What Is Beautiful Is Good Because What Is Beautiful Is Desired: Physical Attractiveness Stereotyping as Projection of Interpersonal Goals

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What Is Beautiful Is Good Because What Is Beautiful Is Desired: Physical Attractiveness Stereotyping as Projection of Interpersonal Goals

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Abstract

The authors posit that the attribution of desirable interpersonal qualities to physically attractive targets is a projection of interpersonal goals; people desire to form and maintain close social bonds with attractive targets and then project these motivations onto those targets. Three studies support this model. Tendencies to see attractive novel targets depicted in photographs (Study 1), attractive romantic partners (Study 2), and attractive friends (Study 3) as especially interpersonally receptive and responsive were explained by perceivers' heightened desires to bond with attractive individuals. Additional findings regarding response latencies (Study 1) also supported this model. Many instances of the "beautiful is good" effect may not reflect stereotyping as it is typically construed. Rather, they may reflect projection of heightened desires to bond with beautiful people.

Keywords

physical attractiveness stereotype, projection, interpersonal attraction, stereotyping, beautiful is good

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Beauty is the mark God sets upon virtue.

—Ralph Waldo Emerson (1898, p. 25)

In their seminal article, Dion, Berscheid, and Walster (1972) reported evidence suggesting that many people share Emerson's idealization of the beautiful. Relative to unattractive targets, attractive targets depicted in photographs were perceived as more sociable, interpersonally warm, trustworthy, and kind. Numerous replications suggest that these effects are robust (e.g., Snyder, Tanke, & Berscheid, 1977; for a review see Langlois et al., 2000). Hence, there seems to be a consistent tendency to see beautiful people as interpersonally good people (top model in Figure 1).

Although many scholars have claimed that this phenomenon is the result of attractiveness stereotypes, few studies have attempted to understand the underlying mechanisms. In this article, we propose and test a model explaining why beautiful people are seen as good people. We propose that this effect is the result of two sequential processes. First, perceivers desire to form close bonds with beautiful people. Second, perceivers project, or subjectively construct reciprocation of, this interpersonal orientation.

Step 1: What Is Beautiful Is Desired

Beauty is an ecstasy; it is as simple as hunger.

—W. Somerset Maugham (1930, p. 140)

We posit that attractiveness elicits positive emotional reactions in perceivers that create desires to establish close relationships. People feel more positive emotions after exposure to or when anticipating interaction with attractive targets (Garcia, Stinson, Ickes, Bissonnette, & Briggs, 1991; Pataki & Clark, 2004). Moreover, subliminal presentations of

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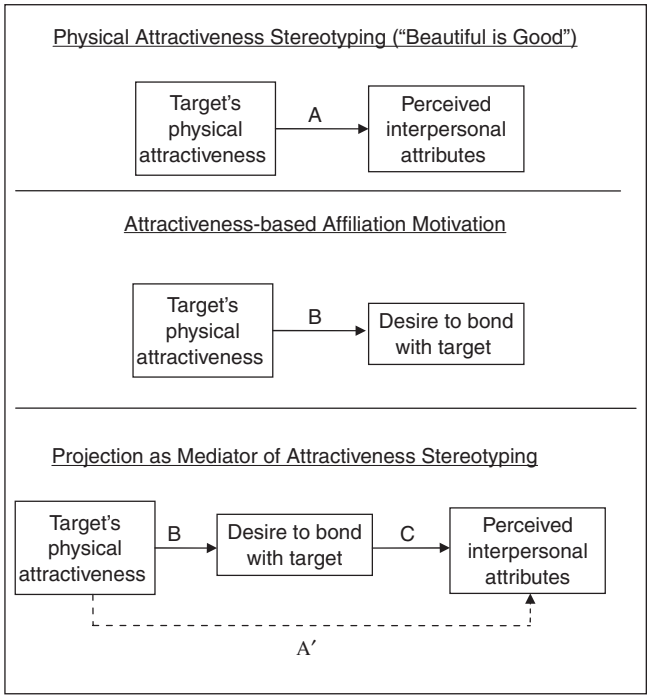

Figure 1. Beautiful is good, attractiveness-based affiliation, and projection as mediator models

attractive faces prime positive emotion concepts (Olson & Marshuetz, 2005), suggesting that positive affective reactions may be automatic. Neurological evidence also suggests the pleasantness of physical attractiveness. Exposure to attractive faces stimulates activity in the medial orbitofrontal cortex, a brain region known to be involved in representing other rewarding stimuli (e.g., food, monetary gain, pleasant music; O'Doherty et al., 2003).

Consistent with reinforcement perspectives on interpersonal attraction (e.g., Byrne & Griffith, 1973; Kenrick & Cialdini, 1977), these positive emotional reactions likely give rise to an interpersonal approach motivation characterized by a desire to establish or maintain bonds with physically attractive targets. People do report more interest in establishing romantic relationships with attractive targets relative to unattractive targets (e.g., Byrne, Ervin, & Lamberth, 1970; Eastwick & Finkel, 2008; Kleck & Rubenstein, 1975; Walster, Aronson, Abrahams, & Rottman, 1966). People also desire to befriend, work with, and interact with physically attractive others (e.g., Byrne, London, & Reeves, 1968; Clark, 1986; Dion, 1973; Eastwick & Finkel, 2008; Marks, Miller, & Maruyama, 1981).

This motivation to bond with physically attractive targets also is evident in behavior. People are especially likely to initiate conversations with attractive individuals (Garcia et al., 1991), an important first step in relationship formation. During such conversations, they make more intimate self-disclosures (Brundage, Derlega, & Cash, 1977), something known to facilitate closeness (Reis & Shaver, 1988). They seem especially eager to help, being more willing to return attractive individuals' lost possessions (Benson, Karabenick, & Lerner, 1976), give them directions (Wilson, 1978), run an errand for them (Wilson, 1978), donate money to them (West & Brown, 1975), and volunteer for their research studies (Mims, Hartnett, & Nay, 1975), which may reflect and communicate interest in establishing relationships. More generally, perceivers seem more interested, sociable, and enthusiastic, according to objective judges, when they believe they are talking with a physically attractive, relative to an unattractive, partner (Andersen & Bem, 1981; Snyder et al., 1977).

Physical attractiveness also affects existing bonds. Mothers' affection toward their newborns is positively related to the attractiveness of their newborns (Langlois, Ritter, Casey, & Sawin, 1995). In ongoing romantic relationships, people report greater satisfaction (Peterson & Miller, 1980) and more passionate love, intimacy, and commitment (Sangrador & Yela, 2000) when their partners are physically attractive. Such findings suggest that perceivers not only see beautiful people as possessing desirable interpersonal attributes but are motivated to bond with beautiful people (middle model in Figure 1) (see Langlois et al., 2000).

