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Mate Preferences for Warmth-Trustworthiness Predict Romantic Attraction in the Early Stages of Mate Selection and Satisfaction in Ongoing Relationships

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Abstract

People seek warm and trustworthy individuals as long-term mates for numerous reasons. Indeed, such individuals are prone to cooperation, have strong parenting skills, have the ability to fulfill our need to belong, and may provide a relationship that is characterized by greater closeness, protection, acceptance, and safety. Although prior work has shown that both sexes indicate equally strong preferences for these traits in potential mates, few studies have examined whether people actually respond favorably to partners high in warmth-trustworthiness in live mating contexts. We, thus, demonstrated that people's stated preferences for warmth-trustworthiness (a) predicted their attraction to potential mates in a live mate-selection context (Study 1) and (b) interacted with their partners' actual traits to predict satisfaction with their marriages (Study 2). Together, these studies demonstrate the importance of partner traits associated with warmth and trustworthiness and add to recent research suggesting that people can accurately report their romantic-partner preferences.

Keywords

warmth-trustworthiness, mate preferences, speed-dating, marital satisfaction, longitudinal design

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Much of the work in the extensive body of research on mate preferences has focused on sex differences in preferences for physical attractiveness and for social status (e.g., Buss, 1989; Jonason, Li, & Cason, 2009; Li, Bailey, Kenrick, & Linsenmeier, 2002; Meltzer, McNulty, Jackson, & Karney, 2014b). In recent years, researchers have examined the extent to which preferences for these traits are related to assessments and decisions in actual mating contexts (e.g., Eastwick & Finkel, 2008; Fletcher, Kerr, Li, & Valentine, 2014; Li et al., 2013; Luo & Zhang, 2009; Meltzer et al., 2014b). Despite the informative nature of such research, however, traits associated with warmth and trustworthiness, which are typically rated as the most important traits in a long-term partner to both sexes (e.g., Fletcher, Simpson, Thomas, & Giles, 1999), have received less attention. In this article, we address this gap by investigating the extent to which men and women respond to warmth-trustworthiness in a live mate-selection context and in newly formed marriages, as well as the extent to which their stated preferences for partner warmth-trustworthiness predict their actual valuation of their partners in both of those mating contexts.

The Multiple Benefits of a Warm and Trustworthy Partner

In various mate preference studies, both men and women rate “kind and understanding” as the most desirable trait in a potential marriage partner (e.g., Buss, 1989; Buss & Barnes, 1986). Likewise, other research has demonstrated that, for long-term mates, both men and women prioritize kindness as a necessity (Li et al., 2002), warmth-trustworthiness over attractiveness-vitality and status-resources (Fletcher, Tither, O’Loughlin, Friesen, & Overall, 2004), and good parenting over good provisioning and good genes (Lu, Zhu, & Chang, 2015). Moreover, cross-culturally, men and women highly

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value kindness and honesty in long-term partners (Buss, 1989; Li, Valentine, & Patel, 2011; Lippa, 2007).

Several reasons may underlie why warmth-trustworthiness has been consistently highly valued by both sexes. First, warmth-trustworthiness may be directly related to a person's tendency to cooperate in the maintenance of a long-term relationship (e.g., Buss & Barnes, 1986; Fletcher et al., 1999; Kenrick, Sadalla, Groth, & Trost, 1990; Li et al., 2002). Consistent with this idea, people with spouses high (vs. low) in warmth and trust report higher general marital satisfaction and rate their spouses more positively across a variety of domains (e.g., supportive, loving; Botwin, Buss, & Shackelford, 1997). Conversely, people with spouses low (vs. high) in warmth and trust are more likely to report infidelity, condescension, and self-centeredness, and women with husbands lower in warmth and trust are more likely to report spousal abuse (Buss, 1991). Moreover, partners high (versus low) in warmth and trust are more likely to use positive persuasion strategies (e.g., reason) rather than negative persuasion strategies (e.g., coercion) when convincing their spouses to engage in specific behaviors (Buss, 1992). Similarly, people higher (vs. lower) in warmth and trust act more cooperatively in their consumption of a shared depleted resource (Koole, Jager, van den Berg, Vlek, & Hofstee, 2001) and in the repeated prisoner's dilemma game (Kagel & McGee, 2014). Together, these findings suggest that people higher (vs. lower) in warmth and trust make more cooperative partners—an important attribute in maintaining a long-term relationship.

Not only are warm and trustworthy people better cooperative partners, but evidence suggests that they are also better parents. Biparental care has been observed throughout the world and across time, and is likely adaptive—throughout our ancestral history, children were more likely to survive to the extent that more than one adult cared for them (Hrdy, 2009). Warm and trustworthy people seem to be more likely to participate in parenting. People high (vs. low) in interpersonal warmth report a stronger desire to have children and, once they become parents, are more caring and tender toward their children (Buckels et al., 2015). Furthermore, a meta-analysis found that parents high (vs. low) in warmth, trust, kindness, and considerateness are more responsive caregivers (Prinz, Stams, Dekovic, Reijntjes, & Belsky, 2009), which, importantly, is associated with better physical and cognitive child development (Shonkoff, 2015). Thus, people who possess traits associated with warmth-trustworthiness may be more likely to successfully rear children who survive and thrive. Given the adaptive significance of both cooperation and parenting, it is reasonable to postulate that people may have evolved to especially value warmth-trustworthiness in a partner.

Moreover, people may prioritize warmth-trustworthiness because such partners are more able to fulfill their basic need to belong (Baumeister & Leary, 1995). Warm and trustworthy individuals may have more positive interactions

with their partners, which may contribute to those partners feeling close, protected, accepted, and safe. Relatedly, warm and trustworthy partners may be less likely to stray or otherwise cause relationships to end (Buss, 1991). Thus, seeking a warm and trustworthy partner might be a way for people to achieve a more favorable balance between (a) the benefits of getting closer in a relationship and (b) increased vulnerability to the risks of rejection (Murray, Holmes, & Collins, 2006). People's preference for warm and trustworthy long-term partners may be due to the stability and security such partners provide.

In sum, several reasons potentially explain why people might especially value warmth-trustworthiness in a long-term partner and why this might be reflected in their actual mate choices and relationship satisfaction. Behavioral support for a preference for warmth-trustworthiness would be consistent with not only the possibility that people evolved to value such traits for their links to cooperation and parenting, but also that it is a valued trait dimension because partners with such traits better satisfy the need to belong and provide acceptance and safety.

Beyond Just Preferences

Although people state preferences for long-term partner warmth-trustworthiness, few studies have investigated whether such preferences are expressed outside the lab. If this trait is indeed important, then potential and existing partners who have higher levels of warmth-trustworthiness should be more highly desired and positively evaluated in actual mating contexts.

Initial Mate Selection

Despite the importance of partner warmth-trustworthiness, there are, nevertheless, individual differences in preferences for this trait. Some people, for instance, more highly favor traits relating to attractiveness-vitality (i.e., good genes) or status-resources (i.e., good provisioning; Fletcher et al., 2004; Lu et al., 2015) than do other people. As such, the question remains whether people's specific trait preferences guide their actual selection and retention of mates in actual mating contexts, as an evolutionary perspective on mate preferences would suggest (Buss & Schmitt, 1993; Li et al., 2013). Specifically, individuals who place greater (vs. lesser) value on a particular trait are expected to react more favorably to higher levels of the trait when encountering actual mates.

