

**The Many Shades of Rose-Colored Glasses:  
An Evolutionary Approach to the Influence of Different Positive Emotions**

VLADAS GRISKEVICIUS

MICHELLE N. SHIOTA

STEPHEN M. NOWLIS

Vladas Griskevicius is the University of Minnesota McKnight Land-Grant Professor and Assistant Professor of Marketing, University of Minnesota, Carlson School of Management, 321 19th Ave S. Minneapolis 3-150, MN 55455, (612) 624-3841, fax (612) 624-8804, [vladasg@umn.edu](mailto:vladasg@umn.edu).

Michelle N. Shiota is an Assistant Professor of Psychology, Arizona State University, Department of Psychology, Tempe, AZ, 85287-1104, (480) 965-3326, fax (480) 965-8544, [Michelle.Shiota@asu.edu](mailto:Michelle.Shiota@asu.edu).

Stephen M. Nowlis is the AT&T Research Professor of Marketing, W. P. Carey School of Business, Arizona State University, Tempe, AZ, 85287-4106, (480) 965-2939, fax (480) 965-8000, [Nowlis@asu.edu](mailto:Nowlis@asu.edu).

We present an evolutionary framework for examining the influence of different positive emotions on cognition and behavior. Testing this framework, we investigate how two positive emotions—pride and contentment—influence product desirability. Three experiments show that different positive emotions (compared to a neutral control condition) have specific effects on judgment, consistent with the proposed underlying evolved function of each positive emotion. As predicted by the framework, the specific influences of pride and contentment on product desirability are mediated by the triggering of emotion-specific functional motives. Overall, an evolutionary approach presents important research implications and practical applications for how and why discernible positive and negative emotions influence thinking and behavior. The implications of an evolutionary approach for the study of emotions is discussed, highlighting key similarities and differences between this and other approaches, as well as noting the advantages of incorporating an evolutionary approach.

Keywords: emotion, affect, positive mood, product judgment, evolutionary psychology

Consider a shopper who is in a great mood. She might be feeling contented after having eaten a delicious meal, or feeling proud after having accomplished an important goal. Given her affective state, how will she perceive the products she is about to encounter?

The answer to this question might initially appear simple: Much classic research shows that positive affect produces a “rose-colored glasses” effect, making everything appear more desirable (for reviews see Pham 2007; Schwarz and Clore 2007). Indeed, most prior studies examining the effects of emotion on psychological processes have emphasized the implications of global positive or negative affect. Yet more recent research notes that negative feelings of the same valence—that is, different negative emotions—can have vastly different consequences for judgment and behavior (e.g., Lerner and Keltner 2001; Lerner, Small, and Loewenstein 2004; Maheswaran and Chen 2006; Raghunathan and Pham 1999).

Conspicuous for its absence in the emotions literature is research on how—or why—different *positive* emotions might influence judgment and behavior. Researchers readily acknowledge that an understanding of how different positive emotions influence various psychological processes is sorely needed. For example, Lerner, Han, and Keltner (2007, p. 186) note that, “studying specific positive emotions (rather than global mood) and decision making represents a research lacuna.” Cavanaugh, Bettman, Luce, and Payne (2007, p. 172) similarly note that, “researchers know relatively little about the consequences of discrete positive emotions.” An accurate understanding of the implications of specific positive emotions is especially important for consumer research, because marketers often go to great lengths to engineer positive environments for consumers.

In this paper we present an evolutionary framework for examining how different positive emotions influence judgment and behavior. Although positive feelings are frequently conceptualized as the opposites of negative feelings, and researchers often emphasize the

implications of broad positive affect categories such as “happiness” or “joy,” our approach suggests that this over-generalization may be misleading for both researchers and practitioners. Instead, an evolutionary approach contends that different positive emotions are qualitatively distinct constructs, meaning that different emotions influence judgment and behavior in different ways via different cognitive and motivational processes. Our goal is to build upon existing theoretical approaches to the study of emotion that emphasize a particular mechanism (e.g., affect valence, appraisal tendencies), and to show that explicit evolutionary considerations can contribute to a deeper understanding of the positive emotions, supporting textured hypotheses about their effects on judgment and behavior. Our approach has important implications for (1) the definition and function of different positive emotions, (2) hypotheses regarding how such emotions might influence a variety of outcomes, and (3) hypotheses regarding the different mechanisms by which different positive emotions might produce their effects.

Drawing on this theoretical framework, we investigate how and why two different positive emotions—pride and contentment—influence the desirability of specific kinds of products. Across studies, we find that pride and contentment have emotion-specific influences on judgment consistent with the hypothesized function of each emotion. In addition, we demonstrate that the effects of pride and contentment on product desirability are mediated by the activation of emotion-specific motivational goals. Overall, our theoretical approach and findings not only have important implications for how and why different positive emotions influence judgment, but also prompt novel research questions about the influence of all emotions—positive or negative—on cognition, motivation, and behavior. We consider the broader implications of an evolutionary approach for the study of emotions in the General Discussion, highlighting the advantages of this perspective and its relationship to other approaches.

## **EMOTION AND JUDGMENT: EXISTING PERSPECTIVES**

An extensive body of research has examined the influence of incidental mood, affect, and emotion on judgment and behavior (for reviews see Cohen, Pham, and Andrade 2007; Forgas 1995; Pham 2007; Schwarz and Clore 2007). Much of this work emphasizes the distinction between positive affect (e.g., “happiness”) and negative affect (e.g., “sadness”), showing that feelings of opposing valence have opposing influences on cognition. In particular, the Affect Infusion Model (AIM; Forgas 1995) predicts that evaluative judgments about a new target will generally tend to be congruent with one’s current affect, meaning that negative feelings lead to more negative judgments, and positive feelings lead to more positive judgments. Such affect-congruency effects have been shown for targets ranging from products (Gorn, Goldberg, and Basu 1993), to advertisements (Gardner and Wilhelm 1987; Goldberg and Gorn 1987; Murry and Dacin 1996), political candidates (Isbell and Wyer 1999), consumption decisions (Pham 1998), and evaluations of brand extensions (Barone et al. 2000; Yeung and Wyer 2005). Based on these types of findings, some researchers have concluded that, “the only relevant aspect of emotion is their valence” (Elster 1998. p. 64).

