Article

Best Practices for Testing the Predictive Validity of Ideal Partner Preference-Matching

Personality and Social Psychology Bulletin
2019, Vol. 45(2) 167–181

DOI: 10.1177/0146167218780689
journals.sagepub.com/home/pspb
SAGE

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Abstract

Many psychological hypotheses require testing whether the similarity between two variables predicts important outcomes. For example, the ideal standards model posits that the match between (A) a participant's ideal partner preferences, and (B) the traits of a current/potential partner, predicts (C) evaluative outcomes (e.g., the decision to date someone, relationship satisfaction, breakup); tests of the predictive validity of ideal-matching require A × B → C analytic strategies. However, recent articles have incorrectly suggested that documenting a positive samplewide correlation between a participant's ideals and a current partner's traits (an A-B correlation) implies that participants pursued, selected, or desired partners with traits that matched their ideals. There are at least six alternative explanations for the emergence of a samplewide A-B correlation; A-B correlations do not provide evidence that ideals guide the selection/evaluation of specific partners. We review appropriately rigorous A × B → C tests that can aid scholars in identifying the circumstances in which ideal-matching exhibits predictive validity.

Keywords

ideals, close relationships, predictive validity, matching hypothesis, human mating

Received January 3, 2018; revision accepted May 9, 2018

Numerous scholarly disciplines are interested in conceptual questions related to the consequences of matching, similarity, fit, or congruence. Does the fit between a person's goal orientation and goal pursuit strategy generate positive evaluations (Higgins, 2005)? Does personality similarity between supervisor and supervisee affect job performance (Strauss, Barrick, & Connerley, 2001)? Do people become disappointed when their expectations do not match their actual experiences (McNulty & Karney, 2004)? Are people better adjusted when observers' ratings of their personality match their ratings of themselves (Colvin, 1993)? In all of these cases, researchers examine whether the match between variable A (e.g., goal orientation, supervisor personality, expectations, others' personality ratings) and variable B (e.g., goal pursuit strategy, supervisee personality, actual experiences, own personality ratings) predicts consequential outcome C (e.g., positive evaluations, job performance, disappointment, adjustment). Theories and hypotheses that draw from matching or similarity concepts are widespread in social and personality psychology, and methodologists have offered advice about how scholars should conduct and interpret relevant statistical tests (e.g., Griffin, Murray, & Gonzalez, 1999; Humberg, Nestler, & Back, in press; Kenny, Kashy, & Cook, 2006; Rogers, Wood, & Furr, 2018; Wood & Furr, 2016).

One matching hypothesis in the domain of human mating has recently received considerable research attention: Does the match between (A) a person's *ideal partner preferences*, and (B) a partner's traits, predict (C) positive romantic outcomes (e.g., attraction, romantic partner selection, relationship satisfaction)? For example, to the extent that I ideally want a partner who is adventurous, is my partner's level of adventurousness a stronger predictor of my relationship satisfaction with her? This question originates with the ideal standards model (Fletcher & Simpson, 2000; Fletcher, Simpson, Thomas, & Giles, 1999; Simpson, Fletcher, & Campbell, 2001)—an influential model in the close relationships tradition—as well as broader interdependence theory perspectives on the function of interpersonal standards (Thibaut & Kelley, 1959). This question is also central to sociological (Hill, 1945) and evolutionary

