

Perception of Physical Attractiveness: Mechanisms Involved in the Maintenance of Romantic Relationships

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In 2 studies, factors involved in the perception of attractiveness of opposite-sex persons were examined. Investigation 1 revealed that individuals involved in dating relationships, relative to those not involved in them, tend to perceive opposite-sex persons as less physically and sexually attractive. Investigation 2 revealed that this dating status effect was not attributable to differences in physical attractiveness, self-esteem, empathy, self-monitoring, or altruism between individuals who were and those who were not involved in exclusive dating relationships. Moreover, both groups perceived young/same-sex and older/opposite-sex persons as equally attractive, suggesting that the effect is specific to young/opposite-sex persons. Results are discussed in terms of possible proximate and ultimate explanations underlying relationship maintenance processes.

Research on romantic relationships traditionally has focused on processes underlying either relationship initiation (e.g., Berscheid, 1985; Byrne, 1971; Duck & Gilmour, 1981; Newcomb, 1961) or, more recently, relationship dissolution (e.g., Baxter, 1984; Berg & McQuinn, 1986; Duck, 1982; Simpson, 1987). Somewhat less attention has been devoted to examining processes that may serve relationship-maintenance functions (Byrne & Murnen, 1988; for exceptions, see Dindia & Baxter, 1987; Johnson & Rusbult, 1989; Rusbult, 1983).

Despite this state of affairs, a variety of cognitive and perceptual phenomena have been presumed to promote the maintenance of romantic relationships. Selective memory for relationship-relevant events (Beach & Tesser, 1988), biased attributional accounts of relationship-relevant outcomes (Harvey, Wells, & Alvarez, 1978; Fincham, Beach, & Nelson, 1987), and biased perceptions of partner attributes and abilities (Graziano & Musser, 1982) all have been conjectured to directly or indirectly promote relationship maintenance. Some of the most in-depth theoretical speculation, however, has centered on the perception of attractive, opposite-sex persons, particularly those external to the current relationship. Indeed, researchers adopting several different theoretical perspectives, including

interdependence theories (e.g., Berscheid, 1986; Thibaut & Kelley, 1959), attachment theories (e.g., Bowlby, 1979), and evolutionary biological theories (e.g., Mellen, 1981; Symons, 1979), all have suggested that the stability of a relationship may be enhanced by the subtle perceptual derogation of attractive, opposite-sex persons.¹

Relatively little empirical research, however, has directly addressed this topic. Johnson and Rusbult (1989) recently have demonstrated that individuals who are highly committed to their relationships actively and perhaps consciously derogate attractive, ostensibly available alternative partners on several interpersonal dimensions (e.g., intelligence, sense of humor, similarity of attitudes, dependability, and faithfulness). Derogation appears to be particularly pronounced when available alternatives are attractive and pose a clear threat to ongoing relationships. Aside from these findings, however, little is known about whether, how, and under what conditions perceptual derogation processes might promote relationship maintenance.

Needless to say, attractive alternatives can be evaluated and derogated within many different interpersonal domains (see Johnson & Rusbult, 1989). One of the most important dimensions ought to involve perceptions of physical and sexual attractiveness. Relative to other interpersonal attributes, an alternative's physical and sexual attractiveness is unique in that it often acts as the first and sometimes *only* dimension on which interpersonal evaluations are based (Berscheid & Walster, 1974). As such, derogation of it may serve as the first and perhaps primary line of defense in relationship-maintenance processes. Moreover, initial evaluations of attractiveness can strongly affect judgments concerning a host of other interpersonal characteristics (Dion, Berscheid, & Walster, 1972), most of which require considerably more time to evaluate. Despite these consid-

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¹ Throughout this article, the term *derogation* is used to connote relative derogation.

erations, derogation processes involving the perception of attractiveness *per se* have not been examined.

Dating Status

Highly attractive opposite-sex persons can constitute one of the greatest potential threats to the stability of an existing relationship (Levinger, 1979; Rusbult, 1980, 1983; Thibaut & Kelley, 1959). If alternative partners are perceived to be extremely attractive, they frequently may draw individuals away from established relationships, particularly if such alternatives are readily available. Past theory (e.g., Thibaut & Kelley, 1959) and research (e.g., Berg & McQuinn, 1986; Rusbult, 1983) on alternatives typically have focused on whether and how attractive, available opposite-sex persons influence the stability or internal functioning of established relationships. Attractive opposite-sex persons, however, need not necessarily be realistic or accessible to have negative, deleterious effects on existing relationships. Brief exposure to highly attractive opposite-sex individuals (e.g., media figures), for example, is known to attenuate evaluations of opposite-sex acquaintances (Kenrick & Gutierrez, 1980) and, in some situations, current romantic partners (Kenrick, Gutierrez, & Goldberg, 1989). To the extent that current partners routinely pale in comparison to highly attractive others, such persons—even if they are neither realistic nor accessible alternatives—may subtly undermine the satisfaction and perhaps stability of established relationships (cf. Weiss, 1975).

Given the considerable impact that close, ongoing relationships can have on promoting an individual's physical health (Bloom, Asher, & White, 1978) and psychological well-being (Campbell, Converse, & Rodgers, 1976), and in light of the myriad of factors that can precipitate the demise of an existing relationship (Levinger, 1979), it seems reasonable to conjecture that psychological processes designed to buffer established relationships from the lure of highly attractive persons might exist. When individuals enter a romantic relationship, psychological processes geared toward maintaining and perhaps promoting relationship stability should begin to operate. These processes, whether motivational or purely perceptual in origin, are likely to operate covertly, possibly outside of conscious awareness. Highly attractive individuals, who are most likely to indirectly undermine or threaten the permanence of established relationships, ought to be subtly derogated and seen as less desirable. Accordingly, we hypothesize that individuals involved in ongoing dating relationships (daters), relative to those not involved in relationships (nondaters), should perceive highly desirable opposite-sex persons as less physically and sexually attractive.

