Cosmetic Surgery Makeover Programs and Intentions to Undergo Cosmetic Enhancements: A Consideration of Three Models of Media Effects

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The recent proliferation of reality-based television programs highlighting cosmetic surgery has raised concerns that such programming promotes unrealistic expectations of plastic surgery and increases the desire of viewers to undergo such procedures. In Study 1, a survey of 170 young adults indicated little relationship between cosmetic surgery makeover program viewing and body satisfaction or perception of risk but a small positive association with desire to undergo cosmetic surgical procedures. In Study 2, a survey of 271 young women allowed for a test of three theoretical explanations for this association. Evidence in support of cultivation theory, social cognitive theory, and social comparison theory emerged, thus highlighting the need for a more integrated theoretical model of media effects.


In 2004, the number of cosmetic procedures performed in the United States reached nearly 12 million, representing a 17% increase in surgical and a 51% increase in nonsurgical cosmetic procedures from the previous year (American Society for Aesthetic Plastic Surgery, 2005). What could explain this sudden and dramatic increase? The popular press pointed to the growing number of “makeover” television programs depicting cosmetic procedures as the culprit (e.g., Shute, 2004). Extreme Makeover, I Want a Famous Face, and The Swan are among the most prominent examples of reality-based programs depicting the transformation of adults from ordinary and, in their own eyes, imperfect into their own ideal, often through multiple cosmetic surgical procedures. These programs have been criticized not only for presenting invasive cosmetic procedures as relatively low risk but also for implicitly suggesting that they are common and acceptable means of improving one’s appearance and ultimately one’s body and life satisfaction. Assuming audiences adopt these views, critics have

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suggested that reality programs’ depictions of plastic surgery encourage viewers to seek out and undergo unnecessary, and perhaps even dangerous, cosmetic enhancement procedures (Shute, 2004; see also Sarwer, Magee, & Crerand, 2004).

There is no research, however, testing these assertions. This is not to say that such arguments are not consistent with theoretical principles. Cultivation, social comparison, and social cognitive theories—all of which have been used to frame research on the effects of media content on body image generally—could explain why reality-based cosmetic surgery makeover programs might impact the perceptions and behaviors of their audiences. Drawing from these theories, this research presents two studies that investigate the relationship between viewing reality-based cosmetic surgery makeover programs (hereafter cosmetic surgery makeover programs) on body satisfaction, perceptions of the risks and benefits of undergoing plastic surgery, and intention to undergo cosmetic enhancement procedures. Study 1 offers a preliminary look into whether the relationships between cosmetic surgery makeover program viewing and outcomes of interest even exist. Study 2 then explores the nature of those relationships by considering the relative explanatory power of three theoretical perspectives.

**Media consumption, body satisfaction, and plastic surgery**

Much research has considered how media content—magazine and TV images in particular—impacts viewers’ body image and body satisfaction. A recent meta-analysis of 25 experimental studies of the so-called thin body ideal in media messages concluded that exposure to idealized images negatively impacts women’s body satisfaction ($d = −.31$; Groesz, Levine, & Murnen, 2002). This association is deemed both significant and troubling given its link to psychopathological conditions, like body dysmorphia, and potentially life-threatening disordered eating conditions, like anorexia nervosa and bulimia nervosa (e.g., Bissell & Zhou, 2004; Botta, 1999; Harrison & Cantor, 1997; Sarwer & Crerand, 2004; Stice & Shaw, 1994).

Although Sarwer and Crerand (2004) suggest a link between body area dissatisfaction and seeking out cosmetic enhancement treatments, the academic literature is nearly mute on the relationship between media exposure and interest in such procedures to enhance attractiveness. In their comprehensive discussion of body image and cosmetic surgical treatments, Sarwer and Crerand assert that the prevalent, yet unrealistic media image of the “ideal” thin, large-breasted woman is a contributing factor to the increase in the number of cosmetic procedures in the United States; however, they provide no empirical evidence to support this claim. Still, Harrison (2003) found that frequency of exposure to the thin body ideal in the media associated with young people’s approval of both surgical and nonsurgical methods to alter proportions, correlations ranging from .21 to .28. Thus, we might infer that exposure to idealized images may be linked to approval for interventions that might be perceived as helping to achieve that ideal.

However, such interventions might be associated with serious physical and psychological consequences. Physical side effects of surgery, such as pain, bruising, blood
loss, or infections, are common, occurring in up to one in four breast augmentation patients (Gabriel et al., 1997). Common postoperative psychological consequences include anxiety, disappointment, and depression (Borah, Rankin, & Wey, 1999). Of greatest concern, the mortality rate for cosmetic surgery is approximately 1 in 13,000, which is comparable to general surgical procedures (Yoho, Romaine, & O’Neil, 2005). Indeed, some procedures, like liposuction, may be even higher. A survey of cosmetic surgeons suggested that deaths from liposuction (20 per 100,000) are comparable to those from motor vehicle accidents (16.4 per 100,000; Grazer & de Jong, 2000).

Since Harrison’s (2003) investigation, several reality-based programs have premiered that directly depict individuals undergoing one or more, sometimes radical, cosmetic enhancement procedures. A logical question, then, is how these direct and arguably realistic depictions might relate to perceptions of and desire for such procedures. Sarwer et al. (2004) suggest that the prevalence of such programming may contribute to the current demand for cosmetic enhancement procedures. Yet, empirical evidence supporting this claim is scarce. Perhaps closest is Delinsky (2005), who found an association between exposure to media generally (ads, articles, TV shows) about cosmetic surgery and both approval for and general future likelihood of cosmetic surgery, though both sets of measures were so broad that the data are best classified as exploratory.

Although it is possible that, as with idealized body images, frequent exposure to media depictions of patients undergoing cosmetic enhancement procedures might negatively impact body dissatisfaction, create an unrealistically positive view of such procedures, and increase demand for them, it is also possible that the depiction of the pain and discomfort associated with undergoing these procedures and the sometimes only mediocre results (a clear difference between these programs and idealized media images) might have the opposite effects. Study 1 marks a preliminary effort to consider whether watching reality-based cosmetic surgery makeover programs is associated with body satisfaction (RQ1), perceptions of the risks and benefits of cosmetic surgical procedures (RQ2), and estimated likelihood of undergoing invasive and minimally invasive cosmetic enhancement procedures (RQ3).

Study 1

Method

Participants and procedures
One hundred and seventy undergraduates at the University of Arizona completed a survey on perceptions of reality TV in exchange for course extra credit in June 2004. The survey was distributed at the end of the class period and took approximately 15–20 minutes to complete. Of the sample, 56% were women, 72% were Caucasian, and their average age was 22 years (SD = 3.49). Fifty-nine percent of the sample had previously seen at least one of three targeted cosmetic surgery makeover programs—MTV’s I Want a Famous Face, ABC’s Extreme Makeover, and FOX’s The Swan.
Famous Face follows young people in their late teens and 20s who have chosen to undergo plastic surgery in an attempt to achieve a look similar to that of an admired celebrity. Although many seem pleased with the ultimate results, cautionary tales of plastic surgeries gone very wrong are embedded in each episode. Extreme Makeover depicts men and women in their early 20s to late 50s both before and after they undergo multiple surgical procedures ranging from purely cosmetic to reconstructive (e.g., cleft palate). Each program concludes with an emotional reunion in which the patient’s new appearance is revealed to family and friends. Finally, The Swan provides 16 female contestants (aged 24–40) with multiple invasive and minimally invasive cosmetic enhancements. Each week, the transformation of two women is revealed, and the one judged to have the most complete transformation is chosen to move on to compete in a beauty pageant to win the title of the Swan.

Although concerns are often raised over the use of undergraduates in communication research, this group is particularly appropriate for considering the effects of cosmetic surgery makeover program viewing. One in five (22%) cosmetic procedures in 2004 was performed on those aged 19–34 years. Further, a survey of college women suggested that though only 5% actually had cosmetic surgery, 40% expressed interest in having it “in the near future,” and two-thirds of college women knew someone who had a cosmetic procedure (see Sarwer et al., 2005). In addition, some programs, MTV’s I Want a Famous Face especially, highlight high school and college-aged men and women choosing to undergo surgically invasive procedures. Moreover, college students who may be more affluent than the average 18–22 year old are best positioned within this age group to afford and have access to such procedures. For these reasons, and given most of the concern over cosmetic surgery makeover programs focuses on the effects they might have on young people, an undergraduate sample is suitable for this research.