Step 2: Projection of Interpersonal Goals

> We do not see things as they are. We see things as we are.
>
> —Anais Nin

As a result of this interpersonal motivation, people may construct images of attractive targets as interpersonally receptive and responsive in return. Prior evidence suggests the operation of goal-driven interpersonal perception (e.g., Fiske, 1992; Haselton & Buss, 2000). For instance, people seem strategically inaccurate about their partners' thoughts, especially when accurate discernment could threaten relationships (Simpson, Ickes, & Blackstone, 1995). Moreover, people idealize relationship partners (Murray, Holmes, & Griffin, 1996), which may protect feelings of relationship security. Temporarily activated mating and self-protection goals also seem to engender goal-facilitative perceptions of others (Maner et al., 2005; Stephan, Berscheid, & Walster, 1971).

The belief that others share interpersonal goals is critical to building and maintaining close relationships (Holmes & Rempel, 1989; Reis, Clark, & Holmes, 2004). People seem unwilling to depend on partners (Murray, Holmes, & Collins, 2006), engage in prorelationship acts (Wieselquist, Rusbult, Foster, & Agnew, 1999), and establish new relationships (Byrne & Griffith, 1973) when they doubt partners' reciprocation of interest, commitment, or care. In other words, people strongly desire reciprocation of their interpersonal desires.

Given their importance in forming and maintaining social bonds, perceptions of others' interpersonal motivation also may be biased by one's own social goals. Research on projection of responsiveness suggests such a bias. People see existing partners for whom they care as caring for them in return, apparently independently of partners' true care (Lemay, Clark, & Feeney, 2007). This projection also applies to perceptions of new acquaintances' attraction (e.g., interest in establishing a bond, liking; Lemay & Clark, 2008a). Such projection appears to enhance relationship satisfaction (Lemay et al., 2007) and facilitate perceivers' pursuit of interpersonal goals by promoting trust in partners' reciprocation (Lemay & Clark, 2008b).

The "beautiful is good" effect, we suggest, may be a product of this projection process. Our model is depicted in the lower portion of Figure 1. People more strongly desire to form or maintain bonds with physically attractive partners relative to unattractive partners—an attractiveness-based affiliation effect (Path B). In turn, through projection, attractive partners are perceived to possess attributes that are compatible with these goals, which largely center on their reciprocation of interest in establishing or maintaining close relationships (Path C). After removing the influence of this two-step process, the beautiful-is-good effect may be substantially reduced or eliminated (Path A′).

Alternative Model

Some have argued that people desire to affiliate with attractive people because they see attractive people as interpersonally virtuous (e.g., Snyder et al., 1977; see Langlois et al., 2000, for a review). This perspective switches the outcome variable (perceptions of targets' qualities) with the mediating variable (desire to bond with targets) relative to our model. We expect that desires to bond with attractive targets are driven by affective processes that are independent of inferences regarding targets' interpersonal qualities. As such, we predicted that this reversed model would not be supported.

Overview

In three studies we tested a model positing that projection of heightened desire to bond with physically attractive targets explains the attribution of desirable interpersonal qualities to attractive targets. We tested our model with regard to perceptions of novel targets presented in photographs (Study 1) and perceptions of existing relationship partners (Studies 2 and 3). In all three studies, we also tested the alternative mediation model described above.

Study 1: Novel Stimuli Study

In Study 1 we tested our model using ratings of strangers depicted in photographs, which is the methodological approach most commonly used in studies of the beautiful-is-good effect. In this study we used the term *perceivers* to denote individuals who are judging others' qualities. We used the term *targets* to denote the photographed individuals who are being judged by perceivers and whose variation in attractiveness is thought to predict perceivers' judgments. Like most of the early studies on this topic, this study provides a test of our model in the absence of acquaintanceship between perceivers and targets. (Inclusion of such a study in our model testing is important to rule out alternative explanations involving prior interaction between perceivers and targets.)

Although it is consistent with projection, a positive association between perceptions of self and perceptions of others also may be explained by the reversed causal effect (perceptions of others causing perceptions of self). Examination of response latencies may shed light on the underlying process. If people judge targets' desire to bond first and *then* formulate their own desire accordingly, they should be faster to judge targets' desire than their own desire. However, if they experience their own desire first and then use this to infer targets' desire, as our model suggests, they should be faster to judge their own desire than targets' desire (see Clement & Krueger, 2000).

Method

Participants. Ninety-three undergraduates (*M* age = 18.59 years; 34 men, 56 women, 3 participants did not report gender) participated in exchange for partial fulfillment of course requirements in an introductory psychology course.

Stimuli. To obtain an initial pool of stimuli, images of individuals between the ages of 18 and 25 were downloaded from a publicly accessible website that displays site members' photographs along with averages of the physical attractiveness ratings made by other site users (hotornot.com). To be chosen for our initial stimuli pool, the image needed to be of good resolution and the depicted individual needed to be alone, be fully clothed, be looking at the camera, have his or her face fully visible, not display unusual clothing or an unusual facial expression, and be rated as relatively attractive (above 8.5 on the 10-point scale) or relatively unattractive (below 5 on the 10-point scale) by other site users. An initial pool of 60 images was assembled (15 photos of attractive and 15 of unattractive men and a like number of attractive and unattractive women). Images were cropped approximately at each target's shoulders.

We asked a panel of 22 judges to rate each of the 60 depicted individuals on attractiveness using 9-point response scales (1 = *extremely unattractive*; 5 = *neutral*; 9 = *extremely attractive*). The 60 target individuals also were rated by a panel of 10 judges on the extent of smiling using 4-point response scales (1 = *no smile*; 2 = *hint of a smile or unsure*; 3 = *moderate smile*; 4 = *full smile*). These ratings were used to select 12 photos for use in the main study, including 3 each

of attractive and unattractive women and men. Images were selected to represent the extremes of the panel's attractiveness ratings, with the constraints that equally (un)attractive males and females should be selected, there should be variability in smiling within each of the Attractiveness × Target Gender cells, and smiling ratings should be matched. Each Attractiveness × Target Gender cell included one target with a high, moderate, and low level of smiling.

Results of 2 (attractiveness category) × 2 (target sex) repeated-measures analyses of variance on the panel's attractiveness and smiling ratings of the selected images (averaged across the three targets in each category) reveal only one significant effect—a large effect of attractiveness category on attractiveness ratings, $F(1, 21) = 325.59$, $p < .001$. Targets designated as consensually attractive were rated as more attractive ($M = 6.92$) than were targets designated as consensually unattractive ($M = 3.12$). We used this dichotomous attractiveness categorization as an index of consensual attractiveness in analyses. Smiling ratings did not systematically vary across target attractiveness or sex.