A speed-dating study found evidence that people who met opposite-sex others who are higher on a cluster of traits comprising fun/exciting, responsive, dependable/trustworthy, and friendly/nice considered those others more desirable and were more likely to date them (Eastwick & Finkel, 2008). This study, however, did not find a link between people's stated partner preferences for these traits

and their evaluations and dating of the potential mates. One possible explanation for this null finding is that their inclusion of the trait fun/exciting “washed out” the correspondence; fun/exciting loads more highly onto Buss and Barnes’s (1986) socially exciting factor and Fletcher et al.’s (1999) vitality-attractiveness factor. Fletcher and colleagues (1999) originally theorized, as we do, that warmth-trustworthiness indicates cooperation, security, and good parenting, with which fun/exciting does not conceptually fit. Thus, although past research has examined the predictiveness of stated preferences for traits similar to warmth-trustworthiness, the inclusion of a theoretically superfluous trait may have introduced unnecessary noise that made it difficult to accurately conclude whether people choose long-term mates based on stated preferences for partner warmth-trustworthiness.

Ongoing Relationships

Of course, mate choice is only one aspect of romantic relationships. After forming a long-term relationship, intimates continue to assess one other. Among both foraging populations and postindustrial societies, the likelihood of divorce is highest in the first 5 years of marriage, particularly among couples who have not yet had children (Blurton Jones, Marlowe, Hawkes, & O’Connell, 2000; Bramlett & Mosher, 2002), and thus, the first several years of marriage likely afford intimates time to more closely evaluate whether their spouses fulfill their mate preferences. To the extent that preferences are not fulfilled, marital satisfaction likely decreases, which increases the likelihood of divorce (Karney & Bradbury, 1995). Such a finding would suggest that mate preferences are important in initial interactions and remain an important process with life-altering consequences.

We are aware of only one study that has examined the association between intimates’ stated preferences and their relationship satisfaction. Specifically, people report higher satisfaction to the extent that their partners match their stated mate preferences, including preferences for partner warmth-trustworthiness (Fletcher et al., 1999, Study 6). Nevertheless, partner warmth-trustworthiness was combined with traits assessing other major dimensions (i.e., partner vitality-attractiveness, partner status-resources), and thus, it remains unclear whether a concordance between stated preferences for warmth-trustworthiness and actual partner warmth-trustworthiness uniquely predicts relationship satisfaction. Moreover, despite the important role that partner warmth-trustworthiness may play across time, few studies have longitudinally examined the relationship between people’s preferences for partner warmth-trustworthiness and long-term relationship satisfaction. As the honeymoon phase begins to wear off, young married couples may begin to more carefully examine whether their partners’ traits fulfill their own preferences, which could have notable consequences for their marital satisfaction.

The Current Research

The goal of the current research was to examine the relevance of heterosexual preferences for long-term partner warmth-trustworthiness in actual mate choices and long-term relationship outcomes. We predicted that people who prefer warm and trustworthy partners would be (a) more likely to select such partners in a live-interactive context and (b) satisfied with their long-term relationships to the extent that their partners are warm and trustworthy. We tested this possibility in two independent studies of opposite-sex pairs. In Study 1, we examined the ability of preferences for partner warmth-trustworthiness to guide actual mate choice for singles in a live-interactive context. Consistent with reasoning that warmth-trustworthiness reflects cooperativeness and good parenting and fulfills the need to belong for both men and women (Fletcher et al., 1999), and consistent with the notion that mate preferences guide mate choice (Li et al., 2013), we predicted that both sexes’ preferences for partner warmth-trustworthiness would affect the extent to which they would be attracted to and would select partners who are higher on warmth-trustworthiness. In Study 2, we examined newlywed couples across a span of 4 years. In line with an evolutionary perspective that mate preferences serve an adaptive function of guiding not only long-term mate selection, but also long-term mate retention (Buss & Shackelford, 1997), we predicted that people who place relatively high value on partner warmth-trustworthiness would be most satisfied with their long-term relationships to the extent that their partners are warm and trustworthy.

Study 1

In Study 1, we compared people’s stated mate preferences with their actual mate choices in a speed-dating setting. We predicted that people would be more attracted to potential partners who are high (vs. low) in warm-trustworthiness. Moreover, we predicted that people’s stated preferences for partner warmth-trustworthiness would predict their actual mate choices in the live-interaction event and that this effect would not differ across sexes.

Method

Participants. We recruited single, heterosexual participants ($n = 216$; 109 women) through Facebook advertisements and the psychology subject pool at a major Singaporean university to take part in a “chatting study” for SGD15 (~US\$10). Female and male participants were on average 20.88 ($SD = 1.53$) and 23.16 ($SD = 1.86$) years of age, respectively. One hundred forty-four (66.7%) participants were tertiary students, 59 (27.3%) participants were employed, and 12 (5.6%) participants indicated they were neither in school nor working; one participant failed to indicate his or her occupation.

Procedure and materials. After participants completed an online preevent survey, a research assistant scheduled their specific speed-dating events. We aimed to assemble events with 10 men and 10 women; but due to no-shows, we ended up with five to 10 individuals of each sex per event with a total of 13 events. Upon arriving, participants registered and received an ID sticker; we then photographed all participants and led them to the waiting area. Once all participants had arrived or 30 min had transpired from the advertised start time (whichever happened first), the experimenter briefed the participants on the procedures and led them to the event area, where we had placed sets of questionnaires on clipboards labeled with each participant's ID at each table. Participants started at the table where their questionnaires were located and then took their questionnaires with them throughout the session.

We counterbalanced which sex rotated and approached the other. Each speed-date session lasted 4 min, during which participants spoke freely with one another. The experimenter rang a bell after each session to signal participants to stop talking. The rotating sex for that session moved clockwise to the next date, whereas the other sex remained seated. Participants then had 2 min to complete a survey regarding their date before the experimenter rang the bell again to signal the start of the next date. Once all dates were completed, participants were debriefed and compensated with either participation credit or cash.

Preevent survey: Stated partner preferences. Participants completed the preevent survey online up to 14 days before each event. This survey assessed participants' demographics and stated partner preferences. Specifically, participants used a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) to indicate their agreement with the importance of various traits in determining who they would be willing to date, including items assessing partner warmth-trustworthiness: responsive, dependable/trustworthy, friendly/nice. This three-item measure demonstrated modest reliability ($\alpha = .69$). As will be seen in the "Results" section, however, this somewhat low reliability did not appear to pose a problem detecting key effects.

