

The Validity of Sex-Differentiated Mate Preferences: Reconciling the Seemingly Conflicting Evidence

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Across decades and cultures, researchers have found that men prefer physical attractiveness in their romantic partners more than women do, whereas women prefer social status and resources in their partners more than men do. From an evolutionary perspective, these sex differences are important as they reflect hypothesized psychological mechanisms that evolved in response to different adaptive challenges faced by ancestral men and women. Social psychologists, however, have recently challenged the validity of mate preferences and thus, this evolutionary perspective. Indeed, recent speed-dating studies (e.g., Eastwick & Finkel, 2008) and a meta-analysis (Eastwick, Luchies, Finkel, & Hunt, 2014) demonstrate that the sexes respond similarly to physical attractiveness and earning prospects in potential mates encountered live, as well as in ongoing relationships. Here, we review (a) the mate preferences literature and associated evolutionary perspective, (b) the recent challenge to this work, (c) issues that have arisen with the challenge, and (d) empirical work that we have undertaken to respond to those issues and to demonstrate that the sex-differentiated mate selection processes do indeed occur in initial mating contexts and ongoing, long-term relationships. We then conclude by discussing various remaining issues and considerations, as well as future directions.

Keywords: long-term mating, mate preferences, mate selection, romantic relationships, speed-dating

Issues of reproduction and mating are at the heart of evolutionary processes and as such, it is no surprise that biologists and other evolutionary-minded scientists have investigated numerous aspects of mating in thousands of species. Human mating has been examined over the past several decades by a number of social scientists. Since the 1940s, researchers have consistently found that when considering potential romantic partners, men value physical attractiveness more than women value physical attractiveness, whereas women value social status and resources more than men value social status and resources (e.g., Buss, 1989; Hill, 1945; Shackelford, Schmitt, & Buss, 2005; Sprecher, Sulli-

van, & Hatfield, 1994). Drawing on an evolutionary perspective, many researchers have attributed the sex differences in mate preferences to sex-differentiated psychological mechanisms that have evolved to solve critical adaptive problems faced by our ancestors over the course of human evolutionary history (Buss & Schmitt, 1993; Symons, 1979).

In this article, we review the debate that has transpired in recent years regarding the validity of mate preferences (i.e., whether mate preferences predict actual mate selection and ongoing relationship satisfaction) and thus, the associated evolutionary perspective. In the sections below, we first describe the dominant evolutionary perspective on mate preferences. We then highlight the challenge posed by social scientists studying attraction and relationships in speed-dating contexts, the extent to which we took issue with this challenge, and how we have addressed those issues. Finally, we conclude by considering some other remaining issues and the extent to which evolutionary and traditional

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social psychological perspectives on mate preferences are compatible and complementary.

Mate Preferences as Evolved Mechanisms

From an evolutionary perspective, humans have evolved, through processes of sexual selection operating via differential reproductive success (Campbell, 1972), context-dependent mate preferences to adaptively guide their selection of mates (Buss & Barnes, 1986). That is, heritable mate preferences that led individuals to choose mates who contributed more greatly to reproductive success (i.e., bearing and rearing offspring) would have been selected over the course of evolutionary history. Ancestral men, more than women, faced the adaptive problem of identifying and preferring mates who were reproductively viable. Because women's fertility peaks in their mid-20s and sharply declines in their 30s (e.g., Rothman et al., 2013), ancestral men who were attracted to females displaying observable cues of sexual maturity and youth were more likely to mate with such partners and outreproduce their counterparts who were not drawn to such observable cues (Symons, 1979). Accordingly, preferences for secondary sexual characteristics such as breasts and buttocks (Cant, 1981), as well as youthful features such as full lips, lustrous hair, large eyes, and smooth skin (Zebrowitz, Olson, & Hoffman, 1993), were likely selected for over time (Singh, 1993). In contrast, because men's fertility declines at a much slower rate across the life span, there was less selection pressure for ancestral women to favor youthful features in their long-term partners.

Ancestral men, however, differed widely in their ability to provide resources that were critical to the survival of women and their offspring. Thus, women are thought to have evolved a preference for men's resources and associated traits such as social status and ambition to ensure (Geary, 2009; Symons, 1979). Men tend to acquire higher social status and greater access to resources as they age beyond their 20s, so, at least for relatively young women, a preference for status also tends to be associated with a preference for older partners (Buss, 1989; Kenrick & Keefe, 1992).

These sex differences are consistent with various lines of related research. As mentioned above, studies have indicated sex-differentiated

mate preferences for physical attractiveness and status-related characteristics in numerous surveys across decades and cultures. They have also been demonstrated in experiments that manipulate physical attractiveness and social status in opposite sex target photographs and descriptions (e.g., Townsend & Levy, 1990; Townsend & Roberts, 1993), as well as studies of personal advertisements (e.g., Harrison & Saeed, 1977; Wiederman, 1993), spending behaviors (e.g., Hill, Rodeheffer, Griskevicius, Durante, & White, 2012; Hayhoe et al., 2000), self-concept (Campbell & Wilbur, 2009), self-esteem (Wade & Cooper, 1999), self-ideals (Li, 2007), folk tales (Gottschall, Martin, Quish, & Rea, 2004), and several other contexts (see Schmitt, 2014).

