Cues of parental investment as a factor in attractiveness

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Initial receipt 22 January 2004; final revision received 28 June 2005

Abstract

One prediction derived from parental investment theory is that women will be more attentive than men are to cues of a prospective mate's dispositions to invest in children. Research with 1793 Internet participants, representing a diverse population sample, found that (a) women tend to be generally more critical than men are in their evaluations of potential mates, but not potential friends or neighbors, and (b) cues of a positive disposition towards parental investment (DPI) have a positive influence on female evaluations of the attractiveness of males. This latter effect, however, is less domain-specific than previous research [La Cerra, M. M. (1995). Evolved mate preferences in women: Psychological adaptations for assessing a man's willingness to invest in offspring (doctoral dissertation, University of California, Santa Barbara). *Dissertation Abstracts International: Section B: the Sciences & Engineering Mar, 55*(9-B), 4149] indicated; it is not limited to mating contexts and to cues focusing on parental investment. In fact, much of the sex difference appears to be due to indifference by males towards cues of female DPI. A second study further clarified that the previous findings were not due solely to the Internet methodology or the immediate accessibility of images being evaluated.
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Keywords: Human mate selection; Interpersonal attraction; Parental investment; Sociosexual orientation; Social perception

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1. Introduction

In the particular case of humans, the initial state of females as the higher investing sex is supplemented by the additional consideration that males are capable of investing quite heavily in offspring (Geary, 2000). The idea that male parental investment is not only possible but has, over human evolutionary history, been an important factor in offspring survival and health has been a major explanation for female preferences for male partners with status and resources. Unlike the direct physiological investments by women in producing offspring, however, male parental investment is not obligate; fathers may decide either to not help raise children or to continually provide help substantially below the level provided by mothers. In short, while males with status and resources are generally found to be more attractive by females, it is also crucial from a female's perspective that a given male be *willing* to devote those resources to raising any future children in a relationship. The *disposition* of males towards parental investment, as indicated by their behaviors, can therefore be an important factor for females in making their relationship choices.

From an evolutionary viewpoint, assessments of another's disposition towards parental investment, or DPI, can be expected to show the marks of both the greater initial investment of females in offspring, as well as the possibility of large parental investment by males. On the one hand, males should place a relatively low weighting on assessments of female DPI, because the large initial investment by females in offspring (obligate female gestation and postpartum suckling) creates a situation in which females can be expected to be generally disposed to caring for their children. On the other hand, females should place a higher weighting on assessments of male DPI, which is often a much more open question. In other words, males will tend to assume a basic level of positive female DPI, whereas females will tend not to assume such a basic level of male DPI when assessing potential mates. Females are therefore predicted to pay more attention to cues of male DPI and more heavily utilize such cues in evaluations of males as suitable mates.

This evaluation of DPI could be accomplished via either dedicated evaluative mechanisms or via evaluations of more general characteristics that would be desirable in a potential mate (e.g., general helpfulness and compassion towards others). In fact, there are several possibilities regarding the domain specificity of a cognitive ability that would serve to assess parental dispositions. Progressing from the most domain-general to the specific, the possible ranges of specificity include the following:

(a)   An ability that works equally well in both men and women, evaluating targets of either sex, in any situation diagnostic of general traits (e.g., helpfulness or compassion).
(b)   An ability that is differentially activated in women, rather than men.
(c)   An ability that is differentially activated in evaluations of opposite-sex targets.
(d)   An ability that is differentially activated in situations that are specifically diagnostic of parental investment (as opposed to general helpfulness or compassion).
(e)   An ability that embodies two of the three above domain restrictions, (b), (c), and (d).

(f) An ability that embodies all the above domain restrictions, (b), (c), and (d); that is, women are more sensitive than are men, specifically to contextual cues of parental investment dispositions of opposite-sex targets (potential mates).

The purpose of the present study is to evaluate which of these alternatives best reflects the nature of DPI evaluations.

