ground theories.

As an example, Simpson and Ostrom (1976) asked participants to rate either positive or negative stimulus persons, which served as context stimuli, and then asked them to write a paragraph of a standard neutral stimulus person. Results indicated that the paragraphs were contrasted away from the context stimuli. In other words, participants who were shown positive context stimulus persons rated the target person (who was actually, neutral) more negatively than those who were shown positive context stimulus persons. On similar lines, Levin, Wall, Dolezal and Norman (1973) asked participants to rate either several high valued or low valued personality trait adjectives, followed by a common neutral target. Results indicated that those

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Perlman and Oskamp, 1971; Sears, 1983; Zajonc and Burnstein, 1965) and are more comprehensively reviewed by Matlin and Stang (1978). Similar results have been reported in brand judgments, where people believe that most brands will perform well (e.g., Folkes and Patrick 2003; Herr, Kardes and Kim 1991; Mizerski 1982). The fact that people’s impressions of the world are so pleasant may make it easier for negative information to stand out by contrast.

who rated the high valued personality adjectives rated the neutral target lower than those who rated the low valued personality trait adjectives.

Recent evidence for expectancy-contrast theories is provided by Singh and Teoh (2000; also see Adaval 2003). These authors report that the person-positivity effect (Sears 1983) is higher for social than intellectual attraction, which leads to a stronger negativity effect in the former than in the latter.

### *Frequency-Weight Theories*

According to these theories, negative attributes are perceived as more novel than positive attributes because people view the world as a positive place (this point was elaborated in the earlier section). In other words, negative cues are perceived as “different” and “unique” and hence, receive extra attention and deeper processing, resulting in greater weight assigned to them over positive cues in the formation of judgments (e.g., Fiske 1980).

Considerable research supports the proposition that the novelty of target characteristics significantly affects impression ratings (Levin et al. 1973; McArthur and Solomon 1978; Taylor and Fiske 1975; Wyer 1974). For instance, Fiske (1980) showed that people pay more attention to, and place more weight on, negative cues than on positive cues. Research in marketing too, suggests that people believe most products to perform well (i.e., they have a positive expectation of most products), and that negative information is not normative (e.g., Folkes and Patrick 2003; Herr, Kardes and Kim 1991; Mizerski 1982). Mizerski (1982) found that most consumers expect a new product to have greater positive than negative attributes.

As an example of frequency-weight theory, Fiske (1980) gave participants two behavioral attributes each for several target persons, and measured their evaluations as well as their looking

times. Findings suggested that participants overweighed negative attributes, and also spent a greater time looking at them as opposed to positive attributes. Fiske (1980) suggests that because most person cues are positive, negative cues stand out due to their being rare. Hence, they attract more attention and receive more weight.

Novelty alone, however, may not be able to solely account for the negativity effects. Research examining the independent influence of novelty and negativity has found that negative information continues to receive greater weight in evaluations even after novelty is taken into account (i.e., is controlled for; e.g., Abelson and Kanouse 1966; Feldman 1966), suggesting the need for other explanations that may provide a better understanding of negativity effects (Kanouse and Hanson 1972).

Note that the frequency-weight theories seem similar to the expectancy-contrast theories in their assumption that “the world is a positive place.” However, whereas frequency-weight theories suggest that negative information carries more weight because it is more *informative* (perhaps, due to their greater novelty), the expectancy-contrast theories indicate that negative information is *contrasted* against the backdrop of positive expectations (or positive anchor). As will be shown later, for the purposes of this dissertation, this distinction is not important and the two explanations may be subsumed into one general theory. Like the expectancy-contrast theories, the frequency-weight theories are also silent about conditions leading to positivity effects (i.e., they cannot explain positivity effects).

Both the expectancy-contrast and the frequency-weight theories predict that consumers who have positive attitudes towards a brand are more likely to contrast the negative product information and find it “surprising” than those who have negative attitudes towards the brand. Hence, according to these theories, consumers who have a positive attitude towards a brand

should show greater negativity effect than those who have a negative attitude towards the brand.

<sup>3</sup>This expectation leads us to our first hypothesis.

H1: (Expectancy-contrast and frequency-weight hypothesis): If consumer A has a more positive attitude towards the target brand than consumer B, then when both consumers see equivalent positive and negative information of equal intensity about the brand, consumer A would evaluate the brand more negatively than consumer B.

### *Range Theories*

These theories rest on the notion that when people are asked to evaluate a cue (e.g., a person trait, attribute or a brand name), they give a value that is most probable, though other values within a given range may also be acceptable to them (Birnbau 1972; Wyer 1973; 1974). In other words, every stimulus cue implies some range of possible values along a dimension of judgment. Hence, when a consumer responds to an individual cue (e.g., *Toyota*), with a rating (e.g., 6 on the quality dimension), she is reporting a value that is most probable for her. However, other values within a range may also be possible (e.g., 5 to 7). The width of this range reflects her uncertainty about the cue: the more narrow a cue's distribution, the less ambiguous

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<sup>3</sup> Because prior research using these theories has primarily used anonymous (not specific) targets, one may argue that expectancy contrast theories lead to the prediction that a contrast would occur when specific (or particular) stimuli are judged based on expectations of the general category to which the stimulus belongs. However, expectancy-contrast theories also lead to the prediction that a contrast would occur when specific stimuli are judged based on expectations of the same stimuli, for instance, when the situation is novel enough to warrant a re-evaluation of the brand (see study 4 for more). For details on the predictions of expectancy-contrast theories, see Skowronski and Carlston (1987; 1989).

its meaning, and greater is the weight it carries in judgments<sup>4</sup> (also relevant here is assimilation-contrast theory by Sherif and Hovland 1961).

More specifically, these theories postulate that an impression judgment made from two cues approximates the midpoint of the overlap in these cues' distributions (note that this prediction is akin to that made by an averaging model discussed earlier). They further contend that a cue with little variability will be perceived as less ambiguous and hence, would carry greater weight in the formation of overall evaluations than a cue with higher variability, even though the two cues may be equal in mean extremity. Further, these theories assume (with empirical support) that most negative cues have narrower distributions of meanings and hence, are perceived as less ambiguous than are positive cues. Hence, negative cues are weighed greater than positive cues.<sup>5</sup>

For example, the cue "he pocketed the \$2.00 tip the previous customer left for the waitress," may have a narrower range of values on the morality dimension than the cue "he donated \$2.00 to a charity that publishes names of donors." When these two cues are combined (e.g., when a subject is told that a person engaged in both these behaviors, and is asked to form an overall morality evaluation of this person), the cue with the smaller range (here the former cue) is likely to weigh greater than the cue with a larger range of values elicited (here the latter cue) because it is less ambiguous or more informative. Similarly, in the product context, the cue "the computer hard drive failed when he needed it most" (a negative cue) may elicit a narrower range on the quality dimension than the cue "the computer hard drive did not fail when he

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<sup>4</sup> A variation of these theories assumes that when a number of people are asked to evaluate a cue, all of them do not agree on the value. The range of possible values reflects the ambiguity of the cue, such that the wider the range, higher is the ambiguity, and lesser the weight assigned to the cue in the formation of overall impressions.

<sup>5</sup> It is noteworthy that range theories are generally viewed more broadly than presented here (e.g., Ostrom and Upshaw 1968; Volkmann 1951). According to the latter conceptualization, the range of the values of the stimuli to be judged determines the perceived value of any one stimulus in the range.

needed it most” (a positive cue) because the former cue is less ambiguous about performance than the latter cue. Hence, the former (negative) cue is predicted to have a greater weight than the latter (positive) cue in the formation of overall evaluations about the performance of the computer, assuming of course, that the two cues are equal in extremity.

### *Category-Diagnosticity Theory*

This approach assumes that people categorize other individuals and objects using the informational cues that are available (Skowronski and Carlston 1987; 1989; 1992). As elaborated in the earlier section, these cues can have multiple values, and hence, several categorizations are possible with a single cue. This approach further postulates that people will view some cues as more helpful than other cues in discriminating between alternative categorizations. For instance, “stealing money” is likely to be perceived as much more informative with respect to an actor’s honesty or dishonesty (i.e., fewer categorizations are likely for the cue) than the behavior “giving money for charity” (for which, more categorizations are likely). The better a cue’s ability to discriminate between alternative categorizations, the higher is its category-diagnosticity. Attributes perceived as more diagnostic for category membership will have more of an influence on impression formation than will less diagnostic attributes.

Skowronski and Carlston (1987) suggest that negative behaviors are more diagnostic (i.e., helpful in categorizing a person) than positive behaviors because they are thought to be characteristic primarily of actors who belong in negative categories. Positive behaviors are seen as less diagnostic (i.e., less helpful in categorizing a person) because they may be characteristic of actors in both positive and negative categories. Hence, people confronted with positive and negative cues of equal extremity should generally assign the negative cue more weight, which

should lead to a negativity effect. For example, a person who robs banks (a dishonest act) and accurately reports income to the IRS (an honest act) will generally be perceived as dishonest because the former cue is more informative than the other, even though they may be equal in intensity. In essence, most people may report their taxes to the IRS accurately, but relatively fewer people rob banks (see Skowronski and Carlston 1989).

Another example, provided by Reeder and Coovert (1986) may help understand this better. These authors argue that moral persons rarely, if ever, emit immoral behavior. Moral people like the Pope or Mother Teresa would not be expected to cheat on their income tax returns. On the other hand, immoral persons commit not only immoral deeds, but also moral acts under some circumstances. For instance, a mafia hit man may make an occasional donation to charity. In sum, observers expect immoral behavior to be emitted only by persons who hold an immoral disposition, whereas moral behavior is expected from both moral and immoral persons. Hence, immoral behavior will be perceived as more diagnostic of the actor's character than moral behavior.

Skowronski and Carlston (1987; 1989; 1992) further suggest that when positive cues are more diagnostic than negative cues, a positivity effect should occur. One domain where this is likely is that of ability because people generally perceive success as evidence that an actor has the ability to perform a task, whereas they perceive failure as ambiguous, because numerous reasons (e.g., situational, motivational, or ability related factors) can be responsible for failure. Hence, success should be more diagnostic of ability than should failure.

Using the impression formation paradigm, Skowronski and Carlston (1987; 1992) asked participants to indicate the probability that a particular trait would be associated with a behavior, and found that positive behaviors were more diagnostic than negative behaviors in the ability

domain, whereas the opposite was true in the morality domain. They further found that the diagnosticities of behaviors were directly proportional to their relative influence in impression formation. In the domain of morality, the authors found a negativity effect, whereas in the domain of ability, they found a positivity effect (for similar results, see Singh and Teoh 2000; Wojciszke, Brycz and Borkeanu 1993). Further, in a product context, Herr, Kardes and Kim (1991) found support for the proposition that negative information about computers is more diagnostic or informative than positive information. Specifically, using a diagnosticity index, they found that negative computer attributes were more associated with low quality than positive attributes were associated with high quality (for details, see Herr, Kardes, and Kim 1991).

Several researchers have treated range theories as a special case of category-diagnosticity theory (e.g., Ahluwalia 1996; Mellers, Richards and Birnbaum 1992; Reeder and Spores 1983). The category-diagnosticity account contends that negative information gets more weight because it is more diagnostic than positive information – implying that negative information discriminates between alternative categories better than positive information. The range theory account contends that negative cues have narrower distributions than positive cues and therefore, are less ambiguous or more discriminative about their implications regarding category membership. These two arguments make the same point. Therefore, for the purposes of this research, range theory and category-diagnosticity theory may be treated interchangeably.

The range and category-diagnosticity theories predict that the more diagnostic (or less ambiguous) an attribute, the greater weight it should have in the evaluations. These theories do not predict any influence of consumer goals. In other words, according to these theories, whether a consumer is looking for a good product, or wishes to avoid a bad product, should not influence her product evaluations. These arguments lead us to our second hypothesis.

H2: (Range and Category-diagnostics hypothesis): If attribute A is more diagnostic than attribute B, then consumers would place greater weight on attribute A than attribute B in the formation of judgments, irrespective of their processing goals.

A summary of the essential propositions of the four theories presented thus far is given in table 1, whereas a comprehensive review of the literature is given in the appendix. In the next section, I discuss reasons for questioning the generality of these theories.

### **Limitations of the Extant Theories**

A limitation of some of the extant research in negativity and positivity effects is that they have assumed the intercept  $I$  in equation 1 to equal zero, and have focused solely on the influence of positive and negative attributes. Some factors that may influence the intercept are consumer goals, motivations, attitudes towards the product or object being evaluated, and familiarity with target. To the extent that the influence of these factors is not considered, we have an incomplete picture of how people form impressions of products from its constituent attributes. It is noteworthy that previous researchers seem to have deliberately avoided examining the influence of the intercept in equation 1 by asking respondents to evaluate *anonymous* objects and people.

This dissertation attempts to fill some of this gap by examining how consumer characteristics like their goals and attitudes, and product characteristics like attribute diagnosticity might influence the processing of product information. For example, it is not clear from extant research whether and how goals like looking for a good product or avoiding a bad product differ in their evaluations of the same product. Similarly, it is not clear how consumers with positive and negative prior attitudes towards a product or brand may evaluate negative and

positive attributes. Some indirect insights on how different goals and attitudes might influence the negativity and positivity effects may be gained by recent evidence outlined below. These findings seem to be in direct conflict with each of the existing accounts of the negativity effects, indicating the need for further theoretical development in this area.

As discussed earlier, previous research has shown that consumers highly committed<sup>6</sup> to a brand exhibit a positivity effect, whereas those less committed to a brand exhibit a negativity effect (Ahluwalia 2002; Ahluwalia, Burnkrant, and Unnava 2000; Ahluwalia and Klein 2004). Highly committed consumers are likely to have positive impressions of a brand, and may have goals of buying a good product, whereas uncommitted consumers are not likely to have positive impressions, and are not likely to have such goals. If this is correct, goals may influence the processing of product information. It is noteworthy that these findings seem inconsistent with the expectancy-contrast and frequency-weight theories of negativity effect which lead to the prediction that people who have positive prior impressions about an object are more likely to exhibit the negativity effect than those who have neutral or negative prior impressions of the brand. Indeed, Lau (1985), using the 1968, 1972, and 1980 CPS national elections data, showed that people who trust the government showed greater negativity effect on information pertaining to the government than people who distrust the government. On somewhat similar lines, Singh and Teoh (2000) reported that people view others' social characteristics (e.g., morality) more positively than their intellectual characteristics (e.g., intelligence). This distinction led to a greater negativity effect for the social than intellectual characteristics.

Sanbonmatsu et al. (1997) gave participants positive and negative information (four each, for a total of eight pieces of information) about four job candidates and asked them to indicate

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<sup>6</sup> As noted elsewhere, Ahluwalia controlled for the influence of attitude towards the brand while studying the influence of commitment to a brand on product evaluations. It cannot be said with certainty whether the findings of the commitment to brand would be the same as those for attitude towards the brand.

the probability that one of them was selected. Results indicated that participants overestimated the probability that each one of them was selected, suggesting that they weighed positive information greater than negative information (i.e., a positivity effect). These findings cannot be easily explained by any of the theories presented above. First, the expectancy-contrast and frequency-weight theories are, by and large, silent about positivity effects, and are not able to account for these. Second, the category diagnosticity account predicts positivity effects only when positive information is more diagnostic than negative information. This explanation is unlikely in Sanbonmatsu et al. (1997) because numerous studies have found significant and reliable negativity effects in the domain of candidate selection for a job (Macan and Dipboye 1994; Rowe 1989; Webster 1982; for a review, see Schmidt 2002), suggesting that negative information may be more diagnostic. As discussed in detail later, it is likely that Sanbonmatsu et al.'s results are driven by the instructions to indicate the probability that a candidate was selected (which may have prompted participants to test a positive hypothesis). A caveat here is that the negative and positive attributes were not controlled for "extremity." Hence, in principle, it is possible that the positive information carried greater weight because it was perceived to be more intense or extreme than negative information.