Measures
This study was part of a larger investigation of reality-based television, though only those measures relevant to the current analyses are described. Unless otherwise noted, measures are based on 5-point Likert items, ranging from 1 (strongly disagree) to 5 (strongly agree). Factor analyses conducted in the process of forming the scales reported made use of principal components extraction.

Daily television viewing was measured by asking respondents to indicate how many hours of TV they watch during each of four time periods (6 a.m. to noon, noon to 6 p.m., 6 p.m. to midnight, and midnight to 6 a.m.) during the average weekday and weekend day. These data were combined (weighting the “average weekday” questions by a factor of 5 and the “average weekend day” by a factor of 2) to create an “average TV viewing hours per day” measure.

To assess cosmetic surgery makeover program viewing, respondents were presented with a list of 33 reality-based programs and asked to indicate how frequently they watch each one, on a scale from 0 (never watch) to 3 (watch frequently). Among these were three programs that focused specifically on cosmetic surgery—Extreme
Makeover, I Want a Famous Face, and The Swan. In addition to considering each program separately, a composite viewing index was created based on the average viewing frequency of these three programs.

After a number of intermediary questions regarding reality TV generally, respondents were asked about their behavior likelihood and past behavior regarding a range of cosmetic enhancement procedures. Using a technique modified from Harrison (2003), all respondents were asked: “If cost were not an issue, how likely would you be to do each of the following to improve your appearance?” All respondents were asked to use a 0 (never) to 5 (I have already done this) scale to indicate their likelihood or past experience with 15 appearance-enhancing behaviors. Three additional procedures were asked of women only (wearing makeup, breast augmentation surgery, and breast reduction surgery). The procedures ranged from noninvasive to highly invasive. The nature of each procedure, augmented by exploratory factor analyses, suggested that they be combined as follows: minimally invasive (hair coloring, appearance-improving skin lotion, teeth bleaching, laser hair removal, dermabrasion/skin peel; $\alpha = .77$) and invasive (botox injections, nose job, face lift, cheek implants, tummy tuck, liposuction, breast implants; $\alpha = .82$). Diet and exercise were combined as an indicator of noninvasive, health-oriented efforts ($r = .45, p < .001$). Four procedures—wearing contact lenses, wearing makeup, dental veneers, and breast reduction surgery—did not load clearly on any dimension and thus were dropped from further consideration. Of note, 3% of the sample had previously undergone at least one invasive cosmetic procedure, consistent with Sarwer et al. (2005), and 61% reported having had at least one minimally invasive procedure.

Perceived risks and benefits of plastic surgery were assessed with eight items developed for this survey based on journalistic reports on this subject. Three items related to high risk and five to high benefit. Exploratory factor analysis revealed a 2-factor solution, though one item evidenced poor loading on both factors and was subsequently dropped. Of the remaining items, two related to high risk (i.e., “Plastic surgery can be dangerous to one’s health,” “There are serious psychological risks associated with having plastic surgery”; $r = .63; p < .001$) and five related to high benefit ($\alpha = .75$; e.g., “Plastic surgery can improve a person’s general outlook on life,” “Plastic surgery can make people happier with their lives,” “Plastic surgery is a low-risk way to improve one’s appearance”). The risk and benefit measures did not correlate ($r = .03, ns$).

Body satisfaction was assessed with measures designed to tap both specific body area and overall body satisfaction. A modified version of the Body-Areas Satisfaction Subscale (BASS) of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990) assessed satisfaction with specific physical features (shape of body, appearance of skin, appearance of nose, size of chin, appearance of teeth, size of chest, waistline, size of thighs, length of legs, and overall muscle tone) that might be altered by cosmetic enhancement procedures. These items combined to form a composite index of body area satisfaction ($\alpha = .86$). In addition, 5 items from the 7-item Appearance Evaluation Subscale of the MBSRQ tapped into
overall satisfaction with one’s appearance (e.g., “I like my looks just the way they are,” “I like the way I look without my clothes on”; α = .86). Finally, 5 items from the Surveillance Subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) tapped into how body conscious a person is. Sample items include: “During the day, I think about how I look many times” (reverse coded) and “I rarely think about how I look.” These items formed a reliable index (α = .77). For these three variables, lower scores indicate less body satisfaction and greater body consciousness.

Demographics, including gender, age, race, and year in school, along with height and weight, concluded the survey. Each respondent’s body mass index (BMI) was calculated based on the formula: BMI = (weight/(height in inches)^2) × 703. Based on this calculation, the sample’s average BMI was 23.6 (SD = 4.09). Five percent of the sample was underweight (BMI < 18.5), 66% were in the normal range (BMI of 18.5–24.9), 25% were overweight (BMI of 25–29.9), and 5% were obese (BMI of 30 and up). As a point of reference, the average BMI for U.S. White women aged 20–29 years in 1990–2002 was 26.7. For White men aged 20–29 years, it was 27.1.

**Results**

Unless otherwise specified, the research questions were explored using partial correlations controlling for gender (male = 0, female = 1), age, race (non-White = 0, White = 1), daily hours of TV viewing, and BMI, except when daily hours of TV viewing was one of the correlated measures. Each of these variables, except race, correlated with the composite cosmetic surgery program viewing measure and at least one body satisfaction measure (ps < .05). Race was included, given the increasing evidence of race differences in body-image–related variables and its relationship to television viewing (e.g., Roberts, Cash, Feingold, & Johnson, 2006; Schooler, Ward, Merriwether, & Caruthers, 2004).

**Cosmetic surgery makeover program viewing and body satisfaction**

RQ1 asked whether viewing cosmetic surgery makeover programs relates to body satisfaction. Partial correlations suggested no statistically significant associations between any of the three measures of body satisfaction and composite or individual cosmetic surgery makeover program viewing (see Table 1). Indeed, only the association between overall TV viewing and body consciousness proved significant, r_p(159) = .18, p = .03. Thus, it appears that the relationship between cosmetic surgery makeover program viewing and body satisfaction is negligible.

**Cosmetic surgery makeover program viewing and perception of risk/benefit**

RQ2 asked whether viewing cosmetic surgery makeover programs would affect viewer perceptions of the risks or benefits of plastic surgery. Partial correlations indicated small, nonsignificant associations between composite cosmetic surgery program viewing and perceived benefit and risk of plastic surgery (see Table 1, Column 3). However, small differences did emerge for individual program viewing. Viewing *Extreme Makeover* associated with greater perceived benefits, r_p(160) = .17,
p = .03, but not perceived risks, \( r_p(160) = .04, \text{ns} \). Conversely, viewing Famous Face associated with greater perceived risk, \( r_p(160) = .18, p = .03 \), but not perceived benefit, \( r_p(160) = .07, \text{ns} \). The Swan did not impact benefit or risk perceptions. Thus, the evidence suggests that viewing some programs may have small associations with perceptions of both risks and benefits of plastic surgical procedures.