The Challenge: Mate Preferences Fail to Predict Actual Mate Choices

Recently, studies have investigated how people choose actual mates in modern-day, live-interactive mating markets such as speed-dating events. Although some of these studies have found evidence for sex differences in actual mate-selection criteria (e.g., Fisman, Iyengar, Kamenica, & Simonson, 2006), others have clearly not (e.g., Kurzban & Weeden, 2005). Putting to test the evolutionary hypotheses underlying the sex-differentiated mate preferences, Eastwick and Finkel (2008) conducted a campus speed-dating study and found no overall evidence for sex-differentiation in the predicted directions for the criteria that men and women use to evaluate and select speed-dating partners. Furthermore, they found no significant link between individuals' explicit sex-differentiated mate preferences and the manner in which people selected actual mates in the speed-dating paradigm. That is, individuals who indicated on paper that physical attractiveness is more important in a long-term romantic partner did not report greater attraction to or more favorable evaluations of opposite sex speed-dates who were more physically attractive. Likewise, the same relationship failed to hold for sex-differentiated preferences for partner earning prospects. The findings were interpreted by the authors as indicating that lay theories about mate preferences are inaccurate, and by others to indicate that sex differences in partner preferences simply do not exist in the real world

(Conley, Moors, Matsick, Ziegler, & Valentine, 2011).

To explain the mismatch, the researchers invoked two social psychological theories. First, citing Nisbett and Wilson's (1977) classic work on people's causal judgments, they suggested that people lack insight into the manner in which they select mates, basing their mate preferences on plausible but inaccurate a priori theories about the causes of attraction. Second, citing Loewenstein's work on empathy gaps (e.g., 2005), they further suggested that while attraction processes occur in an emotionally hot state, mate preferences are contemplated and articulated in studies when people are in a cool, rational state and thus are unable to account for the affect that characterizes romantic processes (Eastwick & Finkel, 2008). The researchers implied that a cold-state reliance on a priori theories has led people across decades and cultures to specify explicit sex-differentiated mate preferences that do not reflect actual hot-state attraction processes.

Subsequently, Eastwick, Luchies, Finkel, and Hunt (2014) conducted a meta-analysis across 97 romantic relationship studies. Romantic relationship studies were separated into three levels corresponding to the stages identified in Levinger and Snoek's (1972) intersection model of pair relatedness. Studies of participants evaluating hypothetical partners correspond to Levinger and Snoek's first level of *awareness*, which involves premeeting impression formation. Studies of initial attraction, such as speed-dating, correspond to Levinger and Snoek's second level of *surface contact*, where individuals become initially acquainted face-to-face, sharing minimal information with one another. Finally, studies of individuals evaluating a current romantic partner correspond to the third stage of *mutuality*, which involves mutually recognized relationships where some closeness has been achieved. The meta-analysis revealed no overall evidence of sex-differentiation in the importance of physical attractiveness and earning capacity in romantic evaluations for either initial attraction contexts or ongoing relationships. And a deeper investigation indicated that although explicitly stated ideal partner preferences predicted romantic evaluations at the awareness and, to some extent, mutuality stages (i.e., hypothetical partners and established relationships), such stated preferences failed to pre-

dict romantic evaluations at the surface contact stage (i.e., face-to-face, attraction contexts).

To explain why ideal preferences might have predictive power in the first and, to some extent, the third Levinger and Snoek (1972) stage, but not the second stage, the researchers proposed a complex process (Eastwick et al., 2014, Figure 6), invoking construal-level theory (Trope & Liberman, 2003, 2010). Specifically, construal-level theory suggests that whereas people evaluate psychologically distant objects using abstract, high-level construals, they evaluate psychologically near objects using concrete, low-level construals. Accordingly, expanding on their initial conjectures (Eastwick & Finkel, 2008), Eastwick and colleagues (Eastwick, Finkel, & Eagly, 2011; Eastwick et al., 2014) proposed that when people meet and interact face-to-face in the surface contact stage, they base their judgments on the feelings they experience, which incorporate all the informationally rich details of the immediate context (Trope, Liberman, & Wakslak, 2007). When people evaluate hypothetical mates, however, they cannot access these details and the accompanying emotions (Robinson & Clore, 2002), and instead rely on abstract sources such as relevant schemas, stereotypes, and ideologies, which form the propositional beliefs about their ideal partner preferences. Moreover, in the mutuality stage, because interdependence is high, the relationship itself becomes an abstract concept that can be evaluated in high-level terms for a hypothetical future.

Eastwick and colleagues indicated that, consistent with research on both affective forecasting (Wilson & Gilbert, 2003) and empathy gaps (Loewenstein, 1996, 2005), people may often be inaccurate in gauging the emotions that they expect to feel in social situations. They suggest, however, that affective states in such situations may be more accurately assessed by using *implicit* measures. Across several studies, they demonstrated that explicit measures (i.e., conscious judgments) of physical attractiveness preferences predicted the extent to which the physical attractiveness of photographed individuals, but not individuals encountered live, inspired romantic desire. Implicit measures (e.g., the go/no-go association task; Nosek & Banaji, 2001), however, worked in opposite fashion. That is, implicit measures moderated the degree to which physical attractiveness preferences

moderated romantic desire toward individuals encountered live, but not in photographs (Eastwick, Eagly, Finkel, & Johnson, 2011). The researchers cite classic work on person perception processes (Asch, 1946; Hamilton & Zanna, 1974) and suggest that after a live encounter with a person, the meaning of individual traits change to match the overall impression that is formed of that person. Accordingly, they found evidence to support this hypothesis (Eastwick et al., 2011).

In summary, this recent line of work that has examined mate selection in live contexts has concluded that men and women equally value traits such as partner physical attractiveness and partner earning prospects when encountering actual mates, and that individuals' valuation of these traits is unrelated to their stated mate preferences. Such work poses a challenge to research demonstrating sex differences in ideal mate preferences and, more generally, an evolutionary perspective on mating, which proposes that men and women have evolved to differ in the value that they place on partners' physical attractiveness and social status and resources.