Collectively, these findings indicate the limitations of extant theories in accounting for all types of negativity and positivity effects. Further, in the real world, consumers usually have goals (e.g., to buy a good PC, or to avoid buying an inferior PC). To date, no research has investigated how consumers form impressions of products with positive and negative attributes when they have specific goals in mind. As discussed below, the selective hypothesis testing account may be one framework that can account for the discrepant findings discussed earlier, and make specific predictions about negativity or positivity effects when consumers process target

information with specific goals in mind, or when they have prior positive or negative attributes towards the target.

#### A SELECTIVE HYPOTHESIS TESTING ACCOUNT

Although negativity and positivity effects can be accounted for by several theories, recent evidence suggests that at least under some conditions, participants may be engaging in *selective hypothesis testing*, the tendency to focus on a specific hypothesis in the gathering and assimilation of evidence (as opposed to comparative hypothesis testing wherein alternatives [e.g., the null and the alternate hypotheses] are carefully compared for all options). In the process, alternatives are not directly compared to reach a conclusion, but greater attention is paid to hypothesis confirming than disconfirming evidence. Take for example, the task of judging whether a product is good or bad, given positive, negative and neutral attributes. Comparative hypothesis testing would begin with a systematic comparison of support for the two hypotheses under consideration (e.g., this product is “good” or “bad”). In contrast, in selective hypothesis testing, a particular hypothesis (e.g., “this product is good”) might be nominated and assessed. In the process, the hypothesis tester may place greater weight on information directly relevant to the hypothesis (e.g., positive information) than information that appears less relevant to the hypothesis (e.g., negative information) (Sanbonmatsu et al. 1997; 1998; also see Mussweiler 2003). The tendency to selectively choose and test a hypothesis may be because of people’s limited cognitive resources, or their being cognitive misers who carefully conserve scarce mental resources (e.g., Bargh 2002; Gilbert 1991; Fiske 1980; Taylor and Fiske 1975).

A number of findings suggest that selective hypothesis testing is directed toward confirmation of the focal hypothesis. People may not necessarily interpret or search for evidence

to confirm a given hypothesis; rather, they often collect, construe, and integrate evidence so as to favor the hypothesis under consideration. This effect may enter during the search for information stage (Klayman and Ha 1987; Pyszczynski and Greenberg 1987; Snyder 1981) such that instances or cases are sought that support the given hypothesis (Borgida and DeBono 1989; Devine, Hirt and Gehrke 1990; Sanbonmatsu, Akimoto and Gibson 1994; Skov and Sherman 1986; Wason 1960; 1968), and evidence that supports alternative hypotheses is ignored (Mehle, Gettys, Manning, Baca and Fisher 1981). Even though the support for alternative hypotheses may be equally or even more compelling, the hypothesis being considered is sometimes confirmed because hypothesis-inconsistent evidence is not adequately considered (for a detailed discussion, see Gibson, Sanbonmatsu and Posavac 1997).

Other research indicates that the mere act of understanding or comprehending a proposition entails believing it, and that once such beliefs are formed, people have considerable difficulty undoing them (see Gilbert 1991, and Gilbert, Tafarodi and Malone 1993 for reviews). Hence, simply comprehending a hypothesis may increase its perceived plausibility. Further, people often assume the validity of hypotheses that they are prompted to test (Evetts, Devine, Hirt, and Price 1994; see also Gettys et al. 1986). Additional research suggests that, during selective testing, the possibilities given the hypothesis is true are explicated or unpacked, thus heightening recognition of the scope of the focal hypothesis and/or an expansion of its boundaries (Tversky and Koehler 1994; also see Fishoff et al. 1978). Evidence not supporting the hypothesis is selectively challenged, discounted, or ignored (Ditto and Lopez 1992; Edwards and Smith 1996; Gilovich 1983; Lord, Ross, and Lepper 1979). As a result, evidence is more likely to be judged as supporting the hypothesis (see Sanbonmatsu et al. 1998 for a detailed discussion).

Consumers with different goals have been shown to test different hypotheses and process information in a manner that favors the hypothesis under consideration (Meyvis 2001; Meyvis and Janiszewski 2002). It is likely that when people with different goals encounter positive and negative information about a product, they will test different hypotheses and engage in selective hypothesis testing and process the same stimuli (e.g., positive and negative information about a product) differently (see Meyvis and Janiszewski 2002; Sanbonmatsu et al. 1997; 1998; Trope and Liberman 1996). For example, a consumer who is looking for a good computer may test a positive hypothesis (e.g., “this computer is good”) and focus more on the positive than negative attributes, and give the positive attributes more weight in the formation of judgments. On the other hand, a person who wishes to avoid buying a bad computer may test a negative hypothesis about the product (e.g., “this computer is bad”) and focus more on the negative attributes, and end up giving more weight to the negative than positive information. Hence, a positivity effect is expected for the former consumer, whereas a negativity effect is expected for the latter consumer. This process is outlined in figure 1.

The selective hypothesis testing account can fill some of the gaps in the negativity (or positivity) effect literature identified above. For example, in Ahluwalia’s studies reported above, if highly committed consumers previously had favorable experiences with the product, then they may have tested a positive hypothesis (e.g., “this product is good”), resulting in a positivity effect. On the other hand, less committed consumers, due to their unfavorable experiences with the product may have tested a negative hypothesis (e.g., “this product is not good”), resulting in a negativity effect. Of course, as argued by Ahluwalia, it is also possible that committed participants counter-argued against the negative information and accorded less weight to it, whereas less committed participants did not counter-argue, which resulted in the usual negativity

effect. From the evidence, it is not clear which explanation (selective hypothesis testing or counter-arguing) accounts for Ahluwalia's findings.

Sanbonmatsu et al.'s (1997, experiment 2)<sup>7</sup> findings provide more direct support for the selective hypothesis testing account. Recall that Sanbonmatsu et al. gave participants positive and negative information (four each, for a total of eight pieces of information) about four job candidates and asked them to indicate the probability that one of them was selected. Results indicated that participants overestimated the probability that each one of them was selected. In other words, participants exhibited a positivity effect. It is possible that these instructions triggered the testing of the positive hypothesis (that each candidate was selected). Specifically asking participants to indicate the likelihood that each candidate was not selected could result in negativity effect because participants would likely test a negative hypothesis.

On similar lines, the participants in a choice study by Shafir (1993; also see Chernev 2001; Dunning and Parpal 1989) were given information about parents who were competing for custody of a child. One parent was described by a greater number of negative and a greater number of positive attributes. Both groups of participants -- those who were asked to assess which parent should be awarded custody and those who were asked to assess which parent should not be awarded custody -- selected the same parent -- the parent with the greater number of positive and negative qualities. Note that these findings cannot be easily explained by the existing accounts of the negativity effect. However, they may be explained by a selective hypothesis testing account. Participants asked to choose a parent may have tested a positive hypothesis and focused more on the positive than negative attributes, assigning them greater

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<sup>7</sup> One needs to be cautious in interpreting the findings of Sanbanmatsu et al. (1997, experiment 2), and Shafir (1993) because they did not control for the extremity of the negative and positive behaviors. In other words, their findings may have been driven by the differential intensity of positive and negative attributes. However, this is much less likely for Shafir's findings because he showed both positivity and negativity bias in the same context using instructions to choose or reject.

weight, whereas those asked to reject a parent may have tested a negative hypothesis and assigned greater weight to negative than positive attributes.

Snyder and Cantor (1979) made participants read an extensive account of events in one week of the life of a woman named Jane. Subsequently, participants used this information to test hypotheses about Jane's suitability for one of two jobs: either the rather extraverted job of real estate salesperson, or the rather introverted job of research librarian. Participants were first asked to report all of Jane's characteristics/behaviors relevant to assessing her suitability for the job under consideration, and then to indicate their judgments of her job suitability. Results indicated that participants reported greater amounts of hypothesis confirming than hypothesis-disconfirming characteristics/behaviors. Further, participants judged her to be better suited for the hypothesized job than for the non-hypothesized job. Note that in this case, all the existing explanations of negativity effect predict that when evaluating the suitability of Jane for either job, greater attention and weight should be given to negative than positive information (e.g., Fiske 1980), resulting in participants judging her to be less suited for that job than for the other job. Hence, Snyder and Cantor's results are inconsistent with the existing accounts of the negativity effect, but consistent with the selective hypothesis testing account, indicating that the latter may dominate the other accounts of the negativity effect.

Van Der Plight and Eiser (1980) and several others (e.g., Anderson 1965; Dreben, Fiske, and Hastie 1979; Singh and Teoh 2000) provide reliable evidence of primacy effects in impression formation such that negative behavior is weighed heavier than positive behavior when it comes first but not when it comes second (i.e., NP is evaluated as more negative than PN). These results can be accounted for by the selective hypothesis testing account, but not by the other accounts of the negativity effect. There is evidence that when people are not given an

explicit hypothesis to test, they form a hypothesis based on the first stimuli encountered, and proceed to test it with the remaining stimuli (Trope and Liberman 1996). People given positive information first may be more likely to test a positive hypothesis and hence, may be relatively less influenced by the negative information provided later. Those who are given negative information first are predicted to be more likely to test a negative hypothesis and hence, may be relatively more likely to show negativity effects.

Skowronski and Carlston (1992) gave participants a behavior (positive or negative) followed by 1, 2, 3, or 4 equally extreme contradictory behaviors. Results suggested that when the behavior was diagnostic (e.g., negative morality or positive ability related behavior; see “Category Diagnosticity” section), both positive and negative initial behaviors were resistant to change. However, when the behavior was not diagnostic, participants readily changed their impressions after receiving contradictory behavior. At first glance, the former result seems consistent with the selective hypothesis testing account because it is likely that participants formed and tested a hypothesis relating to the information provided first. The latter result seems inconsistent because according to the selective hypothesis testing account, participants should form and test a hypothesis based on any first information, which should be resistant to change. However, other research suggests that people are more likely to form and test a hypothesis when provided diagnostic information than when provided non-diagnostic information (e.g., Shaklee and Fischhoff 1983; Trope and Bassok 1982; Trope and Liberman 1996). Taken together, this suggests that while participants in the former condition formed and tested a hypothesis, those in the latter condition may not have done so. Collectively, these results support the selective hypothesis testing account.

The selective hypothesis testing account may also be able to explain the findings formerly attributed to the category-diagnostics theory. Recall that the category-diagnostics theory contends that attributes perceived to be more diagnostic receive greater weight in evaluations (Skowronski and Carlston 1987; 1989). The model further postulates that in the domain of morality, negative behavior (immoral) is more diagnostic than positive behavior (moral), whereas in the domain of ability, positive behavior (high intelligence) is more diagnostic than negative behavior (low intelligence), which leads to a negativity effect for the former but a positivity effect for the latter.<sup>8</sup> Other research suggests that people are more likely to engage in selective hypothesis testing when provided diagnostic information than when provided non-diagnostic information (e.g., Devine, Hirt, and Gehrke 1990; Skov and Sherman 1986; Trope and Bassok 1982; Trope and Liberman 1996; Zuckerman, Knee, Hodgins, and Miyake 1995).

Hence, it is possible that when people are encouraged to think about morality-immorality, they test a hypothesis based on immorality (rather than morality) because it is more diagnostic (Skowronski and Carlston 1987; 1989), resulting in negativity effect. On the other hand, when people are encouraged to think about ability, they may test a hypothesis based on high ability (rather than low ability) because high performing actions are more diagnostic, resulting in positivity effects (i.e., intelligence is accorded greater weight than stupidity).

The selective hypothesis testing account predicts that consumers who test a negative hypothesis are more likely to evaluate a product unfavorably than those who test a positive hypothesis, when both are exposed to the same positive and negative product attributes.

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<sup>8</sup> Reeder and Coovert (1986) contend that along with being higher in diagnosticity, immoral behavior (or high ability behavior) is also more vivid or salient than moral behavior (or low ability behavior). Given that people often form hypotheses based on salient cues (Trope and Liberman 1996), it follows that people may have formed and tested hypothesis based on immoral (or high ability cues) rather than moral (or low ability) cues.

Moreover, since the default hypothesis tested is negative, the evaluations of consumers testing a negative and neutral hypothesis do not differ. This leads to our third hypothesis.

H3: (Selective hypothesis testing hypothesis): People will evaluate the product more favorably if they test a positive hypothesis than if they test either a negative hypothesis or no hypothesis; the evaluations of the latter two will not differ.

As discussed earlier, a consumer who has a positive attitude towards a brand is likely to have more favorable experiences with a brand, whereas a consumer who has a negative attitude towards a brand is likely to have less favorable experiences towards a brand. Hence, the former consumer may be more likely to test a positive hypothesis, whereas the latter consumer may be more likely to test a negative hypothesis. This argument leads us to the fourth hypothesis.

H4: (Selective hypothesis testing hypothesis): If consumer A has more positive attitude towards the brand than consumer B, then when both consumers see positive and negative information of equal intensity about the brand, consumer B would evaluate the brand more negatively than consumer A.

Finally, in contrast to the category-diagnostics account, the selective hypothesis testing account predicts that goals influence product evaluations. For example, a consumer who is looking for a good product is more likely to test a positive hypothesis, which is likely to result in a positivity effect. On the other hand, a consumer who wishes to avoid a bad product is likely to test a negative hypothesis, which is likely to result in a negativity effect. When consumers with

different goals encounter positive and negative product attributes differing in diagnosticity, the selective hypothesis testing account predicts evaluations consistent with the goals but independently of attribute diagnosticity. This argument leads to our fifth hypothesis.

H5: (Selective hypothesis testing hypothesis): The effect of selective hypothesis testing on product evaluations occur independently of attribute diagnosticity.

#### RECONCILIATION WITH EXISTING FINDINGS OF THE NEGATIVITY EFFECT

Given that most researchers demonstrating the negativity effect did not give participants explicit hypotheses before presenting the stimuli (i.e., positive and negative attributes, characteristics, or behavior), does it mean that no hypothesis testing took place? In this section, I argue that this may not necessarily be so. Instead, participants may have inadvertently tested a negative hypothesis resulting in a negativity effect.

The notion that participants may have tested a negative hypothesis receives support from several researchers. First, Sanbonmatsu et al. (1998, p. 214) note:

“A hypothesis is often selected for testing because of its motivational significance, informational value, and/or relevance to the self. In many situations, it is important to test some hypotheses before others. For example, if there is an unidentified animal rumbling about the tent, it is probably more prudent to check the possibility that it is a bear before entertaining the notion that it is a raccoon. Similarly, in trying to account for the expression of irritation on the boss’s face, it is more important to examine one’s own behavior before considering which of several colleagues might be acting in an obnoxious or annoying manner.”

Further, Trope and Liberman (1996) outline a detailed cost-benefit account of the motivation for hypothesis testing. They propose that before initiating hypothesis testing, people weigh the costs associated of committing errors of omission (false negatives, or type I errors) and errors of commission (false positives, or type II errors). The two costs are generally asymmetric, and this may lead to a preference for testing one hypothesis over the other.

Negative attributes may be perceived as losses, and positive attributes may be perceived as gains. For example, a person who has a reference point of 25 miles per gallon (mpg) of gas for an average car is likely to evaluate 15 mpg as a negative attribute but 35 mpg as a positive attribute. Empirical evidence indicates that people may be more motivated to avoid losses than to seek gains (Kahneman and Tversky 1979). Taken together, these arguments indicate that people may be more motivated to avoid negative attributes than to seek positive product attributes (i.e., people are generally risk averse; see Kahneman and Tversky 1979), leading them to test a negative than a positive hypothesis about a product, unless instructed otherwise, or unless it conflicts with their goals (Trope and Liberman 1996). Friedrich (1993) provides considerable support for the notion that the hypothesis selected by participants depends on the likely costs that would be incurred in case of an error. For example, if consumers are likely to lose more by selecting a bad product than gain by selecting a good product, they are more likely to test a negative than a positive hypothesis (also see Kellerman 1984).