Conditions Within the Dating Relationship

Subjective and objective conditions that exist within dating relationships might moderate these effects (see Johnson & Rusbult, 1989). Individuals involved in highly interdependent and committed relationships should have developed strong affectional bonds with their partners. It seems reasonable to surmise that relationship-maintenance processes might operate more strongly in relationships reported to possess these attributes. As

a result, individuals involved in relationships subjectively characterized as being more interdependent and committed might perceive opposite-sex persons as less attractive.

Certain objective/behavioral measures also might serve as veridical indices of the amount of bonding present in a relationship. Two such measures are the duration (Kelley et al., 1983) and the sexual nature (Peplau, Rubin, & Hill, 1977) of the relationship. Affectional bonds require time to develop, and they often might be strengthened by the occurrence of sexual intercourse, particularly for females (Symons, 1979). Relationship-maintenance mechanisms, therefore, may operate more strongly in long-term, sexual relationships. If this is so, individuals involved in long-term, sexually active relationships might perceive opposite-sex persons as less attractive.

To test these hypotheses, we conducted the first investigation.

Investigation 1

Method

Participants

A total of 204 Texas A&M University undergraduates (101 men and 103 women) participated in a study on "psychology and advertising" for introductory psychology course credit. Their median age was 19.3 years.

Procedure

Participants reported to the study in same-sex groups of 10 to 20. Upon arrival, they were informed that a large advertising company, in cooperation with local psychologists, was interested in college students' reactions to several current magazine advertisements. Participants were told they would view and rate a series of magazine ads and then provide some background information about themselves. This cover story was used to deflect participants' attention away from the central hypotheses of the investigation in order to negate potential subject awareness biases (Aronson, Brewer, & Carlsmith, 1985).

Participants then viewed and rated 16 slides. Each slide depicted an advertisement taken from one of several popular magazines (e.g., *Cosmopolitan*, *Gentlemen's Quarterly*, and *Time*). The ads promoted a wide variety of products, including clothes, shoes, life insurance, food products, jewelry, liquor, cologne, soft drinks, and cigarettes.

By design, only 6 of the 16 ads featured opposite-sex persons. Male participants saw 6 ads featuring women and female participants saw 6 featuring men. These 6 opposite-sex ads served as the primary stimulus materials for male and female participants, respectively. The remaining 10 filler ads, which were viewed by both men and women, contained either no persons or mixed-sex groups of individuals. These filler ads were included to camouflage the true purpose of the study. To further minimize possible awareness biases, relationship measures were collected after the attractiveness measures. This ensured that participants' current dating status was not overtly salient when the attractiveness ratings were made.

As they viewed each ad, participants first responded to four Likert-type filler items that inquired about their liking for, and the persuasiveness of, each ad. For ads featuring opposite-sex persons, they also responded to two additional questions that served as measures of physical and sexual attractiveness.

Once participants had evaluated all 16 ads, they completed measures that assessed their attractiveness, the frequency of their sexual activity in the preceding month, and their current dating status. If they were

dating someone, they also indicated how long they had dated their current partner. Following this, participants were thanked and debriefed.

Measures

Physical and sexual attractiveness index. For each of the six ads containing an opposite-sex person, participants responded to two items: "How attractive do you find the person in the ad?" (rated on a 7-point scale, where 1 = *not at all* and 7 = *extremely*) and "From your perspective, how much sex appeal does the person in this ad possess?" (rated on a 7-point scale, where 1 = *none at all* and 7 = *a great deal*). These two items were highly correlated across the six opposite-sex stimulus persons viewed by men and the six viewed by women (r s ranged from .58 to .90 and from .81 to .89 for men and women, respectively). To construct a more reliable index of physical and sexual attractiveness, we aggregated participants' responses to these two items across all six opposite-sex stimulus persons separately for men and women. Participants' scores on this global index could range from 12 (indicating opposite-sex persons were seen as minimally attractive) to 84 (indicating such persons were seen as maximally attractive). This index was internally consistent (Cronbach's $\alpha = .87$).

Physical attractiveness. Participants' self-reported physical attractiveness was assessed by the question "How attractive do you consider yourself to be, relative to other people your age?" (answered on a 7-point scale, where 1 = *very unattractive* and 7 = *very attractive*).

Frequency of sex in the previous month. The frequency with which participants recently had engaged in sex was assessed by the item "How many times have you had sex (intercourse) in the past month?"

Current dating status. Participants' current dating status was assessed by the item "Are you currently dating someone?" (answered "yes" or "no"). Among daters ($n = 106$), men and women reported having dated their current partner for a median of 17 and 15 months, respectively.

Conditions within the dating relationship. Participants who were dating someone then responded to a series of questions designed to assess subjective impressions of their current relationship.

The first set of questions assessed their interdependence with the current partner: (a) closeness: "How close are you to your current dating partner?" (b) dependency: "How psychologically and emotionally dependent are you on your current dating partner?" (c) seriousness: "How serious are you with your current dating partner?" and (d) investments: "How many personal sacrifices have you made for your current dating partner?" (all responded to on 7-point scales, where 1 = *not at all* and 7 = *extremely*). Given that these four items were highly correlated, they were aggregated to form a more reliable index of interdependence (Cronbach's $\alpha = .89$).

