



Predicting interest in cosmetic surgery: Interactive effects of appearance-based rejection sensitivity and negative appearance comments

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ABSTRACT

This study investigated effects of appearance-based rejection sensitivity (Appearance-RS) – the dispositional tendency to anxiously expect rejection based on one's appearance – in a sample of 133 American college students. Participants were randomly assigned to write an essay about either a negative or positive appearance comment they had received in the past. Compared to participants with lower Appearance-RS, those with higher Appearance-RS felt more rejected and expressed greater interest in cosmetic surgery after recalling a negative versus positive appearance comment. Content analysis of the essays revealed that negative appearance comments were most often made in reference to one's body weight/shape/size; positive appearance comments were most often made in reference to one's overall appearance. Peers/friends/romantic partners were the most frequently cited source of both positive and negative appearance comments. Overall, this research suggests that the interaction between the person and the situation is important to consider when predicting cosmetic surgery interest.

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Introduction

Over the past decade, the rate of cosmetic surgery procedures has skyrocketed in the United States. Since 1997, there has been a 457% increase in all cosmetic procedures, with nearly 11.7 million procedures performed nationally in 2007 (American Society for Aesthetic Plastic Surgery, ASAPS, 2008). Approximately 10.6 million surgical cosmetic procedures in 2007 were performed on women, whereas 1.1 million procedures were performed on men. Moreover, 21% of these procedures were performed on individuals between 19 and 34 years of age, and 27% of 18–24 year olds reported that they would consider undergoing cosmetic surgery now or in the future (ASAPS, 2008).

With the rise in cosmetic surgery interest, researchers have begun to explore a number of variables that may lead some individuals, but not others, to consider cosmetic surgery. There is accumulating evidence that certain intrapersonal factors, such as body image dissatisfaction (Henderson-King & Henderson-King, 2005; Sarwer, Wadden, Pertschuk, & Whitaker, 1998), low self-rated attractiveness (Brown, Furnham, Glanville, & Swami, 2007), psychological investment in appearance (Delinsky, 2005; Sarwer, LaRossa, Bartlett, Low, Bucky, & Whitaker, 2003; Sarwer et al.,

2005), attachment anxiety (Davis & Vernon, 2002), body dysmorphic disorder (Crerand, Franklin, & Sarwer, 2006; Sarwer & Crerand, 2008) and previous experience with cosmetic surgery (Swami et al., 2008) predict acceptance of, and interest in, cosmetic surgery. Social and interpersonal factors, such as appearance-related teasing (Sarwer et al., 2003), vicarious experiences of cosmetic surgery via family and friends (Brown et al., 2007; Delinsky, 2005; Swami et al., 2008), and internalization of sociocultural appearance messages and ideals from the media and entertainment industries (Delinsky, 2005; Henderson-King & Brooks, 2009; Sarwer et al., 2005; Sperry, Thompson, Sarwer, & Cash, 2009; Swami et al., 2008) have also been implicated in the desire for cosmetic surgery.

The present study adds to this growing body of literature by examining the role of a new personality construct in predicting cosmetic surgery interest: appearance-based rejection sensitivity (Appearance-RS, Park, 2007). Appearance-RS refers to the dispositional tendency to anxiously expect, readily perceive, and overreact to signs of rejection based on one's physical appearance. Whereas previous studies have typically reported main effects of demographic, personality, or sociocultural variables in predicting cosmetic surgery interest (Brown et al., 2007; Davis & Vernon, 2002; Delinsky, 2005; Henderson-King & Henderson-King, 2005; Sarwer et al., 2003; Sperry et al., 2009), the present study is the first to examine empirically whether aspects of the person (Appearance-RS) interact with aspects of the situation (appearance-related teasing) to influence current interest in cosmetic surgery.

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Although cosmetic surgery reflects a drastic form of controlling and changing one's appearance, considering such procedures may help to alleviate anxious expectations of rejection based on appearance for those with high Appearance-RS.¹ Because people's goals and decisions are often shaped by both internal and external forces, it seems important to investigate factors underlying cosmetic surgery interest, and to understand how individuals respond to situational influences when predicting their interest in cosmetic surgery.

Predictors of interest in cosmetic surgery

The increasing acceptance of cosmetic surgery in Western cultures has been attributed to a variety of factors, ranging from advances in surgical procedures, to increased availability and affordability of cosmetic procedures, to media exposure and influence (see Sarwer, Magee, & Crerand, 2004, for a review). In addition to these factors, researchers have identified several intrapsychic and interpersonal variables that contribute to people's interest in cosmetic surgery.