Second, Pyszczynski and Greenberg (1987, p. 308)<sup>9</sup> suggest that "...the hypothesis selection phase may also be affected by one's focus of attention and the perceptual salience of

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<sup>9</sup> Pyszczynski and Greenberg (1987, p. 310) also note that when initially gathered data do not allow a clear test of the hypothesis under consideration, people are likely to use multiple inferential rules (i.e., sometimes, a different hypothesis), suggesting that when given a hypothesis and both positive and negative information, participants may discard the initial hypothesis and formulate a different one. If Pyszczynski and Greenberg's (1987) claims are valid, support for the argument that negativity and positivity effects are driven by selective hypothesis testing may be difficult to obtain.

objects in the environment (e.g., Hensley and Duval 1976; McArthur 1981; Smith and Miller 1979; Taylor and Fiske 1975; Taylor et al. 1978). Objects that are perceptually salient or upon which attention is focused may be especially likely to be selected as part of a causal hypothesis to be validated with further processing.” In most instances, negative information has been shown to be salient and attract greater attention (e.g., Fiske 1980; Pratto and John 1991; Ybarra, Chan, and Park 2001). Further, lesser time and fewer cues are required to make a negative evaluation than a positive evaluation (Peeters and Czapinski 1990). Lastly, when participants are asked whether they want to hear either the good news or the bad news first, they prefer the bad news (Marshall and Kidd 1981, cited in Peeters and Czapinski 1990). Hence, other things remaining the same, it is likely that decision makers will attend to negative information first, treat it as a tentative hypothesis and test it with all the available information.

Third, Kanouse and Hanson (1972, p. 56) note: if a choice needs to be made from “a range of generally positive alternatives, it is simpler and less effortful to “sort the alternatives” on the basis of their few negative aspects rather than their many positive one’s. for the same reason that one counts empty seats in a theater that is largely filled, and filled seats in a theater that is largely empty.” Since people perceive the world as a positive place (this is actually the foundation for most early theories of the negativity effect), it may be easier to test a negative than a positive hypothesis.

Fourth, Warr (1974) argues that when people are asked to make a judgment on the basis of several items of information, they select the item with the most negative (or extreme) evaluation implications and make a provisional judgment based on that item. Then they examine the implications of the remaining items and modify the provisional judgment accordingly. This

line of reasoning also suggests that people may be more likely to form and test a negative hypothesis than a positive one.

Evidence indicates that once a hypothesis is selected, participants engage in a biased search for evidence to test the hypothesis (Shaklee and Fischhoff 1982; Snyder and Cantor 1979; Snyder and Swann 1978; Klayman and Ha 1987; Wason 1960). In other words, participants testing a negative hypothesis about a product (e.g., “this product will not work”) are likely to look for evidence that the product is indeed bad. Lastly, participants have been shown to only consider the implications of the focal hypothesis (here, the negative hypothesis) and ignore the consequences of the alternate hypothesis (here, the positive hypothesis). Thus, consumers’ hypothesis testing is not only confirmatory, but is also selective (Beyth-Marom and Fischhoff 1983; Sonbanmatsu et al. 1997; 1998; Trope and Liberman 1996). This tendency is predicted to result in evaluations confirming the focal hypothesis (here, a negativity effect).

In sum, considerable research alludes to the possibility of the negativity (and positivity) effects being driven by a selective hypothesis testing process, though no prior research has tested their relationship. Furthermore, in unrelated domains (e.g., the dilution effect), the selective hypothesis testing account has been shown to be able to explain a wider range of phenomena than any other theory (e.g., averaging, representativeness, conversational norms) (see Meyvis 2001; Meyvis and Janiszewski 2002). Would the same hold true for negativity and positivity effects? This is the central question I wish to examine in this dissertation.<sup>10</sup>

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<sup>10</sup> It is important to note that evidence for the validity of the selective hypothesis testing in judgments does not imply invalidity of extant models of negativity and positivity effects. Robust support exists for the models outlined earlier (e.g. expectancy-contrast theory, category diagnosticity theory). I am not arguing that these models do not explain negativity and positivity effects. All I am arguing is that these are not the sole explanations of impression effects. It is therefore, not the intention of this research to supplant the existing explanations of negativity and positivity effects, but to complement them.

## SUMMARY

This chapter reviewed the literature on how people evaluate negative and positive stimuli of equal intensity. It was concluded that a majority of literature reveals that negative information is accorded greater weight than positive information of equal extremity and importance. Four explanations for this phenomenon were also reviewed –expectancy-contrast theories, frequency-weight theories, range theories, and the category-diagnostics account. Given these theories’ silence on how consumer goals and attitudes influence product evaluations, and recent evidence, it was concluded that these four theories may not account for all types of negativity (and positivity) effects.

A selective hypothesis-testing model was proposed to account for how consumer goals and attitudes may influence the evaluation of product information. It was suggested that consumers who have positive goals (e.g., to buy a product) and those with favorable prior attitudes are likely to test a positive hypothesis of the product (e.g., this product is good), whereas those with negative goals (e.g., to avoid buying a product) and those with unfavorable prior attitudes are likely to test a negative hypothesis of the product (e.g., this product is not good). These hypotheses are predicted to guide subsequent processing of the product information such that hypothesis consistent evidence is given greater weight than hypothesis inconsistent evidence. Hence, consumers testing a positive hypothesis are likely to weigh positive product information greater than negative information, whereas those testing a negative hypothesis are likely to weigh negative information greater than positive information.

## CHAPTER 3: METHODOLOGY AND RESULTS

In the previous chapter, I outlined a selective hypothesis testing explanation of negativity and positivity effects, and proposed several hypotheses contrasting this explanation against existing explanations of these effects. In this chapter, I report a set of experiments conducted to test these hypotheses.

Given that no previous study has provided direct empirical evidence supporting the selective hypothesis testing explanation, study 1 was designed to test whether the selective hypothesis testing is a viable explanation of negativity and positivity effects (H3). Study 2 provides evidence against conversational norms, which is an alternative explanation of the findings of study 1. Study 3 attempts to show that the effect of selective hypothesis testing is independent to that of category-diagnostics theory, and study 4 contrasts the expectancy-contrast (and frequency-weight) theories against the selective hypothesis testing explanation (H1 and H4). Table 2 provides an overview of these four studies.

### PRETEST

A pretest was conducted to ascertain negative and positive product attributes that are perceived to be equivalent in terms of extremity and importance. Fifty-three undergraduate students participated in exchange for class credit. Participants were told that they would be shown a wide range of products and their attributes (one at a time), which could be negative, positive, or neutral. They were further informed that the attributes listed are all of different brands of the product indicated, and that they should indicate whether the attribute is good or bad

using the -5 to +5 scale provided, where -5 represented "very bad," 0 represented "neither good nor bad," and +5 represented "very good." Participants were also asked how important the attribute is on a 9-point scale, anchored by "not important" and "important." Five products with positive and negative attributes insignificantly different in terms of extremity and importance were selected. These are outlined in table 3.

## STUDY 1

### **Objective**

Study 1 was conducted to show that selective hypothesis testing is a viable explanation of negativity and positivity effects. Specifically, I predicted that participants testing a positive hypothesis about a product (e.g., this product is good) would evaluate them more favorably than those testing a negative hypothesis (e.g., this product is bad) and those testing a neutral hypothesis (i.e., no hypothesis). The evaluations of the latter two groups of participants are not likely to differ because as argued earlier, the default hypothesis is negative.

### **Participants and Design**

Seventy undergraduate students enrolled in introductory business courses (Principles of Marketing and Management and Organizational Behavior) were randomly assigned to a positive hypothesis, negative hypothesis, or no hypothesis (control) condition. Respondents participated in exchange for class credit. The design was a 3 (hypothesis tested: positive, negative, none) x 5 (product replicates) mixed design. In the negative hypothesis condition, participants were asked to evaluate the possibility that the product (e.g., an airline) with the attributes shown is bad.

Conversely, in the positive hypothesis condition, participants were asked to evaluate the possibility that the product is good. In the control condition, no hypothesis was provided; participants were simply asked to evaluate the products with the listed attributes.

## **Procedure**

A computerized program was used to administer the experiment. Upon entering the lab, participants were seated on a computer terminal, which read:

“Thank you for agreeing to participate in this study.

In the following screens, we will show you a few products and some information about them. We would then ask you to indicate whether the product is good or bad, given the information.

The product information could be positive or negative (i.e., good or bad product attributes). You should look at this information as objective information, i.e., information as provided by *Consumer Reports*.

Please click on continue to proceed.”

Thereafter, depending on the condition they were in, participants were given a positive, negative, or no hypothesis (described above). Then they were shown five product replicates (airline, apartment, car, shampoo, hotel), on different screens, and the corresponding positive and negative attributes listed in table 3, and were asked to evaluate each product on a -5 to + 5 scale anchored by “very bad” to “very good.” After all product replicates had been presented, participants were given a reaction time training task. Following Meyvis and Janiszewski (2002), participants were shown six simple statements unrelated to the experiment (e.g., “Miami is the

capital of the United States”). Their task was to indicate whether the statement “True” or “False” as fast as possible by pressing the “T” or “F” key on their keyboard. The average time taken to answer these questions served as a measure of baseline speed of the respondent. The measures of response time to positive and negative attributes (elaborated next) were divided by the baseline measure to control for respondents’ intrinsic tendency to work at a fast or slow pace on general questions. Participants were then shown five each of negative and positive attributes from the list they saw earlier, and were asked to indicate whether each attribute was presented earlier or not as fast as possible on a binary scale anchored by yes/no. The time each participant took to answer the questions (i.e., response time) was recorded by the computer.

Finally, participants were asked to indicate the diagnosticity of the attribute information shown to them. The measure of diagnosticity was based on Skowronski and Carlston (1987), Herr, Kardes, and Kim (1991), and Ahluwalia (1996). Participants were shown the negative and positive attributes presented earlier, and asked to estimate the percentage of high-versus low quality products that had those attributes. Low (high) quality was defined as below (above) average as judged by most people. To compute the diagnosticity index, ratios using these estimates were computed. The diagnosticity of negative information was computed by dividing the perceived probability of a low quality product having the negative attribute by the sum of the same probability and that of a high quality product having the negative attribute. Similarly, the diagnosticity of a positive attribute was computed by dividing the probability of a high quality product having the positive attribute by the sum of the same probability and that of the low quality product having the positive attribute.

## Results

*Product Evaluations.* Directional hypotheses in this and subsequent studies were conducted via 1-tail tests. An ANOVA with evaluations as the dependent variable and hypothesis tested revealed that participant evaluations in the positive, negative, and neutral conditions were significantly different ( $F(2, 67) = 2.62, p < .05, d = .31$ ). As predicted, follow up contrasts suggested that participants in the positive hypothesis condition ( $M = 5.42$ ) evaluated the products higher than those in the control condition ( $M = 4.78, t(48) = 1.64, p < .05, d = .47$ ), and the negative hypothesis condition ( $M = 4.55, t(37) = 2.34, p < .05, d = .76$ ; see figure 2). As predicted, product evaluations of participants in the latter two conditions were not significantly different ( $t(49) = 0.67, p > .50, d = .19$ ), which is consistent with the prediction that the default hypothesis (i.e., in the control condition) is negative. These findings support H3a and H3b.

*Response Times.* If indeed, participants in the positive hypothesis condition paid greater attention to positive than negative attributes, then these attributes should be salient in their minds and participants should be faster in recognizing them later. Similarly, participants in the negative hypothesis condition should have negative attributes more accessible in memory, which should result in lower response times to negative over positive attributes. To assess this, first, the response times of similarly valenced attributes (i.e., positive or negative) were aggregated. Next, as indicated earlier, in order to control for participant's intrinsic speed of responding, these two measures were divided by participants' response time to the six general questions (i.e., ratios were created). Hence, two indices were created – one for the positive attributes (range = 0.26 to 2.41), and the other for the negative attributes (range = 0.29 to 1.37). A GLM with response time to positive and negative seen attributes as a repeated measures variable, and hypothesis tested

(positive or negative) revealed an interaction ( $F(2,67) = 2.54, p < .06, d = .39$ ). Participants in the negative hypothesis condition were faster in responding to negative ( $R = .65$ ) than positive attributes ( $R = .75, t(37) = 1.50, p < .07, d = .50$ ), whereas those in the positive hypothesis condition were faster in responding to positive ( $R = 0.85$ ) than negative ( $R = 0.94$ ) attributes, though the latter difference was insignificant ( $t(37) = 0.70, p < .48, d = .23$ ). The response times are depicted in figure 3. These data are consistent with the selective hypothesis testing explanation.

*Diagnosticity.* I tested whether diagnosticity influenced product evaluations. A regression equation with product evaluations as the dependent variable, and diagnosticity as the independent variable was significant ( $\beta = .25, t(64) = 2.05, p < .05$ ), suggesting that participants relied, at least in part, on diagnosticity to form product evaluations. Hence, H2 is supported.

*Mediation Analysis.* Next, I tested whether diagnosticity was responsible for the evaluation differences by hypothesis tested (i.e., whether diagnosticity mediated the relationship between hypothesis tested and product evaluation). The mediation was examined using a series of regression equations prescribed by Baron and Kenny (1986) to ascertain mediation. In the first regression equation, product evaluation was regressed on hypothesis tested and consistent with the above results, the relationship was significant ( $\beta = .26, t(67) = 2.19, p < .05, d = .53$ ). In the second equation, diagnosticity was regressed on hypothesis tested and the relationship was not significant ( $\beta = -5.42, t(67) = 1.13, p > .25, d = .27$ ). In the third equation, product evaluation was regressed on diagnosticity and hypothesis tested. Results revealed that the effect of hypothesis tested was unchanged from the first equation ( $\beta = .23, t(66) = 1.95, p < .05, d = .48$ ), even though attribute diagnosticity was also significant ( $\beta = .22, t(66) = 1.80, p < .08, d = .44$ ). These findings suggest that diagnosticity did not mediate the relationship between hypothesis

tested and evaluations, and that both hypothesis tested and diagnosticity influenced product evaluations. Hence, H5 is supported.

## **Discussion**

The results of the first study support the selective-hypothesis testing framework. Participants in the positive hypothesis condition evaluated the products more favorably than those in the negative and neutral hypothesis conditions, suggesting that they assigned greater weight to the positive than negative attributes. Those in the negative hypothesis condition accorded greater weight to the negative than positive attributes, thereby evaluating products inferior. The evaluation of participants in the negative hypothesis condition was insignificantly different from those in the control condition, which is consistent with the prediction that in the absence of any goals or prior attitudes, people are likely to test a negative hypothesis.

Further support for the selective hypothesis-testing framework comes from the response time data. If participants in the positive hypothesis condition paid greater attention to the positive attributes than those in the negative hypothesis condition, then these should be reflected in the response times. Specifically, participants should be faster in responding to the attributes congruent with the hypothesis being tested. Our results confirmed these predictions. Participants were faster in responding to positive attributes when in the positive than negative hypothesis condition, whereas the opposite was true for the negative attributes. Overall, the pattern of results supports the selective hypothesis-testing framework outlined in the previous chapters.

When both hypothesis tested and diagnosticity were entered in the regression model to explain product evaluations, results suggested that both were significant. This finding is important because the central argument of the dissertation is that the selective hypothesis testing

is a relatively *new* explanation that has been overlooked in the context of negativity and positivity effects. If the effect of hypothesis testing on evaluations runs through (i.e., is due to) differences in diagnosticity or if the hypothesis tested somehow influenced participants (e.g., if participants in the positive hypothesis condition somehow perceived the positive product information as more diagnostic than those in the negative hypothesis condition), then diagnosticity should have mediated the link between hypothesis tested and evaluations. Clearly, the data did not support this view. Instead, it appears that the effect of hypothesis tested on evaluations occurs independently of diagnosticity and that diagnosticity was not responsible for the relationship between hypothesis tested and evaluations.