Taking Issue With the Challenge

We applaud the extensive efforts to scrutinize the basic evolutionary hypotheses and the predictive validity of the universal sex differences in mate preferences. As these researchers have clearly demonstrated, sex differences in mate selection criteria as well as the link between mate preferences and mate selection criteria are not evident in some mating contexts.

We recently identified several issues, however, that may underlie why men's and women's mate selection criteria appear similar and unconnected to their stated sex-differentiated mate preferences in initial selection contexts (Li et al., 2013) and ongoing relationships (Meltzer, McNulty, Jackson, & Karney, 2014a). Because of these issues, we believe that a dismissal of the evolutionary perspective on mate preferences (e.g., Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Symons, 1979; Trivers, 1972)—a scientific perspective with an extensive nomological network linking humans to virtually all other sexually reproducing species—is premature. In this section, we review some of the most pertinent issues.

Relationship Duration

A critical distinction in the mating literature affecting partner evaluation at all relationship stages concerns long-term versus short-term mating. From an evolutionary perspective, there are a few key differences in the adaptive problems faced by those seeking committed, long-term relationships versus casual, short-term sexual relationships (Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Kenrick, Sadalla, Groth, & Trost, 1990; Kenrick, Groth, Trost, & Sadalla, 1993; Li & Kenrick, 2006).

As described above, women likely evolved a preference for long-term partners with social status and access to resources to aid with child rearing. However, if a relationship is largely sexual and lacking long-term commitment, then obtaining a continuous flow of resources would be much less important if not irrelevant (Li & Kenrick, 2006). Thus, women likely did not evolve a relatively strong preference for resources in a short-term mating context. On the other hand, women may have evolved to value a short-term partner's genetic fitness, which can be conferred to any resulting offspring. Specifically, women may have evolved to be physically attracted to short-term partners displaying visible markers of genetic fitness such as symmetry and masculinity (Gangestad & Simpson, 2000; Gangestad & Thornhill, 1997). Likewise, women may have evolved to value size and muscularity in their short-term mates (e.g., Frederick & Haselton, 2005; Gangestad, Garver-Apgar, Simpson, & Cousins, 2007; Li & Kenrick, 2006), for purposes of obtaining physical protection (Smith, 1984; Smuts, 1985).

For men, identifying fertile and healthy partners is a primary, adaptive problem in both long-term and short-term mating and thus, men likely evolved to highly value physical attractiveness in both contexts (Buss & Schmitt, 1993). As such, sex-differentiated mate preferences are not expected to be present in short-term contexts (e.g., Thornhill & Gangestad, 1999; Li & Kenrick, 2006), where both sexes evolved to prioritize partner physical attractiveness. Consistent with this reasoning, studies have demonstrated that both sexes highly value physical attractiveness in a short-term mate (e.g., Kenrick et al., 1990; Li & Kenrick, 2006; also see Regan & Berscheid, 1999).

Thus, we would expect individuals to indicate sex-differentiated valuations of partner physical attractiveness and social status only if they are evaluating mates for potential or ongoing *long-term* relationships (Li et al., 2013; Meltzer et al., 2014a). Given the prevalence of noncommitted sexual relationships in the modern day (e.g., Jonason, Li, & Cason, 2009; for a review, see Garcia, Reiber, Massey, & Merriwether, 2012), however, it is unlikely that all individuals are focused on the prospect of a long-term relationship at a speed-dating event or even at the beginning of a romantic relationship. Hence, it is not clear that the validity of mate preferences or evolutionary theories of mating are seriously challenged if studies of speed-dating or modern dating relationships do not find mate evaluation criteria to be sex-differentiated (Meltzer et al., 2014a; Schmitt et al., 2012) or linked to individuals' (sex-differentiated) mate preferences (Li et al., 2013).

The Low End of Traits and Self-Selection Bias

According to the mate preference priority model (Li, Bailey, Kenrick, & Linsenmeier, 2002; Li, Valentine, & Patel, 2011; Li et al., 2013), although many people would ideally like mates who are highly physically attractive and resourceful, a large part of initial mate selection—where sex differences might be most apparent—likely involves the screening out of those at the *low* end of these traits. Moreover, because numerous traits could be valuable in a potential mate, humans may have evolved to prioritize which of these traits to value and seek first (Li et al., 2002). Because an infertile mate precludes any chance of reproduction, men may have evolved to first ensure that a mate is likely fertile and healthy. In ancestral times, where conditions were relatively harsh and modern cosmetics were not available, a woman who was below average in physical attractiveness was probably not sufficiently healthy and fertile (Singh & Young, 1995). Thus, men may have evolved to prioritize having a long-term (and short-term) mate who they perceive to be at least average in physical attractiveness or, stated differently, to avoid those who are clearly below the average (Li & Kenrick, 2006; Li et al., 2013). This view is compatible with research indicating that although people of aver-

age versus above average physical attractiveness tend to be treated relatively equally, individuals at the low end of attractiveness tend to be negatively discriminated against (Hatfield & Sprecher, 1986).

Men's reproductive value as a long-term mate, in contrast, may hinge more critically on their resources. Specifically, ancestral men with at least an average level of social status would likely have been sufficient to provide resources for offspring survival and viability, whereas low-status men may have been a reproductive dead-end (Li et al., 2002). Thus, women may have evolved to prioritize having a long-term (but not short-term) mate with at least an average level of social status or, in other words, to avoid men who are clearly below the average.