Although affect valence is an important aspect of emotional experience, a growing body of research suggests that different emotions of the same valence may influence judgment and decision-making in quite different ways (e.g., Lerner, Small, and Loewenstein 2004; Tiedens and Linton 2001; Raghunathan, Pham, and Corfman 2006). The overwhelming majority of such research has focused on negative emotions (e.g., Rabi 1999; Roseman, Wiest and Swartz 1994). For example, the negative emotion of fear leads people to be more risk-averse, whereas the equally negative emotion of anger appears to facilitate risk-seeking (Lerner and Keltner 2001). Contrasting effects of different negative emotions are typically explained in terms of appraisal tendencies associated with each emotion (e.g., Lerner and Keltner 2000; Han, Lerner, and

Keltner 2007). According to this perspective, specific emotions can be defined in terms of a particular pattern across a series of appraisal dimensions, each reflecting some interpretation of the emotion-eliciting event. Emotion researchers have identified and studied several such dimensions, including novelty, certainty, control, anticipated effort, responsibility, and safety (see Smith and Ellsworth 1985; Scherer 1997), whereby these initial appraisals are thought to “carry over” beyond the initial event, biasing interpretation of subsequent targets in a way that influences judgment (Lerner et al., 2004).

### **AN EVOLUTIONARY PERSPECTIVE**

For the present research, we adopt an evolutionary perspective in predicting the effects of discrete positive emotions on judgments of consumer products. A rich tradition beginning with William James (1884), and elaborated by theorists such as Robert Plutchik (1980), Richard Lazarus (1991), and Paul Ekman (1992), defines emotions as complex, fitness-enhancing responses to particular kinds of adaptive problems. This approach has consequences not only for the hypothesized effects of emotions on judgment and behavior, but also for hypotheses about the mechanisms behind these effects. Studies adopting the affect-valence and appraisal-tendency approaches emphasize a single aspect of emotional experience (e.g., positive affect, the appraisal of certainty, etc.), and compare two or more emotions differing on that common factor. This approach is highly useful for examining the effects of emotion one mechanism at a time.

In contrast, an evolutionary approach asks whether different emotions lead to different outcomes through different mechanisms. In the most recent articulations of this approach, emotions are conceived of as superordinate neural programs, activating sets of cognitive and motivational sub-routines that facilitate adaptive behavior in the face of a prototypical, fitness-relevant opportunity or threat (Cosmides and Tooby 2000; Kenrick and Shiota 2008). Once an

emotional system is activated, it promotes a cascade of perceptions, cognitions, short-term goal activation, and behaviors conducive to solving the adaptive problem (Kenrick, Griskevicius, Neuberg and Schaller forthcoming). For example, consider the fear system, which evolved to promote adaptive action in the face of physical threat to one's life and limb (Öhman and Mineka 2001). Activating the fear system produces enhanced attention to and memory for angry male strangers, perceptions that outgroup members are more dangerous, and behaviors to blend into the crowd (Ackerman et al. 2006; Griskevicius et al. 2006; Kenrick et al. 2009). Because an evolutionary perspective maintains that different adaptive opportunities and threats demand qualitatively different solutions, it is not expected that the same processes or mechanisms will underlie the effects of all emotions. Thus, instead of studying one mechanism at a time, with emotions falling on a continuum reflecting their engagement of that mechanism, our approach suggests that we can learn something important by asking whether each emotion engages qualitatively distinct mechanisms, leading to qualitatively distinct outcomes.

### **IMPLICATIONS FOR POSITIVE EMOTION**

The evolutionary-function approach is endorsed by many researchers studying negative emotions, who routinely invoke the functions of fear, anger, sadness, and disgust when deriving hypotheses (e.g., Keller and Nesse 2006; Öhman and Mineka 2003; van Kleef, De Dreu and Manstead 2004). Although positive emotion was long treated as a single construct, researchers have recently begun to offer function-based definitions of specific positive emotions as well (e.g., Bartlett and DeSteno 2006; Fredrickson 1998, 2001; Keltner, Haidt, and Shiota 2006; Shiota, Campos, Keltner, and Hertenstein 2004; Tracy and Robins 2007; Williams and DeSteno 2008). In much the same way that negative emotions are believed to facilitate fitness-enhancing responses to distinct types of threat, positive emotions are thought to facilitate fitness-enhancing

responses to distinct types of opportunities (e.g., Fredrickson 2001; Griskevicius, Shiota and Neufeld forthcoming; Keltner and Haidt 1999; Shiota et al. 2004; Tracy and Robins 2004). The current research focused in detail on how two often-experienced positive emotions—pride and contentment—influence product desirability. By using the theorized function and definition of each emotion as a starting point, we derived hypotheses regarding how and why each positive emotion (relative to a neutral control state) should influence the desirability of specific classes of products. We discuss each of the two positive emotions under investigation in more detail below.

#### Pride: Functional Definition and Predictions

Pride is what we feel after a valued achievement, such as doing well on a difficult exam or getting a deserved promotion. This emotion functions to facilitate public displays drawing attention to oneself (Gilbert 2001; Tracy and Robins 2004, 2007), and increasing one's social standing. For instance, the physical expression of pride includes puffing out the chest and raising the chin—an expression of dominance in the animal kingdom. This display differentiates one positively from others, and is interpreted by others as an indicator of high status (Shariff and Tracy 2009; Tiedens, Ellsworth, and Mesquita 2000). Even in cultures where it is unacceptable to boast about one's achievements, pride produces a desire to display publicly, although in a more modest manner (Stipek 1998). At its core, pride functions to motivate individuals to take advantage of legitimate opportunities for gaining status via public positive differentiation.

Given that the function of pride is to motivate public displays to draw positive attention to oneself, we hypothesized that pride should enhance desire for products useful for *positive differentiation through public display*. This means that pride should enhance attractiveness of products that can be used in public and that can positively individuate their owners. Note that the activation of the pride system is not the same as eliciting a desire for luxury. Pride is predicted to

lead to a desire for public positive differentiation, which can be achieved via expensive or inexpensive products. For example, a person can catch the eye of others and impress them by wearing a unique and interesting outfit regardless of its price or brand name. Although the functional definition of pride is associated with the word “status,” note that status within an evolutionary framework is defined as having the attention and deference of others (Cummins 2005; Henrich and Gil-White 2001).

Given the hypothesized function of pride, we also predicted that this positive emotion should *not* enhance desire for products that are poorly suited for achieving positive differentiation through public display. For example, pride should not enhance the desire for products purchased for private use in one’s home. Thus, a functional analysis of pride suggests that this positive emotion should enhance the desirability of products that can help achieve the particular fitness-enhancing goal associated with pride (positive differentiation through public display), but not enhance the desirability of products that do not help achieve this goal.