Measures and Procedure

Participants completed blocks of questions for each construct (own affiliation motivation, perceptions of targets' affiliation motivation, perception of targets' interpersonal traits, and perception of targets' physical attractiveness). The order of these blocks was randomly generated each time the experiment was initiated, with the exception that the physical attractiveness questions were presented last. Items and photos within each block were randomly ordered. Participants completed an item in regard to all photos and then progressed to the next item. Photos were presented in the center of the screen, with an image size of approximately 4 inches tall and 2.5 inches wide.

Perceivers' own affiliation motivation. Using 9-point response scales, participants completed three items measuring their own desires to bond with targets. Items assessed interest in increasing acquaintanceship ("Based on your first impression, how interested would you be in getting to know this person?") (1 = *not at all interested*; 9 = *extremely interested*), anticipated friendly behavior ("Based on your first impression, how would you treat this person?") (1 = *very friendly*; 5 = *neutral*; 9 = *very unfriendly*), and anticipated liking ("Based on your first impression, to what extent would you like or dislike this person?") (1 = *strongly dislike him or her*; 5 = *neutral*; 9 = *strongly like him or her*). After reverse scoring the friendliness responses, responses to these three items were averaged (Cronbach's alpha = .88).

Perceived targets' affiliation motivation. Using similar 9-point response scales, participants completed three items that were analogous to the three own affiliation motivation items to measure perceptions of each target's motivation to bond with the self (Cronbach's alpha = .86).

Perceived targets' interpersonal traits. Participants completed four items measuring perceptions of each target's traits using 9-point response scales. Items assessed kindness (1 = *very cruel*; 5 = *neutral*; 9 = *very kind*), generosity (1 = *very giving*; 5 = *neutral*; 9 = *very selfish*), extraversion (1 = *very outgoing*; 5 = *neutral*; 9 = *very shy*), and warmth (1 = *very cold*; 5 = *neutral*; 9 = *very warm*). After reverse scoring the extraversion and generosity responses, responses to these 4 items were averaged (Cronbach's alpha = .77).

Subjective judgments of attractiveness. Participants judged each target's attractiveness using 9-point response scales (1 = *very unattractive*; 9 = *very attractive*).

Results

Analysis strategy. A series of multilevel models (using SAS PROC MIXED) tested the primary hypotheses while modeling the ratings of the 12 targets as nested within participants (within-cluster $n = 1{,}116$; between-cluster $n = 93$). Intercepts and slopes were modeled as randomly varying across participants to account for the nested data structure. Predictors were not centered.[1] Parameters were estimated using a restricted maximum likelihood algorithm.

Stimuli check and descriptive statistics. To check on the selection of targets, participants' judged attractiveness was regressed on consensual attractiveness (coded 0 for unattractive; 1 for attractive). Unattractive targets were judged to be less attractive ($M = 3.54$) than were attractive targets ($M = 7.25$), $b = 3.71$, $t(84) = 28.55$, $p < .001$, and these means differed from the scale midpoint of 5, $t(84) = -13.84$ and 29.42, $ps < .001$. Hence, study participants appeared to agree with our designation of targets as attractive and unattractive. Means, variance estimates, and correlations between all study variables are displayed in Table 1.[2]

The what-is-beautiful-is-good effect. According to the beautiful-is-good hypothesis, participants perceive attractive targets as having more desirable interpersonal traits and being more motivated to form social bonds relative to unattractive targets. To test this prediction, perceivers' perceptions of targets' traits or targets' affiliation motivations were regressed on an index of targets' physical attractiveness (the dichotomous consensual attractiveness classification or participants' judged attractiveness). Results are shown in the top two rows of Table 2. As predicted, both consensual and judged attractiveness predicted participants' perceptions of targets' interpersonal qualities. Participants perceived the consensually attractive targets to have more desirable interpersonal traits ($M = 5.83$) and to be more motivated to bond with the self ($M = 5.75$) relative to the unattractive targets ($M = 5.32$ and 5.30, respectively), and participants' judgments of targets' attractiveness were positively related to their perceptions of targets' traits and targets' affiliation motivation. These results replicate the beautiful-is-good effect (Path A in Figure 1).

Table 1. Descriptive Statistics (Study 1)

Variable	*M*	Between-Person Variance	Within-Person Variance	2	3	4	5
1. Consensual attractiveness	.50	0	.25	.80	.17	.14	.34
2. Judged attractiveness	5.39	0	5.45	—	.35	.35	.35
3. Perceived traits	5.57	0	2.19	—	—	.78	.69
4. Perceived targets' affiliation motivation	5.53	0.13	2.41	—	—	—	.73
5. Perceivers' own affiliation motivation	5.63	0.24	2.61	—	—	—	—

All correlations are significant, $p < .001$.

Table 2. Results of Analyses Testing Beautiful Is Good, Attractiveness-Based Affiliation, and Projection as Mediator Models (Study 1)

	Consensual Attractiveness		Judged Attractiveness	
Predictor	*b*	*t*	*b*	*t*
Predicting perceivers' perception of targets' traits (beautiful is good)				
Targets' physical attractiveness	0.51	5.44***	0.24	12.02***
Predicting perceivers' perception of targets' affiliation motivation (beautiful is good)				
Targets' physical attractiveness	0.44	4.06***	0.25	9.89***
Predicting perceivers' affiliation motivation (attractiveness-based affiliation)				
Targets' physical attractiveness	1.13	8.65***	0.41	17.68***
Predicting perceivers' perception of targets' traits (projection as mediator)				
Targets' physical attractiveness	–0.24	–3.43***	–0.04	–2.13*
Perceivers' affiliation motivation	0.68	23.65***	0.68	20.39***
Predicting perceivers' perception of targets' affiliation motivation (projection as mediator)				
Targets' physical attractiveness	–0.40	–5.44***	–0.08	–4.18***
Perceivers' affiliation motivation	0.80	26.90***	0.81	23.51***

Results of models using the dichotomous consensual attractiveness variable are presented in the two columns on the left. Consensual attractiveness was coded 1 for attractive targets and 0 for unattractive targets. Results of models using participants' subjective judgments of targets' attractiveness appear in the two columns on the right.
*$p < .05$. ***$p < .001$.

Attractiveness-based affiliation. According to the attractiveness-based affiliation hypothesis, participants should report more motivation to form social bonds with attractive targets relative to unattractive targets. To test this prediction, participants' ratings of their own affiliation motivation were regressed on an index of targets' physical attractiveness (consensual attractiveness or judged attractiveness). Results are shown in the third row of Table 2. Both indexes of targets' attractiveness predicted perceivers' affiliation motivation. Participants indicated more interest in bonding with consensually attractive targets ($M = 6.20$) relative to consensually unattractive targets ($M = 5.07$), and their judgments of targets' attractiveness was positively related to their motivation to affiliate with targets. These results replicate prior findings of attractiveness-based desires to form social bonds (Path B in Figure 1).