### Table 1 Study 1 Partial (and Zero-Order) Correlates of Cosmetic Surgery Makeover Program Viewing

<table>
<thead>
<tr>
<th>Overall TV Viewing</th>
<th>Composite Viewing</th>
<th>Extreme Makeover</th>
<th>Famous Face</th>
<th>The Swan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall body satisfaction</td>
<td>( .07 ) (( .09 ))</td>
<td>( .12 ) (( .00 ))</td>
<td>(- .01 ) (( .00 ))</td>
<td>(- .03 ) (( .01 ))</td>
</tr>
<tr>
<td>Body area satisfaction</td>
<td>( .11 )</td>
<td>( .06 )</td>
<td>( .13 )</td>
<td>( .04 )</td>
</tr>
<tr>
<td>Body consciousness</td>
<td>( .18^* ) (( .19^* ))</td>
<td>(- .02 ) (( -.13^* ))</td>
<td>( .05 ) (( -.07 ))</td>
<td>(- .11 ) (( - .15^* ))</td>
</tr>
<tr>
<td>Benefits</td>
<td>( .03 ) (( .05 ))</td>
<td>( .13 ) (( .16^* ))</td>
<td>( .17^* ) (( .20^** ))</td>
<td>( .07 ) (( .09 ))</td>
</tr>
<tr>
<td>Risks</td>
<td>( .05 ) (( .06 ))</td>
<td>( .10 ) (( .17^* ))</td>
<td>( .04 ) (( .10 ))</td>
<td>( .18^* ) (( .23^** ))</td>
</tr>
<tr>
<td>Invasive procedures</td>
<td>( .08 ) (( .04 ))</td>
<td>( .16^* ) (( .34^*** ))</td>
<td>( .12 ) (( .29^*** ))</td>
<td>( .06 ) (( .20^** ))</td>
</tr>
<tr>
<td>Minimally invasive procedures</td>
<td>(- .09 ) (( -.15^* ))</td>
<td>( .17^* ) (( .38^*** ))</td>
<td>( .11 ) (( .32^*** ))</td>
<td>( .15^* ) (( .31^*** ))</td>
</tr>
<tr>
<td>Noninvasive procedures</td>
<td>(- .07 ) (( -.08 ))</td>
<td>( .11 ) (( .17^* ))</td>
<td>( .13^* ) (( .18^* ))</td>
<td>(- .04 ) (( .02 ))</td>
</tr>
</tbody>
</table>

Notes: Column 1 controls for gender, age, race, and BMI; Columns 2–5 also control for daily TV viewing; lower scores indicate lowered body satisfaction and greater body consciousness; and \( df \) for partial correlations range from 159 to 160.

\* \( p < .05 \), ** \( p < .01 \), *** \( p < .001 \).

\( \dagger \) \( p < .10 \).

Cosmetic surgery makeover program viewing and likelihood of undergoing cosmetic procedures

RQ3 asked whether viewing cosmetic surgery makeover programs associates with estimated likelihood of undergoing cosmetic procedures. Cosmetic surgery makeover program viewing significantly and positively associated with likelihood of undergoing invasive, \( r_p(160) = .16, p = .05 \), and minimally invasive procedures, \( r_p(160) = .17, p = .03 \), though not noninvasive interventions, \( r_p(160) = .11, \text{ns} \). Analyses by program indicated that viewing The Swan had significant or near significant associations with all three types of intervention, \( r_p(160) = .13–.18 \) (see Table 1, Column 6). Famous Face viewing evidenced only a marginal association with minimally invasive procedures, \( r_p(160) = .15, p = .06 \), and Extreme Makeover maintained only a marginal association with noninvasive interventions, \( r_p(160) = .13, p = .09 \). Overall TV
viewing did not associate with any measure of cosmetic procedure likelihood. Thus, there is evidence that viewing cosmetic surgery makeover programs may associate with a desire for a range of cosmetic enhancement procedures.\(^3\)

**Discussion**

The results of this exploratory study offer little evidence that watching reality-based cosmetic surgery makeover programs associates with body satisfaction. There was also no evidence supporting the fear that viewing such programming minimizes the perceived risks associated with plastic surgery. However, these effects might vary depending on the program viewed. Although viewing certain programming (*Extreme Makeover*) might increase perceived benefits, viewing other programming might actually increase perceptions of risk (*Famous Face*). Finally, viewing cosmetic surgery makeover programs does appear to maintain a small association with interest in undergoing a range of cosmetic procedures.

Although these data do not allow conclusions regarding causality, we can surmise that the lack of a relationship between viewing and body satisfaction suggests that those with body image concerns are not drawn to these programs nor are these programs portraying cosmetic surgery in ways that alter viewer’s perceptions of their own bodies. Particularly interesting is the fact that *Famous Face* viewing associated with perceived risk. It is possible that those who see cosmetic surgery as risky are more likely to perceive that risk when watching this programming. However, it is more imaginable that the portrayal of such procedures on *Famous Face*, which include stories of the negative health outcomes associated with cosmetic procedures, suggests greater risk than viewers might have previously imagined. The differences in association patterns across the programs indeed suggest that portrayal content matters. Moreover, the increase in likelihood of desiring such procedures associated with viewing these programs suggests a potentially meaningful impact that warrants further consideration.

Study 2, then, focuses on understanding the process through which such programs might relate to desire for cosmetic enhancements. Based on past body image and media effects literature, there are three media-based theoretical explanations for why viewing cosmetic surgery makeover programs might impact intentions to undergo such procedures: cultivation, social comparison, and social learning. Each is briefly reviewed, and theoretically motivated hypotheses regarding program exposure and behavioral intentions are proposed.

**Theoretical explanations for the effects of cosmetic surgery makeover programs**

**Cultivation**

Cultivation theory addresses the relationship between TV content and viewers’ beliefs about social reality, primarily asserting that compared to light TV viewers, heavy viewers perceive their social environment as more similar to the world as portrayed on TV than it really is (e.g., Gerbner, 1969; Gerbner & Gross, 1976; Gerbner, Gross, \[\]
Morgan, & Signorielli, 2002). A significant body of evidence supports this hypothesis (Morgan & Shanahan, 1996), and though initially these effects were believed to emerge regardless of genre, increasing evidence for genre-based cultivation outcomes has surfaced (e.g., Hawkins & Pingree, 1981; Segrin & Nabi, 2002).

In the body image literature, cultivation theory has been used to explain how heavy consumers of the unrealistic images of beauty prevalent in the media internalize those images as sociocultural norms to which they might try to adhere, potentially resulting in body dissatisfaction and disordered eating symptomology. There is, however, mixed evidence in support of these assumptions. Although some evidence links overall TV viewing with body dissatisfaction (e.g., Harrison & Cantor, 1997; Tiggemann, 2003) and overall magazine consumption with disordered eating symptomology (e.g., Harrison & Cantor, 1997), other studies have found null effects (e.g., Botta, 1999; Tiggemann, 2005). There is also mixed evidence linking more specific content consumption and body image variables (see Bissell & Zhou, 2004; Harrison, 2003; Park, 2005; Stice et al., 1994; Tiggemann, 2003, 2005, for supportive evidence, and Botta, 1999, Stice, Spangler, & Agras, 2001, for null effects.)

This line of research, then, does not allow us to confidently assert that viewing cosmetic surgery makeover programs will associate with body dissatisfaction or desire for enhancement procedures. However, to be fair, from a cultivation standpoint, the most proximal and relevant variable would actually be the expected societal prevalence of such surgeries. Assuming that the portrayals send predominantly positive messages (i.e., cosmetic procedures will enhance your appearance, self-esteem, etc.), heavy viewers would be expected to desire such procedures. Thus:

H1: Greater consumption of cosmetic surgery makeover programs will associate with:
(a) a higher perceived societal prevalence of cosmetic enhancement procedures, and (b) a greater expressed likelihood of undergoing such procedures.

Although we might imagine that the generally positive portrayals of cosmetic enhancements might lead to the perception of such procedures as high benefit/low risk, which in turn could impact desire for plastic surgery (see Nabi & Sullivan, 2001, for arguments linking these constructs), Study 1 data did not support this relationship. It did, however, suggest that those who perceived greater benefits expressed stronger interest in undergoing invasive and minimally invasive procedures, \( r_p(s(159) = .24-.32, p < .01 \). No such association emerged for perceived risks, \( r_p(s(159) = -.02 \) to .09, ns. Thus, consideration of whether program exposure impacts perceptions of the benefits and risks of surgical enhancement procedures is still warranted.

Social comparison theory
According to Festinger’s (1954) social comparison theory, people are driven to evaluate their own opinions and abilities, and when objective assessment is not possible, people compare themselves to others who are both similar on ability-related
(though sometimes unrelated) attributes and are close (but not too close) in ability or opinion. Discrepancy on the target dimension then sets both the standard and the motivation for achievement. Since its initial formulation, additional motives for comparison beyond self-evaluation have emerged, including self-improvement and self-enhancement (see Wood, 1989), both of which have direct relevance for issues of body image and appearance.