Using a budget allocation method and mate screening paradigm, Li et al. (2002) demonstrated that, consistent with this perspective, men initially prioritized an average level of physical attractiveness, whereas women prioritized an average level of social status. As participants were given the ability to select among high quality mates, however, their relative emphasis on these key traits decreased and sex differences diminished.

Consequently, as a result of self-selection processes, sex-differentiated priorities may not be readily apparent in people's actual choices. For instance, in colleges or universities where researchers publish articles on speed-dating, most students are middle class (Townsend, Kline, & Wasserman, 1995) and likely associate with few individuals that they consider as having truly low status (e.g., fast food preparers, factory workers). Similarly, commercially run speed-dating events (e.g., Hurrydate) are held in large urban centers and draw in professionals with reasonably high incomes (Li et al., 2013). More generally, self-selection processes are prevalent in everyday life, where neighborhoods, jobs, and social circles are stratified by social class (McPherson, Smith-Lovin, & Cook, 2001). Upper-middle class individuals likely find their mates from among their usual associates who include other doctors, lawyers, and accountants, but not janitors, convenience store clerks, and movie theater ushers. With social status requirements already sufficiently met and diminishing marginal returns associated with higher income (Kenrick, Sundie, Nicastle, & Stone, 2001; Li et al., 2002), there is less reason

for such individuals to initially screen out mates and make other mate selection judgments on this basis. Hence, sex differences on at least one key selection trait—social status—will be more difficult to find in these speed-dating contexts.

Participant Age

According to sexual selection and parental investment theories (Buss, 1989; Buss & Schmitt, 1993; Trivers, 1972, 1985), sex-differentiated mating preferences evolved according to what was most adaptive for successful reproduction. As we previously described, women demonstrate a greater preference for resource acquisition—a cue indicating men’s ability to provide resources; and, men demonstrate a greater preference for physical attractiveness—a cue indicating women’s fertility. Unlike men’s reproductive value, however, women’s reproductive value is steeply age-graded (Symons, 1979; Williams, 1975). Indeed, recent evidence demonstrates that women’s fecundability significantly decreases after the age of 35 (Rothman et al., 2013). Given that successful reproduction is most likely to occur in relationships in which women are 35 years of age or younger, sexual selection and parental investment theories would suggest that sex-differentiated preferences for partner physical attractiveness are most likely to emerge in such relationships. Given that successful reproduction is less likely to occur in relationships in which women are older than 35 years of age, in contrast, men’s evolved preference for partner physical attractiveness may no longer apply and thus we may no longer expect sex-differentiated preferences for partner physical attractiveness in such relationships.

Nevertheless, research examining sex differences in the preference for partner physical attractiveness rarely limit their samples to couples with younger women. For example, although HurryDate (Kurzman & Weeden, 2005) excluded extreme ages from their analyses, they nevertheless included women up to the age of 47. Any sex-differentiated preference for partner physical attractiveness that may have emerged involving women 35 years of age or younger may have been attenuated by women between the ages of 36 and 47. Likewise, Eastwick and colleagues’ (2014) meta-analysis examining sex differences in the preference for

partner physical attractiveness included 13 samples of couples in which women were, on average, over the age of 35 (e.g., Murstein & Christy, 1976; Peterson & Miller, 1980), which again may have attenuated any sex-differentiated mate preferences among couples in which women were younger than the age of 35. Without limiting examination exclusively to couples with reproductively capable women, this research does not adequately challenge the validity of the sex-differentiated preference for partner physical attractiveness that is predicted by evolutionary perspectives.

Trait Measurement

Additionally, parental investment and sexual selection theories strongly suggest that sex differences should emerge in reaction to *observable indicators* of physical attractiveness, such as clear skin, symmetry, feminine features (for women), and masculine features (for men). Among ancestral men and women, these observable features likely indicated fertility and genetic fitness. But given this adaptive function of physical attractiveness throughout evolutionary history, several non-appearance-related qualities have become associated with men’s and women’s physical attractiveness. For instance, physically attractive people earn more money (Roszell, Kennedy, & Grabb, 1989), are more socially skilled (Feingold, 1992), and have more friends and higher social status (Anderson, John, Keltner, & Kring, 2001; Feingold, 1992; for a review, see Langlois et al., 2000). For these reasons, physical attractiveness has also become a socially desirable characteristic. People are motivated to perceive themselves and their partners as more physically attractive than they actually are and consequently do perceive themselves and their partners as such (e.g., Epley & Whitchurch, 2008; Montoya, 2008). For example, when participants are shown photographs of themselves and close others that are (a) accurate, (b) have been altered to appear less attractive, and (c) have been altered to appear more attractive, and asked to indicate which picture is the most accurate, participants tend to select more-attractive photographs (Epley & Whitchurch, 2008).

Throughout evolutionary history, women’s fertility would have been most strongly correlated with objective qualities of their physical

appearance, rather than their own potentially biased perceptions (or their partners' potentially biased perceptions) of their physical appearance. Thus, men and women should have evolved to respond to objective features of one another's physical attractiveness, not to perceptions of physical attractiveness. Accordingly, it is crucial that research examining the validity of sex-differentiated preferences for partner physical attractiveness obtain objective measures of physical attractiveness that isolate the effects of objective features of physical appearance.

Nevertheless, some recent research examining the validity of sex-differentiated mate preferences fails to use purely objective ratings of physical attractiveness. For example, speed-dating studies often use participants' own ratings of physical attractiveness (e.g., Kurzban & Weeden, 2005). Likewise, Eastwick and colleagues' (2014) meta-analysis collapsed across objective, own, and partner ratings of physical attractiveness, and did not account for nonphysical qualities related to physical attractiveness, such as social skills. This inclusion of own and partner perceptions of attractiveness may have attenuated any sex-differentiated preferences that may have emerged if only objective ratings of observable features had been used.