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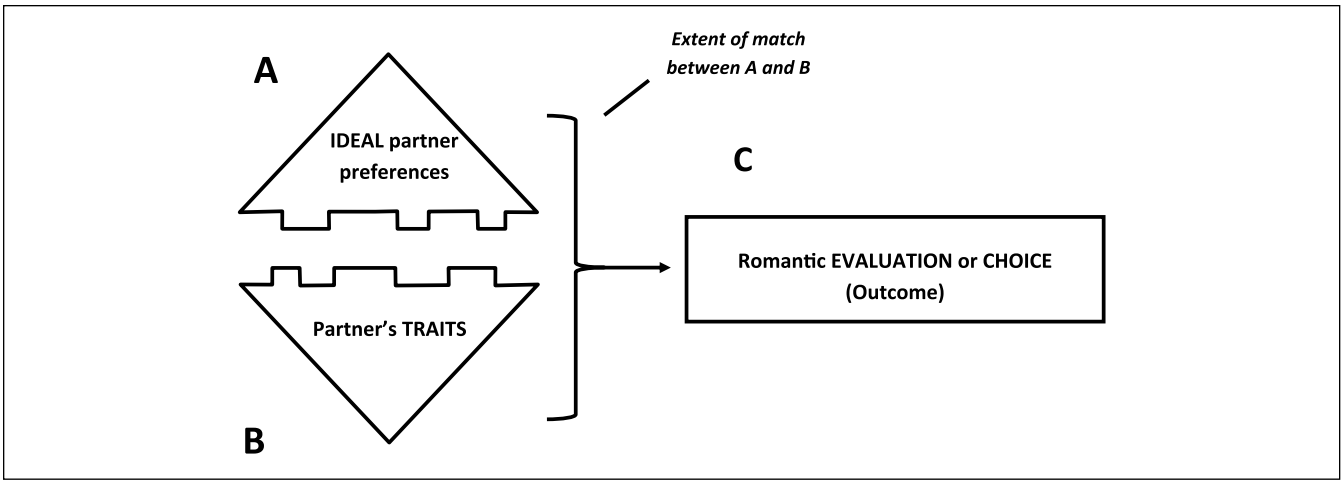

Figure 1. Predictive validity of ideal partner preference-matching.

(Buss, 1989) studies of partner preferences, as well as the accompanying presupposition in these literatures that these preferences in some way guide mate choice or other functional outcomes. Since the 1990s, over 30 published studies have tested this ideal partner preference-matching *predictive validity hypothesis*: People should positively evaluate partners to the extent that a partner's trait(s) match the participant's ideals on those trait(s). This literature has been growing steadily—identifying the contexts and analytical techniques that do and do not reveal support for the predictive validity of ideal-matching (for a review, see Eastwick, Luchies, Finkel, & Hunt, 2014).

Several compelling analytical approaches can be used to address this hypothesis. As we elaborate later in this article, the strongest ones involve the assessment of all three relevant constructs: ideals (A), a partner's traits (B), and evaluative and/or selection outcomes (C). Recently, an alternative approach has emerged: Some scholars have documented a positive correlation between a participant's ideals and his or her current romantic partner's traits (an A-B correlation) and then have drawn direct inferences about the ideal partner preference-matching predictive validity hypothesis (e.g., Conroy-Beam & Buss, 2016; Gerlach, Arslan, Schultze, Reinhard, & Penke, in press; for a discussion of this technique, see Campbell, Chin, & Stanton, 2016). This inference is tempting: If people have partners who possess the traits that they ideally want (as indexed by the A-B correlation), the conclusion that people must have selected their partners for this reason feels quite intuitive.[1] However, because the selection event is not measured (i.e., there is no outcome C in the analysis), A-B correlations provide imprecise and logically problematic tests of the predictive validity of ideal partner preference-matching. Below, we outline the potential problems associated with these interpretations of A-B correlations.

The Predictive Validity of Ideal Partner Preference-Matching

The central predictive hypothesis of the ideal standards model (Fletcher et al., 1999; Simpson et al., 2001) is that romantic outcomes (e.g., partner selection, partner evaluation, breakup) should be affected by the degree to which a person's ideals match his or her current partner's traits on key dimensions.[2] Figure 1 displays the three constructs required for a rigorous test of this hypothesis. First, a researcher needs to assess a participant's ideals (Component A), typically by asking him or her to use a rating scale to evaluate traits such as *attractive, understanding*, and *intelligent* in terms of their importance in an ideal partner or mate. Second, the researcher needs to assess these traits with respect to a target partner (Component B), such as a current romantic partner, a desired romantic partner, a peer, or a stranger. Finally, the researcher can then use one of several methods to determine whether the match between Components A and B (i.e., the consistency between ideals and traits) predicts romantically or evolutionarily relevant outcomes (Component C). Possible outcomes include how much a participant likes a partner on the first encounter, whether or not he or she chooses to date the partner, his or her satisfaction with the partner, or his or her decision to break up with the partner.