The second set assessed participants' commitment to the relationship: (a) "What is the likelihood that you will be dating your current dating partner 1 month from now?" (b) "What is the likelihood that you will be dating your current dating partner 1 year from now?" and (c) "What is the likelihood that you will marry your current dating partner?" (all responded to on 7-point scales, where 1 = *very low* [we'll definitely break up before then] and 7 = *very high* [we'll definitely still be dating/married]). Because these three items were highly correlated, they were aggregated to construct a more reliable index of commitment (Cronbach's $\alpha = .93$).

The final set assessed the relative interdependence that existed between participants and their current partners: (a) closeness: "Between you and your dating partner, who is closer in the relationship?" (b) dependency: "Who is more dependent on the relationship?" (c) seriousness: "Who is more serious about the relationship?" and (d) investments: "Who has made more personal sacrifices for the relationship?" (all answered on 7-point scales, where 1 = *I am/have* and 7 = *my partner*

Table 1
Investigation 1: Means and Standard Deviations for the Physical and Sexual Attractiveness Index

| Status | Men | | | Women | | |
|------------|----------|----------|-----------|----------|----------|-----------|
| | <i>n</i> | <i>M</i> | <i>SD</i> | <i>n</i> | <i>M</i> | <i>SD</i> |
| Dating | 46 | 55.37 | 13.51 | 66 | 61.34 | 11.81 |
| Not dating | 55 | 61.40 | 10.18 | 37 | 67.49 | 11.97 |

Note. The possible range on the physical and sexual attractiveness index was from 12 (*minimal attractiveness*) to 84 (*maximal attractiveness*).

is/has). Because these four items were highly correlated, they were aggregated to form a more reliable index of relative interdependence (Cronbach's $\alpha = .69$).

Participants finally provided objective information about their dating relationship, including (a) the number of months they had dated their partner and (b) whether or not they had engaged in sex with him or her.

Results and Discussion

Dating Status

To determine whether involvement in a dating relationship has effects on the perceived attractiveness of opposite-sex persons, we conducted a 2 (dating status: dating vs. not dating) \times 2 (sex: male vs. female) between-subjects analysis of variance (ANOVA), treating the physical and sexual attractiveness index as the dependent measure. As is evident in Table 1, individuals involved in ongoing dating relationships found the opposite-sex persons to be significantly less physically and sexually attractive than did individuals not involved in dating relationships, $F(1, 197) = 11.28, p < .001$. Simple effects analyses revealed that this result was reliable for both men, $F(1, 197) = 6.34, p < .02$, and women, $F(1, 197) = 6.59, p < .02$. A reliable Dating Status \times Sex interaction failed to emerge, $F(1, 197) = .03, ns$.²

Participants' ratings of the persons depicted in the ads could have been influenced by their own level of physical attractiveness. Individuals who perceive themselves to be highly attractive relative to their peers may possess higher standards for attractiveness when evaluating the appearance of other people. Because attractive individuals are more likely to be involved in dating relationships (Berscheid, Dion, Walster, & Walster, 1971), the dating status effect might be attributable to this potentially confounding variable.

To determine whether participants' self-reported physical attractiveness did account for this effect, we conducted a 2 (dating status: dating vs. not dating) \times 2 (sex: male vs. female) between-subjects analysis of covariance (ANCOVA), treating the physical and sexual attractiveness index as the dependent measure and participants' perceived attractiveness as a covariate. When the effects of self-rated attractiveness were statistically removed,

² In this analysis and subsequent analyses involving the perception of opposite-sex persons, main effects for sex are not reported. Given that men and women viewed different stimulus persons, the results of such analyses are not informative.

the dating status effect still emerged. Specifically, individuals involved in dating relationships found the opposite-sex persons to be less attractive than did those not involved in them, $F(1, 196) = 11.25, p < .001$. In fact, self-rated attractiveness did not covary with scores on the physical and sexual attractiveness index for either men ($r = .04, ns$) or women ($r = .12, ns$).

It also might be argued that the dating status effect could be mediated by "new look" perceptual processes in individuals who are not dating someone (cf. Bruner & Goodman, 1947). Many individuals who are *not* involved in dating relationships may be deprived of certain important, rewarding activities and outcomes that typically can be secured within ongoing relationships. If individuals who are not dating anyone experience greater deprivation on these important relationship-contingent dimensions, they may be motivated to perceive opposite-sex persons who theoretically could redress their deprivation as more attractive.

One of the most important relationship-contingent dimensions that might influence the perception of attractiveness in others is the sexual one (cf. Stephan, Berscheid, & Walster, 1971). Because recurrent sexual activity requires the presence and cooperation of a consenting partner, individuals who are not involved in a relationship, relative to those who are, theoretically should engage in sex less frequently. As a result, they may experience higher levels of sexual deprivation. Individuals not involved in a relationship did report having had sex significantly less often during the preceding month compared with those involved in one ($M_s = .56$ and 5.29 for nondaters and daters, respectively), $t(202) = 3.64, p < .001$. To control for this potentially confounding variable, we covaried the effects of participants' frequency of sex out of their scores on the physical and sexual attractiveness index. When these effects were statistically removed, a significant main effect for dating status still emerged, $F(1, 196) = 10.45, p < .001$. In sum, sexual deprivation per se does not appear to account for the dating status effect.³

Subjective and Objective Conditions Within Relationships

To determine whether subjective and objective conditions that exist within dating relationships might moderate the dating status effect, we conducted two separate multiple regression analyses on the subsamples of men and women who currently were dating someone. For each analysis, we treated participants' scores on the physical and sexual attractiveness index as the criterion variable and their standing on the interdependence index, the commitment index, the relative interdependence index, the length of their dating relationship, and whether or not they had engaged in sex with their dating partner as predictors. As revealed in Table 2, these analyses yielded somewhat different results for men and women.