Projection as mediator. To test the prediction that projection of interpersonal goals mediates the beautiful-is-good effect (combination of Paths B and C in Figure 1), effects of targets' attractiveness on participants' perceptions of targets' interpersonal traits and targets' affiliation motivation were re-examined after controlling for participants' own desires to bond with targets. Results are displayed in the lower two sections of Table 2. As predicted, the tendencies to attribute more positive interpersonal qualities and stronger affiliation motivation to attractive targets (Path A′ in Figure 1) were eliminated after controlling for perceivers' own affiliation motivation. Indeed, the effect of targets' attractiveness (both consensual and judged) became negative. Moreover, consistent with our projection perspective, perceivers' own affiliation motivation predicted their perceptions of targets' interpersonal traits and affiliation motivation (Path C in Figure 1). Sobel tests of the indirect effects (targets' attractiveness → perceivers' own affiliation motivation → judgments of target) were significant, zs > 8.11, ps < .001.

Alternative model. We tested the alternative model positing that the beautiful-is-good effect explains attractiveness-based desires to form social bonds. To test this alternative

explanation, effects of targets' attractiveness on perceivers' own affiliation motivation were retested after controlling for perceivers' perceptions of targets' traits or targets' affiliation motivation. Consensual target attractiveness continued to predict perceivers' own affiliation motivation, $b = .90$, $t(77.9) = 10.29$, $p < .001$ and $b = .79$, $t(77.9) = 8.86$, $p < .001$, respectively. The same was the case for judged target attractiveness, $b = .28$, $t(80.3) = 15.56$, $p < .001$ and $b = .26$, $t(81.3) = 14.72$, $p < .001$, respectively. Hence, this alternative model was not supported. Whereas perceivers' attractiveness-based social desires explained their positive perceptions of attractive targets' interpersonal qualities, the reverse was not the case; perceivers' perceptions of attractive targets' interpersonal qualities did not explain their heightened desires to bond with attractive targets.

Response time analyses. We predicted that participants' judgments of their own affiliation motivation would be faster than their judgments of targets' motivation. A three-level multilevel model (two judgments nested within target and target nested within participant) contrasted the speed of these two judgments while modeling coefficients as varying across both targets and participants.[3] Participants' judgments of their own affiliation motivation tended to be faster ($M = 2568.79$ ms) than their judgments of targets' affiliation motivation ($M = 2664.70$ ms), $b = –95.91$, $t(83.4) = –1.71$, $p = .09$.[4]

Summary

This study provides evidence supporting the prediction that projection of interpersonal desires explains the beautiful-is-good effect. Relative to unattractive targets, participants perceived attractive targets to have more of the attributes that would facilitate relationship formation (e.g., kindness, extraversion, attraction to the self), and this effect was explained by participants' desires to establish relationships with attractive targets. Indeed, after controlling for the effects of own desires, the link between physical attractiveness and perceptions of targets became negative. We return to this finding in the General Discussion.

The alternative mediation model positing that the beautiful-is-good effect explains attractiveness-based desires to bond was not supported.[5] In addition, response time findings were consistent with a projection perspective and inconsistent with a perspective favoring the reverse causal effect. That is, judgments of own affiliation motives tended to be faster than judgments of targets' affiliation motives, suggesting that own motives are likely to be discerned before discernment of others' motives.

Study 2: Dyadic Marriage and Dating Study

The beautiful-is-good effect also applies to perceptions of known relationship partners (Langlois et al., 2000). In Study 2, we tested our model on dating and married couples. We predicted that, relative to physically unattractive romantic partners, perceivers would attribute to attractive partners more of the communal care that would facilitate maintenance of close relationships (see Reis et al., 2004), and they would do so because they care for attractive partners. As in the prior study, we use the term *perceivers* to designate the individuals who are judging others' attractiveness and care and *targets* as their relationship partners, who are being judged. However, all participants provide data relevant to both perceiver and target roles.

Method

Participants and procedure. Romantic couples were recruited via advertisements on electronic bulletin boards to complete an electronic survey in exchange for payment of $5 per individual. Data from one dyad of the initial 102 dyads were eliminated from analyses due to missing data on variables used in the analyses. The sample included 96 heterosexual, 2 same-sex male, and 3 same-sex female couples (69 married couples or domestic partnerships and 32 dating couples; M age = 33.41 years). Participants completed the following measures in the order presented.[6]

Measures

Perception of targets' care. Participants completed a version of the own care for targets measure described below that was modified to measure perceptions of the partner's communal care (e.g., "This person would be reluctant to sacrifice for me"). Items were completed using 7-point response scales (1 = *strongly disagree*; 4 = *neutral*; 7 = *strongly agree*) (Cronbach's alpha = .90).

Perceivers' own care for targets. Participants completed a 10-item measure, adapted from a measure of communal strength developed by Mills, Clark, Ford, and Johnson (2004), assessing their care for their partner (e.g., "I would go out of my way to help this person"; "I would sacrifice very much to help this person") using 7-point response scales (1 = *strongly disagree*; 4 = *neutral*; 7 = *strongly agree*) (Cronbach's alpha = .90).

Perceived target attractiveness. Participants completed a 4-item measure assessing perceptions of their partner's physical attractiveness (e.g., "This person is physically attractive"; "This person's facial features are attractive") using 7-point response scales (1 = *strongly disagree*; 7 = *strongly agree*) (Cronbach's alpha = .84).

Results

Analysis strategy. In this dyadic study, each partner in the dyad serves as both perceiver and target. Given that the two partners' reports are not expected to be independent,

Table 3. Descriptive Statistics (Study 2)

Variable	*M*	Between-Dyad Variance	Within-Dyad Variance	2	3	4
1. Targets' physical attractiveness	6.16	0.15	0.66	.38	.52	.21
2. Perceived targets' care	7.65	0.44	1.43	—	.61	.36
3. Perceivers' care for targets	8.31	0.31	0.49	—	—	.39
4. Targets' care for perceivers	8.31	0.31	0.49	—	—	—

All correlations are significant, $p < .01$.