La Cerra (1995) found support for the most domain-specific of these possible cognitive abilities: Male displaying positive DPI produced higher attractiveness ratings (from women) as a potential mate, but did not have a similar effect in nonmating contexts (i.e., attractiveness as a potential friend or neighbor) or for more general characteristics such as general helpfulness or compassion. Men, in contrast, did not similarly discriminate in assessing women on this dimension. Although this dissertation research has been cited in published articles and textbooks (e.g., Anderson, Kaplan, & Lancaster, 1999; Buss, 1999, 2003; Buss & Reeve, 2003), the original research has not yet been subjected to extensive peer review. Additionally, there are both methodological and conceptual issues that have arisen regarding this research. Methodologically, the prior research can be improved by more current technology (e.g., computer image manipulation rather than photographic slides) and using a more diverse range of participants. Conceptually, these findings can be better situated within the context of other research, and individual differences in sociosexuality can be assessed as a potential mediator of any perceived attractiveness changes due to cues of parental investment (i.e., very sociosexually restricted individuals, and particularly women, should be relatively more concerned about the suitability of a potential partner as a parent, as compared with unrestricted individuals).

In summary, at a very general level, women should be more critical than men in evaluations of attractiveness across all types of romantic relationships (but not nonromantic relationships), and this sex difference should be inversely related to the typical length and commitment of the relationship types under consideration (Kenrick, Groth, Trost, & Sadalla, 1993). After taking those patterns into account, cues of a positive DPI are predicted to have a positive influence on female evaluations of attractiveness of males. Additionally, the present study is designed to improve on the methodology used in La Cerra (1995) by using digitally created stimuli and using a more diverse sample of participants. Finally, the present study is designed to extend beyond the findings of previous research by investigating the relationship between sociosexuality and ratings of attractiveness for potential mates displaying cues of positive parental investment dispositions.

2. Experiment 1

2.1. Participants

The participants were recruited over the Internet, from a number of web pages, and Internet discussion lists that post links to psychological research. After incomplete responses and duplicate submission attempts were culled from the 5394 hits, 1793 usable heterosexual

participants remained. Participants were obtained from over 35 countries, with the majority of responses coming from the United States. The average age of the participants (1221 females and 572 males) was 24.7 (± 8.6) years old (23.7 ± 7.5 for females and 26.8 ± 10.3 for males). Seventy-eight percent of the participants were single, 18.3% were married, and 3.7% were divorced. The average completed education level of the participants was 14.1 (± 2.5) years (i.e., second year of university).

2.2. Materials and procedure

Upon entering the study website, participants were presented with a page that gave general details about the study, experimenter contact information, and the opportunity to give consent to participate. This was followed by a page of instructions. In all conditions, participants viewed a series of eight images that showed eight different models in the following situations (designed to produce the impressions indicated in parentheses):

(1)   Standing alone (control/baseline condition).
(2)   Positive interaction (handing over a cookie) with an approximately 18-month-old smiling child (positive cue of parental investment).
(3)   Negative/ignoring interaction (placing cookie away from child) with an approximately 18-month-old, unhappy child (negative cue of parental investment).
(4)   Neutral interaction (both models facing forward) with an approximately 18-month-old child (baseline control for presence of a child in image).
(5)   Engaging in housework (cue of general helpfulness around the house).
(6)   Handing a glass of water to a reclining, elderly woman (cue of general compassion).
(7)   Approaching a four-door sport-utility vehicle (cue of parental lifestyle resources).
(8)   Approaching a two-door sports car (cue of single-lifestyle resources).

Each participant was exposed to a subset of these images within a counterbalanced Latin-square design (both the order of situations and models were counterbalanced, such that each participant saw a total of eight scenes, each of which involved a different model in a different scene). Photo editing software was used to eliminate any differences in the models' appearance (facial expressions, dress, etc.) in the different situations. All images were altered and all were derived from the same pool of materials (generic local scenes and undergraduate models).[1]

Half of the participants saw opposite-sex models and rated them on their attractiveness across five different types of relationships: attractiveness as a potential date, as a potential sexual partner, marital partner, friend, and neighbor. Each of these five ratings was on an 11-point scale, from −5 for *very unattractive* to +5 for *very attractive*. The other half of the participants saw same-sex models and rated them just on their attractiveness as a friend and as a neighbor.