First, self-perceptions of attractiveness and satisfaction with appearance have been shown to be significant predictors of interest in cosmetic surgery. Not surprisingly, individuals who perceive themselves (or some aspect of their appearance) to be unattractive are more likely to consider cosmetic surgery than those who perceive themselves to be attractive or are satisfied with their appearance (Brown et al., 2007; Didie & Sarwer, 2003; Henderson-King & Henderson-King, 2005; Sarwer et al., 1998, 2003). Indeed, individuals with body dysmorphic disorder – a psychiatric condition characterized by extreme dissatisfaction and preoccupation with a slight or imagined defect in their appearance – are especially likely to consider cosmetic surgery as a way to improve their perceived physical flaws (Crerand et al., 2006; Crerand, Phillips, Menard, & Fay, 2005; Sarwer & Crerand, 2008).

People who desire cosmetic surgery are also likely to derive self-esteem from their appearance and may use cosmetic surgery as a way to repair a damaged self-concept (Delinsky, 2005). Along these lines, Henderson-King and Henderson-King (2005) found that the fear of becoming unattractive, rather than the desire to appear attractive, predicted endorsement and consideration of cosmetic surgery. The desire to avoid negative appearance-related outcomes has also been documented among individuals with an anxious attachment style, who may use cosmetic surgery as a way to attract or retain a significant other, or to avoid potential rejection or interpersonal loss (Davis & Vernon, 2002).

In addition to these intrapsychic variables, several interpersonal and social factors have been linked to cosmetic surgery (Brown et al., 2007; Delinsky, 2005; Swami et al., 2008). Of particular relevance to the present research is a history of appearance-related teasing, which has been shown to predict interest in cosmetic surgery (Sarwer et al., 1998, 2003). Similar to links that have been made between receiving appearance criticism (e.g., “You look like you've gained weight”) and body dissatisfaction and disordered eating (Annis, Cash, & Hrabosky, 2004; Fabian & Thompson, 1989; van den Berg, Wertheim, Thompson, & Paxton, 2002; Wertheim, Paxton, & Blaney, 2004), we posit a link between negative appearance commentary and interest in cosmetic surgery, particularly for those who are sensitive to appearance-based rejection. Given that Appearance-RS is rooted in interpersonal processes, individuals with high Appearance-RS may look to cosmetic surgery as a means to reducing anxieties about being rejected by others based on their perceived physical flaws.

In sum, prior research has linked the desire for cosmetic surgery with dissatisfaction with one's appearance, basing self-esteem on appearance, wanting to avoid appearing unattractive, and a history of being teased based on one's looks. The samples used in these previous studies ranged from community samples (Brown et al., 2007; Swami et al., 2008) to cosmetic surgery candidates (Didie & Sarwer, 2003; Sarwer et al., 2003) to college undergraduates (Delinsky, 2005; Henderson-King & Henderson-King, 2005; Sarwer et al., 2005).

Given that the typical cosmetic surgery patient is much younger than the stereotypical “older female” (ASAPS, 2008; Sarwer et al., 2005), college-aged students may be a particularly relevant sample to study when examining interest in cosmetic surgery. Indeed, several studies to date examining cosmetic surgery interest have involved college students. In one study involving 559 female college students at six universities in the United States, 40% of participants reported that they would consider cosmetic surgery in the near future, and 48% would consider it in middle age (Sarwer et al., 2005). Another study involving over 2000 college women found that viewership of cosmetic surgery reality TV shows was significantly related to greater body dissatisfaction and more favorable cosmetic surgery attitudes (Sperry et al., 2009). Finally, Henderson-King and Brooks (2009) found that the more female college students endorsed materialistic values and internalized sociocultural appearance messages, the more interested they were in cosmetic surgery. Together, these studies suggest that college students may be a particularly relevant population to study when examining personal and situational factors affecting interest in cosmetic surgery. Importantly, whereas previous studies have typically focused on female college students' interest in cosmetic surgery, the present research examined both men and women's Appearance-RS and interest in cosmetic surgery.