A related argument applies to social status. As Townsend and colleagues (1995) have suggested, relying entirely on traditional survey methods to convey the construct of social status may obscure the otherwise large sex differences on the importance of this trait for mate choice. In particular, abstract terms such as "earning capacity" may not resonate with college students, many of whom have never paid their own rent. As such, college women, despite their sensitivity toward distinctions in men's social status, may not ascribe much importance to the words denoting status in a survey, thereby leading to a greater convergence between the sexes on their mate preference criteria. To more concretely and effectively capture social status and thus, to allow sex differences on the importance of this trait to surface, Townsend and colleagues indicate that researchers must understand what denotes social status in the local hierarchies from which participants hail. For instance, at a typical American university, a high-status male might be a first-string quarterback, an interfraternity council president, or lead singer in a college rock band (Townsend et al., 1995). The

important point here is that people (women in particular) may be more apt to react to depictions of partner social status to the extent that the depictions are vivid and relevant to their social world.

All Issues Need to be Simultaneously Addressed

An important point to note is that these key issues, plus various other ones that we have previously raised (see Li et al., 2013; Meltzer et al., 2014a), ideally should be simultaneously addressed in a study designed to evaluate the validity of sex-differentiated mate preferences. That is, it may not be enough to simply account for any one issue in isolation (Meltzer, McNulty, Jackson, & Karney, 2014b). For instance, if a study singularly addressed the participant age issue by examining young women or couples with young women, it is likely that only some of those individuals or couples would be interested in long-term relationships, whereas others would be interested in short-term relationships. Likewise, a study designed to exclusively examine long-term mating criteria may fail to find any sex-differentiation because the women over the age of 35 may embrace different preferences than those who are in their 20s or early 30s. Thus, to detect sex-differentiated mating criteria, it is essential that research take all of the above issues into consideration simultaneously. That is, it is likely necessary that any research examining sex-differentiation should (a) involve women 35 years of age or younger who are interested in long-term relationships or long-term couples with younger women, (b) include a wide range of each trait from which to choose, and (c) use objective physical attractiveness measures and valid social status measures.

Addressing the Issues

Taking into account the above issues, we examined mate selection processes in both initial mate selection contexts (Li et al., 2013) and ongoing, long-term relationships (Meltzer et al., 2014a). In this section, we summarize this work.

Early Mate Selection Contexts

To address the issue of trait measurement, Li et al. (2013) experimentally manipulated the

two key traits (i.e., social status and physical attractiveness) based on (a) interviews to determine prototypes of individuals who represent differing levels of social status in the local setting, and (b) outside ratings of target photos to determine objectively measured physical attractiveness.

Using an online messaging platform, participants (Study 2) chatted with alleged opposite sex participants who were either below average in social status (e.g., fast food workers), average in social status (e.g., undergraduate business students at another university), or above average in social status (e.g., undergraduate law students with jobs secured); and who were either below average, average, or above average in physical attractiveness (depicted by preredated chat photographs). Whereas male participants' interest in dating depended more on a partner's manipulated physical attractiveness, only female participants' dating interest varied (positively) as a function of partner's manipulated social status. For physical attractiveness, mate choice criteria were also related to stated mate preferences such that as minimum requirements for physical attractiveness increased, so did the positive relationship between the target-partner's manipulated physical attractiveness and participants' interest in dating the target.

Two other studies (Li et al., 2013, Studies 3 and 4) used a modified speed-dating paradigm—lab-based speed-dating sessions where participants chatted with a few opposite sex individuals who were selected to participate based on their occupation and/or physical attractiveness. In the first such study, participants chatted with others who were either low or moderate on social status. A partner's social status (as determined by actual occupation) increased women's—but not men's—valuation of the partner's romantic desirability and the participants' consent to future contact (i.e., "yessing"). Additionally, there was a clear link between explicitly stated mate preferences and mate selection criteria such that the more importance that participants ascribed to a mate's earning prospects, the greater the positive relationship between partner social status and participants' assessment of partner romantic desirability and likelihood of yessing the target.

In the second study, participants chatted with opposite sex partners who had been objectively rated as having low physical attractiveness as

well as those who were objectively rated as having moderate physical attractiveness. A partner's physical attractiveness increased men's more than women's valuation of the partner's romantic desirability and yessing. When forced to choose between partners for a short-term relationship, both sexes strongly favored partners with moderate physical attractiveness over those with low attractiveness. However, when forced to choose between partners for a long-term relationship, only men favored the moderately physically attractive partner, whereas women were equally split between the unattractive partners and the moderately physically attractive ones.

Furthermore, people's explicit long-term—but not short-term—mate preferences were linked to their mate choice criteria. That is, the more importance that participants ascribed (on paper) to physical attractiveness for purposes of assessing a chat partner as a long-term mate, the more impact an actual partner's physical attractiveness had on the participants' assessment of partner romantic desirability and on yessing. The same relationship did not hold for the stated importance of physical attractiveness in a short-term mate.

Together, these studies (which featured participants generally in their 20s, used objective measures of physical attractiveness and social status, and distinguished between long-term and short-term mating) indicated that when a person's mating choices clearly include those at the lower end of physical attractiveness and social status, mate preferences are likely to emerge that are sex differentiated in the directions predicted by evolutionary perspectives, and linked to actual initial mate selection criteria.