The ideal standards model's predictive validity hypothesis is most strongly and clearly supported when the match between A (ideals) and B (traits) predicts C (outcomes). The original studies that tested the ideal standards model examined this hypothesis and ongoing controversies about whether ideals do or do not show predictive validity are fundamentally about the strength of evidence for various forms of this matching hypothesis (Eastwick et al., 2014; Schmitt, 2014). Within the last few years, however, clarity about this

Table 1. Incorrect Interpretations of the Ideal Partner Preference-Matching Predictive Validity Hypothesis.

Article	Page	Quote containing incorrect interpretation of A-B correlations
Campbell, Chin, and Stanton (2016)	1	Implicit in research on this topic is the assumption that ideal partner preferences are importantly involved in guiding mate search and mate choice. **In other words, what people say they want in a future partner should be associated with the actual characteristics of their future partners.**
Conroy-Beam and Buss (2016)	54	The seemingly weak relationships between stated preferences and choice have been taken to indicate that stated mate preferences are not relevant to actual mate selection (e.g., Eastwick, Luchies, Finkel, & Hunt, 2014). **The rationale is intuitive: If stated mate preferences drive mate selection, it seems natural that the strength of preference for a trait would correlate with the value of that trait in selected partners.**
Gerlach, Arslan, Schultze, Reinhard, and Penke (in press)	2	With regard to potential partners, one of the key assumptions inherent in the Ideal Standards Model is that partner preferences guide actual mate choices. **Put differently, what people say they want in a partner should be predictive of their future partners' characteristics.**

Note. The boldfaced (second) sentence in each row reinterprets the ideal partner preference-matching predictive validity hypothesis and relevant controversies (first sentence) as revolving around the existence of ideal–trait (i.e., A-B) correlations. This interpretation is incorrect; the ideal partner preference-matching predictive validity hypothesis and relevant controversies are about A × B → C tests.

hypothesis—and the underlying conceptual model—has eroded. Three recent, mainstream articles highlight this controversy and suggest that debates about this hypothesis revolve around the existence of ideal–trait (i.e., A-B) correlations (Campbell et al., 2016; Conroy-Beam & Buss, 2016; Gerlach et al., in press; for quotes, see Table 1).[3] These interpretations of the existing ideals literature—and of the meaning of A-B correlations—are incorrect.

A correlation between A and B does not provide compelling support for the predictive validity of ideal partner preference-matching, regardless of whether the A-B correlation is calculated between-subjects on a single trait (Conroy-Beam & Buss, 2016; Gerlach et al., in press) or as a profile correlation across all traits (Campbell et al., 2016). If B reflects the traits of the current romantic partner, an A-B correlation addresses the conceptual question of whether people's preferences are associated with what they *have* in a partner. If A is assessed before the partner actually becomes a romantic partner, then an A-B correlation addresses the conceptual question of whether people's preferences are associated with what they *will have* in a partner. However, matching hypotheses such as the one posed by the ideal standards model posit that the extent of match should predict a consequential outcome—that is, ideal-matching purportedly guides *choices and evaluations*, such as partner pursuit, selection, desire, satisfaction, or fulfillment of ideals. The three articles highlighted above interpret ideal–trait correlations as providing evidence that bears on conceptual questions about the way in which ideals might guide such processes without assessing or reporting outcomes (C) related to pursuit, selection, desire, satisfaction, or ideal-fulfillment.

This new interpretive trend is unfortunate because a match between a person's preferences and what he or she *has* is inherently ambiguous; indeed, any correlation between an individual difference and what a person has is inherently ambiguous with respect to active selection (e.g., intelligent children have intelligent parents, but they do not select their parents on the basis of intelligence). In the case of partner preferences, ideal–trait correlations can be greater than zero for at least seven plausible reasons (see Table 2). As explained below, the seventh explanation is the primary hypothesis anticipated by the ideal standards model and related conceptual questions about partner selection, and there are precise analytical approaches to test it. Importantly, the six alternative explanations do not constitute a garden variety correlation ≠ causation critique. Rather, they describe psychological processes that will produce an A-B correlation in a world where ideal-matching is irrelevant to the active selection of specific partners. In other words, a person's ideals (A) might be associated with the characteristics of the partner that he has (B) even if the A-B match is not associated with the extent to which he preferentially pursued or desired a particular partner or fulfilled his ideals through active partner selection. The author of a study may favor the seventh explanation, but ideal–trait correlations could actually result from some (or perhaps all) of the six alternative explanations discussed below. The author could attempt to rule out some alternative explanations through certain methodological or statistical procedures, or through logical argumentation, but the question remains: Why not simply conduct some version of the long-standing A × B → C statistical approach, given that doing so typically requires only one extra measure (C) and provides a stronger and clearer test of the key hypothesis?