Following these ratings, all 1793 participants saw the same eight images again and rated the models on four additional measures: the perceived likelihood that the model would invest

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[1] See supplementary materials: http://bengal.missouri.edu/~braseg/PI.html.

emotionally in a future spouse, invest financially in a future spouse, invest emotionally in a future child, and invest financially in a future child. These 11-point scale ratings had labeled endpoints of −5, *very unlikely*, and +5, *very likely*, and these were collected to assess the impressions that the images were intended to create. These results indicated that the contexts were successful in creating the desired impressions.[1]

Finally, participants provided demographic information [age, education level, nationality (defined as country of birth), and marital status] and completed the Sociosexual Orientation Inventory (SOI; Simpson & Gangestad, 1991), which assessed sociosexuality using seven items about respondents' sexual behaviors and attitudes. The final item on this page was an open text box for participants to include comments along with their submitted data. Each time someone started the study, that person was assigned a unique ID number. A routine in the programming of the web site recognized specific browsers and did not record a second set of responses from that browser.

Data from the participants' ratings of opposite-sex models are analyzed and presented first, followed by data from the same-sex model rating conditions. Levine's test of homogeneity of variance was conducted for all t tests and Mauchly's tests of sphericity was conducted for all ANOVA. Significant results from these tests are reflected by corrections to the degrees of freedom (Greenhouse-Geisser corrections) for ANOVA results. Post hoc analyses were all mean comparisons with Bonferroni adjustments.

3. Results

3.1. Do women's and men's ratings of attractiveness vary by type of relationship considered?

Women gave lower ratings of attractiveness overall [collapsing within participants across the types of contexts, there was a main effect for sex; $F(1,919)=35.49$, $p<.001$, $\eta^2=0.037$]. There was also a significant Relationship×Sex interaction [$F(1.72,1577.27)=86.23$, $p<.001$, $\eta^2=0.086$] and main effect for relationship type [$F(1.72,1577.27)=1526.38$, $p<.001$, $\eta^2=0.624$; see Table 1]. Post hoc analyses revealed that women gave lower ratings to men in the context of their attractiveness as a potential date [$t(749.83)=-5.59$, $p<.001$; for which men gave neutral ratings], as a potential sexual partner [$t(720.70)=-13.83$, $p<.001$, for

Table 1
Women's and men's ratings of attractiveness for different types of relationships (means and standard deviations), collapsing both within participants and across the types of contexts [scale is from −5 (*very unattractive*) to +5 (*very attractive*)]

Attractiveness as a...	Female ratings of male models	Male ratings of female models
Dating partner	−0.70±1.95	−0.02±1.68
Sexual partner	−1.40±1.97	0.36±1.78
Marital partner	−1.31±1.02	−0.82±1.84
Friend	1.82±1.55	1.82±1.62
Neighbor	2.11±1.57	2.23±1.58

which men gave positive ratings], and as a marital partner [$t(717.14)=-3.73$, $p<.001$; for which men gave negative ratings]. Ratings for attractiveness as a potential neighbor and as a potential friend, in contrast, were positive overall for both men and women and showed no sex difference [$t(659.04)=-1.12$, $p=.27$, and $t(638.57)=0.04$, $p=.97$]. In summary, the results were as predicted. Men's and women's ratings were the same for attractiveness of the person as a neighbor or friend, somewhat dissimilar for marital partner, and showed sharp divergences in ratings of attractiveness as a potential date or sexual partner.

3.2. Are women's and men's ratings of attractiveness affected by contexts?

To control for the above differences in ratings depending on both the participants' sex and the relationship considered, difference scores were calculated by subtracting the "model alone" rating from each participant's ratings in each of the other conditions. This provided a measure of how much the context affected attractiveness ratings, controlling for the variance in ratings due to sex and general attitudes about a particular relationship. Because of the nature of the hypotheses in this study and the number of variables involved, analyses for male and female participants are reported separately.

A 5×3 ANOVA was conducted on female participants' ratings of male models who were interacting with a baby (positive, neutral, and negative contexts) across all the relationship types. Sociosexuality was entered as a covariate in the analysis. There were main effects for both the type of relationship rated [$F(2.35,1395.16)=4.62$, $p=.007$, $\eta^2=0.008$] and for context [$F(1.96,1164.40)=23.19$, $p<.001$, $\eta^2=0.038$], as well as a significant interaction [Relationship×Context: $F(4.94,2937.58)=4.27$, $p=.001$, $\eta^2=0.007$; Table 2]. Post hoc analyses of the effect of context indicated that, as predicted, males interacting positively with a baby were rated as more attractive than were males simply pictured (neutrally) alongside a baby, and males interacting negatively with a baby were rated as significantly less attractive than the same neutral interaction condition (all $p<.001$). Post hoc analyses of the effect of relationship type found that the ratings were not significantly different for dating, sexual, or marriage relationships (all $p>.05$), but ratings were significantly lower for potential friend and neighbor (all $p<.05$, with the exception of marriage vs. friendship, $p=.057$). Ratings for models as a potential neighbor were even lower than the ratings as a potential friend ($p=.014$).