#### Contentment: Functional Definition and Predictions

Contentment is the feeling of satiety and satisfaction experienced after the fulfillment of basic physical needs, such as food and warmth (Berenbaum 2002). Theories of the function of contentment suggest that this positive emotion prompts individuals to reduce behavioral activation, seek familiar places, and “savor and integrate” their recent successes (Fredrickson 1998, p. 306). Supporting this theorized function, recent research suggests that reward consumption in animals (e.g., eating) facilitates memory encoding of the pathway that led to the just-consumed reward (Foster and Wilson 2006; Depue and Morrone-Strupinsky 2005). In regards to behavior, reward consumption leads to a “satiety sequence” in human and non-human mammals, during which the memory consolidation appears to take place (Foster and Wilson

2006). A crucial component of the satiety sequence is seeking a safe, familiar, and comfortable place to groom and rest (Kushner and Mook 1984; Panksepp 1998; Bradshaw and Cook 1996).

Consistent with the behavioral function of contentment, we hypothesized that contentment should enhance desire for products *used in safe, familiar, and comfortable places*, with one's dwelling as the prototypical example of this environment. Thus, contentment should enhance attractiveness of products that are primarily used to enhance comfort in one's home. Given this hypothesized function of contentment, we also predicted that this positive emotion should *not* enhance desire for products that are purchased for drawing attention to oneself in public. Thus, a functional analysis suggests that contentment should enhance desirability of products that facilitate satiety-related behaviors (being in safe, familiar, and comfortable places), but not the desirability of products that do not help achieve this goal.

## STUDY 1

The first study examined how pride and contentment (compared to a neutral control condition) influenced the desirability of two types of products: public display products vs. home products. Whereas the affect-valence perspective predicts that both positive states should enhance the desirability of both types of products—the “rose-colored-glasses” effect—we predicted that each emotion would have more precise effects. Whereas pride should enhance the attractiveness of products useful for public display (e.g., watches, shoes), pride should not enhance the attractiveness of home products (e.g., dishwashers, beds). Conversely, whereas contentment should enhance the attractiveness of home products, contentment should not enhance the attractiveness of public display products.

The study also systematically varied whether products were higher- or lower-tier in terms of pricing (Nowlis and Simonson 1997). Given that our functional analyses of pride and

contentment do not predict that either emotion should lead people to desire higher-price or lower-price products, we expected that the influence of pride and contentment would not depend on product price. That is, we predicted that pride should enhance desirability of products useful for public positive differentiation, and that contentment should enhance desirability of products used in the comfort of one's home, regardless of whether those products are more or less expensive.

## Method

*Participants.* Seventy-seven students from a large public university in the U.S. participated in the study in return for course credit. Participants (Ps) came to the lab in small groups and were seated at computers that were partitioned from each other.

*Design and Procedure.* The study had a 3 (Emotion: Pride, Contentment, and Neutral Control) X 2 (Product Type: Display vs. Home) x 2 (Product Tier: Higher vs. Lower) mixed-factorial design. Emotion was a between-participants factor, and product type and product tier were within-participants factors.

To minimize potential suspicions and demand characteristics, a cover story was used. Ps were told that they were going to participate in several different studies, whereby the first study concerned memory. Consistent with this cover story, Ps read a short story and were told that they would be asked to recall information about the story later in the session. However, because it was important to let some time pass before the memory recall task (ostensibly, to allow for memory decay), Ps would work on another survey regarding product preferences. Post-study interviews during pilot testing did not reveal any suspiciousness, meaning that no participants indicated suspiciousness about the memory study or believed there was a link between the story and the product questions. All of the studies reported in this paper used the same cover story.

*Emotion inductions.* Emotions were elicited by having participants read a short story of about 500 words. Participants were told that because we were interested in memory (consistent with the cover story), we wanted them to try a particular memory technique: Read the story carefully and try to feel the emotions that the main character is feeling. Each story contained the theoretically derived prototypical cues to elicit a specific target emotion. We did not include the target emotion words in the stories because an evolutionary approach to emotion defines an emotion by the function it serves in a particular kind of eliciting situation (Keltner and Haidt 1999; Kenrick and Shiota 2008). Thus, to elicit a specific emotion, a person should be presented with a prototypical situation in which that emotion is functionally appropriate (Griskevicius, Shiota and Neufeld, forthcoming). In addition, having participants read about (or write about) a particular emotion label (e.g., “contentment”) relies on the often faulty assumption that the participant defines this term in the same way as the researcher. Below are brief summaries of the stories for each of the three emotion conditions.

*Pride:* Ps imagined preparing for an important exam coming up in a few months. After spending much effort studying, the person does extremely well on the test. The story ends as the person is walking home after finding out about their high score (see Tracy and Robins 2004, 2007). *Contentment:* Ps imagined being hungry at the end of the day and having a feast of their favorite food. The story ends with the person feeling satiated, satisfied, and relaxed after eating the food (see Fredrickson 1998; Griskevicius, Shiota, and Neufeld forthcoming). *Control:* Ps imagined doing their laundry. The story methodically goes through the steps of doing laundry, including measuring detergent, finding the correct setting on the washing machine, and switching clothes from the washer to the dryer. The story ends as the person gets ready to fold dry clothes.

*Emotion Induction Pre-Testing.* To ensure that the manipulations elicited the intended emotional states, the manipulations were carefully pre-tested with a separate sample of 83

participants. Each participant underwent one of the three reading tasks with the same instructions as in the studies. Ps then indicated whether the task led them to feel various affective states.

To ensure that the emotion labels rated by participants corresponded to the same psychological construct for both the participants and the researchers, pride and contentment were defined for participants in the following manner. *Contentment*: Feeling relaxed, satisfied, and comfortable, like all of your needs have been fulfilled; the kind of feeling that makes you want to lay around and do nothing for a while (see Fredrickson 1998). *Pride*: Feeling great about yourself, like you are a special, important person; makes you want to be around other people and talk to them about your success (see Tracy and Robins 2007). To measure whether the manipulations elicited positive or negative affect, participants also indicated whether the manipulations led them to feel happy or sad. All responses were provided on 0-6 point scales anchored at “not at all” and “very much.”

Results showed that each of the two positive emotions (pride and contentment) elicited positive feelings. Compared to the control condition, the *pride* manipulation led people to feel significantly more happiness ( $M_s = 4.93$  vs.  $2.11$ ,  $p < .001$ ); compared to the control condition, the *contentment* manipulation also led people to feel significantly more happiness ( $M_s = 5.31$  vs.  $2.11$ ,  $p < .001$ ). Indeed, pride and contentment elicited similar levels of happiness ( $M_s = 4.93$  vs.  $5.31$ ,  $p = .46$ ), meaning that any potential different effects of either manipulation cannot be attributed to differences in positivity.