Table 4. Results of Analyses Testing Beautiful Is Good, Attractiveness-Based Affiliation, and Projection as Mediator Models (Study 2)

Predictor	*b*	*t*
Predicting perceivers' perception of targets' care (beautiful is good)		
Targets' physical attractiveness	0.48	5.01***
Targets' care for perceivers	0.45	4.69***
Predicting perceivers' care for targets (attractiveness-based affiliation)		
Targets' physical attractiveness	0.46	7.79***
Targets' care for perceivers	0.29	4.99***
Predicting perceivers' perception of targets' care (projection as mediator)		
Targets' physical attractiveness	0.12	1.28
Targets' care for perceivers	0.22	2.47*
Perceivers' care for targets	0.79	7.64***

*$p < .05$. ***$p < .001$.

hypotheses were tested using two-level multilevel models (implemented with the SAS MIXED procedure) that modeled pairs of participants as nested within dyads (within-cluster $n = 202$; between-cluster $n = 101$). Intercepts were modeled as randomly varying across dyads. Because of restricted degrees of freedom, slopes were modeled as fixed (see Kenny, Kashy, & Cook, 2006). Predictors were not centered given that we were interested in absolute levels of variables rather than deviations from partners. Parameters were estimated using a restricted maximum likelihood algorithm. Means, variance estimates, and correlations are displayed in Table 3.[7]

The what-is-beautiful-is-good effect. The beautiful-is-good hypothesis predicts an effect of targets' attractiveness on perceivers' perceptions of targets' care (Path A in Figure 1). To test this prediction, we regressed perceivers' perceptions of targets' care on their perceptions of targets' physical attractiveness. Targets' self-reported care for perceivers was included as a predictor to control for accuracy. Results are displayed in the upper portion of Table 4. The significant effects of targets' physical attractiveness on perceivers' perceptions of targets' care indicate that perceivers viewed partners they perceived to be physically attractive as more caring than partners they perceived to be unattractive, independently of targets' self-reported care. (Targets' care for perceivers also predicted perceivers' perceptions, suggesting some accuracy in addition to bias by physical attractiveness.)

Attractiveness-based affiliation. The attractiveness-based affiliation hypothesis predicts an effect of targets' attractiveness on perceivers' desires to maintain bonds with targets (Path B in Figure 1). To test this prediction, we regressed perceivers' care for targets on perceivers' perceptions of targets' physical attractiveness. Again, the index of targets' actual care was included as a predictor to control for reciprocity. Results are displayed in the middle portion of Table 4. The significant effects of targets' physical attractiveness indicate that perceivers cared for targets they perceived to be attractive more than for unattractive targets, independently of targets' self-reported care for perceivers.[8] (Targets' care for perceivers also predicted perceivers' care for targets, suggesting some reciprocation of care in addition to attractiveness-based desire.)

Projection as mediator. The projection-as-mediator hypothesis predicts a reduction of the effect of targets' attractiveness on perceivers' perceptions of targets' care (the beautiful-is-good effect) once perceivers' own care for targets is controlled. To test this prediction, we retested the beautiful-is-good model described above after including perceivers' care for targets as an additional predictor. Results are displayed in the lower portion of Table 4. The effect of targets' physical attractiveness on perceivers' perceptions of targets' care was no longer significant once perceivers' care for targets was controlled. Perceivers' care for targets predicted their perceptions of targets' care, suggesting projection. (Targets' self-reported

care remained significant, suggesting some accuracy in perceivers' perceptions.)

The Sobel test of the indirect effect (perceivers' perception of targets' attractiveness → perceivers' care → perceivers' perceptions of targets' care) was significant, $z = 5.43$, $p < .001$. Hence, targets' physical attractiveness indirectly predicted perceivers' perceptions of targets' care through perceivers' heightened care for attractive targets (combination of Paths B and C in Figure 1).

Alternative model. We tested the alternative model positing that perceiving attractive targets as caring explains perceivers' heightened care for attractive targets. To test this alternative, we re-examined the effect of perceivers' perceptions of targets' attractiveness on perceivers' care for targets while controlling for perceivers' perceptions of targets' care (and continuing to control for targets' self-reported care). Perceivers' perceptions of targets' attractiveness continued to predict perceivers' care, $b = .32$, $t(98) = 5.77$, $p < .001$. Hence, this alternative explanation was not supported.

Summary

This study provides evidence in support of the prediction that projection of interpersonal goals explains the beautiful-is-good effect in existing relationships. The tendency for participants to see physically attractive partners as possessing the communal responsiveness that would facilitate relationship maintenance was explained by participants' own elevated care for such partners. The alternative mediation model positing that perceptions of partners' care explain heightened care for attractive partners was not supported. That is, whereas participants' own communal orientation toward attractive partners explained why attractive partners were seen as interpersonally good, tendencies to see attractive partners as interpersonally good did not explain the heightened care for such partners.

Study 3: Group Study

In Study 3, we tested the model on a sample of 3-person groups. This study features some methodological improvements over Study 2. In this study we used two individuals' views of targets' attractiveness to index the physical attractiveness of targets. In each perceiver–target dyad, there is an outsider who is not a member of that dyad but is a member of the larger 3-person group. These outsiders served as informants and made judgments about targets' physical attractiveness. These judgments may be less biased by qualities of the relationship between perceivers and targets relative to perceivers' judgments. In addition, we more broadly assessed affiliation motivation, including care for needs, commitment to the relationship, support provision, and self-disclosure.

Method

Participants and procedure. We recruited participants between 18 and 30 years of age via advertisements posted on Internet bulletin boards in exchange for a payment of $10. They were asked to recruit two other individuals for participation who were between the ages of 18 and 30, who knew each other, who did not share a biological or romantic relationship with the initial participant or with each other, and at least one of whom was a close friend. Fifty-three complete triads completed the questionnaire but responses from one triad were eliminated from analyses because of missing data. The 154 participants included 51 men and 103 women, with an average age of 24.63 years ($SD = 6.49$). The sample included 118 Caucasian, 19 Asian, and 2 Black participants. Relationships were predominately described as friendships (73.5%).[9] Participants were instructed to refrain from discussing the study with the other participants.

Measures

Perceived targets' care. Using 9-point response scales (1 = *strongly disagree*; 9 = *strongly agree*), participants completed a 10-item measure of each group member's care for the self, as described in Study 2 (Cronbach's alpha = .91). In addition, using 5-point response scales (1 = *not at all motivated*; 5 = *extremely motivated*), participants completed a 3-item measure of each group member's motivation to respond to needs (e.g., "How motivated is this person to respond to your needs?" "How motivated is this person to provide emotional support to you when you are stressed?") (Cronbach's alpha = .93). Scores on these two measures were strongly correlated, $r = .80$. Hence, they were standardized and averaged to form an index of perceived targets' caring.

Perceivers' own self-disclosure. Participants completed the Self-Disclosure Index (Miller, Berg, & Archer, 1983) to indicate the extent to which they disclosed 10 aspects of themselves to each of the group members (e.g., "my personal habits," "my deepest feelings," "what is important to me in life"). Items were completed on 5-point response scales (1 = *not at all*; 5 = *discussed fully and completely*) (Cronbach's alpha = .96).

Perceived targets' support provision. Participants indicated the frequency with which each group member enacted 11 supportive behaviors toward them in the past 30 days. The behaviors were the 11 that correlated highest with the total score during development of the Inventory of Socially Supportive Behaviors (Barrera, Sandler, & Ramsay, 1981; e.g., "gave me some information to help me understand a situation I was in," "listened to me talk about my private feelings," "joked and kidded to try to cheer me"). Items were completed on 5-point response scales (1 = *not at all*; 5 = *about every day*) (Cronbach's alpha = .97).