Another 5×3 ANOVA, on the male participants' ratings of female models interacting with a baby (positive, neutral, and negative contexts) across all the relationship types and with sociosexuality as a covariate found no significant main effects [for type of relationship rated: $F(2.45,791.11)=0.10$, $p=.94$; for context: $F(2,646)=1.89$, $p=.15$] nor any significant interactions (Table 2).

In neither of the above analyses, in which sociosexuality was included as a covariate, were significant effects found for sociosexuality (either as a main effect or in interaction with other variables). The above analyses, however, utilized data that had been adjusted to factor out differences in how various types of relationships were evaluated by males and females overall (Section 3.1), and this may have also stripped much of the variance in responses due to sociosexuality. Using the original ratings, there is a small negative correlation between female

Table 2
Women's and men's ratings of attractiveness (means and standard deviations, controlling for global sex and relationship type differences) across the positive, neutral, and negative interactions with a baby [scale is from −5 (*very unattractive*) to +5 (*very attractive*)] for opposite- (upper panel) and same-sex (lower panel) persons

Attractiveness as a...		Positive interaction with a baby	Neutral (no) interaction with a baby	Negative interaction with a baby
Female ratings of male models	Dating partner	1.04±3.06	0.59±2.93	0.17±3.17
	Sexual partner	1.06±3.11	0.48±2.85	0.36±3.14
	Marital partner	1.15±2.93	0.44±2.70	0.07±2.77
	Friend	0.79±2.56	0.34±2.72	−0.21±2.99
	Neighbor	0.60±2.61	0.31±2.58	−0.49±2.97
Male ratings of female models	Dating partner	−0.23±4.13	−0.28±3.21	−0.16±3.35
	Sexual partner	−0.19±4.39	−0.34±3.51	−0.09±3.56
	Marital partner	−0.10±3.49	−0.33±3.01	−0.20±3.05
	Friend	0.17±2.81	−0.23±2.46	−0.29±2.89
	Neighbor	0.04±2.80	−0.17±2.53	−0.25±2.62
Female ratings of female models	Friend	0.33±2.58	0.04±2.69	−0.47±3.06
	Neighbor	0.24±2.57	−0.08±2.68	−0.77±2.81
Male ratings of male models	Friend	0.50±2.27	0.17±2.22	−0.19±2.39
	Neighbor	0.79±2.55	0.28±2.45	−0.25±2.55

sociosexuality and ratings of males that positively interact with a child as a potential date ($r=−.093$, $p=.022$, two tailed, $n=597$; i.e., those with more restricted sociosexuality gave higher ratings). There were no other significant correlations between sociosexuality and female or male ratings.

3.3. Nonbaby contexts

The presence of a baby in the images may simply elevate attractiveness scores because it is a pleasant image per se for some participants. To evaluate if this "baby effect" was due to a specific sensitivity to cues of male parental investment or if this effect was due to a more general positive evaluation of a scene demonstrating helpfulness or compassion, the positive interaction with a baby context was compared with the remaining contexts. A series of 5×2 ANOVAs were conducted from female participants' ratings of male models, systematically comparing the positive interaction with a baby with the other contexts.

Table 3 shows the means for all the nonbaby contexts, across the different types of relationships. The main effects across different picture contexts are of primary interest and reported here.[1] Males portrayed being generally helpful around the house (doing housework) and approaching an SUV (family-lifestyle resources) were not rated significantly different from the positive interaction with a baby context [$F(1,596)=0.24$, $p=.62$, and $F(1,596)=1.81$, $p=.18$, respectively]. Males portrayed as being generally compassionate (giving an elderly person a glass of water) were rated significantly higher [$F(1,596)=11.43$, $p=.001$, $\eta^2=0.019$], while males portrayed approaching a sports car (single-lifestyle resources) were rated significantly lower [$F(1,596)=7.60$, $p=.006$, $\eta^2=0.013$] than the positive interaction with a baby.