When all five predictors were entered into a regression equation for the subsample of men, a significant overall effect for regression emerged, $F(5, 39) = 3.73, p < .008$. Some of the predictors were moderately correlated. To control for this covariation, we examined the effect that each predictor had on predicting men's scores on the physical and sexual attractiveness index once the effects of the other four predictors were partialled out. These analyses revealed that men who perceived opposite-sex persons as being more attractive were more likely

to have engaged in sex with their dating partner, $F(1, 39) = 4.52, p < .04$, and to perceive their partner as the relatively more interdependent member of the dyad, $F(1, 39) = 4.24, p < .05$.

When all five predictors were entered into a regression equation for the subsample of women, no overall effect for regression emerged, $F(5, 62) = .51, ns$. None of the predictors were reliably associated with women's scores on the physical and sexual attractiveness index.

Investigation 2

Although Investigation 1 provides preliminary support for our initial hypothesis, it does not address several alternate explanations for the dating status effect. First, Investigation 1 does not reveal whether the effect is confined to persons who theoretically could undermine the stability of an ongoing relationship (e.g., young, opposite-sex persons) or whether it extends to persons not likely to do so (e.g., young, same-sex persons and older, opposite-sex persons). If psychological processes designed to maintain established relationships do in fact exist, their effects should be specific to the perception of young, opposite-sex persons rather than persons in general.

Second, the first investigation did not control for variables that past research suggests may distinguish daters from nondaters. If the dating status effect predominately serves relationship-maintenance functions, involvement in an exclusive relationship per se, and not individual differences that differentiate daters from nondaters, should principally account for it. Previous research suggests that individuals who are more physically attractive (Berscheid et al., 1971) and who exhibit higher self-esteem (Morse, Reis, Gruzen, & Wolff, 1974) are more likely to be dating someone at any given point in time. Moreover, individuals who possess interpersonal skills or dispositions that may facilitate the development of relationships (e.g., empathy: Mehrabian & Epstein, 1972; altruism: Rushton, Chrisjohn, & Fekken, 1981; and self-monitoring: Ickes & Barnes, 1977) also might be more inclined to be involved in relationships. If any of these potentially confounding variables systematically predispose individuals to evaluate the appearance of opposite-sex persons either more or less favorably, a relationship-maintenance interpretation for the dating status effect would be rendered less plausible.

Third, in controlling for the effects of participants' physical attractiveness, Investigation 1 relied on self-reported attractiveness rather than more objective ratings provided by independent observers. Because self-reports of physical attractiveness do not always correlate highly with observer ratings (Berscheid & Walster, 1974), the physical attractiveness analyses reported in Investigation 1 may underestimate the extent to which participants' physical attractiveness systematically influenced their evaluations of opposite-sex persons.

Given our initial predictions, Investigation 1 also used a rather imprecise measure of current dating status. If psychological processes that serve to buffer established relationships from

³ Although these results rule out sexual deprivation as a viable explanation for the dating status effect, they do not discount the possibility that the absence of a close relationship in general may produce perceptual enhancement as opposed to derogation effects.

Table 2
Investigation 1: Regression Analyses

| Predictor variable | Men (<i>n</i> = 45) | | Women (<i>n</i> = 68) | |
|--------------------------------|----------------------|---------|------------------------|---------|
| | Zero-order <i>r</i> | β | Zero-order <i>r</i> | β |
| Sex with current partner | .34** | .32* | .08 | .15 |
| Commitment index | -.21 | -.40 | .00 | .13 |
| Relative interdependence index | .34** | .30* | .08 | .09 |
| Length of relationship | -.02 | .08 | -.10 | -.16 |
| Interdependence index | -.11 | .09 | -.04 | -.09 |

Note. Tolerance levels were set so that all five predictors entered each regression equation.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

dissolution do exist, such processes should operate most strongly for individuals involved in *exclusive* dating relationships (i.e., those in which only one partner is being dated). They should operate less strongly, if at all, for individuals involved in nonexclusive relationships (i.e., those in which more than one partner is being dated simultaneously). In fact, nonexclusive daters ought to be more similar to nondaters in that neither group has a single, established relationship to maintain. Perceptual derogation processes, therefore, should not be evident within either of these groups. In view of these considerations, the dating status measure used in Investigation 2 distinguished between individuals involved in exclusive dating relationships (exclusive daters) and those not involved in exclusive relationships (nonexclusive daters and nondaters).

Finally, although the subjective measures of emotional bonding used in Investigation 1 were face valid, they were fairly short and of unknown validity. Because emotional bonding traditionally has been presumed to be reflected in established measures assessing amount of love for the partner, level of commitment to the relationship, amount of satisfaction with the relationship, and the degree to which best alternative partners are perceived to be better than current ones (see Berscheid, 1985), we sought to replicate the findings reported in Investigation 1 using more reliable and more carefully developed measures.

To address these issues, we conducted a second investigation.

Method

Participants

A total of 197 Texas A&M University undergraduates (96 men and 101 women) participated in a study on "psychology and advertising" for introductory psychology course credit. Their median age was 19.4 years.

Procedure

The procedures and cover story were the same as those reported in Investigation 1. Participants viewed and rated a series of 15 *new* slides. Each slide depicted an advertisement taken from one of several popular magazines. Five of the slides depicted young/opposite-sex persons, five depicted older/opposite-sex persons, and five depicted young/same-sex persons.