Appearance-RS and cosmetic surgery

Appearance-RS is a relatively stable personality construct that consists of both an affective and a cognitive component. Anxious concerns of appearance rejection represent the affective component, whereas expectations of appearance rejection represent the cognitive component. These components are thought to interact with one another in a multiplicative fashion, such that anxieties about rejection amplify cognitions, or expectations, of appearance-based rejection (Park, 2007). The construct of Appearance-RS was modeled after Downey and Feldman's (1996) general construct of personal rejection sensitivity (Personal-RS), which reflects anxious expectations of rejection in general, rather than based on a specific attribute. Whereas Personal-RS has been associated with childhood experiences of parental abuse, neglect, and exposure to family violence (Feldman & Downey, 1994), Appearance-RS has been linked to conditional acceptance from peers based on one's appearance, internalization of media appearance ideals, and feeling pressured by the media to look attractive, rather than to parental influence (Park, DiRaddo, & Calogero, 2009).

The link between feeling unattractive and feeling rejected is especially strong for individuals with high Appearance-RS. For example, when asked to list dissatisfying aspects of their appearance, high Appearance-RS participants reported feeling more rejected than those with low Appearance-RS, or those who were reminded of neutral stimuli (Park, 2007). The consequences of feeling unattractive extend to behavioral preferences and tendencies, as well. For example, Park and Pinkus (in press) found that high Appearance-RS participants wanted to avoid both close others and social interaction more generally after receiving negative feedback about their appearance. Furthermore, on days when high Appearance-RS participants felt sensitive to appearance rejection, the more likely they were to actually avoid other people.

¹ Appearance-RS was assessed as a continuous variable and should therefore be viewed in relative versus absolute terms. For brevity's sake, however, we refer to individuals as having high versus low Appearance-RS.

Table 1
Means, standard deviations, and Cronbach's alphas of study measures ($N = 133$).

	Appearance-RS	Self-esteem	Self-perceived attractiveness	Appearance CSW	Personal-RS	Feelings of rejection	Cosmetic surgery interest
<i>M</i> (<i>SD</i>)	9.71 (± 4.57)	3.74 (± 0.87)	4.66 (± 1.01)	3.70 (± 0.70)	8.13 (± 3.55)	2.71 (± 1.44)	2.68 (± 1.68)
Cronbach's alpha	.91	.93	–	.72	.81	.90	.93

Note: Appearance-RS—appearance-based rejection sensitivity; Personal-RS—personal (general) rejection sensitivity; Appearance CSW—appearance contingency of self-worth. Self-perceived attractiveness was a 1-item measure.

Together, these findings suggest that high Appearance-RS individuals expect to be rejected when they feel unattractive, and prefer to avoid others after perceiving instances of appearance-based rejection.

Building upon past research on predictors of cosmetic surgery interest and Appearance-RS, respectively, we hypothesized that compared to individuals with lower Appearance-RS, those with higher Appearance-RS would report greater feelings of rejection and interest in cosmetic surgery after recalling a negative versus positive comment about their appearance. To test the unique predictive validity of Appearance-RS, we included several relevant personality and demographic variables as covariates in the analyses. Specifically, we controlled for self-esteem, because self-perceptions of attractiveness are closely tied to people's global, trait levels of self-esteem (Cash, Winstead, & Janda, 1986; Harter, 1993; Jourard & Secord, 1955). We controlled for self-rated attractiveness, because individuals who perceive themselves (or some aspect of their appearance) to be unattractive are likely to consider cosmetic surgery as a way to change their perceived defects (Brown et al., 2007; Didie & Sarwer, 2003; Sarwer & Crerand, 2008; Sarwer et al., 1998, 2003). Appearance contingent self-worth was included as a covariate, because people who invest self-esteem in their appearance are likely to approve of cosmetic surgery procedures (Delinsky, 2005; Sarwer et al., 2005, 2003). We also controlled for personal-RS, because it is positively related to Appearance-RS (Park, 2007) and to attachment anxiety (Downey & Feldman, 1996), the latter of which has been associated with cosmetic surgery interest (Davis & Vernon, 2002).

In addition to these personality variables, we controlled for demographic variables of sex, age, and ethnicity, based on research showing that: (a) women are more likely than men to base self-worth on appearance (Crocker, Luhtanen, Cooper, & Bouvrette, 2003) and to undergo cosmetic surgery (Brown et al., 2007; Davis & Vernon, 2002; Swami et al., 2008); (b) age influences interest in cosmetic surgery (Brown et al., 2007; Davis & Vernon, 2002; Henderson-King & Henderson-King, 2005); and (c) certain ethnic groups (e.g., African Americans) are less likely to invest self-worth in their appearance (Crocker et al., 2003) or to undergo cosmetic surgery than Caucasians or Asian Americans (Delinsky, 2005).