Table 3
Women's and men's ratings of attractiveness (means and standard deviations, controlling for global sex and relationship type differences) across the contexts indicating general helpfulness (doing housework), general compassion (helping an elderly person), parental-lifestyle resources (approaching an SUV), and single-lifestyle resources (approaching a sports car)

Attractiveness as a...		Doing housework	Helping elderly person	Approaching SUV	Approaching sports car
Female ratings of male models	Dating partner	0.89±3.19	1.32±3.28	1.07±2.86	1.03±3.37
	Sexual partner	0.79±3.09	1.27±3.34	1.02±2.90	0.92±3.30
	Marital partner	1.15±2.94	1.39±3.13	0.81±2.60	0.57±2.98
	Friend	0.80±2.67	1.17±2.45	0.61±2.36	0.47±2.68
	Neighbor	0.74±2.59	1.13±2.60	0.47±2.35	0.19±2.77
Male ratings of female models	Dating partner	0.21±3.87	0.62±3.68	0.20±3.91	0.17±3.45
	Sexual partner	0.14±4.13	0.62±3.90	0.18±4.23	0.06±3.69
	Marital partner	0.28±3.57	0.81±3.42	0.21±3.47	0.24±3.21
	Friend	0.18±2.64	0.33±2.87	0.15±2.76	0.04±2.66
	Neighbor	0.24±2.49	0.29±2.65	0.09±2.63	−0.23±2.51

Another series of 5×2 ANOVAs were conducted from male participants' ratings of female models, systematically comparing the positive baby context with the other contexts. Table 3 shows the means for all the nonbaby contexts across the different types of relationship conditions. Females portrayed being generally helpful around the house (doing housework), approaching an SUV (family-lifestyle resources), and approaching a sports car (single-lifestyle resources) were not rated as significantly different from the positive baby context [$F(1,324)=3.12$, $p=.08$, $F(1,324)=2.49$, $p=.12$, and $F(1,324)=0.65$, $p=.42$, respectively]. As with the ratings of male models, females portrayed as being generally compassionate (giving an elderly person a glass of water) were rated significantly higher than the positive baby context [$F(1,324)=15.02$, $p<.001$, $\eta^2=0.044$]. The models in the helping an elderly person were seen as more attractive than those caring for a baby for all relationship types, but the difference between the elderly person and baby ratings is much *smaller* compared with the attractiveness ratings as a potential friend or neighbor (compare Tables 2 and 3).

3.4. Same-sex evaluations

To determine if the greater sensitivity of women to specific behavioral cues of personality dispositions is specific to opposite-sex evaluations or if it is a general sex difference in evaluations of others, the ratings of same-sex models by the other half of the participants were analyzed using a 5 (Contexts)×2 (Relationship)×2 (Participant sex) ANOVA. These ratings of models as a potential friend and potential neighbor were adjusted relative to the ratings of models in the alone context, as done previously. Table 2 shows the ratings from both men and women, for same-sex models as a friend and as a neighbor, across the three kinds of interactions with a baby.

There was a significant main effect of participant sex [$F(1,874)=4.41$ $p=.036$, $\eta^2=0.005$], with men's ratings for male models, .35, higher versus women's ratings of female models, .07.

There were significant main effects of context [$F(5.76,5032.59)=27.90$, $p<.001$, $\eta^2=0.031$], but not of relationship [$F(1,874)=0.05$, $p=.82$], and there was a significant interaction between these two factors [$F(6.66,5794.04)=14.39$, $p<.001$, $\eta^2=0.016$]. There were no interactions between either of these factors and the sex of the participants [$F(6.68,36421.60)=0.83$, $p=.55$, and $F(1,870)=0.26$, $p<.61$], but there was a significant three-way interaction [$F(5.77,5040.91)=17.13$, $p<.001$, $\eta^2=0.019$]. These effects and interactions indicate that women were better than men in responding to cues of nurturance in potential female friends and neighbors, although men did show a marked increase in the effects of the baby interactions on their ratings of potential male friends and neighbors. (Although still not as responsive to the contextual cues as women, men rating male models showed about twice as much responsive variation in ratings, as compared with the results from males rating female models; see Table 2). Males were particularly responsive to positive cues of nurturance, whereas females were particularly responsive to negative cues of nurturance in same-sex neighbors.