The *pride* manipulation led people to feel more *pride* than in the control condition ( $M_s = 5.07$  vs.  $1.69$ ,  $p < .001$ ) and feel more *pride* than in the contentment condition ( $M_s = 5.07$  vs.  $2.27$ ,  $p < .001$ ). In contrast, the *contentment* manipulation led people to feel more *contentment* than in the control condition ( $M_s = 5.31$  vs.  $2.58$ ,  $p < .001$ ) and feel more contentment than in the pride condition ( $M_s = 5.31$  vs.  $3.74$ ,  $p < .001$ ). None of the manipulations, including the control,

led people to feel negative affect (means across the three conditions ranged from 0.17 to 0.77). In sum, the emotion manipulations led people to feel the intended emotions.

*Products.* Ps indicated the attractiveness of and desire for six products. For each product, Ps responded to two nine-point questions anchored at “not at all” and “very much”: (1) How desirable do you find this product? (2) How attractive do you find this product? Three of the products were chosen because they are useful for public display and positive differentiation: watch, laptop computer, and shoes. Three other products were chosen because they are useful in the privacy and comfort of one’s home: dishwasher, vacuum cleaner, and bed.

To ensure that these two sets of products were clearly perceived to be related to the underlying functions of pride or contentment, we pre-tested the six products with a separate group of 40 participants from a similar sample population. Each product was rated on a nine-point scale anchored with “not at all” and “very much.” Consistent with the hypothesized function of *pride*, participants indicated the extent to which people buy this product: (1) hoping that other people (e.g., friends) will notice it, (2) to try to stand out from others, and (3) to likely display their distinction. Consistent with the hypothesized function of *contentment*, participants indicated the extent to which people buy this product: (1) for use at home, (2) to enhance comfort in one’s home, and (3) to use mainly in familiar locations where people feel safe.

As expected, the public display products (watch, laptop computer, shoes) compared to the home products (dishwasher, bed, vacuum cleaner) were much more strongly associated with being purchased so that others will notice them, to try to stand out, and to display distinction ( $M = 6.60$  vs.  $M = 2.96$ ;  $p < .001$ ). In contrast, the home products were associated more strongly with being used at home, enhancing the comfort of one’s home, and used mainly in familiar locations where people feel safe ( $M = 7.12$  vs.  $M = 3.56$ ;  $p < .001$ ). Thus, the products were clearly perceived as different on the intended dimensions.

*Product Tier.* The six products varied in whether they were associated with a higher-priced-tier or a lower-priced-tier, meaning that participants evaluated a total of 12 products. For the public display products, the higher-price brands were: Bulgari watch, Sony laptop computer, and shoes for Nordstrom. The lower-price brands were: Timex watch, Gateway laptop computer, and shoes from Payless Shoe Source. For the home products, the higher-price brands were: Sub-Zero dishwasher, a bed from Ethan Allen, and a Dyson vacuum cleaner. The lower-price brands were: Maytag dishwasher, a bed from Sears, and a Hoover vacuum cleaner.

To ensure that participants clearly distinguished between the higher-price and lower-price products, we asked a separate group of 42 participants about each of the twelve products. Specifically, participants rated each product in random order on a nine-point scale on (1) How expensive is this specific product relative to similar products? (endpoints “much less expensive” and “much more expensive”), and (2) To what extent is this product a low-tier or a high-tier product? (endpoints “definitely low tier” and “definitely high tier”). Results showed that the six higher-price items were perceived to be more expensive than the six lower-price items ( $M = 6.72$  vs.  $M = 4.71$ ;  $p < .001$ ). The six higher-price items were also perceived to be significantly higher-tier than the six low-price items ( $M = 6.46$  vs.  $M = 4.87$ ;  $p < .001$ ). Thus, the products were perceived as being different on the price-tier dimension.

## Results

An omnibus mixed-model analysis of variance (ANOVA) did not reveal a three-way interaction with brand tier, product type, and emotion ( $F(2, 74) = .02, p = .98$ ), nor did it reveal an interaction between brand tier and emotion ( $F(2, 74) = .20, p = .82$ ). Thus, consistent with predictions from our model, emotion produced similar responses regardless of whether products were higher or lower price.

Although interactions with brand tier were not significant, the omnibus ANOVA did reveal the predicted two-way interaction of emotion and product type ( $F(2, 74) = 10.91, p < .001, \eta^2 = .23$ ; see Figure 1). The specific pattern of the interaction was in line with predictions. Pride led public display products to be more desirable relative to control ( $M_{\text{pride}} = 7.05, M_{\text{control}} = 6.46; F(1, 74) = 3.75, p = .051, d = .45$ ), but pride did not enhance the desirability of home products ( $M_{\text{pride}} = 5.46, M_{\text{control}} = 5.69; p = .59$ ).

---Figure 1 about here---

In contrast to pride, contentment resulted in a marginally significant increase in the desirability of home products relative to the control ( $M_{\text{contentment}} = 6.39, M_{\text{control}} = 5.69; F(1, 74) = 2.84, p = .096, d = .40$ ). Although this two-tailed test was only marginally significant, the effect was in the predicted direction and consistent with the effect found again in Studies 2 and 3. Furthermore, contentment did significantly enhance the desirability of home products when compared to the combination of pride and control ( $F(1, 74) = 5.00, p = .028, d = .51$ ). Finally, although contentment enhanced the desirability of the home products, it did not enhance the desirability of public display products ( $M_{\text{contentment}} = 6.27, M_{\text{control}} = 6.46; p = .50$ ).

## Discussion

The first study examined how two positive emotions (pride and contentment) influenced the desirability of various products. Whereas traditional approaches predict that positive affect will generally enhance the attractiveness of all products in line with the general rose-colored-glasses effect, we found that positive affect may *or* may not enhance the desirability of products, depending on the positive emotion that is elicited and the type of product under consideration.

Drawing on an evolutionary approach, we predicted that a particular positive emotion should enhance the attractiveness of products that help achieve the particular fitness-enhancing

goal associated with that emotion. Consistent with predictions, pride enhanced the attractiveness of products useful for public display and positive differentiation, but did not enhance the attractiveness of products used in the home. In contrast, contentment enhanced the desirability of home products, but not the attractiveness of public display products. Although space constraints limit the number of studies that can be reported herein, it is noteworthy that this very specific pattern of results also replicated using a different method of eliciting positive emotions, whereby participants wrote (rather than read) about a time in which they encountered the theoretically defined prototypical elicitors of pride and contentment (see Griskevicius, Shiota and Neufeld forthcoming). Overall, this study shows that different positive emotions influence judgment in emotion-specific ways consistent with functional accounts of specific positive emotions.