Method

Study overview

Participants first completed the Appearance-RS scale as part of a larger mass testing session conducted in an Introductory Psychology course. A few weeks later, a random sample of participants was selected to come to the lab to participate in a study examining how aspects of personality affect people's thoughts, feelings, and behaviors. After completing measures assessing trait self-esteem, personal-RS, appearance contingency of self-worth, self-rated attractiveness, and demographic information, participants were randomly assigned to write an essay about either a negative or positive appearance comment that they had received in the past. Afterwards, participants reported their feelings of rejection and interest in cosmetic surgery, which

constituted the dependent measures. Finally, participants were debriefed, given course credit, and dismissed. The study was approved by the Social and Behavioral Sciences Institutional Review Board at the University at Buffalo, and written informed consent was obtained from all participants.

Participants

A total of 133 participants (72 women, 61 men) participated in exchange for psychology course credit. The average age of the sample was 19.15 years ($SD = 1.60$) and consisted of 70% Whites, 19% Asian Americans, 6% Blacks, and 5% of other ethnicities. Given the low number of Black participants, we collapsed across categories to create three ethnic groups: White, Asian American, and Other.

Personality and demographic measures

Table 1 presents a summary of the descriptive and internal reliability statistics for each measure. In addition to reporting their sex, age, ethnicity, and self-perceived attractiveness (on a scale from 1 = *not at all attractive* to 7 = *very attractive*), participants completed the following questionnaires:

Appearance-RS scale

The original Appearance-RS scale consists of 15 scenarios in which individuals might anxiously expect to be rejected based on their appearance (Park, 2007). For example: "You are leaving your house to go on a first date when you notice a blemish on your face." Participants indicate their anxiety about being rejected based on appearance (e.g., "How concerned or anxious would you be that your date might be less attracted to you because of the way you looked?") on a scale from 1 (*very unconcerned*) to 6 (*very concerned*) and their expectation of appearance-based rejection (e.g., "I would expect that my date would find me less attractive") on a scale from 1 (*very unlikely*) to 6 (*very likely*). This scale has demonstrated high internal consistency and test-retest reliability (Park, 2007).

Because of time constraints, we administered the shortened, 10-scenario version of the Appearance-RS scale, which has been used in previous research and has demonstrated high internal reliability (Park et al., 2009; Park & Pinkus, in press). A copy of the scale can be retrieved at <http://wings.buffalo.edu/psychology/labs/SMRL/docs/Short%20ARS%20Scale.pdf>. Appearance-RS is calculated by multiplying the degree of anxious concern with the degree of rejection expectation in each situation, and then averaging across anxious expectation of rejection scores across situations for each participant. Participants are considered to have high Appearance-RS if they score high on both the anxiety and expectation of rejection dimensions across situations. Thus, higher Appearance-RS scores indicate greater sensitivity to appearance rejection.

Self-esteem

Trait self-esteem was assessed with the 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). A sample item was, "On the whole, I am satisfied with myself." Responses were made on a

Table 2Zero-order correlations among study variables ($N = 133$).

	1. Sex	2. Age	3. Ethnicity: Asian American	4. Ethnicity: Other	5. Appearance-RS	6. Self- esteem	7. Self-perceived attractiveness	8. Appearance CSW	9. Personal-RS	10. Feelings of rejection	11. Interest in cosmetic surgery
1	–										
2	–.23**	–									
3	.07	.05	–								
4	.01	–.03	–.88**	–							
5	.05	–.07	.02	–.07	–						
6	.02	.07	–.11	.09	–.41**	–					
7	–.02	.03	–.17*	.16	–.42**	–.34**	–				
8	.05	–.10	–.09	.14	.51**	–.04	–.05	–			
9	–.17	–.01	.11	–.09	.46**	–.33**	–.47**	.12	–		
10	–.10	.15	.23**	–.23**	.19*	–.39**	–.36**	–.05	.34**	–	
11	.29**	.10	.02	–.05	.31**	–.16	–.29**	.18**	.14	.15	–

Note: Sex was coded as 1 = female, 0 = male. Appearance-RS: appearance-based rejection sensitivity; Personal-RS: personal (general) rejection sensitivity; Appearance CSW: appearance contingency of self-worth; Ethnicity: Other—non-White, non-Asian American participants.

* $p < .05$.

** $p < .01$.

scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The RSE scale was scored by averaging across all 10 items after reverse-scoring relevant items; higher scores indicate higher trait self-esteem. The RSE scale has high internal consistency, test-retest reliability, and has been shown to be a reliable and valid measure of self-esteem (Blascovich & Tomaka, 1991).