These studies also illustrated the difference between using objective ratings versus participants' own ratings. Specifically, 11 of 12 tests of sex differences and links between mate selection criteria and mate preferences were significant when manipulated trait (objective) levels were used, 6 of 12 corresponding tests (50%) were significant when participant-rated trait levels were used for a manipulated trait, and only 2 of 8 tests (25%) were significant when participant-rated trait levels for a nonmanipulated trait were used. The mixed results when using participant-rated trait levels are in line with the sporadic findings of sex differences across other speed-dating studies, and the

notion that such biased ratings attenuate the predicted effect.

Ongoing Relationships

Drawing from evolutionary perspectives and the ideal standards model (see Fletcher, Simpson, & Thomas, 2000; Fletcher, Simpson, Thomas, & Giles, 1999; Simpson, Fletcher, & Campbell, 2001), ideal partner preferences should function as a standard that partners use to evaluate their ongoing relationships. Indeed, relationship satisfaction may serve as a barometer of having met evolutionary-based mating desires (for a related discussion, see Shackelford & Buss, 1997). Just as positive and negative thoughts and emotions may function to help people attain goals that were important throughout evolutionary history (Nesse & Ellsworth, 2009; Oatley & Jenkins, 1996; Plutchik, 2003), relationship satisfaction may at least partially help direct people to meet their evolved mating needs. Given that women report a stronger desire for social status in an ideal long-term partner than men report (Buss, 1989; Hill, 1945; Shackelford et al., 2005; Sprecher et al., 1994), partner social status should predict women's long-term relationship satisfaction to a greater extent than it should predict men's long-term relationship satisfaction. And given that men report a stronger desire for physical attractiveness in an ideal long-term partner than women report, partner physical attractiveness should predict men's long-term relationship satisfaction to a greater extent than it should predict women's long-term relationship satisfaction.

To test the validity of sex-differentiated preferences for partner physical attractiveness in Levinger and Snoek's (1972) mutuality stage (i.e., established relationships), Meltzer and colleagues (2014a) used four independent 4-year, eight-wave longitudinal studies of newlywed couples. All four studies obtained (a) objective ratings of both partners' physical attractiveness shortly after the wedding, and (b) both partners' reports of marital satisfaction every six months for the first four years of the marriage. Across all four studies, the wives were relatively young (23.82 years of age, on average) and, given all couples' recent nuptials, all partners were clearly committed to long-term relationships. Thus, each of these studies simultaneously met the criteria necessary for testing the validity of

sex-differentiated preferences for partner physical attractiveness (also see Meltzer et al., 2014b).

Results demonstrated that objective ratings of wives' attractiveness were positively associated with initial levels of husbands' satisfaction and not associated with changes in husbands' satisfaction, indicating that husbands were more satisfied at the beginning of the marriage and remained more satisfied over the first four years of marriage to the extent that they had an attractive wife. Objective ratings of husbands' physical attractiveness, in contrast, were not associated with either initial levels of wives' marital satisfaction or changes in wives' satisfaction, indicating that wives were not more or less satisfied initially or over time to the extent that they had an attractive husband. Most importantly, the significant effect of wives' attractiveness on husbands' satisfaction was significantly stronger than the nonsignificant effect of husbands' attractiveness on wives' satisfaction, indicating that, consistent with evolutionary perspectives and the ideal standards model, partner physical attractiveness played a larger role in predicting husbands' marital satisfaction than it did in predicting wives' marital satisfaction.

In summary, several issues may have prevented previous researchers from finding sex-differences in the extent to which people select and retain mates, and links between individuals' mate choice criteria and their explicitly stated preferences. After addressing these issues, we found sex differences in the value placed on partner physical attractiveness and social status in early selection contexts, and links between the extent to which people value these traits in potential mates and people's stated preferences. We also found that in married couples with relatively young wives, men were more satisfied during the early years of marriage than women in response to partner physical attractiveness.

Remaining Issues and Additional Considerations

Although we have addressed various key concerns associated with the ability to identify mate choice criteria that are in line with sex-differentiated mate preferences, various issues and considerations remain. We discuss some of these below.

Explaining the “Empathy Gap”

As suggested by Eastwick and colleagues (e.g., Eastwick & Finkel, 2008), a disconnect between people’s explicitly stated preferences and their actual mate choices may be explained by a cold-hot empathy gap (Loewenstein, 1996, 2005). That is, the disconnect may occur because mate choices—especially those at first acquaintance—are made in the throes of passion or otherwise involve emotions that cannot be accurately gauged when people consider their ideal mate preferences in a cold, calm state.

From an evolutionary perspective, however, emotions motivate people to think and behave in ways that are, on average, reproductively beneficial (Haselton & Ketelaar, 2006). Thus, for any given adaptive problem, emotions should generally be linked to corresponding thoughts and behaviors. For example, consistent with the notion that disgust functions to avoid reproductively maladaptive behaviors such as incest, men and women display greater disgust in response to imagined sexual activity with more-related siblings than with less-related siblings (Lieberman, Tooby, & Cosmides, 2003). In this view, then, a *lack* of correspondence between emotions, preferences, and behaviors in areas as central to reproduction as mate selection likely indicates that the underlying mechanisms are either responding to different mating contexts or facing binding constraints. For instance, a lack of correspondence may indicate (a) a mismatch in intended or perceived relationship duration or (b) partner constraints. We expand on both possibilities below.