Event survey: Partner evaluation. Following each speed-date, participants rated their interaction partner on the three warmth-trustworthiness traits used in the preevent survey (1 = *extremely below average*, 7 = *extremely above average*). This scale demonstrated adequate reliability ($\alpha = .86$). Participants also indicated their attraction to each speed-date (1 = *definitely no*, 7 = *definitely yes*) on four different items: "I like this person," "I am sexually attracted to this person," "I think this person would be an ideal romantic partner," and "If I knew this person were interested in going on a date with me, I'd be willing to." A repeated-measures confirmatory factor analysis (i.e., controlling for within-participant effects) of these items indicated that they all loaded onto one factor,

$\chi^2(4) = 3.99, p = .408$, comparative fit index (CFI) = 1.00, root mean square error approximation (RMSEA) = 0.00; thus, we aggregated these items into one romantic-attraction composite index that demonstrated high reliability ($\alpha = .90$). Finally, participants indicated whether they were interested in exchanging emails with each speed-date ("yes" or "no"), with the understanding that emails would be exchanged if and only if both partners consented.

Results

On average, participants placed relatively high importance on partner warmth-trustworthiness ($M = 5.74, SD = 0.76$) and, as predicted, men's preevent stated importance of partner warmth-trustworthiness ($M = 5.71, SD = 0.80$) did not significantly differ from women's ($M = 5.76, SD = 0.73$), $t(213) = -0.46, p = .65$. In addition, participants were rated by their interaction partners as having moderately high warmth-trustworthiness ($M = 5.01, SD = 0.53$) and reported a moderate range of attraction to each other ($M = 3.42, SD = 0.77$).

The effect of partner warmth-trustworthiness on mate choice.

Given that (a) participants' speed-dating partners were nested within participants and (b) participants were nested within both dyads and speed-dating sessions, we tested our predictions using multilevel mixed-effects modeling. To determine the extent to which partners' other-rated warmth-trustworthiness was associated with participants' romantic attraction and consent to future contact, we computed one mixed-effects linear regression model and one mixed-effects logistic regression model. In the mixed-effects linear regression model, we regressed participants' romantic attraction onto their partners' other-reported warmth-trustworthiness, and included the participant, dyad, and session identification numbers as random-effect variables to control for the nested effects. According to that analysis, consistent with predictions, partner warmth-trustworthiness ratings were positively associated with participants' romantic attraction, $\beta = .64, {}^1 95\% CI = [0.59, 0.69]$, Wald $Z = 25.03, p < .001$, effect-size $r = .60$, such that participants indicated greater romantic attraction to partners who were rated as relatively high (vs. low) in warmth-trustworthiness. A supplemental analysis demonstrated that this effect did not differ across participant sex, $\beta = .00, 95\% CI = [-0.10, 0.11]$, Wald $Z = 0.09, p = .93$.

In the mixed-effects logistic regression model, we regressed participants' yes/no (whether they reported interest in exchanging contact information) onto the partners' other-reported warmth-trustworthiness, and included the participant, dyad, and session identification numbers as random-effect variables (to allow the data to converge, we set the number of integration points to three). According to that analysis, consistent with predictions, partner warmth-trustworthiness ratings were positively associated with

Table 1. Study 1: Associations Between Participants' Stated Preference for PWT, Partners' Other-Reported Warmth-Trustworthiness, and Participants' Romantic Attraction and Yessing.

	Romantic attraction			Yessing		
	β	95% CI	Wald Z	β	95% CI	Wald Z
PWT	0.11	[-0.24, 0.46]	0.63	-0.08	[-1.65, 1.49]	-0.10
IPWT	-0.46	[-0.79, 0.14]	-2.77**	-2.07	[-3.61, -0.54]	-2.64**
PWT \times IPWT	0.09	[0.03, 0.15]	2.96**	0.30	[0.12, 0.58]	2.08*
Effect size for the interactive effect: $r = .07$					odds ratio = 1.35	

Note. CI = confidence interval; PWT = partner warmth-trustworthiness; IPWT = importance of partner warmth-trustworthiness.

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

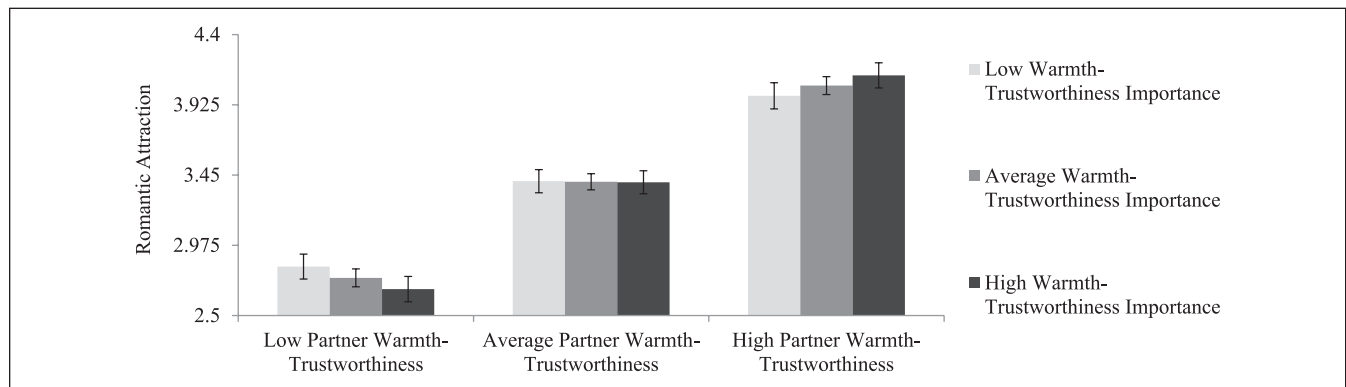


Figure 1. Study 1: Interactive effects of participants' stated preference for partner warmth-trustworthiness and partner warmth-trustworthiness on participants' romantic attraction.

Note. We have used vertical bars to indicate estimated values for participants at low (1 SD below the sample mean), average, and high (1 SD above the sample mean) levels of stated preferences for partner warmth-trustworthiness importance as well as partners' warmth-trustworthiness. It is important to note, however, that both constructs are continuous variables.

participants' yessing, $\beta = 1.60$, 95% CI = [1.19, 2.02], Wald $Z = 7.58$, $p < .001$, effect-size odds ratio (OR) = 4.95, such that participants were more likely to yes partners who were rated relatively high (vs. low) on warmth-trustworthiness. Interestingly, a supplemental analysis demonstrated that this effect was moderated by participant sex, $\beta = .57$, 95% CI = [0.06, 1.08], Wald $Z = 2.19$, $p = .03$, effect-size OR = 1.77, such that it was stronger among female participants, $\beta = 1.90$, 95% CI = [1.35, 2.45], Wald $Z = 6.82$, $p < .001$, effect-size OR = 6.69, than among male participants $\beta = 1.32$, 95% CI = [0.90, 1.76], Wald $Z = 6.02$, $p < .001$, effect-size OR = 3.74.