Personal rejection sensitivity

The 8-item Rejection Sensitivity Questionnaire (Downey & Feldman, 1996) measures anxious expectation of rejection across situations in which participants imagine themselves making requests of others. For example, “You ask your friend to do a big favor for you.” For each situation, participants indicate their anxiety about each outcome (e.g., “How concerned or anxious would you be over whether or not your friend would do this favor?”) on a scale from 1 (*not at all*) to 6 (*very much*) and their expectation of rejection in the situation, from 1 (*very unlikely*) to 6 (*very likely*). Personal-RS scores are calculated in the same way that Appearance-RS is calculated, with higher personal-RS scores indicating greater rejection sensitivity. The 8-item RSQ has been shown to have adequate internal and test-retest reliability (see http://www.columbia.edu/cu/psychology/socialrelations/measures_desc.html).

Appearance contingency of self-worth (CSW)

The contingencies of self-worth scale (Crocker et al., 2003) assesses seven domains on which college students are likely to base their self-worth. In the present research, we assessed five items from the Appearance CSW subscale, such as, “When I think I look unattractive, my self-esteem suffers.” Responses were made on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale is scored by averaging across all five items after reverse-scoring relevant items; higher scores indicate basing self-worth more on one’s appearance. The overall CSW scale and each of the subscales have high internal consistency, test-retest reliability, and are distinct from other personality measures (Crocker et al., 2003).

Experimental manipulation

Participants who were assigned to the *appearance threat* (i.e., negative appearance comment) condition were given the following instructions:

Please take a moment to think about a time when you felt that somebody made a **negative** comment about your appearance/body/face (e.g., **teased you**, **pointed it out to you**, etc.). Think about what took place – where you were, who you were with, how you

felt, what you were thinking, and write about your experience in as much detail as possible in the space provided below.

If participants were assigned to the *appearance boost* (i.e., positive appearance comment) condition, they were given the same instructions, but “negative comment” was replaced with “positive comment” and “teased you” was replaced with “complimented you.”

Dependent measures

Feelings of rejection

Four items from a measure developed by Park (2007, Study 2) were used to assess feelings of rejection at the moment. Specifically, participants indicated how lonely, rejected, unwanted, and isolated they felt at the moment, on a scale from 1 (*not at all*) to 7 (*very much*). The items were then averaged together, with higher scores indicating greater feelings of rejection.

Interest in cosmetic surgery

Three items, adapted from the Acceptance of Cosmetic Surgery Scale (ACSS, Henderson-King & Henderson-King, 2005), were used to assess participants’ interest in getting cosmetic surgery.² The items were: “I would like to have cosmetic surgery so that others would find me more attractive,” “I would consider having cosmetic surgery as a way to change my appearance so that I would feel better about myself,” and “If I was offered cosmetic surgery for free, I would consider changing a part of my appearance that I do not like.” Responses were made on a scale from 1 (*not at all*) to 5 (*very much*). Items were averaged together, with higher scores indicating greater interest in cosmetic surgery.

Data analytic strategy

We first ran descriptive statistics and zero-order correlations (Tables 1 and 2) and hierarchical regression analyses (Table 3) to examine interactive effects of Appearance-RS and experimental condition, controlling for self-esteem, personal-RS, appearance CSW, self-perceived attractiveness, and the demographic variables. Specifically, for our primary regression analyses, we entered

² For purposes of the present study, we were interested in examining participants’ current, overall interest in cosmetic surgery, rather than assessing future interest or specific motives underlying reasons for getting cosmetic surgery, which is what Henderson-King and Henderson-King’s (2005) original subscales of “personal reasons,” “social reasons,” and “consider” assessed.

Table 3
Results from hierarchical regression analyses.