Unlike the sociocultural/cultivation-based research, fairly consistent evidence supports the role of social comparison processes in the media exposure–body image relationship. Research suggests that the generally upward social comparisons on appearance to media images associates with body dissatisfaction in a myriad of contexts, including the general media (Jones, 2001; Morrison, Kalin, & Morrison, 2004), television programming and commercials (Botta, 1999; Cattarin, Thompson, Thomas, & Williams, 2000; Tiggemann & Slater, 2004), and magazine ads (Engelin-Maddox, 2005; Martin & Kennedy, 1993; Richins, 1991; Tiggemann & McGill, 2004). Associations with bulimic tendencies (Botta, 1999), dieting and pathogenic weight control methods in women (Morrison et al., 2004), and steroid use and dieting to gain weight in men (Morrison et al., 2004) have also been found. In sum, it seems the more people compare themselves to idealized media images, the more dissatisfied they are with themselves, the more they are motivated to be thin (for women) or muscular (for men), and the more they pursue related behaviors.

If we assume that cosmetic enhancement procedures are seen as viable means to close the attractiveness gap generated via upward social comparison, then it is reasonable to expect that social comparison processes will associate with both body dissatisfaction and desire for cosmetic enhancement procedures, assuming self-evaluation motives are at play. Thus:

H2: Greater upward social comparison to patients on cosmetic surgery makeover programs will associate with: (a) greater body dissatisfaction, and (b) greater expressed likelihood of undergoing cosmetic enhancement procedures.

Of note, though social comparison on appearance is generally upward, downward comparisons might be expected of those with higher body satisfaction who are driven by self-enhancement, rather than self-evaluation, motives. As such, it is likely that such viewers would be less interested in seeking cosmetic enhancement. Thus:

H2: Greater body satisfaction will associate with (c) greater self-enhancement from viewing cosmetic surgery makeover programs, and (d) reduced expressed likelihood of undergoing cosmetic enhancement procedures.

Social cognitive theory
Bandura’s social cognitive theory revolves primarily around the functions and processes of observational learning (Bandura, 1986, 2002). That is, by observing others’
behaviors, including media figures, one may develop rules to guide subsequent actions and/or be prompted to engage in previously learned behavior. Although moderated by observers’ cognitive development and skills, observational (or social) learning is guided by four processes: attention to certain models and their behavior based on source and contextual features, retention of the observed behavior and its consequences, production of the observed behavior in appropriate contexts, and motivation to selectively engage in observed behaviors based on positive or negative reinforcement from one’s own behavior, the observed feedback given to others, or internal incentives (e.g., self-standards).

Although social learning has long been used to explain the media’s potential effects on behaviors related to violence and sex, it has not seen the same level of interest in the body image literature. Still, consistent with social cognitive theory principles, Taveras et al. (2004) found that nearly half of all female adolescents and one-quarter of male adolescents altered their physical activity in an effort to look more like a same-sex media figure, and Tiggemann (2005) found social learning viewing motives associated with negative body image outcomes for both girls and boys. Most on point, Harrison and Cantor (1997) argued that thinness-depicting media consumption’s association with disordered eating symptomology is consistent with social learning theory as the prevalence of thin models, coupled with the social rewards for being thin, likely motivate viewers to want to be thinner and thus model the behaviors they see, most notably restrictive eating.

However, to the extent a relationship between media exposure and behaviors is found, it is hard to know whether actual modeling versus simple learning is taking place if the theoretically relevant variables are not measured—a challenge in the body image domain as the presumed outcomes of behaviors, rather than the behaviors themselves, are what viewers generally see. Cosmetic surgery makeover programs offer an interesting context to test social cognitive theory as (a) specific behaviors are enacted by people with whom the audience may more or less identify, and (b) those behaviors are often associated with positive outcomes (e.g., praise and positive affect) but sometimes negative outcomes as well (e.g., poor results or pain and discomfort). Given those with lower body satisfaction are likely to identify with program participants who also express body dissatisfaction and the importance of incentives in motivating the modeled behavior, the following is likely, according to social cognitive theory:

H3: Those with lower body satisfaction will (a) watch cosmetic surgery makeover programs more frequently, and (b) experience greater identification with the program participants.

To the extent that viewers identify with program participants (e.g., based on perceived similarity in looks, personality, and life circumstances), they should be more likely to model their behavior, but only if positive outcomes outweigh the negative ones. Thus, the following interaction is expected:
The more viewers identify with cosmetic surgery makeover program participants, the higher their expected likelihood of undergoing cosmetic enhancement will be, provided positive outcomes are perceived. If viewers do not perceive positive outcomes, identification with program participants will not associate with likelihood of undergoing cosmetic enhancement.

Clearly, the hypotheses generated by these theoretical perspectives offer different insights into the link between program exposure and likelihood or desire for cosmetic surgery. As each might reasonably explain variance in intentions to undergo cosmetic enhancements, it is reasonable to ask:

RQ1: What combination of variables best captures the process through which intentions to undergo cosmetic enhancements might be impacted by viewing cosmetic surgery makeover programs?

To offer more legitimate theoretical tests than were possible in Study 1, the following changes were made in Study 2. First, the sample size was increased to better detect smaller effects. Second, in the survey, the TV viewing measures appeared after the body-related measures to reduce demand effects. Third, complete body image scales and measures of theoretically relevant constructs were included.

STUDY 2

Method

Participants and procedures
Three hundred and twenty undergraduates at UC–Santa Barbara completed a survey on perception of reality TV in exchange for course extra credit in the summer of 2005. Given the sample was primarily female (85%) and 88% of cosmetic procedures in the United States are performed on women, only the women were included in these analyses (n = 271). Of these, 69% were Caucasian, and their average age was 20 years (SD = 1.78). Eighty-two percent of the sample had previously watched at least one of the three targeted cosmetic surgery makeover programs.

Measures
Many of the measures were drawn from those in Study 1, and identical combinatory procedures were followed. Only new measures are described in detail. Unless otherwise noted, measures are based on 5-point Likert items, 1 (strongly disagree) to 5 (strongly agree), and are presented in the order they appeared in the survey.

Ten items assessed perceived risks and benefits of plastic surgery. One risk item was dropped due to poor loading. The resulting perceived risk and benefit scales proved reliable (α = .73 and α = .77). Items were the same as in Study 1 but with two additional risk items: “There are serious health risks associated with having plastic surgery” and “Plastic surgery can leave a person looking less attractive than they were
before.” The two measures negatively correlated, $r(271) = -0.30, p < .001$, suggesting that they tap into separate, though related, perceptions.

Body area satisfaction was again measured with the modified BASS of the MBSRQ ($\alpha = .82$). Overall satisfaction with one’s appearance was assessed with the complete 7-item Appearance Evaluation Subscale of the MBSRQ ($\alpha = .88$), and body consciousness (again scored so lower scores indicate greater body consciousness) was assessed with the 8-item Surveillance Subscale of the OBCS ($\alpha = .81$).

Participants then indicated their behavioral likelihood/past behavior regarding cosmetic enhancements. Two procedures, in addition to those from Study 1, were included: LASIK eye surgery and collagen injections. Noninvasive ($r = .36, p < .001$), minimally invasive ($\alpha = .65$), and invasive measures ($\alpha = .84$) were constructed as in Study 1, though the invasive procedures also included collagen injections. Of note, 5% of the sample had already undergone at least one invasive cosmetic procedure, consistent with Sarwer et al. (2005), and 80% reported having had at least one minimally invasive procedure.

Respondents then estimated the prevalence of cosmetic procedures undergone by their peers by assessing how many women (out of 100) in their age group had already done each of the 20 behaviors identified. These estimates were transformed into $z$ scores and combined to form a relative estimate of plastic surgery prevalence in their social group. Composite indices based on the noninvasive, minimally invasive, and invasive procedures were also constructed.

Respondents then completed their viewing frequency of 33 reality programs, including *Extreme Makeover*, *I Want a Famous Face*, and *The Swan*. The composite viewing index created indicates average viewing frequency of these three programs ($M = .93, SD = .71$). Of note, two new programs—*The Biggest Loser* and *Celebrity Fit Club*—were included in the survey as they focus on improving appearance through diet and exercise. They were combined to create a viewing index of reality fitness-oriented programming ($M = .56, SD = .67$).