Mismatched Relationship Durations

A possible mismatch in relationship duration occurs if people think about long-term relationships when they report their preferences for a hypothetical romantic partner, but find themselves in a short-term mating mode when relevant situational cues are perceived in a live encounter (Kurzban & Weeden, 2007; Li et al., 2013). Indeed, many speed-dating events are held in short-term mating markets such as singles bars and nightclubs (e.g., Kurzban & Weeden, 2007). Speed-dating events might also suggest a short-term context simply by exposing a person to an evolutionarily novel abundance of potential mates who are willing to

become acquainted with the person in one sitting (Li et al., 2013). Moreover, a potential mate may also trigger a short-term mating mode by indicating sexual availability.

Accordingly, the apparent cold-hot empathy gap in mate selection might reflect a transition from a long-term mating context, where women, in particular, value traits such as earning prospects or social status, to a short-term mating context, where people’s mate choice criteria tend to emphasize physical attractiveness and, for women, traits like dominance and charisma. This transition can be gleaned from the example that Eastwick and Finkel provided (2008, p. 247) for how empathy gaps might apply to romantic attraction: “it is easy to imagine an individual acknowledging (while calmly chatting with friends) the benefits of dating an individual who is loyal and reliable but soon thereafter experiencing strong romantic desire in the presence of someone who is unpredictable and exciting.”

Researchers may wish to investigate long-term to short-term mating context transitions in future work. An examination of the links between preferences, emotions, and mate choices while accounting for long-term versus short-term mating contexts may provide insights into the role that emotions play in mate choice and the extent to which mismatched relationship durations versus a cold-hot empathy gap is responsible for any disconnect between stated mate preferences and actual mate choices. Likewise, future research may benefit by exploring the extent to which mismatches between mate preferences and mate selection have implications for later relationship satisfaction, which would go a long way toward supporting the validity of evolutionary perspectives.

It should be noted, however, that even if individuals select partners who are inconsistent with their preferences (e.g., a partner who is unpredictable and exciting), we should not be quick to challenge the validity of mate preferences. Indeed, individuals who prefer a loyal and reliable long-term mate yet select an unpredictable and exciting mate will likely experience declines in satisfaction over time with that mate because that mate does not meet their long-term expectations. This view is consistent with many social psychological perspectives, including classic self-discrepancy theory (Higgins, 1987) as it relates to relationship contexts

(see Fletcher et al., 1999). Specifically, individuals may experience decreased satisfaction over time in relationships to the extent that there is a discrepancy between the characteristics they desire in an ideal (long-term) partner and the characteristics of their actual partner. Thus, people may be willing to initiate relationships with those who fail to meet their ideal long-term standards (i.e., the ones they report in mate-preference surveys), but may become dissatisfied over time with such partners and eventually seek to terminate these potentially maladaptive (see Shackelford & Buss, 1997) relationships.

Relatedly, affective forecasting research has shown that people are often poor at predicting how happy an event will make them feel (Gilbert, Driver-Linn, & Wilson, 2002; Gilbert, Gill, & Wilson, 2002; Loewenstein, O'Donoghue, & Rabin, 2003; Wilson & Gilbert, 2003). Specifically, "when people make affective forecasts they . . . overestimate how much it will influence their happiness" (Wilson & Gilbert, 2003, p. 368). Thus, when considering a romantic partner, it is possible that people overestimate the extent to which that partner will make them happy. Indeed, given evidence demonstrating that nearly 50% of all dating relationships end within six months (Drigotas & Rusbult, 1992; Simpson, 1987), and that nearly 50% of all first marriages (Raley & Bumpass, 2003) and 75% of all second marriages end in divorce (Bramlett & Mosher, 2002), it is logical to conclude that people are not particularly good at choosing partners that make them happy in the long-run.

One reason this might occur is that in today's technology-driven, global mating market, a person can easily meet several new potential mates on any given day and reenter the mating market with relative ease. Thus, once initial passion wears off, satisfaction and commitment may decline as a result of the ubiquity of alternatives (Rusbult, 1983), both real and perceived (e.g., images encountered in TV or the Internet). Consistent with interdependence theory (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959), such declines would signal to individuals that perhaps they should reconsider their relationship and possibly pursue other relationship alternatives. Moreover, birth control has allowed individuals to have sex for an extended period of time without conceiving any offspring—a condition that may (adaptively in ancestral times) trigger breakups (Betzig, 1989).

In speed-dating research, it has been presumed that people are able to make decisions about the acceptability of long-term mates when they first become acquainted (e.g., over a 4-min speed-date). However, as suggested above, it is possible that many people become casually romantically involved with one another and subsequently gauge over time whether a relationship is worth keeping or escalating to a more serious stage. Future research may benefit from examining the extent to which decisions about committed, long-term relationships are made up front versus during actual romantic involvement, as well as investigating individual differences and contexts that may influence this process.

It Takes Two

Another factor that might push a person away from their ideal preferences when selecting mates is that most people cannot simply choose who they ideally want; the other party must also be willing to form a partnership. That is, sex differences may be readily apparent in explicitly stated preferences because people are unconstrained when reporting their (evolved) ideals. Consistent with equity theory (Walster, Walster, & Berscheid, 1978; for a review, see Hatfield, Rapson, & Aumer-Ryan, 2008), however, actual choices in the real world are constrained by a person's opportunities in the mating market—opportunities that may not allow his or her preferences to actualize. Indeed, Eastwick and Finkel (2008, p. 261) acknowledge that "the closed field of eligible partners at the speed-dating event itself might have inspired individuals not to act on their preferences but rather to simply pursue the best of the available options." For instance, a woman may be seeking a mate with a relatively high income (e.g., equal to or higher than what she earns), but has to choose among men with lower incomes. Likewise, a man may have high ideal standards for physical attractiveness in a mate but is enticed by a less attractive woman who is sexually available.