	Model 1: Feelings of rejection				Model 2: Interest in cosmetic surgery			
	Step 1	Step 2	Step 3	<i>sr</i> ²	Step 1	Step 2	Step 3	<i>sr</i> ²
Sex	-.01	-.01	.00	.00	.35***	.36***	.37***	.12
Age	.16*	.16*	.16*	.02	.22**	.18*	.18*	.03
Ethnicity: Asian American	.04	.03	-.02	.00	-.28	-.29	-.35*	.03
Ethnicity: Other	-.15	-.17	-.24	.01	-.25	-.25	-.34*	.02
Self-esteem	-.30**	-.28**	-.31**	.07	-.06	-.04	-.08	.00
Self-perceived attractiveness	-.18	-.19*	-.18*	.02	-.21	-.22	-.21*	.03
Appearance CSW	-.01	.01	-.00	.00	.12	.10	.10	.01
Personal-RS	.21*	.19*	.18	.00	.04	.07	.06	.00
Appearance-RS	-.09	-.06	-.08	.00	.13	.14	.12	.01
Experimental condition	.22**	.22**	.22**	.04	.10	.11	.10	.01
Self-esteem × Condition		-.09	-.03	.00		-.16	-.08	.00
Self-perceived attractiveness × Condition		.01	.05	.00		.16	.21*	.03
Appearance CSW × Condition		-.00	-.10	.00		.01	-.11	.01
Personal-RS × Condition		-.09	-.14	.01		.12	.06	.00
Appearance-RS × Condition			.22*	.02			.29*	.03

Note: Regression coefficients reported above represent standardized betas. *sr*²: semi-squared partial correlation, or percentage of variance accounted for by each variable in the model. Sex was coded as 1 = female, 0 = male. Experimental condition was coded as 1 = appearance threat, -1 = appearance boost. Appearance CSW: appearance contingency of self-worth; Personal-RS: personal (general) rejection sensitivity; Appearance-RS: appearance-based rejection sensitivity; Ethnicity: Other—non-White, non-Asian American participants.

Model 1: Step 1— $R^2 = .36$, $F(10, 118) = 6.51$, $p < .001$; Step 2— $\Delta R^2 = .01$, $\Delta F(4, 114) = .43$, $p = .79$; Step 3— $\Delta R^2 = .02$, $\Delta F(1, 113) = 3.89$, $p = .05$.

Model 2: Step 1— $R^2 = .27$, $F(10, 118) = 4.38$, $p < .001$; Step 2— $\Delta R^2 = .04$, $\Delta F(4, 114) = 1.58$, $p = .18$; Step 3— $\Delta R^2 = .04$, $\Delta F(1, 113) = 6.01$, $p < .05$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

centered scores of Appearance-RS, experimental condition (coded as 1 = appearance threat, -1 = appearance boost), and covariates, specifically, sex (coded as 1 = female, 0 = male), age, ethnicity (dummy coded so that Asians and Other were compared to Whites), and the individual difference covariates at Step 1. In Step 2, we entered the interactions between the individual difference covariates and experimental condition. In Step 3, we entered the key interaction between Appearance-RS and condition, to see whether adding this term significantly improved model fit. Additionally, we analyzed the content of the essays to determine the content and source of appearance comments.

Results

Feelings of rejection

Overall, recalling a negative appearance comment produced greater feelings of rejection in the appearance threat condition

($M = 2.96$, $SD = 1.44$) than in the appearance boost condition ($M = 2.47$, $SD = 1.42$), $d = .34$. This effect was qualified by the expected interaction with Appearance-RS, such that the more sensitive participants were to appearance rejection, the more rejected they felt after recalling a negative versus positive appearance comment (see Table 3). This effect held even after controlling for personality covariates and their interactions with experimental condition. Neither sex nor ethnicity significantly moderated the effect ($ps > .52$).

Interest in cosmetic surgery

We also found the expected interaction between Appearance-RS and Condition such that participants with high Appearance-RS reported greater interest in changing their appearance via cosmetic surgery following the appearance threat versus appearance boost condition (see Table 3). This effect was found even after controlling for personality covariates and their interactions with

Table 4
Content and source of appearance commentary recalled by sex and essay condition.

	Body weight/shape/size	Skin	Facial features	Legs/hips/butt	Height	Overall appearance
Content of pos. appearance comment						
Women ($n = 35$)	20%	0%	20%	0%	0%	60%
Men ($n = 31$)	39%	0%	13%	0%	0%	48%
Content of neg. appearance comment						
Women ($n = 37$)	49%	19%	8%	8%	5%	11%
Men ($n = 30$)	47%	6%	20%	0%	7%	20%
	Peers/friends/romantic partner	Parents/siblings	Teachers/coaches	Acquaintances	Strangers	Unspecified
Source of pos. appearance comment						
Women ($n = 35$)	60%	3%	3%	14%	14%	6%
Men ($n = 31$)	58%	6%	0%	10%	13%	13%
Source of neg. appearance comment						
Women ($n = 37$)	51%	27%	3%	8%	8%	3%
Men ($n = 30$)	70%	3%	3%	3%	7%	14%