Respondents were then asked if they had watched any of the three cosmetic surgery makeover programs. If yes, they were asked to choose one and complete the next several measures with only that program in mind. In this way, targeted insight into individual programs, rather than generic impressions of the programming genre, is possible (see Nabi, Biely, Morgan, & Stitt, 2003; Nabi, Stitt, Halford, & Finnerty, 2006). Those who had never seen any of the three programs (14% of the sample) skipped these items.

After measures of program enjoyment, perceived realism, and emotional response, six identification items ($\alpha = .84$) assessed how much people identified with the show participants (e.g., “I feel I am watching people like myself, I can identify with the people on the program”). Social comparison to those on the programs was assessed with six items, including “I find myself comparing how I look to the people on the program look before [after] their makeover” and “I judge how attractive I am by comparing myself with the people on the program” ($\alpha = .80$). Self-enhancement as a result of program viewing was measured with two items: “I feel [better about my own life/more attractive] after watching this
program,” \( r(232) = .67, p < .001 \). The self-enhancement and social comparison measures did not correlate, \( r(234) = -.03, \text{ns} \).

Positive outcomes for the program participants were assessed with three items (\( \alpha = .76 \); i.e., “people are better off than they were before;” “are improved,” “are transformed”). Negative outcomes for the program participants were assessed with six items (e.g., “people are facing rejection,” “dealing with negative consequences,” “struggling with personal challenges”). However, poor reliability among any combination of these items (highest \( \alpha = .59 \)) suggested that this variable was best not used.

Demographics were then assessed. Based on the BMI calculation, the sample’s average BMI was 22 (SD = 3.15). Seven percent of the sample was underweight, 80% were in the normal range, 10% were overweight, and 3% were obese. Daily television viewing was then measured. The survey concluded with two items about general tendency to compare to the attractiveness of TV actresses/actors, \( r(270) = .65, p < .001 \).

Results

Unless otherwise noted, the reported partial correlations control for age, race, BMI, and daily TV viewing hours. Zero-order correlations are also displayed in Table 2 and show only small differences compared to the partial correlations.

Table 2 Study 2 Partial (and Zero-Order) Correlates of Cosmetic Surgery Makeover Program Viewing

<table>
<thead>
<tr>
<th></th>
<th>Overall TV Viewing</th>
<th>Composite Viewing</th>
<th>Extreme Makeover</th>
<th>Famous Face</th>
<th>The Swan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall body</td>
<td>-.14*</td>
<td>-.05</td>
<td>.01</td>
<td>-.12*</td>
<td>.01</td>
</tr>
<tr>
<td>satisfaction</td>
<td>(.16*)</td>
<td>(.09)</td>
<td>(.03)</td>
<td>(.14*)</td>
<td>(.04)</td>
</tr>
<tr>
<td>Body area</td>
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<td>-.07</td>
<td>.01</td>
<td>-.12†</td>
<td>-.05</td>
</tr>
<tr>
<td>satisfaction</td>
<td>(.14*)</td>
<td>(.10*)</td>
<td>(.01)</td>
<td>(.13*)</td>
<td>(.09)</td>
</tr>
<tr>
<td>Body</td>
<td>.08</td>
<td>-.20**</td>
<td>-.11†</td>
<td>-.20***</td>
<td>-.15*</td>
</tr>
<tr>
<td>consciousness</td>
<td>(.08)</td>
<td>(.19**)</td>
<td>(.10†)</td>
<td>(.20***</td>
<td>(.13*)</td>
</tr>
<tr>
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<td>.03</td>
<td>.09</td>
<td>.07</td>
<td>.06</td>
<td>.07</td>
</tr>
<tr>
<td>(.01)</td>
<td>(.09)</td>
<td>(.07)</td>
<td>(.06)</td>
<td>(.08)</td>
<td></td>
</tr>
<tr>
<td>Risks</td>
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<td>-.05</td>
<td>-.03</td>
<td>-.09</td>
<td>.01</td>
</tr>
<tr>
<td>(.05)</td>
<td>(.04)</td>
<td>(.02)</td>
<td>(.09)</td>
<td>(.01)</td>
<td></td>
</tr>
<tr>
<td>Invasive procedures</td>
<td>.02</td>
<td>.27***</td>
<td>.21**</td>
<td>.19**</td>
<td>.20**</td>
</tr>
<tr>
<td>(.02)</td>
<td>(.27***</td>
<td>(.19**)</td>
<td>(.20**)</td>
<td>(.22***</td>
<td></td>
</tr>
<tr>
<td>Minimally invasive</td>
<td>.06</td>
<td>.20**</td>
<td>.18**</td>
<td>.16*</td>
<td>.11†</td>
</tr>
<tr>
<td>procedures</td>
<td>(.05)</td>
<td>(.22***</td>
<td>(.19**)</td>
<td>(.18**)</td>
<td>(.12*)</td>
</tr>
<tr>
<td>Noninvasive procedures</td>
<td>.03</td>
<td>.15*</td>
<td>.12*</td>
<td>.11†</td>
<td>.11†</td>
</tr>
<tr>
<td>(.05)</td>
<td>(.17*)</td>
<td>(.12*)</td>
<td>(.13*)</td>
<td>(.13*)</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Column 1 controls for age, race, and BMI; Columns 2–5 also control for daily TV viewing; lower scores indicate lowered body satisfaction and greater body consciousness; and df for partial correlations range from 259 to 261.

\( ***p < .001 \), \( **p < .01 \), \( *p < .05 \), \( †p < .10 \).
Cultivation and perceptions of plastic surgery
H1a suggested that more frequent cosmetic surgery makeover program viewing would associate with higher perception of the societal prevalence of cosmetic procedures. No significant associations emerged, however, between perception of cosmetic surgery prevalence and viewing cosmetic surgery makeover programs, based on either the composite or individual program viewing frequency measures, \( r_p(s(257)) = -0.05 \) to \(-0.09, ns \). Similarly, no associations between the viewing measures and the subindices of prevalence (invasive, minimally invasive, noninvasive) emerged, \( r_p(s(303)) = -0.01 \) to \(-0.09, ns \). Thus, H1a was not confirmed.

H1b suggested that more frequent cosmetic surgery makeover program viewing would associate with greater expressed likelihood of undergoing cosmetic enhancements. Indeed, cosmetic surgery makeover program viewing positively associated with all three measures of cosmetic enhancement, \( r_p(s(259)) = 0.15–0.27, ps < .05 \) (see Table 2). This pattern was evidenced for each of the three individual programs as well. These results support H1b.

Social comparison, body dissatisfaction, and desire for plastic surgery
As the following analyses include variables related to program assessment, only viewers of reality programs are available for analyses (\( n = 234 \)).

H2a predicted that upward social comparison to patients on cosmetic surgery makeover programs would associate with lowered body satisfaction. As expected, social comparison to program participants associated with lower overall body satisfaction, \( r_p(223) = -0.22, p = .001 \); lower body area satisfaction, \( r_p(223) = -0.34, p < .001 \); and greater body consciousness, \( r_p(223) = -0.33, p < .001 \). Comparable associations with the general social comparison measure were also found, \( r_p(s(223)) = -0.32 \) to \(-0.45, ps < .001 \). Thus, H2a is supported.

H2b predicted that greater social comparison would associate with greater expressed likelihood of undergoing cosmetic enhancements. Indeed, social comparison to program participants related to desiring invasive, \( r_p(222) = 0.28, p < .001 \), minimally invasive; \( r_p(222) = 0.14, p = .04 \); and noninvasive, \( r_p(222) = 0.17, p = .01 \), procedures. Comparable associations with the general social comparison measure were also evidenced, \( r_p(s(222)) = 0.25–0.28, ps < .001 \). Thus, H2b is supported.