Testing the interactions. To examine the extent to which participants' preevent stated preferences moderated the associations between (a) partner trait ratings and participants' romantic attraction and (b) partner trait ratings and participants' yessing, we conducted two additional analyses. In the first analysis, a mixed-effect linear regression, we regressed participants' romantic attraction onto the partners' other-reported warmth-trustworthiness, the participants' stated importance of partner warmth-trustworthiness, and the crucial Warmth-Trustworthiness Stated Importance \times

Partner Warmth-Trustworthiness interaction, and included the participant, dyad, and session identification numbers as random-effect variables (Table 1). As can be seen, consistent with predictions, the key two-way interaction emerged as significant (Figure 1). To decompose this interaction, we estimated the simple effects of partner warmth-trustworthiness for participants who place relatively low importance on partner warmth-trustworthiness (1 SD below the sample mean) versus relatively high importance on partner warmth-trustworthiness (1 SD above the sample mean). Although partner warmth-trustworthiness was associated with romantic attraction among participants who placed relatively low importance on partner warmth-trustworthiness, $\beta = .57$, 95% CI = [0.50, 0.64], Wald $Z = 15.92$, $p < .001$, effect-size $r = .38$, partner warmth-trustworthiness was more strongly associated with romantic attraction among those who placed relatively high importance on partner warmth-trustworthiness, $\beta = .71$, 95% CI = [0.64, 0.78], Wald $Z = 20.38$, $p < .001$, effect-size $r = .49$.

In the second analysis, a mixed-effect logistic regression, we repeated the previous analysis, but replaced participants' romantic attraction with participants' yessing (Table 1). Consistent with predictions, the association between partner

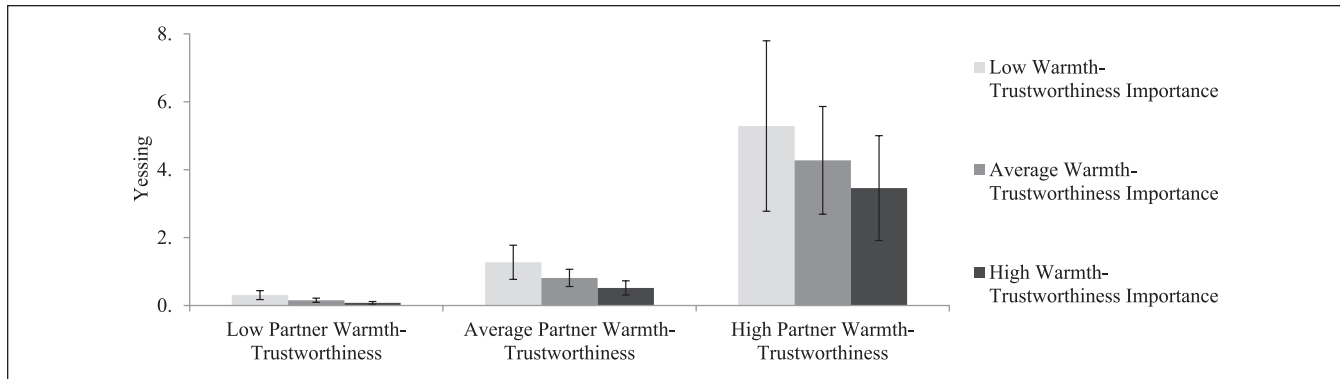


Figure 2. Study 1: Interactive effects of participants' stated preference for partner warmth-trustworthiness and partner warmth-trustworthiness on participants' yessing.

Note. We have used vertical bars to indicate estimated values for participants at low (1 SD below the sample mean), average, and high (1 SD above the sample mean) levels of stated preferences for partner warmth-trustworthiness importance as well as partners' warmth-trustworthiness. It is important to note, however, that both constructs are continuous variables. The horizontal axis indicates the ratio of the number of participants who expressed yessing to the number of participants who reported no interest in exchanging contact information.

warmth-trustworthiness and participants' yessing was moderated by participants' stated preference for partner warmth-trustworthiness (Figure 2). To decompose this interaction, we used the same simple slopes method as described above. Although partner warmth-trustworthiness was associated with yessing among participants who placed relatively low importance on partner warmth-trustworthiness, $\beta = 1.40$, 95% CI = [0.97, 1.83], Wald $Z = 6.36$, $p < .001$, effect-size OR = 4.06, partner warmth-trustworthiness was more strongly associated with romantic attraction among participants who placed relatively high importance on partner warmth-trustworthiness, $\beta = 1.86$, 95% CI = [1.34, 2.38], Wald $Z = 6.98$, $p < .001$, effect-size OR = 6.42.

Discussion

Consistent with predictions, both men and women were more likely to report attraction to and indicate desire for future contact with warm and trustworthy partners, and this was particularly true among participants who placed relatively high importance on partner warmth-trustworthiness. In addition, as can be seen in Figure 2, those participants who placed particularly high value on partner warmth-trustworthiness were particularly disinclined to consent to future contact with partners low in warmth-trustworthiness. Participants, regardless of their stated importance of warmth-trustworthiness, were more likely to yes potential partners high in warmth-trustworthiness. Overall, as predicted, people who indicated that partner warmth-trustworthiness was more important to them demonstrated mate choices consistent with their preferences.

Study 2

To investigate the role of partner warmth-trustworthiness in long-term relationships, Study 2 followed a sample of newlywed couples across the first 4 years of marriage. Given that

relationship satisfaction may act as a barometer to gauge the extent to which relationships meet people's (evolved) needs (Meltzer, McNulty, Jackson, & Karney, 2014a; Meltzer, McNulty, & Maner, 2017), we examined the extent to which ascribed importance of partner warmth-trustworthiness interacted with actual partner warmth-trustworthiness to predict spouses' trajectories of marital satisfaction.

Method

Participants. Participants were 135 opposite-sex newlywed couples recruited from Tennessee, the United States. Couples were recruited using two methods: (a) advertisements in community newspapers and bridal shops and (b) invitations sent to eligible couples who had completed marriage license applications in counties near the study location. All couples responding to either solicitation were screened for eligibility in an initial telephone interview. Inclusion required that (a) this was the first marriage for each partner, (b) the couple had been married less than 6 months, (c) each partner was at least 18 years of age, (d) each partner spoke English and had completed at least 10 years of education (to ensure questionnaire comprehension), and (e) couples did not already have children and that wives were not older than 35 years (as part of the broader study aims). Eligible couples were scheduled to attend an initial laboratory session and mailed a packet of survey measures.

At baseline, husbands and wives were on average 25.90 ($SD = 4.57$) and 24.21 ($SD = 3.59$) years of age, respectively, and had received 15.69 ($SD = 2.38$) and 15.74 ($SD = 2.22$) years of education, respectively. Seventy percent of husbands and 56% of wives were employed full time, and 26% of husbands and 28% of wives were full-time students. The median income band of husbands and wives was US\$20,001 to US\$25,000 per year and US\$10,001 to US\$15,000 per year, respectively. The majority of husbands

Table 2. Study 2: Descriptive Statistics and Correlations.

	(1)	(2)	(3)	M	SD
1. Satisfaction with partner warmth-trustworthiness	—			6.36	0.66
2. Importance of partner warmth-trustworthiness	.41***	—		6.36	0.62
3. Initial marital satisfaction	.62***	.42***	—	97.55	8.18

Note. $N = 270$ for satisfaction with partner warmth-trustworthiness. $N = 269$ for importance of partner warmth-trustworthiness. $N = 268$ for initial marital satisfaction.

*** $p < .001$.

($n = 122$; 91%) and wives ($n = 125$; 93%) self-identified as Caucasian.