One reason why individuals' mate options may be limited might be because of their own mate values. Men and women explicitly state sex-differentiated mate preferences for long-term mates; but in the real world, they must use their own awareness of their mate value to adjust their preferences until it matches their own

levels (Penke, Todd, Lenton, & Fasolo, 2007; also see Bailey, Durante, & Geary, 2011). Consequently, individuals may end up with mates who fail to meet their high ideals, yet meet their ideals that are calibrated to their relative mate value. For example, a woman might desire a long-term mate with high earning potential, but because of her own moderate mate value (e.g., moderate level of physical attractiveness), men with high earning potential may not reciprocate her romantic interest and thus she may select a man with more moderate earning potential who is willing to reciprocate. Indeed, recent research has demonstrated that partners' relative differences more strongly predict relationship outcomes than their absolute differences (McNulty, Neff, & Karney, 2008; Meltzer, McNulty, Novak, Butler, & Karney, 2011).

Future investigations can investigate the extent to which having limited options and lower mate value impacts people's actual mating choices. On paper, it has been shown that people may, over time, make compromises on their mate preferences (e.g., Campbell, Simpson, Kashy, & Fletcher, 2001; Penke et al., 2007; Regan, 1998). However, few studies have been conducted on the association between one's actual options and actual mate choice. Thus, it may be insightful for studies to examine this link, along with the degree to which a potential partner's availability and interest affects a person's willingness to accept less than his or her ideal standards. Given that people like others who like them (Aronson & Linder, 1965), receiving romantic interest from a potential mate may induce some reciprocal interest regardless of one's ideal standards. And because of the cost asymmetries of mating errors for men versus women (Haselton & Buss, 2000), men are more prone to pursuing those who show sexual availability (Clark & Hatfield, 1989; Schmitt, Couden, & Baker, 2001), whereas women may be less prone to getting involved with individuals who fall below their ideal standards. In short, there are many potential avenues to examine regarding what has been called a cold-hot empathy gap in mate selection.

Proximate Versus Ultimate Mechanisms

As summarized in this review, much of the debate over the validity of mate preferences concerns methodological issues. However, it is

also apparent from our discussion that the two sides may be arguing over a distinction between proximate versus ultimate mechanisms, which involve different levels of analysis but are largely compatible (e.g., Confer et al., 2010; Irons, 1979; Kenrick, Griskevicius, Neuberg, & Schaller, 2010; Maner, 2009; Tinbergen, 1963). Indeed, this distinction has been raised by researchers in various domains including empathy (Preston & de Waal, 2002), partner-directed violence (Kaighobadi, Shackelford, & Goetz, 2009), sexual orientation (DeLamater & Hyde, 1998), and consumer behavior (Griskevicius & Kenrick, 2013). As with these areas, whereas evolutionary theories address the ultimate mechanisms of mate choice, various social psychological and romantic relationship theories address the more proximate mechanisms. And there are often numerous proximate mechanisms for peoples' choices and behaviors, even if they are unaware of the ultimate mechanisms of such choices and behaviors. For example, a woman may choose to buy make-up and revealing clothing because it makes her happy or because she wants to feel more positive about her own physical appearance (i.e., proximate causes), without being aware that such behaviors likely increases her perceived mate value and thus the likelihood of obtaining a long-term mate and reproducing (i.e., the ultimate cause). Likewise, a man may choose to wear an expensive watch because he is influenced by the media, without being aware that such a behavior likely increases his mate value. In this view, while preferences may have evolved to guide the selection of mates who, on average, would have contributed to reproductive fitness, there are many ways that, in any particular context, this could occur or, at times, not occur.

Indeed, researchers have proposed reasons why, at times, people may act against their allegedly evolved adaptive interests. One potential reason may be that proximate causes sometimes compete with ultimate causes (e.g., Nesse & Ellsworth, 2009). For instance, people who perceive few long-term mating options, yet strongly desire intimate companionship and fear being single, may compromise their ideals and choose a mate who does not meet their evolved preferences (e.g., Spielmann et al., 2013). Of course, this mismatch could still result in relationship satisfaction over time. Future research may benefit by examining such opposing drives

and the implications that such conflicting decisions have for long-term mating motives and outcomes.

Another potential reason why people may act against their allegedly evolved adaptive interest may be that a behavior may reflect an environmental influence against which there is no defense because of the evolutionary novelty of the influence (Gutierrez, Kenrick, & Partch, 1999; Kenrick, 1995). For example, being attracted toward a particular type of mate encountered through exposure to media rather than one's actual peers may reflect an increased exposure to images of people who look like potential mates and competitors, but not necessarily reflect an evolved tendency. Future research may benefit by systematically identifying such influences and study their effects on actual mate choice and, more generally, the degree to which ultimate and proximate explanations are compatible.

Conclusion

As Eastwick and Finkel (2008) concede, Nisbett and Wilson's (1977) classic work on people's failure to make accurate causal judgments involved preferences and judgments that "did not hold tremendous meaning in participants' lives (e.g., stocking preferences)." In contrast, mate selection involves judgments that are central to reproduction. Thus, it is unlikely that evolution would have designed mate preferences that are largely inaccurate or biased (Fletcher, Kerr, Li, & Valentine, 2014). Nevertheless, the investigation of the validity of sex-differentiated mate preferences and ensuing debate has shed light on various aspects of mate choice and raised numerous questions. Going forward, we hope that researchers will attempt to address these issues, raise new ones, and continue to increase our knowledge of this fundamental reproductive domain.

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