H2c predicted that those with higher body satisfaction would experience greater self-enhancement from viewing cosmetic surgery makeover programs. As expected, viewers with higher overall body and body area satisfaction also reported feeling better about their own lives, \( r_p(223) = 0.42, p < .001 \), and \( r_p(223) = 0.26, p < .001 \), respectively, though no association was found with body consciousness, \( r_p(223) = -0.05, ns \). Thus, H2c is generally supported. Of note, self-enhancement from viewing did not associate with desire for any cosmetic procedures.
H2d predicted that those with higher body satisfaction would be less likely to seek out cosmetic enhancements. Partial correlations indicated that those with higher overall body satisfaction were also less likely to express desire for invasive procedures, \( r_p(259) = -0.19, p = 0.003 \), though no associations emerged for minimally invasive or noninvasive procedures, \( r_p(259) = -0.09 \) to \(-0.10, ns \). Further, those with higher body area satisfaction were less likely to indicate desire for invasive, \( r_p(259) = -0.29, p < .001 \); minimally invasive, \( r_p(259) = -0.20, p = 0.001 \); and noninvasive, \( r_p(259) = -0.15, p = 0.02 \), enhancements. Similarly, lowered body consciousness was associated with reduced desire for invasive, \( r_p(259) = 0.36, p < .001 \); minimally invasive, \( r_p(259) = 0.28, p < .001 \); and noninvasive, \( r_p(259) = 0.31, p < .001 \), enhancements. Thus, H2d is supported.

The combination of the theoretical predictions captured by H2a to H2d, as well as the significant correlations among social comparison, body satisfaction, and desire for invasive procedures (\( rs = -0.29 \) to \(-0.39, p < .01 \)) raises the question of whether body satisfaction mediates the relationship between social comparison and desire for cosmetic surgery or, conversely, if social comparison mediates the relationship between body satisfaction and desire for cosmetic surgery. Analyses revealed that the magnitude of the social comparison–desire for invasive procedure relationship is virtually unaltered when controlling for body satisfaction (\( r = 0.29 \) vs. \( r_p = 0.26, ps < .001 \)). However, when controlling for social comparison, the body satisfaction–desire for invasive procedure relationship is reduced (\( r = 0.16, p = 0.007 \), to \( r_p = 0.08, p = 0.18 \)). Sobel tests confirm that social comparison mediates the body satisfaction–invasive procedure relationship (Sobel statistic = 3.01, \( p = 0.002 \)), whereas the reverse does not hold (Sobel = 1.29, \( p = 0.19 \)).

Social cognitive theory, body dissatisfaction, and desire for plastic surgery

H3a predicted that those with lower body satisfaction would also watch cosmetic surgery makeover programs more frequently. Partial correlations indicated no significant relationship between cosmetic surgery makeover program viewing and overall body, \( r_p(260) = -0.05, ns \), or body area satisfaction, \( r_p(260) = -0.07, ns \). However, an association between cosmetic surgery makeover program viewing and body consciousness suggested that those who are more conscious of their looks watch cosmetic surgery makeover programs more frequently, \( r_p(260) = -0.20, p = 0.001 \). This relationship was suggested by each of the individual programs as well (see Table 2). In addition, viewing Famous Face, which is targeted specifically to college-aged students, was negatively associated with both overall and body area satisfaction, \( r_p(260) = -0.12 \). Thus, these data offer some support for H3a.

H3b suggested that those with lower body satisfaction would identify more with the program participants. As expected, those who identified more with program participants also had lower overall body satisfaction, \( r_p(224) = -0.21, p = 0.002 \); lower body area satisfaction, \( r_p(224) = -0.23, p = 0.001 \); and greater body consciousness, \( r_p(224) = -0.16, p = 0.02 \). H3b is thus supported.
H3c suggested that viewers of cosmetic surgery makeover programs who identify with program participants would have stronger intentions to undergo cosmetic enhancement, provided they perceived positive outcomes for those interventions. Three regressions were performed in which age, race, BMI, body satisfaction, and daily TV viewing were entered into Step 1, centered versions of identification and positive outcome perception were entered into Step 2, and their interaction was entered into Step 3. The three cosmetic enhancement variables served as dependent measures (see Table 3).

Results indicated that greater identification ($\beta = .18$, $p = .02$) and positive outcome perception ($\beta = .20$, $p = .008$) both associated with expressed likelihood of undergoing invasive cosmetic enhancements, though not minimally invasive or noninvasive procedures. Further, as expected, the interaction between identification and positive outcome perception was significant for both invasive ($\beta = .21$, $p = .001$) and minimally invasive ($\beta = .18$, $p = .007$) procedures, though not noninvasive ones. Both interactions suggested that, as predicted, the identification–desire for cosmetic enhancement relationship was stronger if the viewer perceived positive outcomes for the procedures (see Figure 1). A simple slopes analysis at 1 standard deviation above and below the mean of perceived positive outcomes (Aiken & West, 1991) supported this interpretation. That is, when perceived positive outcomes were low, identification had virtually no relationship with likelihood of undergoing invasive ($\beta = .01$, $p = .88$) or minimally invasive ($\beta = -.06$, $p = .48$) cosmetic enhancement. However, when perceived positive outcomes were high, those who identified with program participants expressed stronger likelihood of undergoing invasive ($\beta = .38$, $p < .001$) and minimally invasive procedures ($\beta = .26$, $p = .014$). These results support H3c.

Additional analyses were run to examine whether, as social cognitive theory would suggest, identification would mediate the relationship between body dissatisfaction and desire for plastic surgery. Identification, body satisfaction, and desire for invasive procedures each significantly correlated with one another ($r = -.28$–$-.29$, $p < .01$). When controlling on body satisfaction, the identification–desire for cosmetic enhancement relationship was stronger if the viewer perceived positive outcomes for the procedures (see Table 3).
The results to this point offer some support for each theoretical perspective. RQ1 asks which theoretical explanation—cultivation, social comparison, or social learning—best captures the relationship between cosmetic surgery makeover program viewing and expressed likelihood of undergoing cosmetic enhancements. Quantity of viewing effects would support cultivation theory. Social comparison and self-enhancement effects would support social comparison theory.

**A theoretical comparison**

Invasive procedure relationship was virtually unchanged ($r = .29$ to $r = .25$, $p < .001$). However, the body satisfaction–desire for invasive procedure was altered when controlling for identification ($r = -.16$, $p = .07$, to $r_p = -.09$, $p = .16$). A Sobel test confirmed the significance of identification as a mediator ($Sobel = -2.27$, $p = .02$) but not body satisfaction ($Sobel = -1.33$, $p = .18$). Thus, like social comparison, identification partially mediates the relationship between body satisfaction and desire for invasive procedures.

**Figure 1** Interaction between identification with patient and perceived positive outcomes on expressed likelihood of undergoing invasive cosmetic procedures.
Identification and perceived positive outcome effects would support social cognitive theory.

Three regressions were performed in which age, race, BMI, body satisfaction, and daily TV viewing were entered into Step 1; cosmetic surgery makeover program viewing and viewing of each fitness program were entered stepwise into Step 2; identification, positive outcome perception, social comparison, and self-enhancement were entered stepwise into Step 3; and the interaction between perceived positive outcomes and identification was entered into Step 4. The three cosmetic enhancement variables served as dependent measures (see Table 4). When the interaction was significant, the main effects terms were also included in the model, even if they were not initially significant, in the interest of building a complete model.

Results for invasive procedures supported two of the three theoretical perspectives. The social cognitive theory variables explained the most variance at 9% (identification \( \beta = .16, p = .04 \); perceived positive outcome \( \beta = .16, p = .03 \); and their interaction \( \beta = .20, p = .001 \)). Consistent with cultivation theory, cosmetic surgery program viewing explained 7% of the variance (\( \beta = .20, p = .001 \)). The social comparison theory variables were not significant.

For minimally invasive procedures, again both cultivation theory and social cognitive theory were supported. Cosmetic surgery program viewing explained 2% of the variance in desire for such procedures (\( \beta = .15, p = .03 \)), and the identification–perceived positive outcome interaction explained 3% of the variance (\( \beta = .18, p = .007 \)). For noninvasive enhancements, social comparison and, to a lesser extent, cultivation theory were supported as social comparison to program participants (\( \beta = .15, p = .03 \)) and watching Fit Club (\( \beta = .11, p = .11 \)) each contributed 2% of the variance in expressed likelihood of dieting and exercise.