Procedure and materials. Couples completed a packet of questionnaires at home that they brought to a corresponding laboratory session. This packet included a consent form, self-report measures of demographics, importance of partner warmth-trustworthiness, satisfaction with partner warmth-trustworthiness, and global marital satisfaction, as well as instructions to complete all questionnaires independently. All couples received US\$80 as compensation.

At approximately 6-month intervals subsequent to the initial assessment, we recontacted couples by phone and mailed the global marital satisfaction questionnaire, along with postage-paid return envelopes and instructions reminding partners to complete questionnaires independently. We used this procedure at all follow-up procedures except Time 6, which resembled the baseline assessment. After completing each phase, couples received US\$50. The current analyses are based on up to eight assessments (spanning the first 4 years of marriage).

Satisfaction with partner warmth-trustworthiness. At baseline, we assessed intimates' satisfaction with their partners' warmth-trustworthiness using seven items drawn from a broader measure of satisfaction with various partner characteristics modeled after one described by Murray, Holmes, and Griffin (1996). These seven items were those that were most similar to those used by Fletcher et al. (1999) to assess "warmth and trustworthiness." Specifically, intimates indicated how satisfied they are with the extent to which their partner is "understanding," "supportive," "kind," "considerate," "a good listener," "kind and affectionate," and "responsive to his or her needs" on a 7-point scale (1 = *not at all satisfied*, 7 = *completely satisfied*). We averaged intimates' responses; higher scores indicated higher satisfaction with partner warmth-trustworthiness. Internal consistency of this measure was high (for husbands, $\alpha = .89$; for wives, $\alpha = .87$).

Importance of partner warmth-trustworthiness. At baseline, we assessed the importance that each spouse places on the seven partner warmth-trustworthiness items described

above, using a 7-point Likert-type scale (1 = *not at all important*, 7 = *completely important*). We averaged intimates' responses; higher scores indicated higher importance of partner warmth-trustworthiness. Internal consistency of this measure was high (for husbands, $\alpha = .88$; for wives, $\alpha = .90$). One husband failed to complete this measure and thus could not be included in the primary analysis.

Marital satisfaction. We assessed marital satisfaction at baseline and each follow-up using a semantic differential (Osgood, Suci, & Tannenbaum, 1957), which asks spouses to rate their perceptions of their marriage on 7-point scales between 15 pairs of opposing adjectives (e.g., "Bad-Good," "Dissatisfied-Satisfied"). Scores could thus range from 15 to 105, with higher scores reflecting more positive marital satisfaction. Internal consistency of this measure was high across all phases of the study (for both husbands and wives, all α s $> .90$). Although one husband from one couple and one wife from another couple did not complete this measure at baseline, each individual completed this measure during at least one other assessment and thus could be included in the primary analysis.

Results

As can be seen in Table 2, intimates reported relatively high satisfaction with and importance of partner warmth-trustworthiness, as well as relatively high levels of initial global marital satisfaction. Nevertheless, there was variability in all three of these reports. Moreover, paired-samples t tests indicated that partners' reports did not differ from one another for satisfaction with partner warmth-trustworthiness, $t(134) = 0.69$, ns , nor initial marital satisfaction, $t(132) = -0.22$, ns , but they did differ from one another on the importance they place on partner warmth-trustworthiness, $t(133) = -6.01$, $p < .001$, such that husbands placed less importance on partner warmth-trustworthiness ($M = 6.16$, $SD = 0.63$) than did wives ($M = 6.55$, $SD = 0.54$). Finally, husbands' and wives' satisfaction with partner warmth-trustworthiness, importance of partner warmth-trustworthiness, and marital satisfaction were all positively correlated with one another. Notably, intimates who were more satisfied with their

partners' warmth-trustworthiness were also more satisfied with their marriages.

The trajectory of marital satisfaction. We used growth-curve modeling (Bryk & Raudenbush, 1987) to estimate within-person changes in marital satisfaction over the first 4 years of marriage. Specifically, we estimated the following first level of a fully random second-level model using the HLM 7.01 computer program (Raudenbush, Bryk, & Congdon, 2013), in which husbands' and wives' parameters were estimated separately but simultaneously.

$$Y_{ij}(\text{marital satisfaction}) = \pi_{1ij}(\text{husbands' intercept}) + \pi_{2ij}(\text{wives' intercept}) + \pi_{3ij}\left(\begin{matrix} \text{husbands'} \\ \text{time} \end{matrix}\right) + \pi_{4ij}(\text{wives' time}) + e_{ij} \quad (1)$$

where time represents wave of assessment and was coded from 0 to 7 (so that each intercept represented initial marital satisfaction), the autocorrelation from repeated assessments was controlled in Level 2. We used restricted maximum likelihood estimation and placed no restrictions on the autoregressive error structures.

According to that analysis, both husbands and wives reported relatively high levels of initial marital satisfaction on average (for husbands, $\pi = 95.84$, $SE = 0.79$; for wives, $\pi = 96.01$, $SE = 0.78$) and, consistent with other research (e.g., Meltzer et al., 2014b), tended to experience significant declines in marital satisfaction over the course of the study on average (for husbands, $\pi = -1.30$, $SE = 0.26$; for wives, $\pi = -1.28$, $SE = 0.25$). Moreover, a direct test using the hypothesis testing option revealed that husbands and wives did not significantly differ in their initial levels of marital satisfaction, $\chi^2(1) = 0.03$, ns , and experienced similar rates of decline over time, $\chi^2(1) = 0.02$, ns . Given that these effects did not vary by sex, we constrained the pooled estimates of initial marital satisfaction and changes in marital satisfaction to be equivalent across intimates' sex (i.e., $\pi_{1ij} = \pi_{2ij}$ and $\pi_{3ij} = \pi_{4ij}$) in all subsequent analyses.

Notably, according to the significant chi-square tests of the between-subjects variance, there was substantial between-subjects variability in all parameters of these trajectories, for husbands' initial marital satisfaction, $\chi^2(119) = 300.60$, $p < .001$; for husbands' changes in marital satisfaction, $\chi^2(119) = 258.96$, $p < .001$; for wives' initial marital satisfaction, $\chi^2(119) = 241.35$, $p < .001$; for wives' changes in marital satisfaction, $\chi^2(119) = 306.33$, $p < .001$, suggesting that some spouses began their marriages with higher or lower levels of satisfaction than others and that some spouses experienced more or less change in their satisfaction than others. The primary analysis examined whether spouses' satisfaction with their partners' warmth-trustworthiness and the importance they place on partners' warmth-trustworthiness accounted for this variability.

Table 3. Study 2: Interactive Effects of Intimates' Perceived Importance of and Satisfaction With Their Partners' Warmth-Trustworthiness on Their Marital Satisfaction Trajectories.

	β	95% CI	r
Initial marital satisfaction			
Intercept	95.69	[94.53, 96.84]	
WTS	3.91***	[2.59, 5.23]	.46
WTI	1.84**	[0.64, 3.04]	.26
WTS \times WTI	0.60	[-0.33, 1.52]	.11
Changes in marital satisfaction			
Intercept	-1.44***	[-1.93, -0.95]	.46
WTS	0.33*	[0.04, 0.61]	.20
WTI	-0.34*	[-0.64, -0.05]	.20
WTS \times WTI	0.32**	[0.13, 0.51]	.28

Note. β s are associations between variables and π_1 and π_2 (i.e., husbands' and wives' initial levels of global marital satisfaction, constrained to be equal) and π_3 and π_4 (i.e., husbands' and wives' changes in global marital satisfaction, constrained to be equal). $df = 130$ for all variables. Effect size r is reported. CI = confidence interval; WTS = warmth-trustworthiness satisfaction; WTI = warmth-trustworthiness importance.