## STUDY 2

Within an evolutionary framework, the perceived function of the product is crucial for predicting how a particular positive emotion should influence judgment. For example, if a product is perceived as serving primarily to enhance public positive differentiation, pride should enhance its desirability; but if a product is perceived as not serving this function, pride should not enhance its desirability.

In the first study, we examined how different positive emotions influence desire for different products that generally vary in the functions they serve (e.g., a new watch is often used for public display vs. a new bed is generally used at home). However, a more direct test of our model would come from examining how different positive emotions influence the desirability of the same product category when the function of that category is varied systematically. For example, the category of clothing can be used for positive differentiation and public display (consistent with the hypothesized function of pride), or for being comfortable around the house

(consistent with the function of contentment). In Study 2, we thus examined how pride and contentment influenced the desirability of clothing when it explicitly served different functions.

Additionally, because in our first study all participants viewed and rated all products (i.e., we used a within-subject design for type of product), in the current study we used a between-subjects design, whereby participants in a given emotion condition evaluated only one type of product. Using a between-subject design minimized potential demand characteristics.

## Method

*Participants.* Three hundred and five students from a large university in the U.S. participated in the study in return for course credit.

*Design and Procedure.* The study had a 3 (Emotion: Pride, Contentment, Control) X 2 (Clothing Function: Display vs. Home) between-subjects design. Emotions were elicited by reading a short story (identical to Study 1). Because the neutral control condition in the first study used a clothing-related scenario, we developed a control condition in which people sorted mail into bigger and smaller envelopes. Pilot testing showed that much like the laundry control scenario, this scenario led people to feel neither positive nor negative emotions.

*Clothing Products.* After the emotion inductions, Ps reported their desire to spend money on clothing. Specifically, Ps indicated “how desirable to you right now is spending money on the following product category?” on a 1-9 scale with “not at all desirable” and “very desirable” at the endpoints. Half of the Ps reported desirability of clothing for positive differentiation and public display: “Clothing for going out (e.g., pants, shirt, shoes, dress, etc.)” The other half of the Ps reported desirability of clothing for being at home in a safe environment: “Clothing for lounging around the house (e.g., sweats, pajamas, robe, etc.)”

## Results and Discussion

*Product evaluation.* An omnibus ANOVA with Emotion and Clothing Function revealed an interaction ( $F(2, 299) = 8.80, p < .001$ ; see Figure 2). As predicted, pride led clothing for going out to be more desirable relative to the same clothing in the control condition ( $M_{\text{pride}} = 6.83, M_{\text{control}} = 5.90; F(1, 299) = 10.72, p = .001, d = .39$ ). However, pride did not enhance desirability of clothing for lounging around the house ( $M_{\text{pride}} = 3.89, M_{\text{control}} = 4.10; p = .29$ ).

---Insert Figure 2 about here---

Contentment produced the opposite pattern from pride. As predicted, contentment led clothing for lounging around the house to be more desirable relative to the same clothing in the control condition ( $M_{\text{content}} = 5.00, M_{\text{control}} = 4.10; F(1, 299) = 11.55, p = .001, d = .40$ ). However, contentment actually decreased the desirability of clothing for going out ( $M_{\text{content}} = 5.21, M_{\text{control}} = 5.90; F(1, 299) = 8.71, p = .003, d = .35$ ).

### STUDY 3

Study 2 showed that the effects of pride and contentment on the desirability of a product category depend critically on the perceived function of that product category. This finding speaks to our model's explanation of why different positive emotions have different effects on judgment—because different emotions activate different, fitness-enhancing short-term goals. In Study 3, we set out to demonstrate explicitly the role of goal-activation in mediating the effects of the positive emotions of pride and contentment on product desirability.

Recall that a functional evolutionary perspective views emotions as superordinate, neural programs, activating motivational sub-systems that facilitate dealing with particular kinds of adaptive problems (Cosmides and Tooby 2000; Griskevicius, Shiota and Neufeld forthcoming). Once such an emotion/motivation system is activated, it promotes a cascade of perceptions,

cognitions, and behaviors conducive to the successful solution of the adaptive problem. Our model predicts that the elicitation of a specific emotion should activate specific short-term goals linked to the underlying fitness-enhancing function of that emotion. Considering the hypothesized function of pride, we predicted that pride should enhance attractiveness of public display products specifically because pride leads people to want to have others notice them, and to want to draw attention to themselves (Tracy and Robins 2004, 2007). Similarly, considering the hypothesized behavioral function of contentment, we predicted that this emotion should enhance the desirability of home products specifically because contentment should lead people to want to be in a comfortable and familiar environment (Berenbaum 2002; Fredrickson 1998).

## Method

*Participants and procedure.* Ninety-four students from a large university in the U.S. participated in the study in return for course credit. The study had a 3 (Emotion: Pride, Contentment, Control) X 2 (Product Type: Display vs. Home) mixed-factorial design. Emotion was a between-participants factor and product type was a within-participants factor. Emotions were elicited by reading a short story (identical to Study 1). Participants then evaluated the same six products as in Study 1, whereby 3 of the products were public display products and 3 of the product were home products.

After Ps evaluated the products, they responded to items related to motives. Specifically, participants indicated on a nine-point scale whether the story they read made them: (1a) “want to have others notice you” and (1b) “draw attention to yourself” (the two pride-related motives;  $r = .68$ ); and whether the story made them (2a) “want to be in a familiar environment.” and (2b) “be in a comfortable place” (the two contentment-related motives;  $r = .71$ ).

## Results and Discussion

*Product evaluation.* An omnibus two-way ANOVA revealed the predicted interaction between emotion and product type ( $F(2, 91) = 7.97, p = .001, \eta^2 = .17$ ). Replicating Study 1, pride led public display products to be more desirable relative to control ( $M_{\text{pride}} = 7.39, M_{\text{control}} = 6.46; F(1, 91) = 6.79, p = .011, d = .54$ ). However, pride did not enhance the desirability of home products ( $M_{\text{pride}} = 3.75, M_{\text{control}} = 4.02; p = .52$ ). In contrast, contentment enhanced the desirability of home products ( $M_{\text{content}} = 4.79, M_{\text{control}} = 4.02; F(1, 91) = 3.40, p = .069, d = .39$ ), but not the desirability of public display products ( $M_{\text{content}} = 6.55, M_{\text{control}} = 6.46; p = .80$ ).