### Table 4

<table>
<thead>
<tr>
<th></th>
<th>Invasive</th>
<th>( \Delta R^2 )</th>
<th>Minimal Invasive</th>
<th>( \Delta R^2 )</th>
<th>Noninvasive</th>
<th>( \Delta R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1 Age</td>
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<td>.08**</td>
<td>Age</td>
<td>.01</td>
<td>.04</td>
<td>Age</td>
</tr>
<tr>
<td>Race</td>
<td>.17**</td>
<td>Race</td>
<td>.18**</td>
<td>Race</td>
<td>.15*</td>
<td>Race</td>
</tr>
<tr>
<td>BMI</td>
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<td>BMI</td>
<td>-.02</td>
<td>BMI</td>
<td>.19**</td>
<td>BMI</td>
</tr>
<tr>
<td>Body satisfaction</td>
<td>-.18**</td>
<td>Body satisfaction</td>
<td>-.09</td>
<td>Body satisfaction</td>
<td>-.02</td>
<td>Body satisfaction</td>
</tr>
<tr>
<td>TV hours/day</td>
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<td>TV hours/day</td>
<td>.02</td>
<td>TV hours/day</td>
<td>-.03</td>
<td>TV hours/day</td>
</tr>
<tr>
<td>Block 2 Composite view</td>
<td>.20***</td>
<td>.07**</td>
<td>Composite view</td>
<td>.15*</td>
<td>.02*</td>
<td>Fit Club</td>
</tr>
<tr>
<td>Block 3 Identification</td>
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<td>.05**</td>
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<td>.00</td>
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<td>.07</td>
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<td></td>
<td></td>
</tr>
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<td>.04**</td>
<td>Identification ( \times )</td>
<td>.18**</td>
<td>.03**</td>
<td>Outcome</td>
</tr>
</tbody>
</table>

*Note: Variables in Blocks 2–4 were entered stepwise; main effect terms for the interactions were retained in the model, whether significant or not.*

**\( p < .001 \).** **\( p < .01 \).** *\( p < .05 \).** †\( p < .10 \).
The differences in variance explained suggest that cultivation and social cognitive theory offer more explanatory power in understanding the relationship between program viewing and desire for cosmetic surgery. However, from a theory-building perspective, this is not the most important question to ask. Rather, it would be more fruitful to explore what an integrated model might look like to explain desire for cosmetic surgery. Thus, path modeling was undertaken, focusing on expressed likelihood of undergoing invasive procedures as the outcome of interest. Using AMOS 5.0, the hypothesized relationships among the three sets of theoretically derived variables were included. As well, paths between variables that significantly correlated were included, and nonsignificant paths were removed. The goodness of the path model’s fit to the data was judged using the following criteria: (a) a $\chi^2/df$ ratio of 5 or less (Jorskog & Sorbom, 1989; Marsh & Hocevar, 1985; Wheaton, Muthen, Alwin, & Summers, 1977), (b) a CFI of .90 or greater, (c) an RFI close to 1 (Bollen, 1986), and (d) an RMSEA less than or equal to .08 (Browne & Curdeck, 1993).

The resulting model (see Figure 2) achieved an acceptable fit of the data, $\chi^2/df$ ratio = .59, CFI = 1.00, RFI = .981, and RMSEA = .000. The model suggests that cosmetic surgery makeover program viewing associates directly with desire for invasive procedures as well as indirectly through its effects on social comparison and perception of positive outcomes. Social comparison, identification, and perceived positive outcomes also maintained direct relationships with desire for invasive procedures as well as indirect relationships via their associations with one another and through the perceived positive outcome–identification interaction.

**Figure 2** Path model of integrated theoretical perspectives linking cosmetic surgery program viewing to expressed likelihood of having invasive cosmetic procedures.

*Note:* Each coefficient is significant at $p \leq .05$, except the identification–interaction coefficient ($p = .19$). This coefficient was retained, given its centrality to the interaction term. $\chi^2/df$ ratio = .59, CFI = 1.00, RFI = .981, and RMSEA = .000.
Discussion

Study 2 sought to uncover the theoretical mechanisms through which exposure to cosmetic surgery makeover programs might impact expressed likelihood of undergoing a range of cosmetic enhancement procedures. Individual as well as integrative tests indicated support for cultivation, social comparison, and social cognitive theories. Consistent with cultivation theory, viewing cosmetic surgery makeover programs associated with expressed likelihood of undergoing a range of cosmetic enhancement procedures. As exposure did not associate with perceptions of plastic surgery prevalence, it might be inferred that the effects of exposure are not a function of perceived normative influence but perhaps of simple accessibility effects. Future research is needed to illuminate this issue.

The data also supported social comparison theory in that people with lower body satisfaction seemed more likely to make upward social comparisons, whereas those with high body satisfaction were more likely to make downward social comparisons. Further, those engaged in upward social comparison were inclined to also express interest in having a range of cosmetic enhancements, whereas those likely driven by self-enhancement motives were not. Finally, social cognitive theory was supported in that identification, coupled with perceived positive outcomes, associated with increased interest in pursuing cosmetic enhancements. Perhaps most interesting, the regression analyses suggested that social cognitive theory variables explained the most variance in desire for surgical enhancements, despite the fact that social comparison tends to be the focus of body image research. This could be attributed to the fact that behaviors, and their associated rewards and punishments, are explicitly modeled in cosmetic surgery makeover programs. As such, the nature of the depictions may be particularly important in assessing their effects (see Tiggemann, 2005) and should be a focus of future research.

Finally, the integrated model suggests that not only are these theoretical processes each important but also that they are not mutually exclusive. That is, conceptually important variables for one theory (e.g., social comparison) might influence variables conceptually important to another theory (e.g., identification). This suggests that future research would benefit from drawing from a range of theoretical perspectives to maximize not only our ability to understand what might motivate certain thoughts or actions in response to media exposure but also our capacity to develop theory well suited to this task.

General discussion

The potential negative impact of media messages on young people, whether related to violence, sex, video games, or body image, tends to generate passionate criticism. This research was designed to determine whether cosmetic surgery makeover programs warrant such criticism by assessing whether viewing them associates with negative outcomes like body dissatisfaction and reduced perceived risk of surgical
procedures. Despite some discrepancies in the two data sets, the combined evidence suggests that there is little to fear in this regard. There is a possibility that individual programs, Famous Face in particular, might associate with body dissatisfaction. However, it is critical to note that any associations between viewing and body dissatisfaction identified here might be as likely to stem from those with preexisting body dissatisfaction seeking out such programming as program viewing causing body dissatisfaction.

The data across the two studies indicate small, though not statistically significant, associations between viewing cosmetic surgery makeover programs and perceived benefit and risk. A generous interpretation of these data is that young people might be receiving very subtle messages that these procedures can offer benefits beyond what they previously might have imagined, but their perception of risks is unlikely affected. However, the more reasonable interpretation is that, if any effects exist, viewing any particular program is as likely to increase perception of risk as it is to boost perception of benefit. There is certainly no evidence for an “all gain no pain” message as the popular press has suggested.

Yet, both studies offered evidence that viewing cosmetic surgery makeover programs associates with interest in pursuing cosmetic enhancements, and Study 2 offered support for three theoretical explanations for this effect. Simple exposure may make these procedures cognitively accessible to young people such that they think of them as actions they might reasonably take. Also, young people who are dissatisfied with their bodies may compare themselves to program participants, which might motivate them to want the procedures. However, the evidence points most strongly to social modeling. That is, young people, to the extent they identify with the program participants and see they experience mostly positive outcomes from their enhancement procedures, might be motivated to engage in similar behaviors.

From a theoretical perspective, given each set of predictors had some influence, it seems evident that (a) no one paradigm explains the processes through which these programs might have their effects, and (b) these perspectives have more in common than previously acknowledged in the extant literature. For example, both social cognitive and social comparison theories focus on selecting to whom we compare ourselves or model ourselves after. Incentives and upward comparison, too, overlap conceptually. Looking for ways in which these theories overlap and where each is unique might help to generate a more integrated model of media effects that can explain more variance in the outcomes of interest.