As they viewed each ad, participants first answered four Likert-type filler items that inquired about their liking for, and the persuasiveness of, each ad. They then responded to two additional questions that served as measures of physical and sexual attractiveness. Once participants had rated the ads, they reported on the nature of their current dating status and responded to several individual difference measures. Those who were dating someone exclusively then completed measures assessing various aspects of their current relationship. As participants returned their questionnaire packets, they were unobtrusively rated on their physical and sexual attractiveness by two independent raters. Following this, participants were thanked and debriefed.

Measures

Physical and sexual attractiveness index. For each ad, participants responded to two items: "How attractive do you find the person in this ad?" (rated on a 7-point scale, where 1 = *not at all* and 7 = *extremely*) and "From your perspective, how much sex appeal does the person in this ad possess?" (rated on a 7-point scale, where 1 = *none at all* and 7 = *a great deal*). These two items were highly correlated within the five slides depicting young/opposite-sex persons, the five depicting older/opposite-sex persons, and the five depicting young/same-sex ones (r s ranged from .60 to .93 for both men and women). To construct reliable indices of physical and sexual attractiveness, we aggregated participants' responses to these two items across the subsets of five slides depicting young/opposite-sex persons, older/opposite-sex persons, and young/same-sex persons separately for men and women. Participants' scores on these three global indices could range from 10 (indicating minimal attractiveness) to 70 (indicating maximal attractiveness). These indices were internally consistent (Cronbach's alphas = .69, .81, and .93 for men, respectively, and .77, .85, and .81 for women, respectively).

For each ad depicting a young/opposite-sex person, participants also responded to the question "To what extent do you think you could find and actually date someone who is as attractive as the person in this ad?" (anchored 1 = *I definitely could not* and 7 = *I definitely could*). When their responses were averaged across all five stimulus persons, most individuals thought they could date someone of similar attractiveness (M s = 4.99 for men and 4.41 for women).

Exclusivity of dating status. The exclusivity of participants' dating status was assessed by two items: "Are you currently dating someone?" (answered "yes" or "no") and "If yes, what is your current dating status: dating my current partner and others/engaged or dating my current partner and no one else." Individuals who indicated they were dating someone exclusively ($n = 88$) were designated as belonging to the "exclusive" category. Those who indicated they either were not dating anyone or were dating more than one person ($n = 109$) were classified as belonging to the "nonexclusive" category. Among exclusive daters, men and women reported having dated their current partner for a median of 15 and 13 months, respectively.

Individual difference measures. Participants then responded to several individual difference measures designed to assess self-esteem (the Texas Social Behavior Inventory; Helmreich, Stapp, & Ervin, 1972) as well as various interpersonal skills and dispositions (altruism: Rushton et al., 1981; empathy: Mehrabian & Epstein, 1972; and self-monitoring: Gangestad & Snyder, 1985).

Physical and sexual attractiveness ratings. As they returned their materials, participants were unobtrusively rated according to their physical and sexual attractiveness by two independent observers (one male and one female) who posed as experimental assistants. Observers rated each participant (relative to his or her peers) on two 7-point Likert-type scales, each anchored 1 = *very unattractive* and 7 = *very attractive*. Raters' physical and sexual attractiveness ratings were added together and their composite ratings were then aggregated to form a

more reliable index of observer-rated attractiveness. Given that this index was composed of only two composite ratings, it possessed reasonably good internal consistency (Cronbach's $\alpha = .56$).

Indices reflecting emotional bonding. Participants who were exclusively dating someone then responded to the following measures designed to assess the extent of emotional bonding that existed in their relationships: Rubin's Love Scale (Rubin, 1970), Lund's Commitment Scale (Lund, 1985), an 11-item measure of satisfaction with the relationship (Simpson, 1987), an 11-item measure of the extent to which the best available alternative partner could provide better outcomes than the current one (Simpson, 1987), the number of months they had dated their partner, and whether or not they had engaged in sex with him or her.

Results and Discussion

Dating Status

Data were analyzed within a 3 (person type: young/same-sex, young/opposite-sex, or older/opposite-sex) \times 2 (dating status: exclusive vs. not exclusive) \times 2 (sex: female vs. male) ANOVA framework in which person type was treated as a within-subjects variable and dating status and sex were treated as between-subjects variables. To discern whether the dating status effect was limited to young/opposite-sex persons, we performed two orthogonal, planned contrasts with respect to the person type variable. The first contrast tested whether the predicted Dating Status (exclusive vs. not exclusive) \times Person Type (young/opposite-sex vs. young/same-sex and older/opposite-sex) interaction emerged (see Cohen & Cohen, 1983). As expected, this contrast produced a marginally reliable effect, $F(1, 190) = 3.03, p < .09$. Specifically, exclusive daters perceived young/opposite-sex persons as being less attractive than did nonexclusive daters, whereas the two groups did not differ in their evaluations of either young/same-sex or older/opposite-sex persons. No residual variance was accounted for by person type. The second contrast tested whether a second Dating Status (exclusive vs. not exclusive) \times Person Type (young/same-sex vs. older/opposite-sex) interaction emerged. As anticipated, this contrast was not reliable, $F(1, 190) < 1, ns$.