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

Interactive effects of satisfaction with partner warmth-trustworthiness and importance of partner warmth-trustworthiness on spouses' marital satisfaction trajectories. We predicted that the association between spouses' satisfaction with partner warmth-trustworthiness and their trajectory of marital satisfaction would depend on the importance that spouses place on partner warmth-trustworthiness. To test this prediction, we regressed all parameters estimated in Equation 1 (i.e., husbands' and wives' initial marital satisfaction and husbands' and wives' changes in marital satisfaction) onto husbands' and wives' warmth-trustworthiness satisfaction (standardized), warmth-trustworthiness importance (standardized), and the Warmth-Trustworthiness Satisfaction \times Warmth-Trustworthiness Importance interaction (all entered uncentered) in the second level of the model, and we constrained pooled estimates of each effect to be equal across sex.

The results of this analysis are reported in Table 3. As can be seen, there was a positive association between the Warmth-Trustworthiness Satisfaction \times Warmth-Trustworthiness Importance interaction and changes in marital satisfaction, indicating that the extent to which spouses' satisfaction with partner warmth-trustworthiness was associated with changes in marital satisfaction over time depended on the importance those spouses placed on partner warmth-trustworthiness (Figure 3). To interpret the interaction, we deconstructed it by testing the simple main effects of satisfaction with partner warmth-trustworthiness for spouses who place low (i.e., one SD below the sample mean) and high (i.e., one SD above the sample mean) importance on partner warmth-trustworthiness. Among spouses who place relatively low importance on partner warmth-trustworthiness, satisfaction with partner warmth-trustworthiness was unassociated with changes in marital satisfaction, $\beta = -.01$, 95% CI = [-0.29, 0.27],

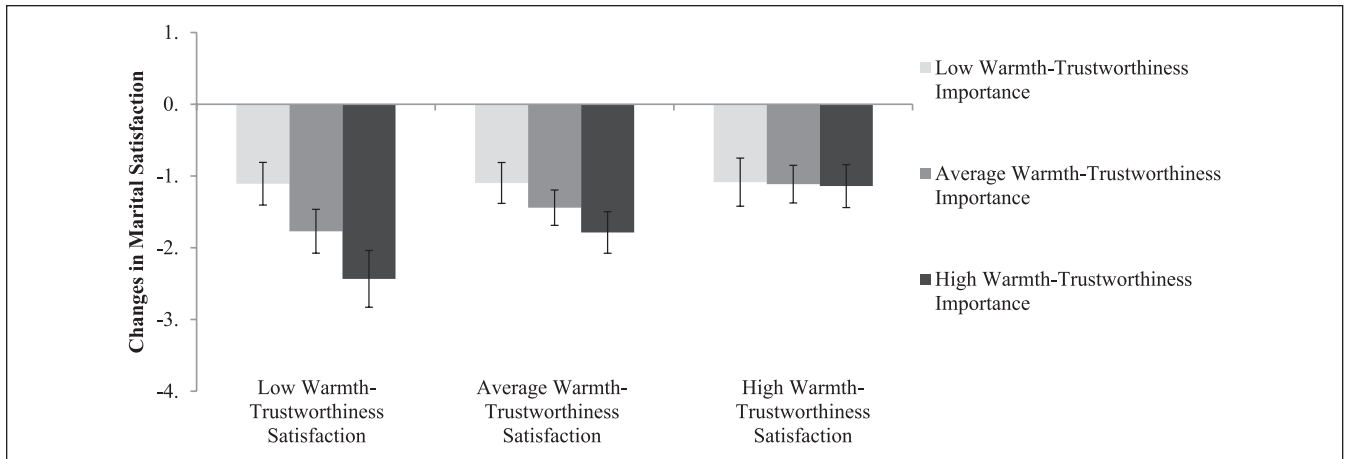


Figure 3. Study 2: Interactive effects of warmth-trustworthiness satisfaction and warmth-trustworthiness importance on spouses' changes in global marital satisfaction.

Note. We have used vertical bars to indicate estimated values for participants at low (1 SD below the sample mean), average, and high (1 SD above the sample mean) levels of satisfaction with and importance of partner warmth-trustworthiness. It is important to note, however, that both constructs are continuous variables.

$t(130) = -0.09$, *ns*. In contrast, among spouses who place relatively high importance on partner warmth-trustworthiness, satisfaction with partner warmth-trustworthiness was positively associated with changes in marital satisfaction, $\beta = .59$, 95% CI = [0.17, 1.01], $t(130) = 2.87$, $p = .005$, effect size $r = .24$. Notably, two supplemental analyses demonstrated that this interactive effect on changes in marital satisfaction (a) continued to emerge as significant when partner marital satisfaction was included as a Level 1 covariate, $\beta = .29$, 95% CI = [0.13, 0.45], $t(130) = 3.45$, $p = .001$, effect size $r = .29$ and (b) was not moderated by sex, $\chi^2(1) = 0.12$, *ns*, (see Supplemental Appendix).

As can be seen in Table 3, both satisfaction with and importance of partner warmth-trustworthiness were positively associated with spouses' initial levels of marital satisfaction. That is, spouses who were relatively more (vs. less) satisfied with their partners' warmth-trustworthiness reported higher initial marital satisfaction, and spouses who placed relatively high (vs. low) importance on partner warmth-trustworthiness reported higher initial marital satisfaction. These two positive main effects indicate that spouses who place higher importance on partner warmth-trustworthiness may experience initial benefits that outlast and thus offset any negative implications they experience over time to the extent that they are less satisfied with their partners' warmth-trustworthiness. To address this possibility, we reanalyzed the data using a recentered time variable, such that Time 8 = 0, making the intercept interpretable as intimates' predicted mean marital satisfaction at the end of the study, or 4 years into marriage.

The results of this analysis are reported in Table 4, where the effects involving time are not reproduced because they are identical to those presented in Table 3. Consistent with the idea that initial satisfaction with and initial importance of

Table 4. Study 2: Interactive Effects of Warmth-trustworthiness Satisfaction and Warmth-Trustworthiness Importance on Spouses' Global Marital Satisfaction at End of Study (4 Years Into Marriage).

	β	95% CI	r
Intercept (initial marital satisfaction)			
Intercept	85.59	[81.85, 83.33]	
WTS	6.21***	[4.30, 8.13]	.50
WTI	-0.57	[-2.40, 1.26]	.05
WTS \times WTI	2.72***	[1.60, 4.04]	.37

Note. Time and all interactions involving time were included in all models, but results are suppressed because they are completely redundant with those in Table 3. $df = 130$ for all variables. Effect size r is reported.

CI = confidence interval; WTS = warmth-trustworthiness satisfaction; WTI = warmth-trustworthiness importance.