Note: pos.—positive; neg.—negative. Examples of content of pos. appearance comment: body weight/shape/size (e.g., physically fit, muscular); facial features (e.g., nice eyes, lips, nose); overall appearance (e.g., good-looking, good dresser). Examples of content of neg. appearance comment: body weight/shape/size (e.g., fat, skinny, scrawny); skin (e.g., acne, scars); facial features (e.g., big nose, crooked teeth); legs/hips/butt (e.g., too large); height (e.g., too tall, too short); overall appearance (e.g., ugly, bad dresser).

condition, attesting to the unique predictive validity of Appearance-RS. Neither sex nor ethnicity significantly moderated the effect ($ps > .13$).

Content analysis of essays

Two undergraduate research assistants independently reviewed and coded each essay.

For content of appearance comments, essays were coded into one of the following six categories: (a) body weight/shape/size; (b) skin; (c) facial features; (d) legs/hips/butt; (e) height; (f) overall appearance. For source of appearance comments, essays were coded into one of the following six categories: (a) peers/friends/romantic partners; (b) parents/siblings; (c) teachers/coaches; (d) acquaintances; (e) strangers; (f) unspecified. Inter-rater reliability for content of appearance comments was $\kappa = .89$ and for source of appearance comments, $\kappa = .74$, indicating substantial agreement across coders for both categories (Landis & Koch, 1977). In cases where coders disagreed on study ratings, a third judge independently reviewed the essay in question and resolved the discrepancy.

Descriptive statistics are presented in Table 4 for men and women separately, by experimental condition. For negative appearance comments, the most frequently mentioned category for both women and men was body weight/shape/size. For positive appearance comments, the most frequently mentioned category for both women and men was overall appearance. Peers/friends/romantic partners were the most frequently mentioned source of both positive and negative appearance comments for men and women.

Next, chi-square analyses were conducted to test whether there were significant relations between the content and source of appearance comments recalled and participants' sex and Appearance-RS (based on a median split of this variable) within each experimental condition. For positive appearance comments, there were no significant relations between the content or source of comments recalled and participants' sex or Appearance-RS. However, for negative appearance comments, there was a significant relation between Appearance-RS and comments made about one's body weight/shape/size, $\chi^2(1, N = 67) = 5.33, p < .05$, such that high Appearance-RS participants were more likely than low Appearance-RS participants to recall negative comments about their body weight/shape/size. A significant relationship was also found between Appearance-RS and negative comments about one's facial features, $\chi^2(1, N = 67) = 5.60, p < .05$, such that high Appearance-RS participants were less likely than low Appearance-RS participants to recall negative comments about their facial features. Finally, there was a significant relation found between participants' sex and parents/siblings as a source of appearance comments, $\chi^2(1, N = 67) = 6.78, p < .05$, such that women overall recalled more negative appearance commentary from their parents/siblings than did men.

Discussion

Results of the present research suggest that individuals who anxiously expect rejection based on their appearance are vulnerable to the effects of negative appearance commentary. Specifically, men and women with high Appearance-RS felt more alone and rejected and showed greater interest in cosmetic surgery after recalling a time when they were teased versus complimented on their looks. These results emerged even after controlling for relevant individual difference variables, such as self-esteem, general rejection sensitivity, appearance CSW, self-perceived attractiveness, and their interactions with condition. Sensitivity to appearance rejection may therefore be a key psychological

variable to consider when examining responses to appearance-related teasing, especially with regard to feeling rejected and expressing interest in cosmetic surgery.

Analysis of the appearance comment essays revealed that negative comments about one's body weight/shape/size were the most commonly mentioned category for both women and men. In addition, peers/friends/romantic partners were the most commonly mentioned source of both negative and positive appearance comments for women and men. Interestingly, the content and source of positive appearance comments did not vary as a function of sex or Appearance-RS. However, there were significant sex and Appearance-RS differences in the content and source of negative appearance commentary. Most notably, high Appearance-RS participants recalled more negative comments about their body weight/shape/size than did low Appearance-RS participants. In addition, women overall recalled more negative appearance comments from their parents and siblings than did men. These findings are consistent with the literature on weight bias and sex differences in sociocultural influence related to appearance.