An alternative explanation of these findings is that participants may have relied on conversational norms (Funder 1987; Grice 1975). According to this account, conversations are guided by a set of tacit assumptions, and all information contributed by discussants is deemed to be relevant to goals of the ongoing discussion. Hence, it is possible that participants believed that because the hypothesis was provided by the experimenter, it is relevant to the task at hand (i.e., product judgments), and based the evaluations on the given hypothesis (A variation of this explanation suggests that participants may have been influenced by experimenter demand). This account also predicts that participants would evaluate the products lower (higher) when given the negative (positive) hypothesis. In addition, since participants were asked to evaluate the possibility that the products shown are good or bad, one could argue that we did not assess participants' goals, and that we directly gave the participants the hypothesis to test. Study 2 was designed to overcome these limitations.

## STUDY 2

The objectives of the second study were to: 1) contrast the conversational norms explanation against selective hypothesis testing, 2) examine the influence of consumer goals (as opposed to those of explicit hypotheses, as in the first study) on product evaluations, and 3) examine whether the findings of study 1 can be replicated when the experimenter is not apparently responsible for the hypothesis or goal provided.

In addition to asking participants to evaluate the products, we also asked whether they relied on the product information or the goal (of buying a good product or a bad product). Participants were told that the goal has been randomly selected by the computer. If participants are relying on conversational norms, then they should not evaluate the products better [worse] in the positive [negative] hypothesis condition because the goal is not coming from the experimenter. On the other hand, if participants are not relying on conversational norms, the pattern of results obtained in study 1 should be replicated because they should rely on the goal and test a goal congruent hypothesis (i.e., positive hypothesis for a positive goal). That is, as argued in the previous chapter, the goal of buying a good product leads to the testing of a positive hypothesis, whereas the goal of avoiding a bad product leads to testing of a negative hypothesis. In addition, if participants are relying on conversational norms, they should be aware of the influence of the goal in shaping their evaluations, and should indicate this when asked. Instead, if participants perceive that the goal did not influence their evaluations, or did so less than the product information, then that would be evidence against the conversational norms explanation.

## **Participants, Design and Procedure**

One hundred and fourteen undergraduate students (63 males, 51 females) enrolled in introductory business courses participated in exchange for class credit. The procedure and design used were similar to that in study 1. However, instead of giving participants explicit hypotheses to test, we gave them goals. In the positive hypothesis condition, participants were told “You are looking for a [product, e.g., a car] and would like to get a good one.” In the negative hypothesis condition, they were told “You are looking for a [product] and would like to avoid a bad one.” In the control condition, no goal was given. They were simply told that “You are looking for a [product].” Second, participants were told that the goal had been randomly selected by the computer. This procedure is similar to that used in studies supporting the conversational norms explanation (e.g., Tetlock, Lerner, and Boettger 1996) and those refuting it (e.g., Meyvis and Janiszewski 2002). These studies have reported that such a manipulation is effective and adequate in removing the experimenter from the picture. At the end of the experiment, participants were asked if they relied on the product information or on the goal in judging the products.

After respondents in the first two conditions rated the products, they were asked “While evaluating the products, did you rely on the product information or the goal (of buying a good [or bad] product)?” Participants indicated their response on a binary scale anchored by 1=Relied on product information, and 2 = Relied on goal. Participants in the control condition were not asked this question since they were not given any goal. Instead, they were asked to indicate whether the following statement (which is unrelated to the study) is true or false: “The sun rises in the west.”

## Results

An ANOVA conducted on the same lines as in study 1 was significant ( $F(2, 112) = 3.00$ ,  $p < .05$ ,  $d = .33$ ). In line with the predictions of selective hypothesis testing, participants in the positive goal condition evaluated the products more favorably ( $M = 5.60$ ) than those in the negative goal condition ( $M = 4.86$ ;  $t(73) = 2.44$ ,  $p < .05$ ,  $d = .57$ ) and those in the control condition ( $M = 5.07$ ;  $t(74) = 1.70$ ,  $p < .05$ ,  $d = .40$ ; see figure 4). As predicted, the evaluations in the latter two conditions were not significantly different. These findings are consistent with those of the previous study, providing further support for the selective hypothesis testing explanation. Further, the insignificant differences in the evaluations of the latter two conditions suggest that the default hypothesis is negative due to the greater salience of negative information (Kanouse and Hanson 1972), and because losses loom larger than gains (e.g., Kahneman and Tversky 1979), as argued in the previous chapter.

The conversational norms explanation predicts that participants relied on the goal of buying a good/bad product because they perceived it coming from the experimenter, and hence, useful in forming product judgments. Hence, according to this explanation, participants should indicate that they relied on the goal more than the product information while forming evaluations. A chi-square test revealed that 75 percent of the participants in the negative and positive goal conditions believed they relied on the product information ( $N = 50$ ) rather than on the goal ( $N = 25$ ,  $\chi^2(1) = 8.33$ ,  $p < .005$ ). The belief in reliance on the product information did not differ by condition ( $N$ 's = 20 and 30 in the positive and negative hypothesis condition, respectively,  $\chi^2(1) = 2.00$ ,  $p > .15$ ). If participants actually relied on the product information, their evaluations in the three conditions should not have differed, as the same product

information was shown to all participants. Clearly, the results suggest that the product evaluations in the three conditions were different. These findings indicate that even though participants relied on the goal of buying a good or bad product, they were likely unaware of it. If participants consciously relied on the goal because it was “handed down” by the experimenter, they should have indicated relying on it. Since they did not, the evidence for the conversational norms explanation is considerably weakened.

## **Discussion**

The second study was conducted to test the conversational norms explanation, to examine whether the findings of study 1 can be replicated to a situation where the experimenter is not apparently responsible for the hypothesis or goal provided, and to overcome the limitation that participants were given an explicit hypothesis to test. The findings replicated those of the previous study.

Results were inconsistent with the predictions of conversational norms. This explanation predicts that when the experimenter is not the source of the goal (e.g., when the goal is randomly assigned by the computer), the differences in product evaluations across the three conditions should disappear. This did not happen. Instead, as in the first study, participants systematically evaluated the products differently based on the goal. Moreover, participants indicated that they relied on the product information rather than the goal in forming product evaluations, suggesting that the manipulation of random assignment of goals was effective.

The pattern of results is consistent with the predictions of the selective hypothesis testing explanation. This explanation predicts that participants in the positive goal condition, who were looking for a good product, likely tested a positive hypothesis about the product (e.g., this

product is good) and proceeded to inspect the product information. In contrast, those in the negative goal condition, who were trying to avoid buying a bad product, likely tested a negative hypothesis (e.g., this product is bad). Since hypothesis testing is confirmatory in nature (e.g., Trope and Liberman 1996; Sanbonmatsu et al. 1997; 1998), participants' judgments are biased in the direction of the hypothesis tested. Hence, participants in the positive hypothesis condition evaluated the product more favorably than those in the negative hypothesis condition. Further, as argued, in the absence of goals or prior attitudes (e.g., in the control condition), participants test a negative hypothesis. In line with this, we found that the evaluations of participants in the negative hypothesis and control conditions were not different.

The finding that participants believed that the goals did not influence their product judgments is also consistent with the selective hypothesis testing explanation. Several researchers (e.g., Meyvis and Janiszewski 2002; Trope and Liberman 1996) suggest that participants need not be aware of the hypothesis in order to test it. In fact, much of hypothesis testing proceeds non-consciously. In sum, study 2 provides further support for the selective hypothesis testing explanation.

One concern with the first two studies is that they used a single item to measure product evaluations. Even though the use of single item scales is common in the literature (e.g., Meyvis and Janiszewski, 2002; Li, Carlson, and Holm 2000), and these are also commonly used in large scale surveys such as the General Social Survey (Davis and Smith 1992), questions about whether single items can truly capture the entire construct of interest, as well concerns pertaining to reliability and validity remain (Reis and Judd 2000). In the next two studies, we attempted to overcome these limitations by using a multiple item scale to measure evaluations.

### STUDY 3

Using statistical procedures, study 1 revealed that the effect of selective hypothesis testing occurs independently of category-diagnostics theory. Study 3 examines the same hypothesis experimentally, i.e., by presenting participants positive and negative product information equivalent in diagnosticity. The tactic followed was to present participants with the hypothesis followed by positive and negative attributes that had been pretested to be equivalent in terms of diagnosticity, and ask them to evaluate the products. The category-diagnostics account predicts that whichever attribute – positive or negative – is more diagnostic, receives more weight in judgment formation. Hence, when the positive and negative attributes are equivalent in diagnosticity, this explanation does not predict any negativity or positivity effects. On the other hand, the selective hypothesis testing explanation predicts systematic negativity and positivity effects based on the hypothesis being tested. This explanation predicts that participants in the positive hypothesis condition should evaluate the product more favorably than those in the negative hypothesis condition.

In the pretest to ascertain the diagnosticity of product attributes, participants were provided with a wide range of attributes for several products. We measured the diagnosticity of each attribute. The measure of diagnosticity was similar to that used in the first study. Participants were shown several negative product attributes (e.g., a computer with a slow processor), and their corresponding positive attributes (e.g., a computer with a fast processor) and asked to estimate the percentage of high-versus low quality products likely to have those attributes. Low (high) quality was defined as below (above) average as judged by most people. Seven products were chosen based on the criteria that we could find three each of negative and

positive attributes equivalent in diagnosticity and extremity. The products and attributes chosen are given in table 4.

### **Participants, Design and Procedure**

Twenty-nine undergraduate students enrolled in introductory business courses participated in exchange for class credit. The design was similar to that in the previous studies, except that due to the shortage of participants (the data for this study were collected in the summer, when participants are scarce), the control condition was not administered. As discussed earlier, the stimuli presented to participants were such that negative and positive product attributes were equivalent in terms of diagnosticity and extremity. For instance, the apartment replicate was described as follows:

*Consumer Reports* found that Apartment brand X:

- had 24 hours surveillance cameras above all doors
- was rated “very comfortable” by an independent agency
- had a low ceiling level
- was not close to public transportation
- had 24 hours on site security
- had little storage space in the kitchen

Participants were given a hypothesis to test (e.g., Evaluate the possibility that the product described is good [bad]), followed by product information, and asked to evaluate the products. A three item, 9 point scale anchored by very bad-very good, not a good value – a good value,

outmoded - advanced, was used to measure evaluations. Thereafter, participants were asked to indicate the diagnosticity of the attributes using the same measure as in study 1 and the pretest.

## **Results**

*Manipulation Check.* The perceived diagnosticity of the positive attributes did not differ significantly from that of the negative attributes ( $D_{\text{positive}} = 0.51$ ,  $D_{\text{negative}} = 0.50$ ,  $t(28) = 0.62$ ,  $p > .53$ ,  $d = .23$ ), suggesting that the manipulation of equivalent diagnosticities was successful.

*Product Evaluations.* The evaluations of the seven replicates were aggregated to form a composite measure. Participants in the positive hypothesis condition evaluated the product better ( $M = 4.79$ ) than those in the negative hypothesis condition ( $M = 4.27$ ,  $t(27) = 1.76$ ,  $p < .05$ ,  $d = .68$ ). These findings are consistent with the predictions of selective hypothesis testing, and provide further evidence that the effect of hypothesis testing occurs independently of attribute diagnosticity.

## **Discussion**

The findings of study 3 provide further support for the selective hypothesis testing explanation. Participants in the positive hypothesis condition evaluated the products more favorably than those in the negative hypothesis condition indicating that the hypothesis biased their search for information to evaluate the products.

The findings also suggest that the effect of hypothesis testing occurs independently of attribute diagnosticity using a different method than used in study 1. Here we used positive and negative attributes that had been pretested to be equivalent in diagnosticity, whereas in study 1 this was ascertained statistically (i.e., by entering both independent variables in a regression

equation predicting product evaluations). Further, because study 3 used different product attributes than in the first two studies, these findings also attest to the generalizability of the effects of selective hypothesis testing.

Although the findings of the first three studies may be accounted for by selective hypothesis testing, they may also be explained by simple framing. Indeed, participants asked whether a product is good evaluated it more favorably than those asked to evaluate it bad. It is possible that participants were merely influenced by the “frame” of the question, instead of the goal or the hypothesis. Study 4 attempts to rule out this hypothesis by examining the brand evaluations of participants with negative and positive attitudes, instead of those assigned a hypothesis or a goal (i.e., a different independent variable is used). If framing is responsible for the findings in the first three studies, then we should not observe any difference in evaluations of the brand by prior attitudes. In contrast, if selective hypothesis testing is responsible for the findings, participants with positive attitudes towards the brand would test a positive hypothesis, leading to a positivity effect, whereas those with negative attitudes towards the brand would test a negative hypothesis, leading to a negativity effect.

#### STUDY 4

The objectives of the fourth study were to: 1) contrast expectancy-contrast (and frequency-weight) theories against the selective hypothesis testing explanation (H1 and H4), and 2) examine how consumers with favorable and less favorable attitudes towards a brand evaluate positive and negative brand information.

A pretest was conducted with 110 undergraduate students to select a brand with considerable variance on the attitude score so as to increase the likelihood of having participants with favorable and unfavorable attitudes. Participants were shown several brands from different product categories (e.g., Taco Bell, McDonald's and Burger King fast food restaurants, Nike and Reebok shoes, Pantene and VO5 shampoo) and were asked to indicate their attitudes using the following three item 9-point semantic differential scale: [The brand listed] is a) unappealing-appealing, b) unfavorable-favorable, c) boring –interesting (McInnes and Park 1991). In addition, participants' familiarity with the brands was assessed using the same scale with the item: [The brand listed] is unfamiliar-familiar. To increase the likelihood of having participants with favorable and unfavorable attitudes towards the brand, Crest toothpaste was selected since it was the brand participants were most familiar with ( $M = 8.22$ ), and it had a reasonable variance (variance = 1.82) on the attitude measure.

### **Participants, Design and Procedure**

The study was conducted in two sessions, spread six weeks apart. This gap was necessary to reduce any demand and memory effects on evaluations. In the first session, 72 undergraduate students enrolled in introductory business courses completed a questionnaire that ascertained their attitudes towards Crest toothpastes. In the second session, the same participants (only 63 showed up; 43 males, 19 females) were given the following instructions:

In the last few years, a number of developing countries in the East have opened their markets to Western companies. As a result, companies like McDonald's, Proctor and Gamble, Nike, Coca-Cola, Pepsico, and Kraft have opened shops in countries as diverse

as Pakistan, Bangladesh, Malaysia, India, Sri Lanka, Bhutan, Nepal, Indonesia, Philippines and so on.

*Consumer Reports*, which is highly reputed for conducting fair and unbiased tests on products, recently analyzed a few leading brands being offered in developing countries.

In the following screens, you will read what *Consumer Reports* found about six brands in different product categories. Please take your time and read the reviews carefully. Once you're done reading them, we would ask you several questions about one of the six brands. Due to time limitations, you would not be asked questions about all six brands. The brand would be randomly picked by the computer.

In answering questions relating to any brand, please imagine that you are living in the developing country where these products were sampled.

Participants were then given positive and negative product attributes pertaining to six brands (Northwest Airlines, Marriott Hotels, Compaq computers, Taco Bell fast food restaurant, Crest Toothpaste, and Ford Cars). They were told that in the interest of time, they would be randomly assigned to one brand and asked some questions about it. All participants were told that they have been assigned to the brand Crest toothpaste, and are being asked to evaluate it using three items on a 9 point scale anchored by not a good value- a good value, outmoded-advanced, bad quality-good quality.