Table 5. Descriptive Statistics (Study 3)

Variable	*M*	Between-Dyad Variance	Within-Dyad Variance	2	3	4	5
1. Targets' physical attractiveness (P)	6.46	0.00	2.60	.46***	.33***	.37***	.14**
2. Targets' physical attractiveness (I)	6.46	0.17	2.47	—	.10†	.14*	.03
3. Perceived targets' affiliation motivation	0	.41	.21	—	—	.95***	.69***
4. Perceivers' affiliation motivation	0	.41	.23	—	—	—	.67***
5. Targets' affiliation motivation	0	.41	.23	—	—	—	—

P = perceivers' perception; I = informants' perception.
†$p < .07$. *$p < .05$. **$p < .01$. ***$p < .001$.

Perceived targets' commitment. Using 9-point response scales (1 = *strongly disagree*; 9 = *strongly agree*), participants completed a 5-item measure adapted from prior research (Rusbult, Martz, & Agnew, 1998) assessing their perceptions of each group member's commitment to maintaining a relationship with the self (e.g., "This person wants our relationship to last for a very long time"; "This person is committed to maintaining our relationship") (Cronbach's alpha = .88).

Perceivers' own care for targets. Participants completed 10-item and 3-item measures of their own care for each group member that were analogous to the perceived targets' care measures and featured identical response scales (10-item Cronbach's alpha = .92; 3-item Cronbach's alpha = .95) (e.g., "How motivated are you to attend to this person's needs?"). Scores on these two measures were highly correlated ($r = .83$) and were standardized and averaged to create an index of perceivers' care for each target.

Perceived targets' self-disclosure. Using 5-point response scales (1 = *not at all*; 5 = *discussed fully and completely*), participants completed a measure that was analogous to the measure of own self-disclosure to indicate their perceptions of each member's disclosure to the self (Cronbach's alpha = .97).

Perceivers' own support provision. Using 5-point response scales (1 = *not at all*; 5 = *about every day*), participants completed a measure that was analogous to the perceived partner support provision measure to indicate their own provision of support to each group member (Cronbach's alpha = .97).

Perceivers' own commitment. Participants completed a 5-item measure, which was analogous to the perceived partner commitment measure described above and featured identical response scales, assessing their commitment to maintaining a relationship with each group member (Cronbach's alpha = .87).

Physical attractiveness. Participants indicated the physical attractiveness of each group member using a 9-point response scale (1 = *not at all characteristic*; 9 = *completely characteristic*).

Results

Analysis strategy. As with Study 2, we used multilevel analyses to test predictions. We used cross-classified multilevel models (with SAS PROC MIXED) to model the three dyads as nested within groups (group $n = 52$; dyad $n = 152$). Intercepts were modeled as varying across dyads and groups to accommodate this data structure. Again, because of the restricted degrees of freedom, slopes were modeled as fixed. Predictors were not centered given that we were interested in absolute levels of variables rather than deviations from partners. Parameters were estimated using a restricted maximum likelihood algorithm.

To simplify presentation of results, we created a composite index of perceivers' affiliation motivation by averaging the standardized scores on perceivers' own care for needs, support provision, self-disclosure, and commitment toward each target group member. Likewise, we created a composite index of perceivers' perceptions of targets' affiliation motivation by averaging the standardized scores on perceivers' perceptions of each group member's care, support provision, disclosure, and commitment toward them. Principal components analyses of the four indexes produced single-component solutions that explained 72% and 73% of the variance in perceivers' own affiliation motivation and perceptions of targets' affiliation motivation, respectively. Internal consistency was acceptable for both composite indexes (Cronbach's alphas = .87).[10]

We used two indexes of the targets' physical attractiveness: perceivers' perceptions and informants' (the individual outside of the dyad being analyzed) perceptions. That is, we tested whether person A's perceptions of person B's interpersonal qualities were predicted by person B's physical attractiveness, as assessed by person A or person C, as well as whether these effects were mediated by person A's desires to bond with person B. However, all group members provided data relevant to all roles. Means, variance estimates, and correlations are displayed in Table 5.

The what-is-beautiful-is-good effect. The beautiful-is-good hypothesis predicts an effect of targets' physical attractiveness on perceivers' perceptions of targets' interpersonal qualities (Path A in Figure 1). To test this prediction, we regressed perceivers' perceptions of targets' affiliation motivation on an index of targets' physical attractiveness (perceivers' reports or informants' reports). The index of targets' affiliation motivation was included as a predictor to

Table 6. Results of Analyses Testing Beautiful Is Good, Attractiveness-Based Affiliation, and Projection as Mediator Models (Study 3)

	Perceivers Report on Targets' Attractiveness		Informants Report on Targets' Attractiveness	
Predictor	*b*	*t*	*b*	*t*
Predicting perceivers' perception of targets' interpersonal qualities (beautiful is good)				
Targets' physical attractiveness	0.11	6.38***	0.04	2.01*
Targets' affiliation motivation	0.66	16.86***	0.71	17.49***
Predicting perceivers' relationship desire (attractiveness-based affiliation)				
Targets' physical attractiveness	0.12	7.27***	0.05	2.75**
Targets' affiliation motivation	0.63	16.38***	0.68	16.56***
Predicting perceivers' perception of targets' interpersonal qualities (projection as mediator)				
Targets' physical attractiveness	0.00	–0.07	–0.01	–1.09
Targets' affiliation motivation	0.09	4.13***	0.10	4.41***
Perceivers' affiliation motivation	0.89	38.49***	0.88	40.83***

*$p < .05$. **$p < .01$. ***$p < .001$.

control for accuracy. Results are displayed in the upper portion of Table 6. The significant effects of targets' physical attractiveness indicate that perceivers viewed attractive targets, as indexed by perceivers' or informants' reports, as possessing more desirable interpersonal qualities (i.e., more affiliation motivation) relative to unattractive targets, independently of targets' reported qualities. (Targets' affiliation motivation also predicted perceivers' perceptions, suggesting some accuracy in perceivers' perceptions in addition to bias by physical attractiveness.)

Attractiveness-based affiliation. The attractiveness-based affiliation hypothesis predicts an effect of targets' physical attractiveness on perceivers' desires to maintain bonds with targets (Path B in Figure 1). To test this prediction, we regressed the index of perceivers' affiliation motivation on an index of targets' physical attractiveness (perceivers' reports or informants' reports). Again, targets' affiliation motivation was included as a predictor to control for interpersonal reciprocity. Results are displayed in the middle portion of Table 6. The significant effects of targets' physical attractiveness indicate that perceivers desired to maintain bonds with attractive targets, as indexed by perceivers' or informants' reports, more than with unattractive targets. Targets' affiliation motivation also predicted perceivers' affiliation motivation, suggesting reciprocity in addition to attractiveness-based desire.