Toward this goal, media scholars might consider four general pathways through which effects might occur, based on the theories frequently applied to media contexts. These pathways might be labeled accessibility, information about the external world, social interaction, and action potential. Accessibility captures the impact of what audiences currently know or believe to be true and refers primarily to the audience’s current or preexisting cognitive state. To the extent media activates or makes available cognitions related to behavior, media exposure may directly impact
action. *Information about the external world* captures a more active cognitive process in which the media might provide information that would factor into more conscious decision making, like information about costs and benefits, self-standards, and so forth. To the extent the media provide information that is used in the cognitive calculus to decide to act or not, it may have impact on audience behavior. *Social interaction* captures the ways in which figures in the media serve as references for action. This would capture issues of identification, similarity, social comparison, social norms, and the like. Finally, *action potential* captures the motivational elements that are necessary to translate cognitive assessment into actual behavior, like emotional arousal, self-enhancement, and self-efficacy.

Clearly, these concepts appear in preexisting models of media effects. Indeed, one might argue that social cognitive theory incorporates each of these pathways, and the above framework is simply a clumsy attempt at recreating the wheel. However, social cognitive theory, perhaps due to its breadth and scope, has been surprisingly less useful in generating media research than one might have imagined. Although it is frequently referenced, especially in content analyses, few if any media studies have applied it in full, and there is some evidence that it may not capture the process of media effects as well as initially thought (see Nabi & Clark, 2008, for more detailed argument on this point.) Also, though it arguably touches on each of the pathways noted above, social cognitive theory seems to suggest that all four components are necessary for modeling to occur, whereas it might be that, depending on the context, only one or two elements might be sufficient to explain certain media effect processes. In essence, it would be fruitful for media scholars to think beyond the confines of one particular model, clarify conceptual terms, and develop clear methodologies to make progress in understanding the process through which media effects occur. This framework is offered simply as a tool to facilitate this endeavor.

In conclusion, this research marks a preliminary effort to consider the role of a new, and seemingly persisting, media fare on body satisfaction and related cosmetic enhancement behaviors. Of course, the studies’ results must be tempered by the limits of the method and samples. For example, the use of survey methodology precludes insight into causal direction of effects. Also, only a small range of makeover programs were considered. Moreover, the college-based samples with average BMIs below the national average suggests that the effects documented may not fully generalize to a more diverse population. In light of such limitations, future research might consider experimental work to test causal direction of some of the relationships identified here; longitudinal research to determine whether intentions to have cosmetic enhancement translate into action; consideration of a broader range of programming to determine its effects on desire for invasive cosmetic procedures; and the effects of such programming on a more diverse population, especially older people who arguably might see themselves as more “in need.”

This research also marks an effort to compare predictions of three major media effects theories. Although such tests require replication in many different contexts to arrive at reliable conclusions, the evidence presented here suggests that each theory is
reasonably well supported, but it is their integration that will ultimately lead to
greater illumination of the processes through which the media influence our emo-
tional, psychological, and perhaps even physical well-being.

Notes

1 Of note, Mazzeo, Trace, Mitchell, and Gow (2007) examined the effects of a single
exposure to an episode of The Swan on a range of psychological assessments and found
no effects on the general sample, though White women evidenced a small rise in body
control beliefs. The lack of any general media exposure measures, however, limits the
relevance of this study to the current research.

2 A second composite index reflecting whether respondents had seen none, one, two, or all
three of these programs was also created, but as the two viewing measures correlated
strongly, $r = .92, p < .001$, and analyses using this second measure mirror those of the
first, only the analyses based on the average viewing measure are reported.

3 Analyses based on individual cosmetic procedures generally mirrored the associations
noted in the aggregate analyses with a few exceptions. For invasive procedures, cheek
implants and tummy tucks were not associated with cosmetic surgery makeover pro-
gram viewing. For minimally invasive procedures, the strongest effects were found for
teeth bleaching and laser hair removal. Finally, effects related to exercise appeared
stronger than those related to diet.

4 Analyses based on individual cosmetic procedures revealed comparable associations to
those noted in the aggregate analyses. The sole exception was the lack of a relationship
between skin-improving lotion use and cosmetic surgery makeover program viewing.

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Les émissions de métamorphose par la chirurgie esthétique et les intentions de se soumettre à des améliorations esthétiques : Une considération de trois modèles des effets médiatiques

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Résumé
La récente prolifération d'émissions de télé-réalité parlant de chirurgie esthétique a soulevé des inquiétudes quant à la possibilité qu'une telle programmation fasse la promotion d'attentes irréalistes face à la chirurgie esthétique et augmente le désir des téléspectateurs de subir de telles procédures. Dans la première étude, une enquête auprès de 170 jeunes adultes a indiqué peu de lien entre le visionnement d'émissions de métamorphose par chirurgie esthétique et la satisfaction corporelle ou la perception du risque, mais elle a affiché une légère association positive entre ce visionnement et le désir de subir une chirurgie esthétique. Dans la deuxième étude, une enquête auprès de 271 jeunes femmes a permis de tester trois explications théoriques de cette association. Des éléments au soutien de la théorie de la cultivation, de la théorie sociale cognitive et de la théorie de la comparaison sociale ont émergé, soulignant ainsi le besoin d'un modèle théorique des effets médiatiques plus intégré.
Schönheits-OP-Shows und die Intentionen, sich einer kosmetischen Verschönerung zu unterziehen. Eine Betrachtung von drei Medienwirkungsmodellen

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Los Programas de Transformación mediante la Cirugía y las Intenciones de Experimentar los Mejoramientos Cosméticos: Una Consideración de Tres Modelos de los Efectos de los Medios

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Resumen

La proliferación reciente de los programas de televisión, basados en la realidad, que resaltan la cirugía cosmética ha producido la preocupación que dicha programación promueve expectativas poco realistas sobre la cirugía plástica e incrementa el deseo de los teledentes de experimentar esos procedimientos. En el Estudio 1, una encuesta de 170 jóvenes adultos indicó poca relación entre la recepción de programas de transformación a través de la cirugía cosmética y la satisfacción de los teledentes con sus propios cuerpos ó la percepción del riesgo, pero hubo una asociación positiva pequeña con el deseo de experimentar con los procedimientos quirúrgicos cosméticos. En el Estudio 2, una encuesta de 271 mujeres jóvenes nos permitió poner a prueba 3 explicaciones teóricas de esta asociación. La evidencia apoya la emergencia de la teoría de la cultivación, la teoría del conocimiento social, y la teoría de la comparación social, y subraya así la necesidad de un modelo más integrado de los efectos de los medios.
手术美容节目和进行美容手术之意图：有关媒介效果三种模式的考量

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美容手术的真人秀电视节目最近的蔓延引使人们担心即此类节目可能会提升对美容手术的不现实期望，并加深了观众进行此类手术的渴
望。研究 1 调查了 170 名年轻成人，结果显示收看手术美容节目和身
体满意度或对风险的感知之间没有什么关联，但和进行美容手术的渴
望存在小幅、正向关联。研究 2 调查了 271 名年轻妇女，使我们可以
检测三种用来解释上述关联的理论模式。支持涵化理论、社会认知理
论和社会比较理论的证据得以显现，这表明我们非常有必要整合有关
媒介效果的理论模式。
미용적 향상을 경험하기 위한 미용성형프로그램과 정도: 미디어 효과에서의
세가지 모델의 고려

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요약

미용성형을 강조하는 사실에 근거한 텔레비전 프로그램의 최신 급증현상은
이들 프로그램들이 미용성형에 있어 사실적이지 않은 기대감을 높이는지,
그리고 시청자들이 이러한 수술을 경험하고자 하는 욕구를
증가시키는지에 대한 관심을 불러 일으키고 있다. 첫번째 연구에서는,
170명의 젊은 어른들이 미용성형프로그램시청과 몸매만족 또는
위기인식사이에는 별다른 관계가 없다는 것을 보여주고 있다. 그러나
미용성형을 경험하려는 욕구와는 적은 정도의 실제적인 관계가 있음을
보여주었다. 두번째 연구에서는 271명의 젊은 여성들이 이러한 관계를
알아보기 위해 3가지 이론적 설명들을 위한 시험을 하도록 하였다. 증거들은
배양이론, 사회인지이론, 그리고 사회적 비교이론을 지지하고 있으며,
따라서 미디어 효과의 더욱 통합적인 이론적 모델이 필요하다는 것을
강조하고 있다.