4. Experiment 2

One could entertain reservations about the Internet sampling technique of Experiment 1. Some responses might have been influenced by friends watching and commenting on the study, and some might have been from persons pretending to be of the opposite gender. The most likely result would be increased variation (i.e., "noise") in the data. Another concern is that the ratings of targets in Experiment 1 were consistently done in the presence of pictures of the target. A more realistic methodology might be to have participants view images and narratives about the target and then solicit assessments of the target after some delay. This would demonstrate that changes in evaluations were not transitory effects of the images immediately available to participants. These methodological concerns were addressed in Experiment 2 using a laboratory-based method.

5. Method

5.1. Participants

The participants were 120 undergraduates (60 females and 60 males) from a large public university in the Midwestern United States, all of whom participated in partial fulfillment of a course requirement. Their average age was 18.8 years (18.9 for females and 18.7 for males), ranging from 18 to 51.

5.2. Materials and procedure

Participants were individually seated at computers equipped with MediaLab software. The first screens collected age and gender information and gave instructions. Thereafter,

participants viewed a series of images and text screens that described an opposite-sex person (Michael or Jennifer) cleaning his/her house, welcoming a sister and her baby for a visit, and then watching television. Of the four screens of images and text, Screens 2 and 4 (with the model not visible) were identical across all conditions, and Screen 1 was identical within each sex (showing the opposite-sex target vacuuming; image taken from Experiment 1). Screen 3, the experimental manipulation, showed either a positive or negative interaction with the sister's baby (images taken from Experiment 1). The text in Screen 3 was also varied to reflect the image:

> (Positive) Once his[her] sister arrives, Michael [Jennifer] helps set up the baby for a meal, helps feed the baby, and then cleans up the meal. He [She] is generally very helpful and attentive with the baby.…

> (Negative) Once his[her] sister arrives, Michael [Jennifer] watches his [her] sister set up her baby for a meal, but doesn't try to get involved at all. He [She] is generally very glad he[she] doesn't have a baby…

Approximately half of the participants viewed either the positive or negative scene. All participants then completed an unrelated distractor task (judgments about numerical quantities) that lasted approximately 5 min. Participants were then asked a series of multiple-choice and rating scale questions about the images and story. An initial block of multiple-choice questions was a manipulation check to ensure that participants had paid attention to the story and were able to recall details [e.g., "Who was visiting Michael (Jennifer)?" and "What did Michael (Jennifer) do first when cleaning the house?"]. A second set of questions collected subjective ratings of general traits [i.e., ratings of the model on how intelligent, physically fit, kind and understanding, and ambitious he (she) was] on a seven-point scale from −3 (e.g., *extremely unintelligent*) to +3 (e.g., *extremely intelligent*). The final two questions collected long- (i.e., "someone to live with and possibly marry") and short-term relationship (i.e., "someone to date") attractiveness ratings on a seven-point scale from −3, *extremely unattractive*, to +3, *extremely attractive*.

6. Results and discussion

All participants correctly identified the visitor as the target's sister, and 96% of participants correctly identified vacuuming as the first cleaning task. Prior to analysis, ratings were standardized into z scores within each sex to control for differences in model attractiveness. The mean ratings for the general personality and attractiveness measures are shown in Table 4. A MANOVA found that there were no main effects of sex (as one would expect, due to the standardization of the ratings) and no interactions between sex and the reactions to the baby. There were, however, several significant differences in ratings across the positive and negative reactions to the baby. Targets who reacted positively to the baby in the story were rated as significantly more attractive for a long-term relationship [$F(1,116)=6.62$, $p=.011$, $\eta^2=0.054$], but this effect did not extend to a short-term relationship [$F(1,116)=1.79$,

Table 4
Experiment 2

	Female ratings of male models		Male ratings of female models	
	Positive interaction	Negative interaction	Positive interaction	Negative interaction
Ambitiousness	0.31±0.95	−0.33±0.96	0.37±0.77	−0.37±1.09
Intelligence	0.15±1.19	−0.16±0.74	0.19±1.03	−0.17±0.98
Kindness	0.62±0.57	−0.66±0.93	0.63±0.58	−0.59±0.94
Physical fitness	0.11±1.07	−0.12±0.92	0.17±1.20	−0.21±0.86
Long-term attractiveness	0.18±0.85	−0.19±1.12	0.29±0.99	−0.26±0.92
Short-term attractiveness	0.11±0.88	−0.12±1.12	0.13±1.10	−0.12±0.85

Women's and men's ratings of personality and attractiveness across contexts of positive and negative interaction with an infant. Ratings are standardized scores (means and standard deviations).