Following this, we performed a 2 (dating status: exclusive vs. not exclusive) \times 2 (sex: female vs. male) simple effects ANOVA, treating participants' scores on the physical and sexual attractiveness index for young/opposite-sex persons as the dependent variable. As revealed in Table 3, individuals involved in exclusive dating relationships perceived the young/opposite-sex persons to be reliably less attractive than did those who were not, $F(1, 193) = 8.16, p < .005$. Additional simple effects analyses indicated that this finding was reliable for women, $F(1, 193) = 10.82, p < .001$. Although the effect was in the predicted direction, it was not reliable for men, $F(1, 193) < 1, ns$. A marginally reliable Dating Status \times Sex interaction emerged, $F(1, 193) = 3.24, p < .08$.⁴

We then conducted two additional 2 (Dating Status) \times 2 (Sex) simple effects analyses, one treating participants' scores on the physical and sexual attractiveness index for young/same-sex persons as the dependent measure and the other treating scores on the attractiveness index for older/opposite-sex persons as the dependent measure. Table 3 reveals that both individuals who were and those who were not involved in exclusive relationships

perceived young/same-sex persons and older/opposite-sex persons to be equally attractive: for young/same-sex persons, $F(1, 192) = 1.56, ns$; for older/opposite-sex persons, $F(1, 190) = .33, ns$. No Dating Status \times Sex interaction emerged for either analysis: for young/same-sex persons, $F(1, 192) = 2.20, ns$; for older/opposite-sex persons, $F(1, 190) = .09, ns$.

If the dating status effect truly is specific to the evaluation of young/opposite-sex persons, it should remain reliable even when the effects of participants' ratings of both young/same-sex and older/opposite-sex persons are statistically removed from their ratings of young/opposite-sex persons. Accordingly, we next conducted two 2 (dating status: exclusive vs. not exclusive) \times 2 (sex: male vs. female) ANCOVAs. The first analysis covaried participants' scores on the attractiveness index for young/same-sex persons out of their scores on the attractiveness index for young/opposite-sex persons. The second one covaried their scores on the attractiveness index for older/opposite-sex persons out of their scores on the index for young/opposite-sex persons. Reliable effects for dating status still emerged once scores on these two covariates were controlled for, $F(1, 191) = 6.57, p < .02$, and $F(1, 189) = 7.22, p < .01$, respectively.

We next examined the extent to which various measures presumed to covary with dating status actually were associated with it. A series of point-biserial correlations (with exclusivity of dating status serving as the dichotomously coded variable) revealed that none of the five individual difference measures—altruism, empathy, self-esteem, self-monitoring, and observer-rated physical attractiveness—were reliably correlated with dating status (all r s $< .10, ns$). To ensure that none of these five variables accounted for the dating status effect, we conducted a series of five 2 (dating status: exclusive vs. not exclusive) \times 2 (sex: female vs. male) ANCOVAs, treating participants' scores on the attractiveness index for young/opposite-sex persons as the dependent measure and their scores on each of the five individual difference measures as covariates. When the effects of observer-rated attractiveness, altruism, empathy, self-esteem, and self-monitoring were individually controlled for, reliable effects for dating status still emerged (all five F s $> 5, p < .03$).⁵ Hence, individual differences on these dimensions do not appear to account for the dating status effect.

⁴ In addition to all analyses reported in Investigation 2, we also conducted a parallel set of analyses in which dating status was operationalized as it was in Investigation 1 (i.e., dating vs. not dating). Without exception, all of the significant effects reported in Investigation 2 continued to be reliable when daters were compared with nondaters, regardless of the exclusivity of their relationships. Nonetheless, effect sizes were somewhat larger when dating status was operationalized according to the criterion of relationship exclusivity, indicating that the nonexclusive daters indeed were more similar to nondaters than to exclusive daters in their perception of young, opposite-sex persons.

⁵ It might be argued that if a more reliable measure of observer-rated physical and sexual attractiveness had been used, the dating status effect might disappear. However, the relation between our moderately reliable measure of participants' attractiveness and the attractiveness index for young/opposite-sex persons was negligible ($r = -.02$). Hence, even if a more reliable measure had been used, the dating status effect would not have attenuated appreciably.

Table 3
Investigation 2: Means and Standard Deviations for the Physical and Sexual Attractiveness Indexes of Young/Opposite-Sex Persons, Young/Same-Sex Persons, and Older/Opposite-Sex Persons

| Sex/dating status | <i>n</i> | Physical and sexual attractiveness index | | | | | |
|----------------------|----------|--|-----------|----------------|-----------|--------------------|-----------|
| | | Young/opposite-sex | | Young/same-sex | | Older/opposite-sex | |
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Female/exclusive | 50 | 49.80 | 11.03 | 49.54 | 9.51 | 19.52 | 7.64 |
| Male/exclusive | 38 | 56.05 | 7.49 | 30.03 | 13.70 | 16.41 | 6.96 |
| Female/not exclusive | 51 | 55.35 | 8.01 | 49.12 | 9.10 | 20.50 | 8.42 |
| Male/not exclusive | 58 | 57.31 | 5.87 | 34.95 | 16.04 | 16.70 | 7.40 |

Note. The possible range on each index was from 10 (minimal attractiveness) to 70 (maximal attractiveness).

Subjective and Objective Conditions Within Relationships

To determine whether either the subjective or objective indicators of emotional bonding moderated the dating status effect, we conducted two multiple regression analyses on the subsamples of men and women who were dating someone exclusively. For each analysis, we treated participants' scores on the physical and sexual attractiveness index for young/opposite-sex persons as the criterion variable and their standing on Rubin's Love Scale, Lund's Commitment Scale, the satisfaction index, the best alternative partner index, the length of their dating relationship, and whether or not they had engaged in sex with their partner as predictors.

When all six predictors were entered into a regression equation for men, no overall effect for regression emerged, $F(6, 28) = .65$, *ns*. We then examined the effect that each predictor had on predicting men's scores on the physical and sexual attractiveness index once the effects of the other five predictors were partialled out. As revealed in Table 4, these analyses indicated that none of the predictors were reliably associated with scores on the physical and sexual attractiveness index for men.