Projection as mediator. The projection-as-mediator hypothesis predicts a reduction of the effect of targets' attractiveness on perceivers' perceptions of targets' interpersonal qualities once perceivers' desire to maintain bonds with targets is controlled. To test this prediction, we retested the beautiful-is-good models described above after including perceivers' affiliation motivation as an additional predictor. Results are displayed in the lower portion of Table 6. The effects of targets' physical attractiveness, as indexed by perceivers or informants, on perceivers' perceptions of targets' affiliation motivation were no longer significant once perceivers' own desire to bond with targets was controlled. (Indeed, as we observed in Study 1, the effects were in the reversed direction, although they were not statistically significant this time.) Perceivers' own affiliation motivation strongly predicted their perceptions of targets' affiliation motivation independently of targets' self-reports, suggesting projection. (Targets' affiliation motivation also continued to predict perceivers' perceptions of that motivation, suggesting some accuracy.)

Results of Sobel tests indicate that the indirect effects (target attractiveness → perceivers' affiliation motivation → perceivers' perceptions of targets) are significant, perceivers' perception of targets' attractiveness effect $z = 7.14$, $p < .001$; informants' perception of targets' attractiveness effect $z = 2.74$, $p < .01$. Hence, targets' attractiveness indirectly predicted perceivers' perceptions of targets through perceivers' desires to form bonds with attractive targets and see attractive targets in similar ways (combination of Paths B and C in Figure 1).

Alternative model. We again tested the alternative model positing that perceiving attractive targets as possessing desirable interpersonal qualities explains perceivers' desires to bond with attractive targets. To test this alternative, we re-examined the effect of targets' physical attractiveness on perceivers' affiliation motivation while controlling for perceivers' perceptions of targets' affiliation motivation (and continuing to control for targets' self-reports). Targets' attractiveness continued to predict perceivers' affiliation motivation, perceivers' judgments of targets' attractiveness $b = .03$, $t(305) = 3.23$, $p < .01$; informants' judgments of targets' attractiveness $b = .02$, $t(293) = 1.98$, $p < .05$. Hence, this alternative explanation was not supported.

Summary

This study provides additional evidence in support of our model. The tendency for participants to see physically

attractive group members as possessing desirable interpersonal qualities that would facilitate relationship maintenance (i.e., caring for needs, supportive, disclosing, committed) appeared to be explained by participants' heightened desires to maintain bonds with attractive group members and tendencies to see those group members as reciprocating this motivation. This was the case when using perceivers' or outsiders' judgments to index targets' attractiveness. The alternative mediation model positing that the beautiful-is-good effect explains attractiveness-based desires to maintain social bonds was not supported.

General Discussion

When beauty fires the blood, how love exalts the mind!

—John Dryden (1821, p. 455)

A well-replicated bias of person perception is the attribution of desirable interpersonal qualities to physically attractive people. This bias was evident in all three of these studies. Perceivers attributed more desirable interpersonal traits (e.g., extraverted, generous, kind, warm, attracted to self) to physically attractive novel targets depicted in photographs relative to unattractive targets (Study 1). Likewise, they judged physically attractive romantic partners and friends to have more desirable interpersonal qualities (e.g., caring, supportive, disclosing) relative to their unattractive counterparts (Studies 2 and 3).

This research tested a model of the mechanism underlying these effects. Our model starts with perceivers' feelings and motivations toward physically attractive targets; targets' physical attractiveness is thought to evoke an affect-based affiliation motivation in perceivers, which involves a desire to form and maintain close relationships. Evidence for this attractiveness-based affiliation motivation (Path B in Figure 1) was found in all three studies. In Study 1, participants predicted that they would be more interested in forming relationships (e.g., interested in the other, feeling friendly toward, liking the other) with attractive, relative to unattractive, individuals depicted in photographs. In Study 2, participants reported more care for romantic partners they perceived to be physically attractive relative to partners they perceived to be unattractive. In Study 3, we replicated this effect in a friendship context while using two individuals' reports of targets' attractiveness and using a broader assessment of perceivers' affiliation motives including care for needs, support provision, self-disclosure, and commitment. These findings replicate prior work suggesting heightened desires to establish and maintain close relationships with physically attractive people.

According to our model, this orientation to bond with attractive targets is projected onto them. That is, because perceivers expect and desire relationships with attractive targets, they see those targets as having the requisite interpersonal qualities for such relationships, which largely center on reciprocated motivation to form and maintain bonds. Our model posits that this process explains the beautiful-is-good effect—the effect is explained by a combination of attractiveness-based motivation to bond (Path B in Figure 1) and projection of that motivation (Path C in Figure 1).

All three studies provide support for this mediation effect. In Study 1, participants' own desire to establish relationships with attractive novel targets depicted in photographs explained why they believed these targets had the desirable interpersonal attributes (e.g., kindness, generosity, extraversion, attraction to the self) that would facilitate relationship formation. In Study 2, participants' elevated care for attractive romantic partners explained their tendencies to see those partners as caring, a perception that would facilitate relationship maintenance. In Study 3, participants' own desires to bond with attractive targets explained why they perceived those targets as similarly motivated (i.e., caring, supportive, disclosing, and committed). Sobel tests of the indirect effects were significant in all three studies. Moreover, in none of the studies did the beautiful-is-good effect remain significant after controlling for our posited mediation process (Path A′ in Figure 1 was not significant). Hence, perceivers saw attractive targets as interpersonally good because they experienced heightened motivation to bond with attractive targets and perceived targets in goal-facilitative ways (i.e., projection).

Analyses of response time data in Study 1 provided additional evidence for a projection process. Judgments of own desires to bond with targets were faster than judgments of targets' desires to bond with the self. The relative accessibility of self-judgments over judgments of others suggests that own desires are discerned before others' desires and, furthermore, that the association between judgments of self and judgments of others may be more indicative of projection (i.e., own motivation → perceptions of others) than the reverse causal effect (i.e., perceptions of others → own motivation) (Clement & Krueger, 2000).

Although our model was supported in all three studies, the strongest evidence for mediation of the beautiful-is-good effect was found in Study 1. In that study, the beautiful-is-good effect reversed direction, such that attractive targets were judged less positively than were unattractive targets once perceivers' own affiliation motivation was controlled. This reversal also was evident in Study 3, although it was not significant. These findings suggest competing processes in forming impressions of physically attractive individuals. Although they are desired relationship partners and are perceived in ways that would facilitate desire, they also may be viewed as unattainable, selective, or conceited based on social exchange principles (see Dermer & Thiel, 1975). However, given its instability across our studies, this suppression effect should be considered tentatively.