Because we are testing how participants' prior attitudes influence evaluations, no explicit hypothesis was provided to participants. It was assumed that participants with positive attitudes towards Crest toothpaste, because of their favorable prior experiences with the brand, would likely test a positive hypothesis, whereas those with negative prior attitudes towards Crest toothpaste, because of their unfavorable prior experiences, would likely test a negative hypothesis (the predictions are elaborated later). As in study 1, participants also completed a response time task, wherein they were shown a few positive and negative attributes about Crest toothpaste from the list of attributes they saw earlier, and asked to respond as quickly as possible whether they have seen the attribute before or not. The time they took to respond to the attributes was captured by the computer program. Further, as in study 1, the ratio of the time taken to respond to positive attributes and that to respond to the general questions (e.g., Miami is the capital of USA) was used as a measure of the speed of responding to positive attributes. Similarly, the ratio of the time taken to respond to negative attributes and that to respond to the general questions was used as a measure of the speed of responding to negative attributes.

## **Predictions**

The expectancy-contrast (and frequency-weight) hypothesis predicts that consumers with positive prior attitudes towards Crest toothpaste would exhibit a negativity effect. The rationale for this prediction is that these consumers, because of their favorable expectations towards the brand, are likely to find negative information more salient and contrasting, and hence it is likely to exert influence than positive information. The expectancy-contrast and frequency-weight hypothesis further predicts that participants with negative prior attitudes are likely to find positive attributes contrasting, and hence, these attributes should be outweighed, leading to a

positivity effect. In contrast, the selective hypothesis testing explanation predicts that consumers with favorable prior attitudes, because of their favorable experiences with the brand, are more likely to test the hypothesis that the product is good, and hence, evaluate the brand better than those with neutral prior attitudes (i.e., exhibit a positivity effect). Those with unfavorable prior attitudes, because of their negative experiences with the brand, are likely to test a negative hypothesis and evaluate the brand lower than those with neutral prior attitudes (i.e., exhibit a negativity effect). These predictions are depicted in figure 5.

## **Results**

Based on their prior attitudes, participants were divided into three groups using a tripartite split. An ANOVA revealed that there were significant differences in the evaluations of the three participant groups ( $F(2, 59) = 14.82, p < .001, d = .99$ ). Post hoc tests revealed that participants with the highest prior attitudes evaluated Crest toothpaste most favorably ( $M = 7.56$ ), followed by those with moderate prior attitudes ( $M = 6.20, t(42) = 3.47, p < .001, d = 1.07$ ), and those with the lowest prior attitudes ( $M = 5.37, t(35) = 6.32, p < .001, d = 2.13$ ). These findings are consistent with the predictions of selective hypothesis testing (H4), but inconsistent with those of expectancy-contrast theory and frequency-weight theory (H1).

Although the above findings are consistent with selective hypothesis testing, an alternative explanation of these findings is that participants directly retrieved their prior attitudes to judge the brand. In other words, it is possible that participants did not use the product information provided to them to form judgments of the brand, but simply formed a judgment based on their previous attitudes (e.g., Bodenhausen and Wyer 1985). To test this possibility, we examined the response time data. If indeed, participants directly retrieved their prior attitude to

form judgments and bypassed the product information provided to them, then their response times to positive and negative attributes should not differ depending on the hypothesis they tested. On the other hand, as predicted by selective hypothesis testing, if participants selectively focused on attributes congruent with their prior attitudes, then, these attributes should be more accessible in their memories, and they should be faster in responding to positive than negative attributes in the positive hypothesis condition, and *vice versa* in the negative hypothesis condition.

A GLM with mean response time to previously seen positive and negative attributes of Crest toothpaste entered as a repeated measures variable, and prior attitudes (positive, negative, or neutral) entered as a between subjects variable revealed an interaction ( $F(2,59) = 2.00, p < .08, d = .37$ ). Contrasts revealed that participants with negative prior attitudes were significantly faster in recognizing negative attributes ( $R = 0.92$ ) than positive attributes ( $R = 0.75, t(17) = 2.96, p < .05, d = .47$ ). In contrast, participants with positive prior attitudes did not differ in their speed of responding to positive and negative attributes ( $R_{\text{positive}} = 0.97, R_{\text{negative}} = 0.86, t(18) = 1.64, p > .10, d = .36$ ). These findings suggest, in line with the selective hypothesis testing framework, that participants did pay attention to the attributes congruent to the hypothesis they were testing, and that they did not simply retrieve their prior attitudes to form a judgment of the brand under consideration (i.e., Crest toothpaste).

## **Discussion**

This study was designed to pit expectancy-contrast and frequency-weight theory against the selective hypothesis-testing framework. The expectancy-contrast and frequency-weight theory predicts that consumers with positive prior attitudes towards a brand would find negative

information salient and contrasting, which should lead them to assign greater weight to this information than to less salient positive information (i.e., a negativity effect). Following the same logic, this theory predicts that consumers with negative prior attitudes towards a brand would evince a positivity effect. The selective hypothesis testing explanation predicts the exact opposite. According to this account, consumers with positive prior attitudes, because of their favorable prior exposure to the brand, would likely test a positive hypothesis, pay greater attention to and overweigh the positive than negative attributes, which should lead to a positivity effect. Those with negative prior attitudes, because of their unfavorable attitudes towards the brand, would likely test a negative hypothesis, leading to a negativity effect.

The results of the study suggested that participants with positive prior attitudes judged Crest toothpaste higher than those who had neutral or negative prior attitudes, and that they did not necessarily directly retrieve their prior attitudes to judge the brand. These findings are in line with selective hypothesis testing, but not with those of expectancy-contrast theory, suggesting that the latter cannot explain or predict negativity and positivity effects in at least some conditions. Since expectancy-contrast theory (and frequency-weight theory) can account for these effects only in some conditions (e.g., those reported in the literature), it may be inferred that the theory provides an insufficient explanation of negativity and positivity effects. Further, the findings revealed that participants with positive prior attitudes paid greater attention to positive than negative attributes, whereas those with negative prior attitudes paid greater attention to negative than positive attributes. These results rule out alternative explanations that suggest participants may have directly retrieved their prior attitudes to form judgments of the brand.

It is noteworthy that unlike in the previous studies, we did not ask participants to test a given hypothesis or give them a goal. Instead, we assumed that the hypothesis tested would depend on their prior attitudes. Hence, this study shows that the hypothesis need not be externally or contextually generated; rather it can be chronically accessible. In a way, this study also addresses the conversational norms explanation raised in study 1 and ruled out in study 2. In this study, the experimenter did not give any hypothesis or goal to participants. If conversational norms and not selective hypothesis testing leads participants to different product evaluations, by definition, the effects should disappear when no hypothesis or goal is given to participants. However, this did not happen in study 4, where the findings were in line with the selective hypothesis testing framework without the participants being given explicit hypotheses or goals.

As elaborated earlier, the findings of the first three studies may be accounted for either by selective hypothesis testing or by framing. Study 4 provides evidence that the brand evaluations may not be driven by framing, but likely by selective hypothesis testing. Because the frames were invariant for all participants, the framing account predicts no differences in brand evaluations by participants. In contrast, the selective hypothesis testing explanation suggests that participants with positive attitudes towards the brand would likely test a positive hypothesis, leading to a positivity effect, whereas those with negative attitudes towards the brand would likely test a negative hypothesis, leading to a negativity effect. Given that we found systematic differences in brand evaluations across participants with different prior attitudes towards the brand, framing is not likely driving the results. More generally, it appears that at least some framing effects may be explained by selective hypothesis testing, though the reverse (i.e., framing explaining the effects attributed to selective hypothesis testing) is not true, as evidenced by study 4.

## SUMMARY

Four studies designed to test the hypotheses proposed in this dissertation are reported in this chapter. The first study showed that selective hypothesis testing, which has not been previously used in the domain of negativity and positivity effects, can indeed explain these effects. Participants testing a positive hypothesis, evaluated products more favorably than those testing a negative or no hypothesis, suggesting that they focused more on the positive than negative attributes, and assigned them greater weight. The opposite was true for those in the negative hypothesis condition. Further evidence for the selective hypothesis testing mechanism comes from the response time index, which showed that participants in the positive (negative) hypothesis condition responded faster to positive (negative) attributes they had seen before. The latter data provide more direct support for the hypothesis that hypothesis-congruent attributes (e.g., negative attributes in the negative hypothesis condition) received extra attention and hence, were salient in the memory of participants, which led them to recognize these faster. Study 1 also showed that the effect of hypothesis testing on product evaluations occurs independently of attribute diagnosticity, and that diagnosticity is not responsible for the effect of hypothesis testing on product evaluations.

An issue with the findings of study 1 is that participants may have been influenced by conversational norms (Funder 1987; Grice 1975), whereby they may have evaluated products more (less) favorably in the positive (negative) hypothesis condition because they believed that the hypothesis came from the experimenter (a form of demand effect). To rule out this alternative explanation, study 2 used positive or negative goals (e.g., You are looking for a good computer, You are trying to avoid buying a bad computer) instead of an explicit hypothesis (e.g., Evaluate

the likelihood that this product is good or bad). Further, participants were told that the goal itself had been randomly selected by the computer (e.g., Tetlock et al. 1996; Meyvis and Janiszewski 2002). Otherwise, the procedure and design were the same as in the first study. If conversational norms are responsible for the findings of study 1, then differences in product evaluations between the three conditions should disappear because the goal is not dictated by the experimenter. The findings of study 1 were replicated, suggesting that conversational norms were not responsible for the results.

Study 3 attempted to demonstrate experimentally that the effect of hypothesis testing occurs independently of diagnosticity. In this study, we presented participants with negative and positive product attributes that had been pretested in terms of diagnosticity. If diagnosticity is responsible for the effect of hypothesis tested on evaluations (e.g., if participants in the negative hypothesis condition find negative product attributes more diagnostic), then, by controlling diagnosticity, the effects of hypothesis testing on evaluations should disappear. However, we still obtained systematic differences in evaluations between the positive and negative hypothesis conditions, suggesting that the effect of diagnosticity on product evaluation is different from that of selective hypothesis testing.

The fourth study contrasted the expectancy-contrast (and frequency weight) theory against the selective hypothesis testing explanation. As shown in figure 3, the two theories, when extrapolated to the domain of product evaluations, lead to different predictions on how consumers with positive and negative prior attitudes towards the brand would evaluate products given negative and positive information. Expectancy contrast theory predicts that people with positive attitudes towards the brand would be more influenced by negative attributes (a contrast effect), leading to a negativity effect. The selective hypothesis testing explanation predicts that

people with positive attitudes towards the brand would likely test a positive hypothesis, and assign greater weight to positive than negative attributes because they confirm to the hypothesis being tested, leading to a positivity effect. Findings supported the selective hypothesis testing explanation. The data also replicated the response time findings of study 1. In line with the selective hypothesis testing framework, participants in the positive hypothesis condition responded faster to positive than negative attributes, suggesting that they focused more on these attributes, which in turn were more salient and easily recognized. The opposite was true for those in the negative hypothesis condition.

## CHAPTER 4: CONTRIBUTIONS AND LIMITATIONS

Consumers are often confronted with positive and negative attributes of products and brands, which they may need to evaluate. Key questions include whether characteristics like consumer's goals or their prior attitudes influence how they judge the product or brand under consideration. For instance, does a consumer who have a goal of buying a good product judge it differently from one who has a goal of avoiding a bad product? Is the product evaluated differently by consumers with positive and negative prior attitudes towards the brand? If indeed, these consumers differ in their product or brand evaluations, why do they differ? Does the effect of consumer goals or attitudes depend on the diagnosticity of the constituent attributes? Prior research provides limited insights on these questions.

Furthermore, as elaborated in chapter 2, extant theories are also not able to account for several recent findings in the literature (e.g., Ahluwalia et al. 2000; Shafir 1993). For instance, Shafir (1993) gave participants information about parents who needed to decide who will get custody of an only child. One parent was described with average positive and negative features (the impoverished option), while the other was described with extreme positive and negative features (the enriched option). Some participants were asked to indicate which parent should be awarded custody, and others were asked to indicate which parent should not be awarded custody. Results indicated that the former group of participants believed the impoverished option should be awarded custody, whereas the latter believed the enriched option to receive custody. Hence, Shafir (1993) found that the goal of selecting versus rejecting led to different outcomes, independently of the characteristics of the stimuli. Since prior theories rely on characteristics of

the stimuli, they predict no influence of participant goals, and hence, are unable to explain these findings.

The purpose of this research was to fill the abovementioned gaps in the literature on negativity and positivity effects. Using an experimental approach, I sought to examine how consumer goals and their prior attitudes influence product evaluations, given negative and positive attributes of equivalent extremity.

### **Theoretical and Substantive Contributions**

Several scholars have recently uncovered the pivotal role played by consumer goals in judgment, choice, and behavior (e.g., Bettman et al. 1998; for a comprehensive review, see Bagozzi and Dholakia 1999). For instance, Bagozzi and Dholakia (1999, p. 19) indicate that “much of consumer behavior is goal directed,” and Bettman, et al. (1998, p. 188) suggest that product evaluations “depend critically on the goals of the decision maker.” It is also known that consumers may have different goals, even while buying the same product. For instance, one consumer may wish to buy the best brand available, whereas another may wish to avoid buying the worst brand available. These goals may lead the consumer to differentially process product information (Bagozzi and Dholakia 1999; Bettman et al. 1998). Nevertheless, despite the importance and relevance of goals, our understanding of how they influence consumer behavior is limited (e.g., Bargh 2002; Bargh et al. 2001).

The current research attempts to shed some light on how consumer goals, as well as their prior attitudes, influence product evaluations. I proposed a relatively novel explanation of negativity and positivity effects in the context of product evaluations. Using the framework of selective hypothesis testing (e.g., Hoch and Deighton 1989; Sanbonmatsu et al. 1998; Snyder and

Swann 1978), I suggested that depending on their goals or attitudes, consumers test hypotheses about products they need to evaluate. These hypotheses may differ in valence. Specifically, a consumer who is looking for a good product is likely to test a positive hypothesis about the product (e.g., “This product is good”), whereas one trying to avoid buying a bad product is likely to test a negative hypothesis (e.g., “This product is bad”). In their hypothesis testing activities, participants have been shown to selectively focus on hypothesis-consistent evidence and ignore hypothesis-inconsistent evidence, leading to a biased test of the hypothesis under consideration (e.g., Sanbonmastu et al. 1997; 1998). Hence, participants testing a positive hypothesis likely focus on the positive attributes more than the negative attributes, leading to a positivity effect, whereas those testing a negative hypothesis likely focus on the negative attributes more than the positive attributes, leading to a negativity effect.

I also proposed that in the absence of goals or prior attitudes, consumers test a negative hypothesis, leading to a negativity effect (which may explain the greater preponderance of the negativity versus the positivity effect in the literature). This negativity effect, I reasoned, is because negative information is generally more salient, novel, and attention grabbing than positive information (e.g., Fiske 1980), and hypotheses are often based on the most salient piece of information, whether externally encountered or retrieved from memory (e.g., Trope and Liberman 1996; also see Bettman et al. 1998, for a similar logic). Moreover, consumers are more motivated to avoid losses than to approach gains (Kahneman and Tversky 1979). If negative attributes (e.g., low mileage) may be treated as a loss, and positive attributes treated as gains, consumers may be sensitive to the negative attributes, resulting in a greater likelihood of a negative hypothesis being tested over a positive one.

Furthermore, prior research suggests that consumers rely on attribute diagnosticity while evaluating products (e.g., Ahluwalia et al. 2000; Herr et al. 1991). In general, the greater the diagnosticity of positive over negative attributes, the better it is evaluated. In fact, this explanation seems to be the most widely accepted explanation of negativity and positivity effects in the literature (e.g., Skowronski and Carlston 1987; 1989). I sought to examine whether the impact of consumer goals on product evaluations occurs independently of diagnosticity. If it is found that consumer goals impact product evaluations by influencing diagnosticity, then, the role of goals per se would be limited (as they would need to influence diagnosticity, which in turn would influence evaluations). However, if it is found that consumer goals influence product evaluations independent of diagnosticity, then the case for understanding consumer goals would be stronger.