Moreover, when all six predictors were entered into a regression equation for women, no overall effect for regression emerged, $F(6, 38) = .68$, *ns*. As evident in Table 4, none of the predictors were reliably associated with women's scores on the physical and sexual attractiveness index.

Combined Analyses

Although the dating status effect was reliable for both sexes in Investigation 1, it emerged only for women in Investigation 2. To arrive at a better and more reliable estimate of the overall magnitude of this effect, we combined the data from Investigations 1 and 2, classified individuals according to the one measure common to both studies (i.e., dating status: daters vs. nondaters), and conducted an omnibus analysis. Specifically, we performed a 2 (dating status: dating vs. not dating) \times 2 (sex: female vs. male) \times 2 (investigation: 1 vs. 2) ANOVA, treating scores on the indices of young/opposite-sex persons within

each study as the dependent variable. This combined analysis revealed a highly reliable main effect for dating status, $F(1, 393) = 20.95$, $p < .001$. All two- and three-way interactions were nonsignificant (all F s < 1.50), including the Sex \times Dating Status interaction, $F(1, 393) = 1.40$, *ns*. Moreover, simple effects analyses indicated that an overall reliable effect for dating status emerged for both women, $F(1, 393) = 16.94$, $p < .001$, and men, $F(1, 393) = 5.75$, $p < .02$. Thus, when data from both studies are pooled, the dating status effect is robust for both sexes, although it tends to be somewhat larger for women ($\eta^2 = .08$) than for men ($\eta^2 = .03$).

Two predictors—occurrence of sex with the current partner and length of relationship—were common to both studies. For men, the former predictor was reliably associated with attractiveness ratings of young/opposite-sex persons in the first investigation but not in the second one. To obtain a more reliable estimate of the magnitude of this isolated effect, we combined the data from both studies. Analyses revealed that the overall correlation for men between occurrence of sex with the current partner and global attractiveness ratings of young/opposite-sex persons was neither reliable (overall $r = .18$, *ns*) nor significantly different from the correlation between occurrence of sex and attractiveness ratings for women, $z = 1.55$, *ns*.

General Discussion

Viewed together, these investigations suggest that individuals involved in dating relationships, relative to those not involved in them, perceive young, opposite-sex persons as less physically and sexually attractive. Investigation 1 revealed that this dating status effect is not attributable to differences between daters and nondaters in frequency of recent sexual activity, suggesting that the effect may not be attributable to perceptual accentuation of opposite-sex attractiveness on the part of nondaters due to sexual deprivation. Investigation 2 documented that this effect is confined to the perception of young, opposite-sex persons and that several additional variables likely to differentiate exclusive daters from nonexclusive daters do not account for it. Although results vary somewhat across the two studies, combined analyses indicated that the effect is reliable

Table 4
Investigation 2: Regression Analyses

| Predictor variable | Men (<i>n</i> = 35) | | Women (<i>n</i> = 45) | |
|--------------------------------|----------------------|---------|------------------------|---------|
| | Zero-order <i>r</i> | β | Zero-order <i>r</i> | β |
| Sex with current partner | -.01 | .08 | -.22 | -.15 |
| Commitment scale | -.22 | -.05 | -.06 | .08 |
| Love scale | -.22 | -.01 | -.09 | -.03 |
| Length of relationship | -.27 | -.21 | -.07 | .03 |
| Satisfaction index | -.24 | -.18 | -.16 | -.09 |
| Best alternative partner index | .20 | .11 | .24 | .20 |

Note. All measures are keyed in the direction indicated by their labeling. Tolerance levels were set so that all five predictors entered the regression equations. Within each analysis, none of the effects were significant (two-tailed).

for both sexes. Moreover, neither objective nor subjective measures of emotional bonding strongly moderate the extent to which young, opposite-sex persons were viewed as being attractive, particularly in the case of women.

These findings extend our understanding of perceptual derogation processes in several different ways. First, by demonstrating that the dating status effect is specific to young/opposite-sex persons, these investigations provide compelling evidence that the effect may operate expressly to promote relationship maintenance. Second, contrary to past research (e.g., Johnson & Rusbult, 1989), the current findings provide evidence for perceptual derogation of attractive yet *unavailable* persons (i.e., models). These results are noteworthy because they indicate that attractive, opposite-sex individuals need not necessarily be accessible in order to be derogated. Perceptual derogation, therefore, may be a much more generalized and pervasive mechanism through which relationship stability might be enhanced than previously has been presumed. Third, past research (e.g., Johnson & Rusbult, 1989) has explored derogation as a function of subjective commitment to relationships. By using a more objective indicator of relationship involvement (i.e., current dating status) and by ruling out several different alternate explanations, the present research provides some of the strongest evidence to date that relationship involvement actually may cause perceptual derogation.

Dating Status

What psychological processes might underlie the dating status effect and, more generally, why does it exist? Although definitive answers to these questions cannot be provided, the effect can be understood at both proximate and ultimate levels of explanation.