*** $p < .001$.

partner warmth-trustworthiness interact to predict intimates' marital satisfaction 4 years into marriage, the Warmth-Trustworthiness Satisfaction \times Warmth-Trustworthiness Importance interaction was positive and significant. To view the nature of the main effects on spouses' initial marital satisfaction together with the significant interactions on spouses' change in marital satisfaction and ultimate marital satisfaction 4 years into their marriages, we depicted spouses' entire trajectories of marital satisfaction in Figure 4. As can be seen, spouses who were relatively more satisfied with and placed higher importance on their partners' warmth-trustworthiness began the study the most satisfied with their marriages and remained the most satisfied with their marriages 4 years later. Spouses who were relatively less satisfied with their partners' warmth-trustworthiness, yet placed relatively high importance on warmth-trustworthiness, in contrast, began the study less satisfied with their marriages and

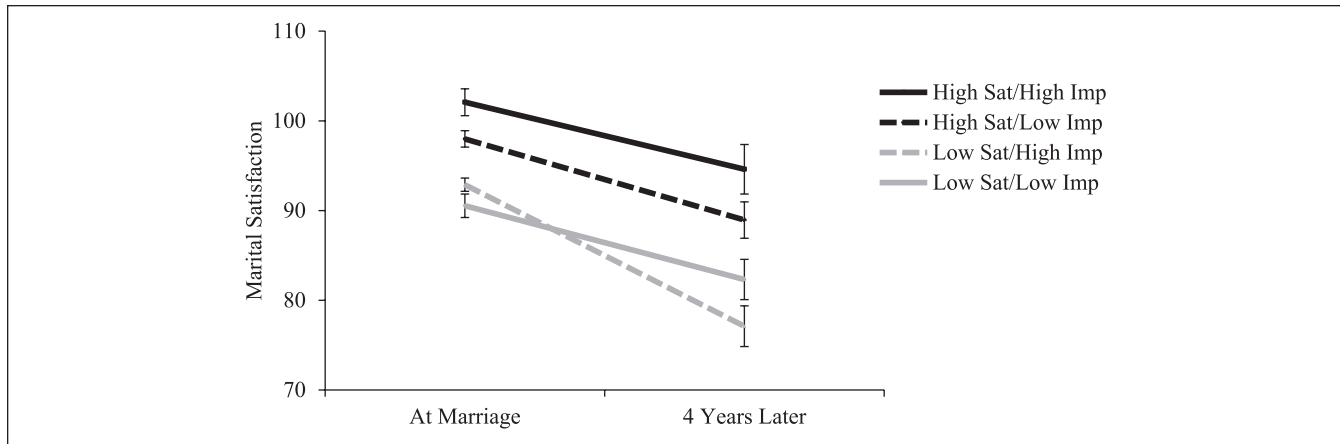


Figure 4. Study 2: Interactive effects of warmth-trustworthiness satisfaction and warmth-trustworthiness importance on spouses' global marital satisfaction trajectories.

experienced the steepest declines in marital satisfaction, resulting in the lowest marital satisfaction 4 years later.

Discussion

In Study 2, we attempted to conceptually replicate the results of Study 1 and extend the findings to a sample of married couples. Consistent with Study 1 and with our predictions, satisfaction with partner warmth-trustworthiness predicted marital satisfaction, and the importance that spouses place on partner warmth-trustworthiness moderated the association between spouses' satisfaction with partner warmth-trustworthiness and their marital satisfaction trajectories. Specifically, among spouses who placed relatively high importance on partner warmth-trustworthiness, satisfaction with partner warmth-trustworthiness was associated with less steep declines in marital satisfaction over the first 4 years of marriage; among spouses who placed relatively low importance on partner warmth-trustworthiness, in contrast, satisfaction with partner warmth-trustworthiness was unassociated with change in marital satisfaction across the first 4 years of marriage. Moreover, Study 2 suggests that spouses who place relatively high importance on partner warmth-trustworthiness experience initial benefits that outlast and thus offset any negative implications they experience over time to the extent that they are less satisfied with their partners' warmth-trustworthiness.

General Discussion

Partner warmth-trustworthiness is an indicator of cooperativeness (e.g., Buss, Shackelford, Kirkpatrick, & Larsen, 2001) and good parenting (e.g., Buckels et al., 2015), and people state that traits associated with warmth-trustworthiness are attractive in long-term mates (e.g., Fletcher et al., 2004). Nevertheless, no previous studies have conclusively addressed whether stated importance of such traits predicts

attraction in live-interactive mate-selection contexts or relationship satisfaction in ongoing long-term relationships. In Study 1, we investigated preferences for warmth-trustworthiness in a speed-dating event. Overall, people found potential romantic partners who were higher in warmth-trustworthiness more attractive and dateable. Furthermore, the greater importance that people ascribed to partner warmth-trustworthiness, the more attracted they were to potential mates who were warm and trustworthy, and the more likely they were to consent to going on another date.

In Study 2, we examined the impact of partner warmth-trustworthiness on intimates' satisfaction in long-term relationships. Using a longitudinal study of newlywed couples, we found that satisfaction with spouses' warmth-trustworthiness affected how satisfied people were with their marriages, and further analyses revealed that this association particularly occurs for those who place high—but not low—value on partner warmth-trustworthiness. Specifically, intimates who highly valued partner warmth-trustworthiness and were satisfied with their partners' warmth-trustworthiness had the highest levels of marital satisfaction initially and remained the most satisfied across the first 4 years of marriage, whereas intimates who prioritized partner warmth-trustworthiness and were dissatisfied with their partners' warmth-trustworthiness experienced the steepest declines in marital satisfaction over the first 4 years of marriage. Taken together, the findings from the two studies extend research on mate preferences showing that warmth-trustworthiness is an important trait dimension that people may have evolved to value in their partners.

Moreover, we found that people's sensitivity to potential and existing partners' warmth-trustworthiness is linked to how much value they place on this trait dimension. Indeed, stated preferences for warmth-trustworthiness predicted actual preference for warmth-trustworthiness in a sample of young singles (Study 1) and a sample of newlyweds (Study 2). An amalgamation of recent work indicates that people's

reported mate-choice criteria tend to be indicative of their actual mate choices (Conroy-Beam & Buss, 2016; Gerlach, Arslan, Schultze, Reinhard, & Penke, 2019; Li et al., 2013) and satisfaction with actual long-term mating decisions (Meltzer et al., 2014b). Together with the current findings, the research is largely consistent with an evolutionary perspective on mating, purporting that mate preferences evolved to adaptively guide actual mate choice (Buss & Schmitt, 1993); warmth-trustworthiness may be especially valued for its positive links to cooperation and parenting. Moreover, the findings are also consistent with the idea that partners with these traits are more able to satisfy people's need to belong (Baumeister & Leary, 1995). Furthermore, the traits may signify a closer, more accepting, and safe relationship that is favorable for the relationship risk regulation system (Murray et al., 2006). The match between people's stated and actual preferences is consistent with warm and trustworthy partners being cooperative and good parents who fulfill people's needs to belong and feel safe in their relationships.