*Mediation analyses.* To examine whether the predicted motives mediated the effects of emotion on product evaluation, we used the method recommended by Baron and Kenny (1986). This strategy entails four steps: (1) examining whether the independent variable (emotion) has an influence on the proposed mediator (emotion-specific goal); (2) examining whether the proposed mediator (emotion-specific goal) has an effect on the dependent variable (product evaluation); (3) examining whether the effect of the independent variable (emotion) on the dependent variable (product evaluation) remains after the proposed mediator is accounted for in the analysis; and (4) examining whether there is a significant difference on how the IV influences the DV depending on whether the proposed mediator is considered in the analyses. Using regression, we performed two such mediation analyses—one for pride and its predicted mediators, and one for contentment and its predicted mediators (see figure 3).

---Insert figure 3 about here---

Examining pride versus control, pride had a significant positive effect on the predicted mediator (the mean of “have others notice you” and “draw positive attention to self”),  $\beta = .60, t(61) = 5.32, p < .001$ . The mediator also had a significant positive effect on the desirability of public display products,  $\beta = .58, t(61) = 5.53, p < .001$ . Although pride had a significant direct

effect on the attractiveness of public display products,  $\beta = .33$ ,  $t(61) = 2.73$ ,  $p = .008$ , this effect went away when the mediator was included in the analysis,  $\beta = -.03$ ,  $t(60) = -.22$ ,  $p = .83$ . A Sobel (1982) test indicated that the mediator significantly accounted for the influence of pride on the desirability of display products,  $z = 3.58$ ,  $p < .001$ . Thus, in line with a functional account of pride, this emotion enhanced the attractiveness of public display products because it led people to want to draw positive attention to themselves and have others notice them.

Examining contentment versus control, contentment had a significant positive effect on the predicted mediator (the mean of “be in a familiar environment” and “be in a comfortable place”),  $\beta = .40$ ,  $t(61) = 3.45$ ,  $p = .001$ . The mediator also had a significant positive effect on the attractiveness of home products,  $\beta = .48$ ,  $t(61) = 3.45$ ,  $p < .001$ . Although contentment had a direct effect on the attractiveness of home products,  $\beta = .23$ ,  $t(61) = 1.85$ ,  $p = .069$ , this effect went away when the mediator was included in the analysis,  $\beta = .04$ ,  $t(60) = .36$ ,  $p = .72$ . A Sobel (1982) test indicated that the mediator significantly accounted for the influence of contentment on the desirability of home products,  $z = 2.53$ ,  $p = .01$ . Thus, consistent with a functional account of contentment, this emotion enhanced the attractiveness of home products because it led people to want to be in a familiar environment and be in a comfortable place.

## **GENERAL DISCUSSION**

For decades, researchers have stressed that affective valence (positive versus negative) is a key factor in determining how emotion influences cognition and behavior (e.g., Schwarz 2002). For example, negative affect has been found to produce negative evaluations, whereas positive affect has been found to generally produce positive evaluations—the affect congruency or “rose-colored-glasses” effect (Forgas 2003). A growing body of research, however, suggests that different negative emotions, can influence judgment and decision-making in quite different ways

(e.g., Maheswaran and Chen 2006; Raghunathan and Pham 1999; Lerner, Small, and Loewenstein 2004; Tiedens and Linton 2001). Researchers typically explain the results of these studies in terms of appraisal biases, carried over from the situation initially eliciting the emotion. However, appraisal-tendency approaches have been less successful at predicting or explaining differences among positive emotions (Cavanaugh et al. 2007). As a result, our understanding of how different positive emotions might influence cognition and behavior remains highly limited.

To examine the influence of different positive emotions on judgment, we adopted a functional evolutionary perspective. This approach emphasizes that different positive emotions are qualitatively distinct entities that promote responding to specific adaptive problems in ways that enhance inclusive fitness (i.e., survival, reproduction, and kin care). In the current set of studies, we investigated how and why two positive emotions (pride and contentment) influence the desirability of consumer products. Using the theorized function of each emotion as a starting point, three experiments documented the predicted differing effects of pride and contentment on product desirability.

Consistent with the notion that *pride* motivates public displays to draw positive attention to oneself (Tracy and Robins 2004, 2007), we hypothesized and found that pride enhances desire for products particularly useful for public positive differentiation. For example, pride enhanced desire for products such as watches and shoes, which are typically displayed in public. However, pride did not enhance desire for products used primarily around the house. As predicted by our framework, the effect of pride depended critically on the perceived function of a given product. For example, pride enhanced desire for clothing to be seen in by others (e.g., clothing for going out), but not for clothing to be worn around the house. Finally, the influence of pride on judgment was mediated by activation of the specific goal predicted by our framework—the goal to be noticed by others and to draw positive attention to oneself.

Consistent with the behavioral function of *contentment* (Berenbaum 2002; Fredrickson 1998), we hypothesized and found that this positive emotion enhanced desire for products used in safe, familiar, and comfortable places, such as one's home. For example, contentment enhanced desire for products such as dishwashers and beds, but not for products generally used for public display. As predicted by our framework, the effect of contentment depended critically on the perceived function of a given product. Contentment enhanced desire for clothing to be worn around the house, but not for clothing for going out. Finally, the influence of contentment on judgment was mediated by activation of the specific goal predicted by our framework—the goal to be in a familiar and comfortable place.

Overall, this research provides empirical support for using a functional evolutionary framework in the study of positive emotions, and demonstrates how this approach can predict highly specific effects and processes. This framework presents a theoretically driven approach for understanding and potentially organizing the positive emotions, including shedding light into how and why different positive emotions influence judgment and behavior. Furthermore, the consideration of the evolutionary function of specific emotions raises potential novel research questions about how cognition and behavior are influenced by all emotions.

### Comparing Evolutionary and Other Approaches

The evolutionary perspective adopted in the current research differs in important ways from perspectives used previously in studies of emotion and judgment. However, these perspectives are not at all incompatible, and research from different perspectives contributes to a richer understanding of the implications of positive emotions for judgment and behavior. Affect-congruency models, including the AIM (Forgas 1995), and appraisal-tendency frameworks emphasize differences among emotions on a single dimension, asking whether these differences

predict some outcome. Thus, these are one-mediator-at-a-time approaches, highlighting a single mechanism. This approach can be quite useful for focusing on particular processes underlying emotion effects. A mechanism that is useful in explaining the effects of some emotions may, however, fail to account for the effects of other emotions. Indeed, in two additional studies not reported herein due to space constraints, we found that none of eight appraisal dimensions – including valence, certainty, or arousal – accounted for the effects of either pride or contentment on product desirability. In other research, we have found that a particular appraisal might mediate the effects of one positive emotion, but not others (Griskevicius et al. forthcoming).