Four studies were conducted to test this relatively novel explanation of negativity and positivity effects, and also to examine the effect of consumer goals and prior attitudes on product evaluations. The first study demonstrated that selective hypothesis testing is indeed, a viable explanation of these effects. Participants given a positive hypothesis to test evaluated the products more favorably than those given a negative or a neutral hypothesis to test. In line with the thesis that the default hypothesis is negative, it was predicted and found that the evaluations of consumers in the control condition would not differ from those testing a negative hypothesis. Further, participants in the positive hypothesis condition were faster in recognizing positive than negative attributes they had seen before, and those given a negative hypothesis to test were faster in recognizing negative than positive attributes, providing support for the notion that hypothesis congruent information is more salient and attention grabbing, and thus, was better retained in

short term memory. In addition, this study demonstrated that the impact of hypothesis tested is independent of diagnosticity, attesting to the importance of the novel explanation proposed.

The second study showed that the findings of study 1 may not be due to conversational norms, and that goals influence product evaluations such that consumers looking for a good product evaluate it more favorably than those who are trying to avoid buying a bad product. Interestingly, even though participants used the goal in forming product evaluations, they did not believe they did. These findings are consistent with the view that hypothesis testing can proceed at a nonconscious level (e.g., Meyvis and Janiszewski 2002; Trope and Liberman 1996). The third and fourth studies showed that the effects of selective hypothesis testing are independent of other explanations of negativity and positivity effects in the literature.

This dissertation enhances our understanding of how consumers evaluate products and brands described with multiple attributes differing in valence. More specifically, it sheds light on how consumer goals and their prior attitudes influence product evaluations, given negative and positive product attributes. For example, it was suggested that consumers who have a goal of buying a good product (avoiding a bad product) start with the hypothesis that it is good (bad), and pay greater attention to positive (negative) than negative (positive) attributes, presumably because those attributes better enable them to satisfy their goals. These arguments are in line with Bettman et al. (1998), who suggest that “individuals will devote more effort to examining information they believe will help them attain whichever goals are more heavily weighted in that situation” (p. 193).

Furthermore, I predicted that the greater salience of hypothesis confirming evidence leads consumers to overweigh these attributes in judgment formation. Hence, overall evaluations are biased in the direction of the hypothesis being tested. On similar lines, those with favorable

(unfavorable) prior attitudes were predicted to start with a positive (negative) hypothesis, leading to a positivity (negativity) effect.

A major theoretical contribution of the dissertation is that it provides a framework to understand some of the recent empirical findings summarized in chapter 2 that are difficult to explain using the extant theories. The framework is based on the literature on selective hypothesis testing. Several studies suggest that while testing hypotheses, people often collect, construe, and integrate evidence so as to favor the hypothesis under consideration (Sanbonmatsu et al. 1997; 1998). Bias may also enter during the search for evidence stage (Klayman and Ha 1987; Snyder 1981) such that instances or cases are sought that support the given hypothesis (Borgida and DeBono 1989; Devine, Hirt and Gehrke 1990), and evidence that supports alternative hypotheses is ignored (Gettys, Mehle, and Fisher 1986). For instance, in Shafir's (1993) study described earlier, it is possible that participants asked to select a parent tested a positive hypothesis, and focused more on the positive attributes, whereas those asked to reject a parent tested a negative hypothesis and focused more on the negative attributes. This process led them to select and reject the same parent. The dissertation provides evidence for selective hypothesis testing.

More importantly, the dissertation shows that the effect of selective hypothesis testing is independent of the extant theories in the literature, namely expectancy-contrast theory, frequency-weight theory, and category-diagnostics theory. For instance, study 1 shows that both category-diagnostics and selective hypothesis testing influence product evaluations independently of each other, suggesting that the effect is additive in nature. Study 3 shows that when the negative and positive attributes are equivalent in diagnostics (i.e., diagnostics of negative and positive product information is controlled for), the findings follow the predictions

of selective hypothesis testing. Study 4 shows that expectancy-contrast theory and frequency-weight theory are not able to explain data that may be accounted for by selective hypothesis testing, suggesting that the conflicting theories act independently of each other.

It should be noted that the concept of selective hypothesis testing is not new in and of itself. Indeed, prior research has provided extensive support for the idea that people's judgments are biased in the direction of the hypothesis being examined (e.g., Hoch and Deighton 1989; Snyder and Cantor 1979; Kardes et al., 2004; Snyder and Swann 1978). For instance, Snyder and Cantor (1979) made participants read some information about a person, and asked them whether this person would be better suited for an extraverted or an introverted job. Results indicated that participants judged the person to be better suited for the hypothesized job than for the non-hypothesized job. However, this dissertation is the first to examine how selective hypothesis testing influences product evaluations when equivalent negative and positive product information is provided to them.

### **Managerial Implications**

This dissertation provides marketers with a better understanding of the conditions wherein negative attributes may receive greater weight than positive attributes. For instance, when consumers are trying to avoid buying a bad product or when they have negative attitudes towards the brand, negative attributes are likely to receive more weight than positive attributes. Marketers could utilize this information to either mitigate the negativity effect, or amplify the positivity effect, as the case may be (How this may be achieved is elaborated later). More specifically, the dissertation sheds light on how consumer goals and attitudes influence the negativity and positivity effects. Consumers who have goals of buying a good product, and those

who have favorable attitudes towards a brand were found to be more likely to focus on the positive than negative attributes, and evaluate the product or brand more favorably. Hence, marketers may be more candid about undesirable product features with the former group of consumers than with the latter group of consumers.<sup>11</sup> Doing so is likely to earn them better goodwill and trust among loyal consumers who may value forthrightness.

Marketers who are concerned about the negativity effect because their product's negative attributes are more diagnostic than positive product attributes would be advised to attempt to change consumer goals. Hoch and Ha (1986; also see Ha and Hoch 1989) show that consumers treat advertising claims as tentative hypotheses to be verified upon product inspection and use. To the extent that an advertisement encourages a person to buy a product, it may be said to set a positive goal (e.g., buy this product). On the other hand, advertisements that discourage people from buying a product (e.g., cigarette, liquor) may be setting a negative goal (e.g., don't buy this product). Hence, advertising is one means by which marketers can change consumer goals and thereby reduce consumers' reliance on the diagnosticity of product attributes in forming evaluations.

In general, marketers would be advised to indirectly prompt consumers to test a positive hypothesis about the brand, which is likely to lead to favorable evaluations, making it more likely for the brand to be chosen over competitor brands. One way of changing consumer goals is

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<sup>11</sup> One way to identify such consumers is via market share. For instance, If Coke has a market share of 90% in a certain city, then the managers at Coke may infer that most consumers in that city have positive attitudes towards their brand. Likewise, the managers at Pepsi may infer that consumers in that city have unfavorable attitudes towards their brand. Another way to identify consumers with positive or negative attitudes towards the brand is by collecting and maintaining a data base on consumers' purchases over a period of time. Based on the ratio of the purchase of a particular brand over its competitors, consumers may be characterized as having high, neutral, or low attitudes towards the brand. Like most measures used in consumer behavior, however, the use of market share as a proxy for attitudes is not without limitations, and the mapping should be treated as very rough.

by situational priming.<sup>12</sup> Marketers who want their consumers to evaluate their products favorably could temporarily “prime” their consumers via notices and POP material inside the store, for instance, by encouraging them to “Buy the best.” Such instructions are likely to trigger the testing of a positive hypothesis, leading to a positivity effect. Another simple tactic of making the consumers test a positive hypothesis is to present positive product information before negative information. Evidence suggests that in the absence of other factors (e.g., goals or attitudes), consumers form a hypothesis based on the first stimuli encountered and proceed to test it with the remaining stimuli (Trope and Liberman 1996). Hence, marketers who generally present negative and positive attributes together (e.g., those required by policy makers to do so -- those marketing drugs, children’s products -- to present positive and negative information like side effects of drugs) would be advised to reconsider their presentation style.

Prior research suggests that several situational variables like time pressure and cognitive load moderate the influence of the hypothesis being tested (e.g., Meyvis and Janiszewski 2002; Trope and Liberman 1996). For instance, it has been demonstrated that the tendency to engage in selective hypothesis testing increases under high time pressure or cognitive load or conversely, decreases under low time pressure or cognitive load (e.g., Trope and Liberman 1996). When marketers expect a negativity effect (e.g., when most consumers try to avoid buying the product unless it is absolutely necessary [e.g., insurance] and are more likely to test a negative hypothesis), they would be advised to give consumers ample time to process the product attributes, which in turn is likely to mitigate the influence of the hypothesis tested. For instance,

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<sup>12</sup> Situational priming is different from framing. The former attempts to temporarily heighten the salience of a goal or a value in the mind of the participant, with the participant usually not being aware of the effect of the prime. The value or goal concerned usually exists in the consumer’s memory, perhaps implicitly, though it needs to be made salient and temporarily accessible via priming. In framing, information is presented differently to the participant (e.g., 80% lean versus 20% fat) in an attempt to get him/her to focus on the attribute of interest. Framing is rarely done subconsciously.

a salesperson who is showing consumers a product could suggest that they could “take all the time they need” in inspecting the product. On the other hand, when marketers expect a positivity effect (e.g., when most consumers have favorable attitudes towards the brand), they would be advised to give their consumers little time to examine the product attributes, a tactic that is likely to amplify the influence of the hypothesis tested, leading to a stronger positivity effect and more favorable product evaluations. For instance, the floor manager on the store can announce that a certain sale will last only for half an hour or one-hour, thereby creating time pressure. Similarly, when consumers come to the store slightly before closing time, the salesperson could show them the product, but add that the store will close in a few minutes, implying that the consumers should “hurry up” with their decision. On similar lines, marketers could attempt to manipulate the cognitive load experienced by consumers by providing them with multiple pieces of information, or prompting them to examine product attributes in noisy or crowded surroundings.

Imagining the consequences of a hypothesis has been shown to prompt greater reliance on hypothesis consistent evidence (Meyvis and Janiszewski 2002). Hence, marketers who want their products to be evaluated favorably would be advised to encourage consumers to imagine the uses of the product and/or how life would be with the product. For example, billboards and POP material inside the stores could contain such prompts. This tactic is likely to lead consumers to test a positive hypothesis, leading to a positivity effect and more favorable evaluations of the brand concerned.

Research on regulatory focus theory (Higgins, 1998) suggests that there are two motivational foci in goal-directed activities. Promotion focus is related to maximizing the likelihood of positive outcomes; Prevention focus is concerned with minimizing the probability of negative outcomes. Individuals who are promotion focused eagerly seek the best outcomes. In

contrast, individuals with prevention focus strive to avoid negative outcomes. Hence, promotion focused consumers may be more likely to test positive hypotheses about products and brands, focus on good attributes than bad attributes, leading to a positivity effect. Research on regulatory focus also indicates that promotion or prevention goals can be temporarily made salient, with or without the participant's conscious awareness. Hence, marketers who want their consumers to evaluate their products favorably could situationally "prime" their consumers to be promotion focused (again, via notices and POP material inside the store), for instance, by encouraging them to think of their goals and achievements in life (Higgins 1998). Some other "primes" that may set people into promotion mode include the statements: "Nothing succeeds like success," and "Think big." In line with this, marketers should avoid placing any materials in the store that may make customers prevention focused.

### **Limitations and Directions for Future Research**

The studies conducted suffer from several shortcomings. First, the studies show that consumers process product information in accordance with their goals and attitudes. Although a majority of consumers do possess goals that guide their behavior (Bagozzi and Dholakia 1999; Bettman et al. 1998), some goals may not influence processing of negative and positive information. For example, consumers who buy an ice cream on impulse may not have goals of avoiding a bad ice-cream, or buying a good ice-cream, though they may have a goal of eating the ice-cream. Under such circumstances, selective hypothesis testing may be less likely to occur.

The studies made the goals of the consumer or the hypothesis they test explicit by giving specific instructions (e.g., decide if this product is good or bad), which does not necessarily correspond to conditions where these goals are spontaneously generated by consumers (Meyvis

and Janiszewski 2002). Whether a goal is salient or not depends on its chronic accessibility in the mind of the consumer or because of priming. The studies conducted consider only the latter type of situations (i.e., when the goal is primed). Although we expect our findings to generalize to situations where the goal is chronically accessible, further empirical work is needed before conclusively stating so.

Even though the results may support the selective processing explanation, they do not completely invalidate the other processes (i.e., expectancy-contrast or category-diagnostics). In other words, it is possible that other processes occur in conditions different from those considered here. Future research should examine these boundary conditions.

Adding on the previous point, it is possible that some of the data may be explained by multiple explanations, including selective hypothesis testing. For instance, even though the findings of study 4 may not be accounted for by explanations based on direct retrieval of attitudes (e.g., Bodenhausen and Wyer 1985), as pointed out earlier, they may be accounted for by selective hypothesis testing as well as attitude-accessibility theory (e.g., Fazio 1990). According to the latter explanation, strong attitudes guide judgments and behavior, and these attitudes manifest themselves in lower response times to attitude-congruent than attitude-incongruent attributes, words and sentences. Hence, attitude-accessibility theory predicts that participants with strong positive attitudes towards Crest toothpaste would be faster in responding to positive than negative attributes, and vice-versa for those with negative prior attitudes. Future research should attempt to tease out these explanations.

Recent research suggests several variables that may moderate the impact of selective hypothesis testing (e.g., Kardes et al. 2004; Trope and Liberman 1996; Meyvis and Janiszewski 2002). For instance, Kardes et al. (2004) found that consumers need for closure significantly

influenced the selectivity in information processed, and hence, the extent that consumers engage in selective hypothesis testing. High need for closure consumers, because of their tendency to draw snap conclusions and desire for definitive opinion and aversion to ambiguity, confusion, and inconsistency, are more likely to engage in selective hypothesis testing. Similarly, it is possible that risk seeking consumers, who have a tendency to “think big” and focus on positive aspects may test a positive hypothesis, whereas risk-averse consumers, who are more concerned about losses may focus on negative aspects of the product. If so, risk seeking consumers may be more likely to exhibit a positivity effect, whereas risk averse consumers may be more likely to exhibit a negativity effect. Conversely, if the perceived risk of buying a product (e.g., a house or a car) is high, consumers may be more likely to test a negative than a positive hypothesis, leading to a negativity effect. Future research should examine the role of such moderators in product evaluations, given multiple attributes differing in valence.

Another limitation pertains to the reliability and validity of the findings. For instance, in study 4, we introduced a six-week gap between the time participants provided information about their attitudes towards the brand and the time they evaluated the brand. Although the time delay was necessary to reduce any demand and memory effects on evaluations, it could also have led to history and maturation effects, thereby threatening the internal validity of the findings. Moreover, as pointed out earlier, the use of single-item scales questions the reliability and validity of the findings, and makes it less certain that the entire gamut of the desired construct is being tapped. Furthermore, with the use of a single source of participants, at a single location, the findings may not be generalizable.

The participants in these studies were students with median age in the range 19-22, which is not representative of consumers in the marketplace. Friedrich (1993) suggests that older

people, because of their greater experience than younger people, are less likely to engage in selective hypothesis testing (conversely, they are more likely to engage in comparative hypothesis testing). If this assertion is correct, the results of these studies should be treated with caution as far as their applicability to older consumers is concerned. Future research should replicate these studies with consumers from the general population as subjects.