At a proximate level, individuals involved in dating relationships may be motivated to derogate attractive, opposite-sex persons in order to justify their involvement in the current relationship (Festinger, 1957). Because of effort justification processes (Aronson & Mills, 1959), individuals involved in relationships may be motivated to perceive opposite-sex persons as less attractive. Although this account is a highly plausible and perhaps likely one (see Wicklund & Brehm, 1976), it may not be a complete one. If effort justification primarily serves as the proximate psychological process underlying this effect, one would expect indices of emotional bonding (e.g., commitment, love, and length of the relationship) to correlate substantially and negatively with ratings on the physical and sexual attractiveness index for young/opposite-sex persons. It seems reasonable to expect that effort justification should increase as individuals become more behaviorally and emotionally invested in their relationships. Even though effects for indices of emotional bonding tended to be in the expected direction, none of the six indicators reported in Investigation 2 reliably correlated with ratings of young/opposite-sex persons. These considerations notwithstanding, it is of course possible that mere involvement in an exclusive relationship *per se* might be sufficient to invoke effort justification processes. Future research must address this issue.

How might this effect be accounted for at an ultimate level of explanation? Involvement in an exclusive, stable relationship is

known to have strong, positive effects on individuals' physical health (Bloom et al., 1978). Moreover, the pair bonding that occurs between partners in a relationship is believed to have assumed a critical role in promoting individuals' reproductive success and in fostering adequate parental care at one time in evolutionary history (Mellen, 1981). In fact, some theorists have suggested that pair bonding might have evolved precisely because it fulfills these vital biological functions (Hinde, 1984; Symons, 1979). Given the diversity of factors that can precipitate the demise of enduring relationships, it seems reasonable to conjecture that psychological mechanisms designed to promote relationship stability might have emerged during evolutionary history (see Mellen, 1981). Because attractive, opposite-sex persons can present serious threats to the permanence of an established relationship, it is conceivable that relationship-maintenance mechanisms may have evolved—and may still operate—to reduce the appeal of attractive persons. One such mechanism might produce a perceptual effect whereby individuals who are involved in an exclusive relationship are inclined to perceive opposite-sex persons as less attractive than those who are not.

These conjectures, of course, are highly speculative. We cannot unequivocally demonstrate that this perceptual effect reflects psychological processes that have evolved and exist explicitly for purposes of promoting relationship maintenance. The dating status effect may exist because it serves entirely different functions. Moreover, it is possible that effort justification processes may serve as the proximate psychological process that mediates this ultimate, evolutionary-based account. Nevertheless, when one considers the importance that stable relationships assume in enhancing individuals' welfare and reproductive fitness, it seems reasonable to surmise that the psychological processes that produce the dating status effect might have evolved primarily to enhance relationship permanence. Future research must discern whether this effect stems from general dissonance reduction processes or whether it operates according to other, more idiosyncratic psychological processes (cf. Cosmides & Tooby, 1987).

Conditions Within Relationships

Within both studies, measures designed to assess emotional bonding did not strongly moderate the dating status effect. One explanation for these null results might be that the measures used were either invalid or very poor indicators of bonding. Yet given that reliable effects failed to emerge across two studies, each of which used several different types of measures, this explanation does not seem to be a compelling one.

These findings appear to be at odds with those of Johnson and Rusbult (1989). They have found that persons who display greater emotional bonding (i.e., satisfaction and commitment) to their romantic partners tend to evidence greater derogation of desirable alternative partners on several dimensions other than attractiveness. These seemingly disparate findings, however, may be the result of different procedural paradigms. In the paradigm used by Johnson and Rusbult, alternative partners not only were highly attractive, they also were readily available. Under these conditions, threat should have been strong and individuals should have been highly cognizant of it.

This state of affairs should have produced motivationally based perceptual derogation in which dissonant cognitions were rendered consonant. By contrast, highly attractive opposite-sex persons were neither available nor accessible in our paradigm. Given these circumstances, threat was likely to be low, perhaps to the point of being almost imperceptible. Indeed, our cover story and procedures were intentionally designed to deflect attention away from relationship-relevant issues that might have aroused strong and direct threat. To the extent that threat was minimal in our studies, motivationally based processes (e.g., dissonance) should not have been invoked. Indicators of emotional bonding, therefore, should not have mediated the dating status effect. Future research must specify the precise conditions under which the degree of emotional bonding does and does not moderate perceptual derogation processes.⁶

Conclusions

It is conceivable that two distinct yet related psychological mechanisms serving relationship-maintenance functions through perceptual derogation may exist. The more subtle, less conscious mechanism may involve perceptual derogation with respect to global attractiveness, one of the first, most salient, and most readily discernible dimensions on which initial impressions of others typically are based. Once involved in a relationship, individuals may possess perceptual "blindness" that effectively insulate them from the distracting and tempting lure of highly attractive persons whom they regularly may encounter. The less subtle, more conscious mechanism may entail overt and perhaps premeditated derogation of alternatives who pose a direct and real threat to established relationships. This second psychological mechanism, which might involve derogation on a variety of different interpersonal dimensions, may serve to further shield current relationships from challenges posed by accessible, real-life alternatives.

Perceptual derogation represents only one of several possible domains in which psychological mechanisms designed to promote relationship maintenance might be evident. Maintenance processes specific to other domains—including perceptions of and attributions about both one's current romantic partner and the relationship in general—also might exist. Fincham et al. (1987), for instance, have shown that nondistressed marital couples often exhibit a positive bias when generating attributions for both their partner's actions and events that commonly occur in the relationship. Although findings such as these typically have not been interpreted in the context of relationship-maintenance processes, they may reflect them. Future research should identify additional domains in which relationship-maintenance processes may operate and determine how these domains interact to facilitate relationship stability.

⁶ Given the present paradigm, it still is possible that differences in emotional bonding may have moderated perceptual derogation through involvement versus noninvolvement in a relationship. If emotional bonding operates according to a threshold principle, mere involvement in an exclusive relationship could produce a level of bonding that is sufficient to instigate derogation processes, independent of relationship quality.

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