Strengths, Limitations, and Future Directions

These studies have elucidated the connections between mate preferences, mate choices, and satisfaction with mate choices. Several strengths of the current research enhance our confidence in the results reported here. First, providing support for the evolutionary-based framework that guided our prediction, the current studies demonstrated that people were attracted to and satisfied as a result of their partners' warmth-trustworthiness if they highly valued partner warmth-trustworthiness. Second, the effects presented here appear robust given that they (a) replicated across two studies using samples of two different populations (singles, married couples) from two different cultures (Singapore, the United States), (b) replicated using three different dependent variables—attraction, consent to future contact, and marital satisfaction, and (c) held in Study 2 after controlling for partner marital satisfaction. Third, both studies used participants who responded based on real people and current romantic relationships, rather than hypothetical, laboratory-based, or past relationships. Thus, the outcome measures were both real and consequential. Overall, the effects reported here seem robust and are not idiosyncratic to different measurement techniques, samples, or cultures.

Despite these strengths, several factors limit interpretations of the current findings until they can be extended. First, we did not experimentally manipulate warmth-trustworthiness as others have manipulated physical attractiveness and social status (e.g., Li et al., 2013). A more thorough test of the impact of any trait on mate choice and relationship success involves directly manipulating the trait. Furthermore, we did not measure or manipulate participants' desire for cooperation, children, or the need to belong. Manipulating such desires would be a fruitful avenue for future research.

Second, we did not investigate the accuracy of warmth-trustworthiness preferences in same-sex pairs. Given that we could only examine opposite-sex couples in Study 2 because of the illegality of same-sex marriage in the United States at the time of data collection, we only hosted opposite-sex speed-dating events in Study 1 to allow for comparison between the two studies. Nevertheless, future research would benefit from examining the extent to which the accuracy of warmth-trustworthiness preferences emerges in nonheterosexual relationships. Due to the human proclivities to (a) seek out positive social interactions through ongoing social bonds (i.e., the need to belong; Baumeister & Leary, 1995) and (b) attempt to balance the potential benefits and vulnerabilities romantic relationships present (i.e., the risk regulation system; Murray et al., 2006), we would predict that lesbian, gay, and bisexual people would demonstrate similar preferences for warmth-trustworthiness. Given that warm and trustworthy partners are more supportive and loving (Botwin et al., 1997) and less likely to cheat (Buss, 1991), they would likely make their partners—regardless of sexual orientation—feel secure in their relationships. Supporting this notion, Lippa (2007) found that gay men and lesbian women, similar to straight men and women, rank honesty and kindness highly when considering the most important traits in a romantic partner.

Third, our speed-dating study did not follow up with participants, and thus we are unable to examine whether people's warmth-trustworthiness preferences predicted actual future contact or establishing a relationship. However, Gerlach and colleagues' (2019) prospective study found that people's initial mate preferences while single predicted the traits of actual dating partners 5 months later. Although we did not directly examine whether preferences predict relationship formation, past studies have demonstrated that they do.

Fourth, in Study 2, we were unable to assess people's warmth-trustworthiness preferences before they began dating the person they eventually married. Given that mate preferences tend to change a bit during the early years of marriage (Shackelford, Schmitt, & Buss, 2005), it is possible that romantic partners might adjust their stated preferences to reflect the traits present in their long-term partners rather than selecting long-term partners based on their preferred traits. However, multiple studies have suggested that although some of the variance in coupled people's stated mate preferences can be explained by preference updating, there is still an effect of preference fulfillment (Conroy-Beam & Buss, 2016; Fletcher et al., 1999; Gerlach et al., 2019). Furthermore, preference updating would work against our ability to detect significant findings because there would be little variance in congruence between the importance of warmth-trustworthiness and satisfaction with partner warmth-trustworthiness, making it difficult to find differential effects on marital satisfaction.

Fifth, whereas people who placed relatively low importance on warmth-trustworthiness still found more warm and trustworthy partners attractive and were more likely to consent to future contact with such partners in Study 1, people who placed low importance on warmth-trustworthiness were not affected by partner warmth-trustworthiness in terms of their changes in relationship satisfaction in Study 2. Perceptions of warmth-trustworthiness may be attractive in a dating context because they are taken as a sign of romantic interest. Luo and Zhang (2009) found that speed-daters do like dates more when dates like them more. Future research could test this by determining whether there is a correlation between perceived warmth-trustworthiness and perceived interest at speed-dating events. Married individuals already have an honest signal of romantic interest (marriage), and thus the importance they place on warmth-trustworthiness is more predictive of the relationship between partner warmth-trustworthiness and changes in relationship satisfaction. Warmth-trustworthiness may signal different things in different relationship contexts.

Sixth, although we predicted no sex-differentiated preferences for partner warmth-trustworthiness or the ability of people's preferences to predict their actual mate choices, this prediction was only partially supported. In Study 1, whereas men and women stated equal preferences for partner warmth-trustworthiness, partner warmth-trustworthiness more strongly predicted consent to future contact for women than for men during the speed-dating events. Similarly, in Study 2, women placed greater importance on partner warmth-trustworthiness compared with men. One possible explanation for these findings is that, across numerous cultures, women are higher on warmth and trust than are men (Schmitt, Realo, Voracek, & Allik, 2008). Thus, although both men and women may equally prefer long-term partners who are warm and trustworthy, finding such a partner may be more challenging for women. Accordingly, women might report a stronger partner warmth-trustworthiness preference than do men because if they do not prioritize it, they are less likely to obtain a warm and trustworthy partner. Of course, such reasoning is speculative and thus future research should directly examine this possibility by assessing sex differences in perceived ease of finding a warm and trustworthy partner.

Relatedly, one area for further research is individual differences in the importance people place on partner warmth-trustworthiness. To find an effect of trait prioritization on mate choice and relationship satisfaction, there must be variation in the extent to which people value warmth-trustworthiness. Although theoretically we would expect this to be a consensually desirable quality due to its utmost importance for cooperation, parenting, and fulfilling people's need to belong, trade-offs exist across trait dimensions (e.g., Li et al., 2002), and there are individuals who should value warmth-trustworthiness to a lesser extent. First, people tend to prefer mates similar to themselves (Kenrick, Groth, Trost, &

Sadalla, 1993). For example, people higher (vs. lower) in psychopathy prioritize kindness less in long-term mates (Jonason, Valentine, Li, & Harbeson, 2011). Second, people with unrestricted (vs. restricted) sociosexuality look at most potential mates as short-term interactions and thus place a lower premium on warmth-trustworthiness and a higher premium on attractiveness-vitality (Gangestad & Simpson, 2000). Future research can heed these considerations and more explicitly investigate how assortative mating and long-term versus short-term mating orientations affect preferences for warmth-trustworthiness.

Conclusion

Our studies highlighted the importance of a long-term partner trait, warmth-trustworthiness, and addressed whether mate preferences affect peoples' mate selection and long-term relationship satisfaction. Together, these studies suggest that people value warmth-trustworthiness in potential and existing mates and are able to accurately introspect regarding their mate preferences for this trait. Furthermore, they add to a collection of recent research suggesting that people's self-reported romantic partner preferences indeed reflect their true desires.

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Note


1. Unstandardized regression coefficients are reported in the mixed-effects linear and logistic regression models.

Supplemental Material

Supplemental material is available online with this article.

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