The stigma of being overweight is pervasive in Western cultures. Overweight individuals are perceived to be lazy, sloppy, lacking in self-control, and responsible for their condition; they tend to experience more discrimination in housing, employment, health care, education, and in interpersonal interactions than do average weight individuals (Crandall, 1994; Dejong & Kleck, 1986; Puhl, Andreyeva, & Brownell, 2008; Puhl & Brownell, 2001; Roehling, 1999). Weight-based discrimination has increased over the past decade, with current prevalence rates being relatively close to reported rates for race and age-based discrimination (Andreyeva, Puhl, & Brownell, 2008; Puhl et al., 2008). Indeed, previous studies have demonstrated that weight-related comments are a common source of appearance-related teasing and stigmatization (Calogero, Herbozo, & Thompson, 2009; Cash, 1995; Herbozo & Thompson, 2006; Jones & Crawford, 2006; Puhl et al., 2008; Sjöberg, Nilsson, & Leppert, 2005).

In addition, sociocultural influence from peers (Jones & Crawford, 2006), parents (Smolak, Levine, & Schermer, 1999), and the media contribute to weight-related teasing. For example, "fat jokes" are common on television (Coleman, 1993), direct parental comments about weight have a greater impact on self-perceptions than parental modeling of weight concern (Smolak et al., 1999), and overweight children and adolescents are often teased by peers, resulting in lowered self-esteem, body satisfaction, and increased depressive symptoms (Grilo, Wilfley, Brownell, & Rodin, 1994; Sjöberg et al., 2005). In sum, the finding in the present study – that the most frequently recalled category of negative appearance comments was body weight/shape/size – is consistent with the literature on weight stigmatization.

Whereas the majority of women's recalled comments regarding body weight/shape/size were related to being overweight, approximately half of the men in our sample recalled negative comments about body weight/shape/size that reflected being underweight, small, or scrawny, rather than being overweight. These findings are consistent with research showing that as men become increasingly exposed to a muscular ideal, those who fall short of conforming to such cultural appearance standards are likely to express body dissatisfaction and appearance concerns (Hatoum & Belle, 2004; Leit, Gray, & Pope, 2002; Leit, Pope, & Gray, 2001).

In addition, the finding that women recalled more negative appearance comments from their family than did men is consistent with research showing that parents tend to exert a stronger influence on the appearance concerns of girls relative to boys (Barker & Galambos, 2003; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). For example, compared to boys, girls receive more information from their parents regarding weight and dieting,

which, in turn, leads to greater body image concerns (McKinley, 1999; Phares, Steinberg, & Thompson, 2004; Smolak et al., 1999).

Limitations and future directions

Several limitations of the current study deserve mention. First, the relatively small sample size and dependence on university students prevent us from making generalizations to broader society. We note, however, the relatively even distribution of men and women in our sample, which allowed us to test for sex differences. Nonetheless, future studies would benefit from assessing a community sample that included a wider range of ages and occupational backgrounds, as well as recruiting more participants from underrepresented ethnic groups.

A second limitation of this study was its focus on selected covariates. Although unique effects of Appearance-RS were found even after controlling for individual differences in self-esteem, personal-RS, appearance CSW, and self-perceived attractiveness, we did not control for other covariates that have been linked to cosmetic surgery interest, such as body image dissatisfaction, attachment anxiety, or past experience with cosmetic surgery. In addition, we did not control for various sociocultural factors, such as a history of appearance-related teasing, media internalization of appearance ideals, or vicarious experiences of cosmetic surgery. Future research could assess these and other personality and appearance-related constructs to establish further the unique validity of Appearance-RS in predicting cosmetic surgery interest.

A third limitation of the present study is that we did not administer the full ACCS (Henderson-King & Henderson-King, 2005), which includes subscales measuring personal and social reasons for wanting to get cosmetic surgery and future consideration of cosmetic surgery. Although we were primarily interested in examining participants' current, overall interest in cosmetic surgery, future research should examine links among Appearance-RS and motives underlying cosmetic surgery interest using the full ACCS.

A final limitation of this study is that we did not measure whether or not participants' reported interest in cosmetic surgery actually translated into them engaging in this behavior. Future research could address this gap by examining whether having high Appearance-RS leads to greater likelihood of getting cosmetic surgery, and what the long-term consequences for psychological adjustment and well-being are for those with high Appearance-RS.

Overall, the present findings underscore the importance of examining the person in the situation when predicting feelings of rejection and interest in cosmetic surgery. Individuals who experience anxiety and expect to be rejected based on their appearance are especially vulnerable to the impact of negative appearance commentary, creating a context for feeling rejected and desiring cosmetic surgery. Future research could assess the impact of high Appearance-RS in other social contexts in predicting cosmetic surgery intentions and behaviors.

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