Alternative Model

Some scholars have implicitly or explicitly argued for a different mediation model; stereotypes about beauty may cause people to attribute desirable interpersonal attributes to attractive targets, which may motivate bonding with attractive targets. This model reverses the mediator (perceivers' interpersonal goals) and outcome (perceptions of targets' interpersonal attributes) relative to our theoretical model. This alternative mediation model was not supported in any of our studies; the direct effects of targets' attractiveness on perceivers' desires to bond remained significant when perceptions of targets' interpersonal attributes were controlled. In other words, attractiveness-based desires to bond explained the beautiful-is-good effect but the beautiful-is-good effect did not explain attractiveness-based desires to bond.

This failure to support the alternative model is consistent with our view that targets' attractiveness evokes an affect-based approach motivation that does not depend on inferences about targets' interpersonal qualities. Moreover, it is consistent with a number of studies suggesting that initial desires to interact with, befriend, date, or form communal relationships with attractive individuals may be largely independent of perceptions of their interpersonal qualities or responsiveness (Clark, 1986; Huston, 1973; Ohbuchi & Izutsu, 1984; Sangrador & Yela, 2000; Zakin, 1983). In addition, infants show preferences for novel attractive faces, which is arguably before they could have learned stereotypes linking attractiveness to interpersonal virtue (Langlois et al., 1987). These findings, as well as our own, are consistent with the notion that affect-based preferences do not require conscious inferences but may very well drive conscious inferences (Zajonc, 1980); heightened desires to bond with attractive individuals may not depend on, but may produce, perceptions of attractive individuals' positive interpersonal attributes.

Another alternative explanation involves subjective construction of physical attractiveness. Some have argued that perceivers' feelings about targets shape their perceptions of targets' attractiveness (e.g., Lewandowski, Aron, & Gee, 2007; Paunonen, 2006). Although this process also seems likely, some aspects of the current research do not support this as an alternative explanation of the present results. Effects consistent with the current model were obtained in the absence of a relationship history or clear personality information about targets (Study 1). In addition, our model was supported even when using outsiders' judgments of targets' attractiveness (Studies 1 and 3). However, additional experimental evidence (beyond our within-subjects manipulation of targets' attractiveness in Study 1) may foster greater confidence in our findings.

Why Do These Effects Occur?

Why should people be especially motivated to bond with attractive individuals? It may be that physical attractiveness communicates information about the risks and benefits of forming bonds. For instance, physical attractiveness is associated with symmetric and mathematically average features (Grammer & Thornhill, 1994; Langlois & Roggman, 1990), which may reflect genetic heterozygosity and resistance to diseases and parasites (Thornhill & Gangestad, 1999). Hence, desires to approach attractive targets and avoid unattractive targets may facilitate healthy offspring, avoidance of contagion, and formation of dependable social alliances (Kurzban & Leary, 2001; Thornhill & Gangestad, 1993). In addition, the prototypicality of attractive faces may drive approach motivation in its own right, as people seek familiarity, perhaps to achieve the broader goal of safety (Zajonc, 1980). Also, positive emotional reactions to attractive people may be a consequence of positive portrayals of attractive people in the media. In raising culture as a possible influence, we should also note that the influence of targets' attractiveness on relationship formation may be moderated by cultural norms dictating the relevance of personal preferences to relationship formation (Anderson, Adams, & Plaut, 2008).

In turn, why might people project their interpersonal goals and perceive attractive targets as possessing positive interpersonal attributes? Biased interpersonal perception often confers important advantages to perceivers (e.g., Haselton & Buss, 2000). In the case of projection of interpersonal goals, assuming that targets share one's desires for close bonds facilitates approach motivation, which may aid in forming and maintaining those bonds (Lemay & Clark, 2008a). In many, although not all, cases, assuming that others share one's desires to bond may be a more interpersonally useful strategy than remaining skeptical and self-protective. In addition, projection of interpersonal goals may be a consequence of the heightened accessibility of one's own goals when judging others.

The Nature of the Beautiful-Is-Good Effect

The beautiful-is-good effect is often referred to as a "physical attractiveness stereotype." However, the consistent support for our model begs the question, is it truly a stereotype? Stereotypes are thought to be attributes that are associated with social categories in memory (Brewer, Dull, & Lui, 1981; Fiske & Neuberg, 1990). The stereotyping account of the beautiful-is-good effect presumes that targets' beauty is directly associated with perceived interpersonal qualities through application of a schema or theory involving beautiful people. Even motivational models of stereotyping typically posit a direct link between targets' category membership and perception of targets' attributes when stereotyping occurs, although this link is thought to be moderated by perceivers' goals (Fein & Spencer, 1997; Kunda & Spencer, 2003).

In our studies, no cognitive structure directly linking targets' beauty to perceived interpersonal attributes was

apparent. Instead, the effect was indirect; beauty seemed to elicit perceivers' desires to bond. In turn, perceivers appeared to project this motivation onto targets. A stereotyping account would not predict such an indirect link. Rather than application of a learned stereotype about beautiful people, many instances of the beautiful-is-good effect may be better characterized as projection of heightened desires to bond with beautiful people.

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Notes

1. Analyses using variables that were centered on each participant's mean produced estimates that were nearly identical to the presented results.
2. The correlations ignored nesting of observations within participants. They were nearly identical when variables were centered on each participant's mean.
3. We eliminated extremely short (<1000 ms) and long (>7000 ms) latencies because they are likely to reflect error and unduly affect estimates. These criteria were based on consideration of the items being completed and frequency distributions. The pattern of results was the same when these eliminated latencies were included in analyses.
4. All models produced similar effects of attractiveness after controlling for the pretest panel's smiling ratings, which were positively associated with the study variables.
5. Only one significant interaction involving target or perceiver gender was found across the three studies. In Study 1, the effect of female targets' attractiveness on judgments made by female perceivers was weaker than the other effects were, although it was still significant.
6. Data from this study were reported in Lemay and Clark (2008b) and Lemay and Dudley (2009). No overlapping findings are presented.
7. The correlations are based on uncentered variables, reflecting our emphasis on absolute levels rather than deviations from partners. This also was the case in Study 3.
8. The effects of partners' attractiveness on perceivers' care also were significant in ordinary least squares regression analyses conducted separately for men and women.
9. Some participants did not fit the study criteria, including 11 participants older than 30 years of age and four involved in family or romantic relationships with other participants. Our conclusions were not affected by exclusion of these participants from analyses. Data from this study were reported in Lemay and Clark (2008a, Study 5) and Lemay and Dudley (2009). These articles did not report any effects involving physical attractiveness, although projection of care (but not commitment, support provision, or self-disclosure) was reported in Lemay and Clark (2008a).
10. Results of analyses involving each of the individual indices of care, support provision, disclosure, and commitment were largely consistent with results involving the composite indexes.

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