Possible Explanations for Ideal–Trait Correlations

Imagine a researcher documents a positive correlation between ideals (A) and a current partner's traits (B). What

Table 2. Possible Explanations for Effects Depicted in Figure 1.

	Ideal partner preference mechanism	Mechanism description	Mechanism example	Possible explanation for A ↔ B effect	Possible explanation for A × B → C effect
1	Assortative mating plus self-enhancement	People with popular traits pair up and my own traits affect my ideals.	Attractive people get to date other attractive people due to market forces (i.e., assortative mating). Unrelatedly, attractive people also think attractiveness is an ideal trait because it characterizes them (i.e., self-enhancement).	Yes	No
2	Passive ideal change	The people around me affect my ideals.	Highly educated people are surrounded by other highly educated people. This causes them to (a) value education as an ideal and (b) meet and date highly educated people.	Yes	No
3	Motivated ideal change	My partner affects my ideals.	My partner is ambitious, which motivates me to value ambition in an ideal partner	Yes	No
4	Perceiver effects	My ideals affect the way I see the people around me.	I think warmth is important in an ideal partner and I generally think people (including my partner) are warm.	Yes	No
5	Motivated projection	My ideals affect the way I see my partner.	I think intelligence is important in an ideal partner and so I am motivated to believe my partner is intelligent.	Yes	No
6	Situation evaluation and selection	I select environments filled with people who do (vs. do not) match my ideals.	I ideally want a partner who is humorous, so I join a comedy group rather than a musical group. Thus, I am more likely to meet and date humorous people.	Yes	No[a]
7	Partner evaluation and selection	I positively evaluate and select partners who do (vs. do not) match my ideals.	I ideally want a partner who is adventurous, so I am more likely to positively evaluate and select partners if they are adventurous.	Yes	Yes

[a]Explanation 6 could be tested using A × B → C approach if C were a situation-selection outcome variable (e.g., desire to join a comedy group).

psychological processes might account for this correlation? There are (at least) seven.

Explanation 1: Assortative Mating Plus Self-Enhancement

According to this explanation, a participant's trait is the underlying cause of both (a) the partner possessing the trait (via assortative mating) and (b) the participant's ideal preference for the trait (via self-enhancement); ideals play no causal role. The first component, assortative mating, can emerge on consensually desirable traits due to market forces (Ellis & Kelley, 1999; Kalick & Hamilton, 1986). For example, people who score high on a desirable trait tend to be successful at pursuing others who also score high on that trait (e.g., attractiveness), with less desirable individuals having to settle for each other. Market forces effects do not require the active use of ideals because matching effects would emerge if everyone simply pursued the most desirable individuals (Burley, 1983; Kalick & Hamilton, 1986). On traits like attractiveness, assortative mating effects are moderately strong (r = .30–.40, Feingold, 1988).

Assortative mating creates the appearance of a match between ideals and a partner's traits when combined with the second component—the self-enhancing tendency to evaluate positively the traits one happens to have. If, for example, Amber is attractive, she may be more likely to believe that attractiveness is an important trait in an ideal partner. Correlations between ideals and self-judgments are often r = .50 or greater (e.g., Figueredo, Sefcek, & Jones, 2006). Thus, market forces and self-enhancement processes can produce ideal–trait correlations, with ideals being an incidental third variable.

Explanation 2: Passive Ideal Change

Ideal–trait correlations can also emerge from the tendency for ideals to reflect the traits that characterize the local population of potential mates. Indeed, people form ideal partner preferences in part by observing the extent to which potential partners in the immediate environment—both desirable and undesirable ones—have more of a particular trait, on average. Educated people, for example, tend to develop networks of highly educated friends and acquaintances, and they date within these networks (Kalmijn, 1998). When these individuals look at potential partners around them and think about what characteristics they want in a partner, they are more likely to say they value educational attainment (Kurzban & Weeden, 2007). But within this local milieu, they are just as likely to date less versus more educated individuals; in other

words, people are not using education level to distinguish among the different potential partners whom they actually encounter (Eastwick, Harden, Shukusky, Morgan, & Joel, 2017).