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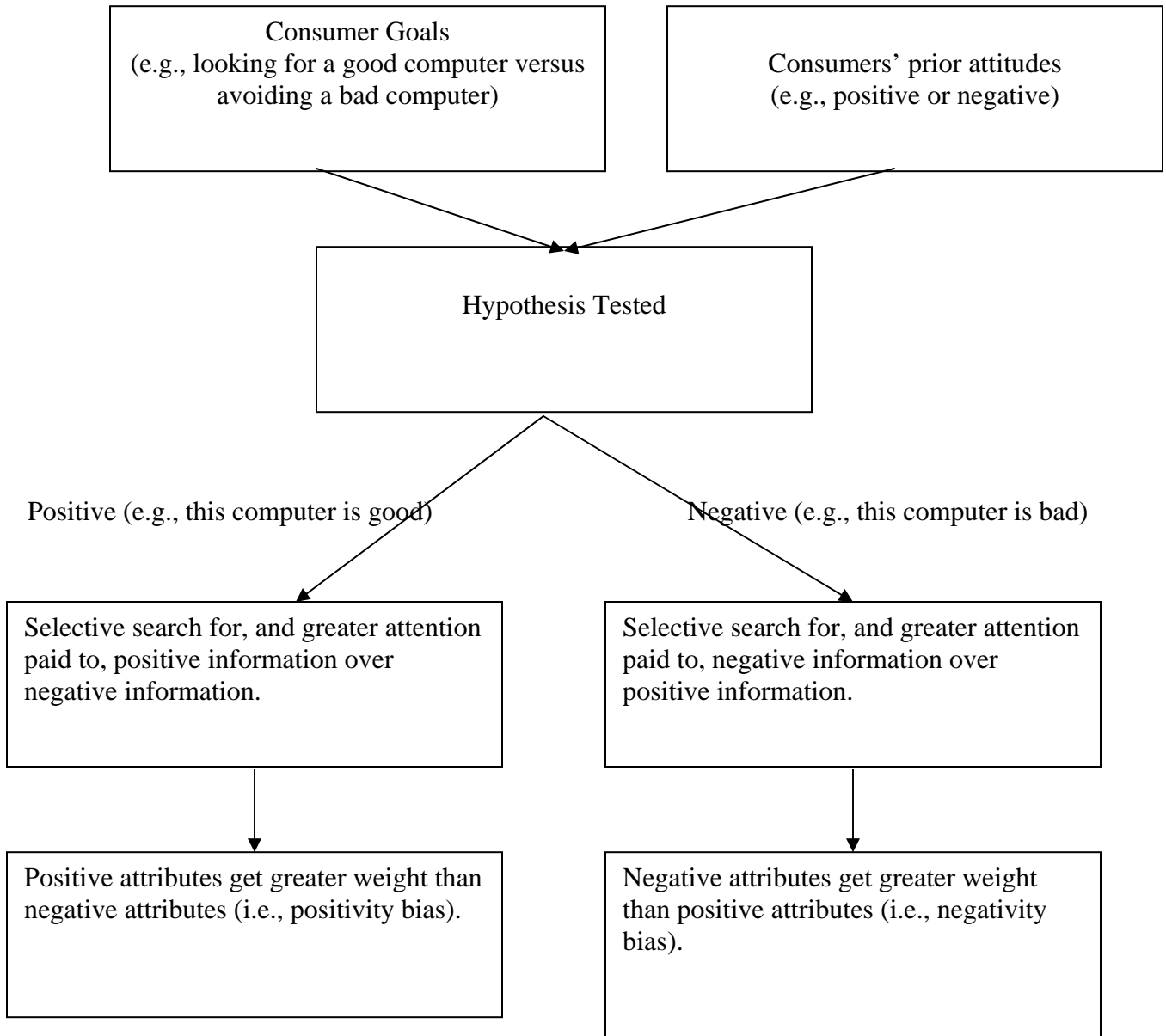
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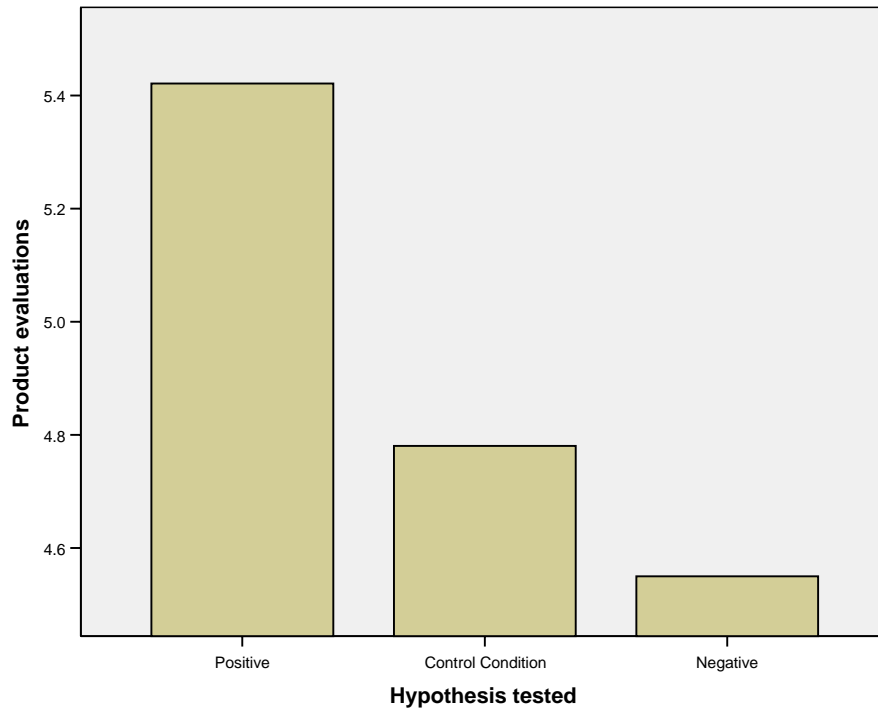
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**FIGURE 1: OUTLINE OF THE SELECTIVE HYPOTHESIS TESTING ACCOUNT OF NEGATIVITY AND POSITIVITY EFFECTS**

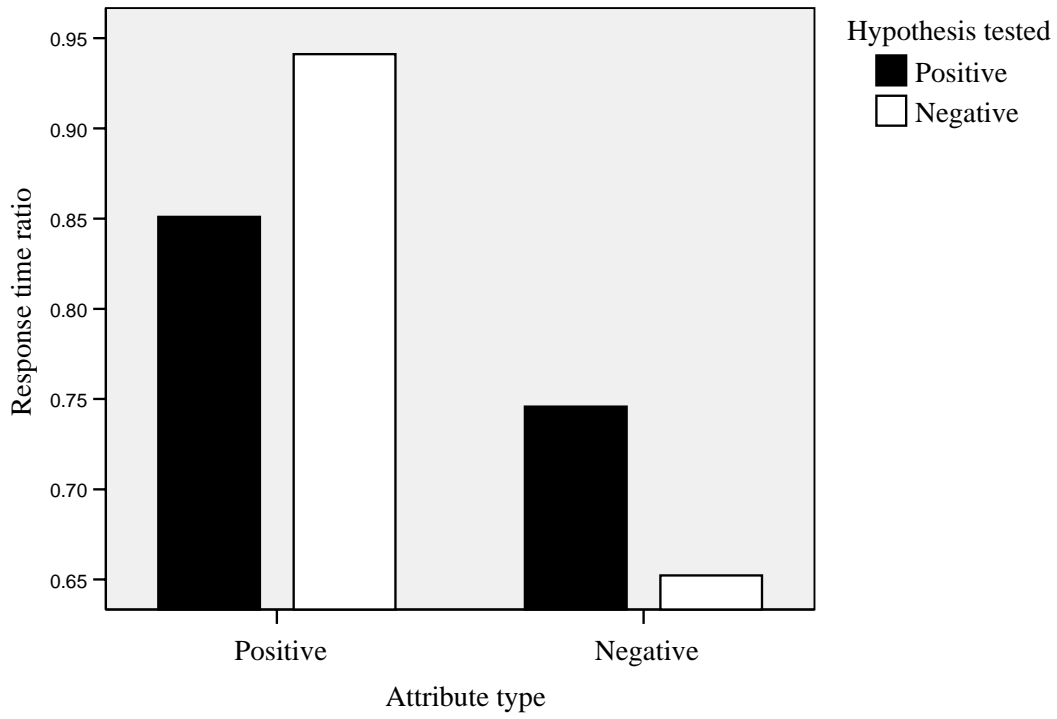


\*Note: Product information is hypothesized to influence the hypothesis tested only in the absence of specific goals. The default hypothesis tested is negative due to the greater salience and attention grabbing power of negative information over positive information (e.g., Fiske 1980; Pratto and John 1991).

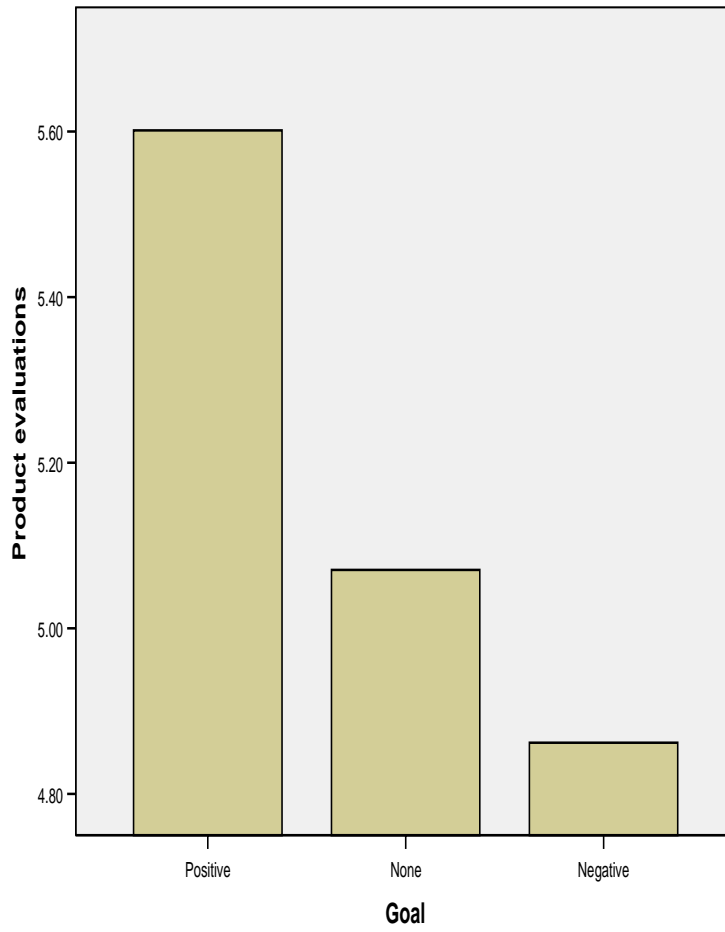
**FIGURE 2: PRODUCT EVALUATIONS BY HYPOTHESIS IN STUDY 1**



**FIGURE 3: RESPONSE TIMES IN THE POSITIVE AND NEGATIVE HYPOTHESES  
IN STUDY 1.**



**FIGURE 4: PRODUCT EVALUATIONS BY GOAL IN STUDY 2**



**FIGURE 5: PREDICTIONS OF EXPECTANCY-CONTRAST THEORY AND  
SELECTIVE HYPOTHESIS TESTING IN STUDY 4.**

Figure 5A: Predictions of Expectancy-Contrast theory

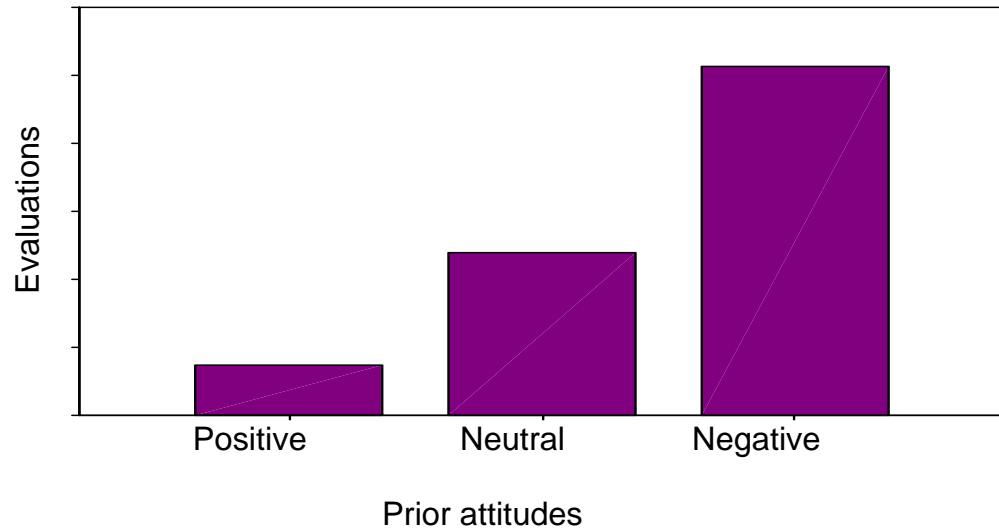
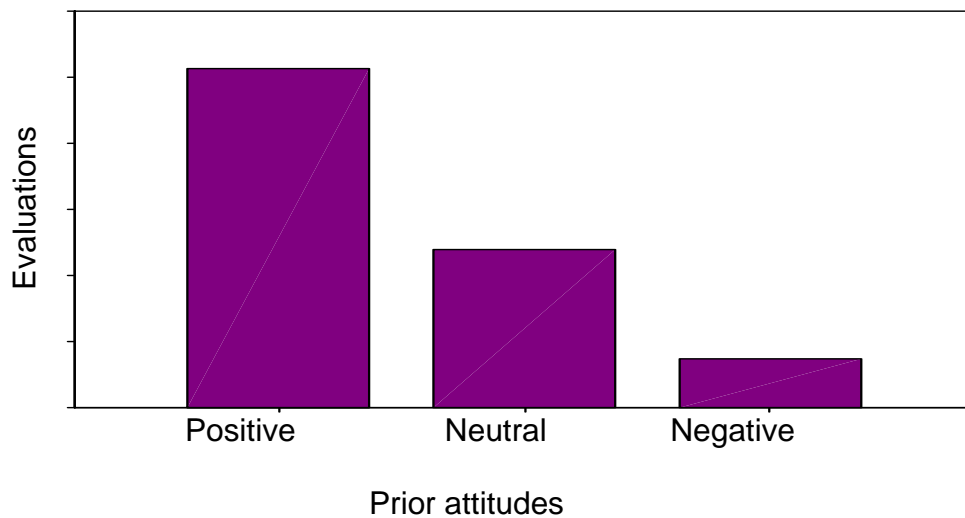


Figure 5B: Predictions of Selective Hypothesis Testing



**TABLE 1: BASIC PREMISES OF THE THEORIES OF NEGATIVITY EFFECT**

<b>Theory</b>	<b>Premise 1</b>	<b>Premise 2</b>	<b>Premise 3</b>	<b>Supporting articles</b>
Expectancy-contrast	People perceive most things in the world (e.g., people, things, objects) favorably. Hence, the internal anchor <sup>13</sup> for most things is positive.	Negative stimuli contrasts with these positive anchors.	Hence, negative stimuli carries greater weight than positive stimuli.	Helson (1964), Kaplan (1976), Levin, Wall, Dolezal and Norman (1973), Sherif and Sherif (1967), Simpson and Ostrom (1976), Kanouse and Hanson (1972)
Frequency-weight	People perceive most things in the world favorably. Hence, the internal anchor for most things is positive.	Negative stimuli is perceived to be novel and is more salient than positive stimuli. Hence, it is subjectively perceived to more informative.	Hence, negative stimuli carries greater weight than positive stimuli.	Fiske (1980), Zajonc (1968)
Range	Every stimulus cue is associated with a range of values on a dimension of judgment (e.g., quality, reliability).	Cues with a smaller range are perceived to be less ambiguous, and hence, carry greater weight than cues with a larger range.	Negative cues usually have smaller ranges, and hence carry greater weight than positive cues.	Birnbaum (1972), Slovic and Lichtenstein (1971) Wyer (1973)
Category-Diagnosticity	People give more weight to more diagnostic than less diagnostic attributes in the formation of evaluations.	Negative cues are more diagnostic about most behaviors.	Hence, negative cues carry greater weight than positive cues.	Skowronski and Carlston (1987; 1989; 1992), Wojciszke et al. (1993)
Selective Hypothesis Testing	People are more likely to test a negative hypothesis, unless their goals or experimental instructions dictate otherwise.	Hypothesis testing is usually selective, i.e., people are biased towards confirming the focal hypothesis. Hence, they pay greater attention and weight to confirming than disconfirming evidence.	Hence, negative cues carry greater weight than positive cues.	