$p = .18$]. There were also significant differences in general personality trait ratings: Targets who reacted positively to the baby in the story were rated as significantly more ambitious [$F(1,116) = 15.72$, $p < .001$, $\eta^2 = 0.119$], as well as kind and understanding [$F(1,116) = 78.28$, $p < .001$, $\eta^2 = 0.403$].

In summary, the type of interaction between the target model and the baby continued to have a significant effect on the ratings of the target model under these laboratory conditions, where the pictures of the models were no longer available and when using a between-subjects experimental design. The general size of the effect is smaller than that found in Experiment 1, but this may be due to differences in methodology (e.g., Experiment 1 included baseline ratings that were used to subtract out the effects of gender and relationship type, whereas Experiment 2 used standardized ratings). Either a specific parental investment disposition assessment mechanism or a general personality assessment mechanism is compatible with the finding that the context influenced long-term attractiveness ratings more strongly than it did short-term attractiveness ratings. The finding that cues to more general personality traits (e.g., being compassionate and kind) more strongly influenced attractiveness rating than the positive/negative interaction with a child context, however, suggests a more general personality trait assessment.

7. General discussion

Women tend to be generally more critical than men in their evaluations of potential mates (e.g., Kenrick et al., 1993), but this point was extended in two important ways by findings in the present study. First, it was demonstrated that this sex difference is specific to the mating context; it disappears when men and women are asked to evaluate the attractiveness of opposite-sex models for nonromantic relationships (as potential friends and neighbors). Second, this pattern was demonstrated using a more heterogeneous set of participants than prior studies with just university students.

At a finer level of analysis, cues of a positive DPI increase women's evaluations of male attractiveness, as predicted and found by La Cerra (1995). This phenomenon is much less

domain-specific that previously reported, however. Women's evaluations of men are also higher, given a positive interaction with a baby context, for nonmating (as potential friends and neighbors) as well as for mating relationships. Women are also just as influenced by contexts that illustrate other similarly positive traits (e.g., general helpfulness and compassion). Although this result does not rule out the existence of specific evaluative mechanisms for assessing men's dispositions towards parental investment (e.g., as just one of many evaluative mechanisms), it fails to provide evidence of its existence.

The one cue that showed a notable influence on men's evaluations of women and also had the strongest influence on women's ratings of men was the cue designed to illustrate general compassion (i.e., the context of giving an elderly person a glass of water). Although not predicted a priori, this result supports the findings of Buss (e.g., 1989) that the trait of "kind and understanding" was one of the most valued traits by both men and women across a wide range of cultures.

The methodological checks and improvements on prior research (La Cerra, 1995) appear to have been successful, and differences in female sociosexuality may have a small effect on ratings of men interacting positively with babies.

The general pattern of sensitivity to cues of DPI on the part of women but not men is consistent with the findings of La Cerra (1995). However, the specificity of this sensitivity (relative to contexts indicating more general dispositions) was not found. To assess if these conflicting results are due to the relatively more diverse sample in this study, a subset of the data was constructed by eliminating all participants who did not fit the criteria of being (1) under 25 years of age, (2) single, (3) American, and (4) not a college graduate. The resulting subset of responses (241 women and 108 men) were largely the same as with the full data set.[1] Specifically, the linear trend of the "baby effect" was actually slightly stronger for females in this subsample, while in the male subsample, positive and neutral interactions with a baby led to *lower* ratings of attractiveness.

It is possible that female attention to behavioral cues of male parental investment is one aspect of attention to a general personality assessment (e.g., of helpfulness, kindness, or compassion) rather than a dissociable element that can be assessed separately. More tightly constrained comparison conditions (e.g., cues of parental investment that are not simultaneously cues of other desirable traits such as helpfulness, compassion, or kindness) would resolve this issue. There may also be situational and personality variations, other than sociosexuality (e.g., socioeconomic factors, life-history stages, and menstrual cycle variations), that mediate individual differences in reactions to others' parental investment dispositions.

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