In contrast, an evolutionary framework uses the hypothesized function of each emotion as the basis for predicting the aggregate effects of likely intervening mechanisms, including appraisal carry-overs. Appraisal biases are among the tools an emotion system can call upon to get the job done, but different emotions are expected to rely upon somewhat overlapping, yet somewhat different tool kits. As a result, an evolutionary framework suggests that different mechanisms, or combinations of mechanisms, are likely to drive the effects of different emotions. In the present study, emotion-specific short-term goals were found to account for the effects of each emotion on product desirability. Although this approach may shed less light on a particular mechanism, it puts the spotlight on the emotion constructs themselves, facilitating the development and testing of rich and textured theories of each qualitatively distinct emotion.

The evolutionary approach also differs in important ways from perspectives that emphasize mood-maintenance or affect regulation motives in explaining the effects of emotion on judgment and behavior (e.g., Clark and Isen 1982). These latter perspectives rightly note that people often engage in motivated cognition, willfully or automatically directing their attention toward stimuli that facilitate a desired emotional state. However, from an evolutionary perspective, “feeling good” is not an end in and of itself, and the function of a positive emotion

state is not to perpetuate itself. Indeed mood-maintenance models do not predict the effects found across our series of studies. In fact, in two studies not reported herein due to space constraints, we found that pride and contentment failed to lead to increased desirability of products that would elicit additional pride (e.g., a class ring) or contentment (e.g., gourmet food).

At the very core of a functional evolutionary approach is a definition of the term “emotion,” with an emphasis on functionally discrete emotions. An emotional response is “discrete” to the extent that, relative to other emotions: (a) it is elicited by a qualitatively distinct, prototypical, fitness-related threat or opportunity, (b) more often than not, it successfully solves the adaptive problem posed by this threat or opportunity, and (c) it does so by invoking a distinct package of sensory, cognitive, motivational, and physiological subroutines/mechanisms that collectively facilitate adaptive behavior. It is important to note that our approach does not imply the total absence of overlap among subroutines invoked by various emotions. For example, both fear and anger clearly include activation of the sympathetic nervous system, which prepares the body for intense muscular activity. However, the set of subroutines associated with each emotion should be distinct and predictable on the basis of the emotion’s function. Whereas appraisal-tendency and other dimensional perspectives emphasize the subroutines as the starting point, an evolutionary perspective emphasizes the whole superordinate *system* of subroutines, whereby discrete emotions are directly associated with specific systems designed to promote adaptive solutions to different evolutionary challenges. Ultimately, these bottom-up and top-down approaches both contribute to a rich science of the influence of emotion on judgment and behavior.

Marketing Implications and Future Directions

The current research also has broad marketing implications. For example, our findings suggest that shoppers are likely to want to buy different products depending on the specific positive emotions that they are feeling. Shopping after lunch, for example, may motivate a contented person to go to Crate & Barrel to shop for home products. But shopping after reading a positive review of one's work may lead a proud person to purchase a new outfit for going out in public. A functional approach to discrete positive emotions suggests that marketers might more carefully consider the manner in which they attempt to make consumers feel positive—and to elicit specific positive emotions in a strategic way. A retailer, for example, might try to induce a specific positive emotion rather than just general positive affect. If a retailer is selling products that allow the consumer to “show off” to other people, this retailer might want to induce feelings of pride through store atmospherics or advertising. In contrast, a retailer selling primarily home furnishing might want to try to induce feelings of contentment specifically, rather than general positive affect, through store displays, lighting, fixtures, service, or by being in physical proximity to restaurants, which are filled with full and contented potential shoppers.

Although the current research provides empirical support for how pride and contentment influence the desire for products, future research is poised to examine the specific influences of other positive discrete emotions, such as awe, sexual desire, amusement, enthusiasm, and nurturance (e.g., Keltner et al. 2006; Shiota et al. 2004; Griskevicius, Shiota, and Neufeld forthcoming; Griskevicius et al. 2007). Furthermore, future research should examine the relationship between individual differences in emotion (e.g., Tybur et al. 2009) and behavioral outcomes. An evolutionary framework of positive emotions is useful and appropriate not only for examining how judgment and decision-making are influenced by incidental affect (affective experiences whose source is not directly connected to the object to be evaluated), but also by integral affect (affective responses that are directly linked to the object of judgment or decision)

(see Cohen, Pham, and Andrade 2007; Pham 2007). That is, emotion-laden products or decisions themselves can serve as the stimuli that elicit specific positive emotions (e.g., Luce 1998), which should also produce emotion-specific effects on cognition and behavior. Overall, the current research—and an overarching functional evolutionary framework of positive emotions—holds promise for not only helping organize and understand the positive emotions, but also for serving as the seeds of future research examining how different positive emotions influence judgment and choice.