<sup>13</sup> An anchor is a reference point. For example, a person who has an anchor (a reference point) of 25 miles per gallon (mpg) of gas for an average car is likely to evaluate 15 mpg as a negative attribute but 35 mpg as a positive attribute.

**TABLE 2: HYPOTHESES TESTED, OBJECTIVES, AND FINDINGS OF THE STUDIES**

Study	Hypothesis tested	Rationale	Hypothesized and observed findings
1	H3	H3 is tested before the other hypotheses because it lays the foundation of selective hypothesis testing.	<p>The study predicts and shows that participants given a positive hypothesis evaluate an identical product higher than those given a negative hypothesis or no hypothesis (control condition). The latter two groups of participants do not differ in their evaluations because the default hypothesis tested (e.g., in the control condition) is negative.</p> <p>In addition, the data suggest that participants in the positive hypothesis condition were faster in recognizing positive attributes than negative attributes, whereas those in the negative hypothesis condition were faster in recognizing negative than positive attributes.</p> <p>Finally, this study showed that the effects of hypothesis testing on evaluations occur independently of attribute diagnosticity.</p>
2	H3	To rule out conversational norms as an alternative explanation of the findings of study 1, and also to replicate the findings of study 1 using goals instead of explicit hypotheses.	This study replicates the findings of study 1. In addition, participants were asked whether they relied on the product information or the goal (of buying a good/bad product). A significantly higher number of participants indicated relying on product information as opposed to the goal, despite evidence that the goals shaped their evaluations.
3	H2 and H5	To contrast the selective hypothesis testing explanation with the range theories and the category-diagnosticity theory.	Consistent with the selective hypothesis testing explanation, this study shows that consumers rely on their goals in forming evaluations even when attribute diagnosticity is held constant.
4	H1 and H4	To contrast the selective hypothesis testing explanation with the expectancy-contrast and the frequency-weight explanations.	Participants with favorable prior brand attitudes evaluated the brand higher than those who have unfavorable prior attitudes.

**TABLE 3: PRODUCTS AND THEIR ATTRIBUTES SELECTED FROM THE PRETEST  
BASED ON EXTREMITY AND IMPORTANCE RATINGS**

<b>Product</b>	<b>Positive attributes</b>	<b>Extremity Rating</b>	<b>Importance rating</b>	<b>Negative attributes</b>	<b>Extremity</b>	<b>Importance</b>
Airline	Friendly customer service.	3.71	7.31	Multiple stopovers even for short durations.	-3.77	7.21
	Numerous flight destinations.	3.08	7.19	Inadequate staff for customer service.	-3.54	7.17
Apartment	Large amount of closet/storage space.	3.20	6.73	Unsanitary neighbors.	-3.24	7.19
	Sewage fee included in rent.	1.49	5.96	Low ceiling level.	-2.00	5.56
Car	Includes cruise control.	2.96	5.67	Roll down windows (i.e., manual, not automatic).	-2.04	4.02
	Includes dual airbags.	3.55	7.62	Exhaust pollutes atmosphere.	-2.56	6.06
Restaurant	Delicious food.	4.67	8.40	Poor service.	-4.24	8.33
	Able to customize orders.	3.84	7.77	Unfriendly staff.	-3.92	7.96
Hotel	Close to downtown.	3.10	6.54	Small rooms.	-2.96	6.94
	Soundproof walls.	3.61	7.29	Very early check out time.	-3.20	6.94

**TABLE 4: PRODUCT DESCRIPTIONS USED IN STUDY 3 (NEGATIVE AND POSITIVE ATTRIBUTES ARE EQUIVALENT IN TERMS OF DIAGNOSTICITY)**

<b>Product replicate</b>	<b>Description</b>
Apartment	<i>Consumer Reports</i> found that Apartment brand X had 24 hours surveillance cameras above all doors, and were rated “very comfortable” by an independent agency. However, they had a low ceiling level, and were not too close to public transportation. Further, they had 24 hours on site security, but had little storage space in the kitchen.
Car	<i>Consumer Reports</i> found that Car brand Y had roll down windows, and their exhaust polluted atmosphere. However, their doors could be automatically opened and closed, and the car overall had a sleek design. Further although their seats could not be easily reclined, they were heated.
Clothing store	<i>Consumer Reports</i> reported that Clothing store brand Z had limited fitting rooms, and customers were allowed to try only 1 cloth per trial in them. However, the stores had a very lively environment, and sold clothes of latest trends.
Computer	According to <i>Consumer Reports</i> , Computer brand M uses an Intel Pentium processor, and has a CD and DVD rewritable drive included. However, it has a bulky monitor and has a bad resolution.
Movie theater	Movie theater brand N was found to have a sticky floor and not enough screens. However, it had reclinable seats, and a quick and friendly service.
Package delivery service	Package delivery service brand O was found to have an extended network of warehouses, and used durable packaging material. However, they delivered only small and certain types of packages.
Shampoo	Shampoo brand P was found to replenish damaged hair, and strengthen hair. However, it knotted hair, and had an inaccurate advertising on bottle.

**APPENDIX**

**SUMMARY OF RELEVANT RESEARCH IN NEGATIVITY AND POSITIVITY EFFECTS**

<b>Author(s)</b>	<b>Year</b>	<b>Context</b>	<b>Information provided together or separately</b>	<b>Neutral items included?</b>	<b>Dependent Variable</b>	<b>Findings</b>	<b>Theory</b>
Folkes and Patrick	2003	Insurance agents	Separately	Yes	Evaluations of Friendliness, Responsiveness	Positivity effect, participants ignore atypical information about agents	Atypicality, though Participants in study 1 indicated that behavior is not atypical
Klein	1996	Bill Clinton vs. George Bush	Together	No	Score on 9 traits, Overall evaluation	Negative traits weighed heavier than positive traits on overall evaluation	Figure-ground theory
Skowronski and Carlston	1987	Personality/Trait descriptions of people	Together - 2 behaviors at a time	No	Evaluations of Honesty, Intelligence	Negativity effect in judgments of honesty, positivity effect in judgments of intelligence. Negativity effect in memory for both.	Cue-Diagnosticity theory for evaluations, Atypicality for memory.
Vonk	1999	Differential evaluations of likeable and dislikeable behaviors towards superiors and subordinates	Separately	No	Evaluations of Likeability	Likeable behavior evaluated more positively when performed by superior to subordinate than vice versa. Moderately negative behaviors evaluated more negatively when performed by superiors. Extremely negative behaviors were disliked	Ingratiation techniques. Extremely negative behavior is informative enough to offset other differences (e.g., superior-subordinate distinction).

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
						irrespective of who performs it.	
Walker, Vogl and Thompson	1997	Memory for pleasant and unpleasant events over time	No info provided. Self events probed.	NA	Memory for pleasant and unpleasant events	Unpleasantness fades faster than pleasantness over time	Implications for Freud's repression theory and Taylor's mobilization-minimization hypothesis.
Sherman and Frost	2000	Recall and recognition of stereotype consistent and inconsisent info	Together	Yes	Memory of stereotype consistent and inconsisent info	Recall favors consistent info; recognition favors inconsisent info.	Differential encoding of consistent and inconsisent info.
Herr, Kardes and Kim	1991	Product judgments on the basis of attribute info provided. Goals (forming an impression verus memory) manipulated.	Separately -- 9 attributes	Yes (separately, in a b/w participant and s design)	Evaluations Memory (3 mins given)	Negativity effect in judgments of both evaluations and memory.	Diagnosticity. In product judgments, negative attribute info is more diagnostic than positive attribute info.
Pratto and John	1991	Attention grabbing power of negative information.	80 adjectives- one by one.	Yes	Response Latency, Memory	Response latencies for negative and positive traits follow a categorical pattern.	Comment: Attention may influence evaluations via memory.

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
Carlston	1980	Episodes containing + and - traits provided to Ss.	Together (Out of 6 episodes provided, 3 were +ve and 3 were -ve)	Yes	Evaluations of personality	After a delay, -ve info recalled with more confidence than +ve info. -ve info possess a recall advantage. With delay, negativity in recall increases. Number of -ve episodes recalled declined less over a week delay than the number of positive episodes.	
Ahluwalia	1997	ACR special session summary	NA	NA	NA	Klein found that negativity effect is consistently found in US presidential elections, it is not found in Poland and Hungary. She also found that the poles have a generally negative view of political leaders, while Americans generally have positive views.	Figure-ground theory (also referred to as the expectancy-contrast theory or atypicality theory).
Klein	1999		Separately	Yes (these were the non-focal attributes, which were not manipulated)	Evaluations of camera, purchase intentions,	Ss in the positive expectations/poor actual performance condition show negativity effect, whereas those in negative expectation and positive expectation/good performance conditions do not show negativity effect.	Figure-ground theory.
Mizerski	1982	Product judgments	Separately	No	Evaluations: Attributions of opinions (of	Negativity effect. Unfavorable ratings have stronger influence than	Attribution theory. Dispositional inferences greater when no other relevant reasons present. So if a

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
					expectations), beliefs, overall affect	favorable ratings on attributions, beliefs and attitudes.	person (here expectancy) says that a product is bad, he must be telling the truth. People who say that the product is good may be doing so for social desirability related reasons.
Howard and Rothbart	1980	Person memory and judgment	Together	No	Memory (recognition) and evaluations	Negativity effect is stronger for outgroup than ingroup.	Pits several explanations against each other in 3rd experiment.
Bird	1987	Person judgment	Together	Yes	Evaluations of likeability and memory (free recall)	Spacing effect in recall, bias towards recalling - traits better than + traits. Processes seem to be driven at encoding rather than at retrieval.	Contrast effect (figure ground theory) for greater recall of - than + traits.
De Bruin and Van Lange	2000	Person judgment. Pits the attention grabbing hypothesis with the negativity stop and go hypothesis. The former claims that negative info is so threatening that it mobilizes the person to increase search of the dangerous			Information search, attention, weight to negative vs. positive info.	Negative info weighed more heavily than positive info. Evidence for the morality stop and go hypothesis. People searched for lesser info following negative than positive info.	

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
		person. The latter claims that negative info entails lower search because it is more informative, and that it must be avoided.					
Lutz	1975	Product judgments	Separately	Yes	Evaluations: Cognitive structure and attitudes	Negative info has greater influence than positive info on cognitive structure and attitudes	Negative info is scarce, and hence, receives more weight.
Klein	1991	Political candidates	Together	NA	Overall evaluations and voting behavior	Negativity effect.	Figure-ground, expectancy-contrast, correspondent inference theory (p. 412).
Lau	1985	Political candidates	Together	NA		Negativity effect.	Evidence for two theories: Figure-ground and Cost Orientation
Wojciszke, Byrcz and Borkenau	1993	Personality/Trait descriptions of people	Together		Evaluations/behavioral predictions	For morality, negativity effect was strong for extreme, but nonexistent for moderate information. For competence, positivity was strong for moderate but weak for extreme information.	People avoid targets who produce extremely positive and extremely negative behaviors, they approach moderately positive and moderately negative behaviors. Negativity reflects a risk avoidance strategy. Hence, negativity is prevalent for extreme info. However, such negativity may preclude from forming relationships. Hence, ppl are willing to forgive moderately negative behavior.

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
Shaw and Steers	2001	Impression formation task	Separately	No	Search	Search shorter for negative vs. positive info and for extreme vs. moderate behavior. Men exhibited negativity effect only for extreme info, whereas women exhibited negativity effect for both extreme and moderate info.	Risk seeking/risk averse behavior.
Folkes and Kamins	1999	Ethical behavior of firms and their product quality	Separately (between subjects design)	No	Attitudes towards firm	A good product cannot improve attitudes towards a firm engaging in unethical behavior. When product is inferior, unethical practise is more diagnostic than quality of product; when product is superior, product quality is more diagnostic than prosocial behavior.	Cue-Diagnosticity
Skowronski and Carlston (1992)	1992	Person perception: They explore how inconsistent behavior changes evaluations in the domain of honesty/dishonesty and intelligence/stu	Both separately and together	No	Trait rating	Findings support category diagnosticity theory	Cue-Diagnosticity

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
		pidity.					
Martijn et al.	1992	Experiment 1 replicates Skowronski and Carlston (1987: experiment 1) using a different method. For intelligence, + ve behavior is more diagnostic. For morality, - ve behavior is more diagnostic.	Experiment 1: separately.	No	Overall evaluations	In Experiment 1 findings replicate Skowronski and Carlston (1989). Negative morality is more diagnostic than positive morality. Positive ability is more diagnostic than negative ability. Experiment 2 shows that negative info is stronger than positive info for both ability and morality.	They favor Cue-Diagnosticity even though results of experiment 2 show that negative info is weighed greater than positive info for both ability and morality.
Van Der Plight and Eiser	1980	Adjective pairs (e.g., foolhardy and irresponsible) were combined and participants were asked to make overall evaluations	Together	No	Overall evaluations	Usual negativity effect. In addition, negative traits were more extreme than positive traits. Inferences made from negative traits are made with greater certainty.	Negative info is more informative (Jones and Davis 1965)

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
Ahluwalia Burnkrant and Unnava	2000	Brand information	Separately	N	Attitudes towards brand	Commitment a significant moderator of negativity effects. High commitment consumers exhibit positivity effects whereas low commitment participants exhibit negativity effects. For low commitment Ss, diagnosticity mediated attitudes, for high commitment consumers, counterarguments mediated attitudes.	Strong attitudes resist information that attacks them, I.e., negative info (Petty and Krosnick 1995).
Birnbaum	1974	Ratings of likeableness of persons described by 2 adjectives. Also pits "rating scale effects" versus "unequal weight effects."				Evidence inconsistent with constant weight averaging models. Moreover, negativity effects cannot be attributed to "response scale effects." Constant weight averaging model may hold when stimulus range is restricted and the experimental design lacks power.	
Ganzach	1993,	study Evaluations of 3 employees.	Together	Numbers given for each attribute		Responsibility (or Accountability) magnifies negativity effect.	
Hodges	1974	Evaluations of people	Together	Yes		Negativity effect. No consistent evidence of primacy effects. However,	Anderson's weighted average model.

Author(s)	Year	Context	Information provided together or separately	Neutral items included?	Dependent Variable	Findings	Theory
						this could be due to the manner in which info was presented (simultaneously).	
Warr and Jackson	1987	Combinations of Trait adjectives, tape recorded messages, and newspaper articles.	Together	No	Evaluations	Salience, and importance in context are important variables in person perception.	Provides support for an anchoring and adjustment model such that negative and extreme cues are considered first, and adjustments made for subsequently considered stimuli. In the process, judgments are biased towards the negative or extreme stimuli.
Gardner Wendi (doctoral dissertation)	1997	Evaluations of people	Together	No	Negativity, positivity, and ambiguity on BEAM scale.	Neutral targets (e.g., for which no negative info is provided) are evaluated positively. Negative information carries greater weight than positive information. Negative and positive evaluations are independent and uncorrelated.	Bivariate model of evaluation
Birnbaum	1972	Person perception	Together	No	Evaluations of people	Findings are inconsistent with simple adding models	Range theory

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