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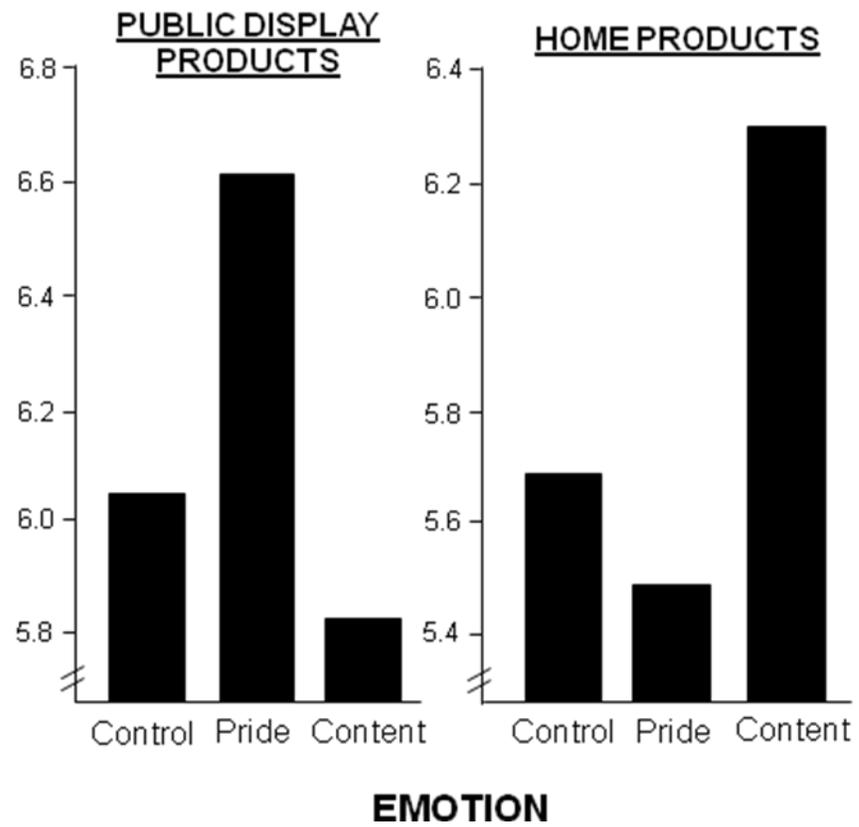
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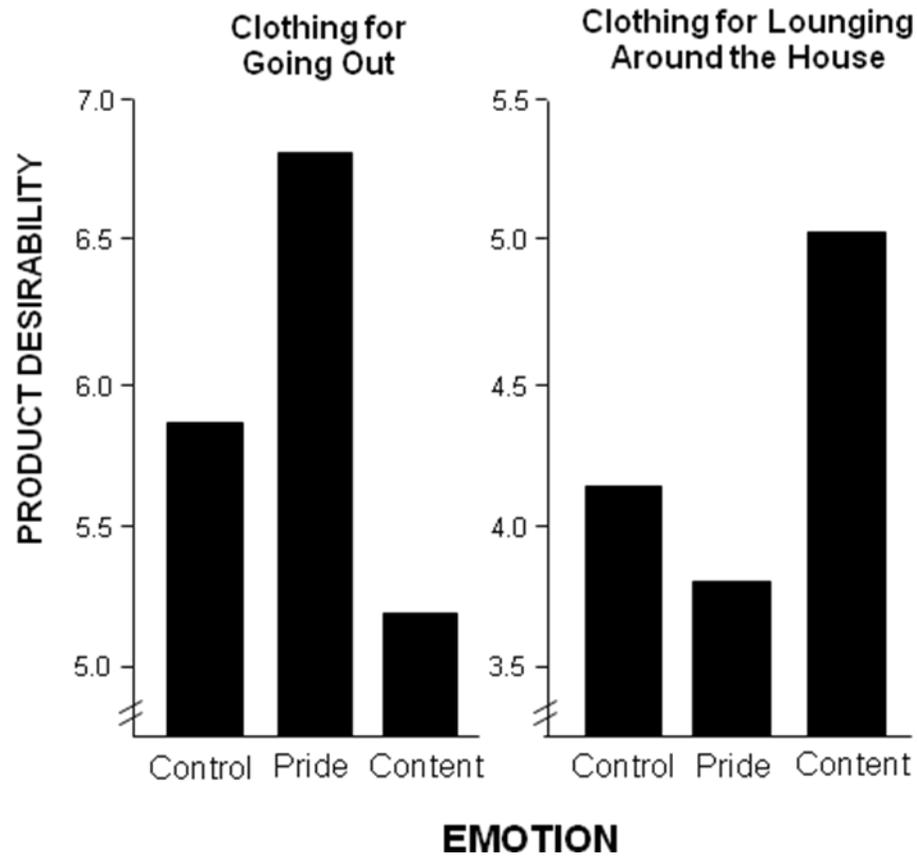
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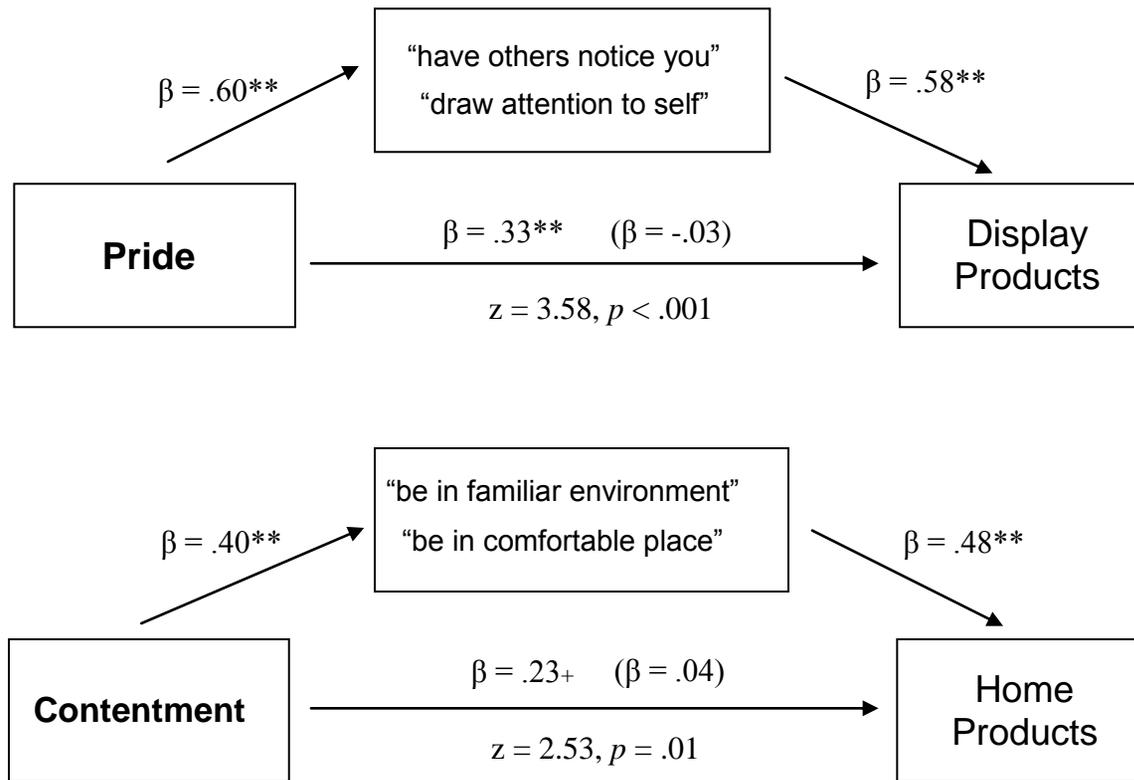
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**FIGURE 1: Product Desirability as a Function of Positive Emotion and Product Type (Study 1)**

**FIGURE 2: Desirability of Clothing Depending on Positive Emotion and Perceived Function of the Clothing (Study 2)**

**FIGURE 3: Mediation Analyses for How Pride and Contentment Influence Product Desirability (Study 3)**



$+p < .07, *p < .05, **p < .01$