This mechanism has been demonstrated experimentally in a dating simulation where participants make inferences about the attributes that appeal to them (Eastwick, Smith, & Ledgerwood, 2018). Participants were randomly assigned to dating environments in which potential mates had a large or moderate amount of a novel, imaginary attribute, which was equally diagnostic of dating desirability in both the large-amount and moderate-amount conditions. Despite this, participants inferred they had a stronger preference for the attribute when they were in the environment with potential partners who had a large (vs. moderate) amount of it; that is, their preferences were biased upward by the presence of the trait in the population of desirable and undesirable mates. Through such an inference process, the traits of the population of potential partners can shape participants' ideals, but ideals do not necessarily reflect whom participants judge to be more or less desirable.

Explanation 3: Motivated Ideal Change

Ideal partner preferences may also shift in response to the characteristics of the current partner. For example, if James becomes involved with someone who is especially ambitious, he may increase the extent to which he believes his ideal partner is ambitious. Such a shift would produce an ideal–trait correlation, but the causal arrow points from the partner's traits to the participant's ideals. This shift may occur due to motivated reasoning: Individuals want to believe their partner's traits are the ones they value. Several earlier investigations (e.g., Fletcher, Simpson, & Thomas, 2000) have shown that participants do engage in such a motivated perception process—shifting their ideals over time to match their current partner's traits. At least one study suggests that this process may even take place in brief getting-acquainted interactions with potential partners (Gunaydin, Selcuk, Yilmaz, & Hazan, in press). Studies may be especially subject to this alternative explanation when they assess participants' ideal partner preferences and the characteristics of the partner at the same time-point (e.g., Conroy-Beam & Buss, 2016).

Explanation 4: Perceiver Effects

Other possible explanations posit a causal role for ideals without any implications for the active selection of a partner who matches one's ideals. One of these explanations involves perceiver effects—individual differences in the traits that people generally believe other people possess (e.g., Irene might tend to perceive that other people are generally friendly; Kenny, 1994; Srivastava, Guglielmo, & Beer, 2010). Perhaps surprisingly, ideal partner preferences and perceiver effects tend to correlate positively. Why would this be? One possible explanation is that when people have strong attitudes about something, they tend to perceive it more readily (Roskos-Ewoldsen & Fazio, 1992). Thus, if Irene has a strong positive attitude toward friendliness in an ideal partner, she is also likely to perceive that other people are generally friendly.

Positive correlations between ideals and perceiver effects are evident in ratings of strangers that we collected and published earlier (Eastwick, Eagly, Finkel, & Johnson, 2011; Eastwick & Finkel, 2008; total $N = 350$) and reanalyzed for this article. Ideals reported 1 to 2 weeks before a speed dating event correlated with perceiver effects among participants who rated ~12 opposite sex strangers who signed up for the same event. These effects were small-to-moderate in size, approximate $r = .16$, 95% confidence interval (CI) = [.06, .26]. These findings suggest that a portion of the ideal–trait correlation effect in studies that have asked participants to rate their partner's traits (e.g., Conroy-Beam & Buss, 2016; Gerlach et al., in press) may be attributed to the fact that people who value certain traits believe that *other people generally* possess them.

Explanation 5: Motivated Projection

Wish fulfillment can also cause ideals to correlate with perceptions of a partner's traits (Murray, Holmes, & Griffin, 1996a, 1996b). According to this explanation, ideals serve a causal role, but they do so by motivating participants to perceive their partners in a particular light. In Murray and colleagues' (1996a, 1996b) work, ideal–trait correlations represent the tendency for people who have higher ideals to view their partners more positively on those traits due to projection. These associations are the basis of positive illusions: Individuals who have more rigorous (higher) ideal standards tend to have rosier impressions of their partners, which may spark a Pygmalion-like process that causes partners to actually acquire more of those traits over time (Murray et al., 1996b). Thus, participants' ideals may correlate with their perceptions of their partner's traits because they are motivated to perceive that their partner matches their ideals, or because their partner grows closer to those ideals over time, not because they initially selected a partner who more closely matched their ideals.

Explanation 6: Situation Evaluation and Selection

Ideal partner preferences may play a causal role in directing people to select environments that contain a preponderance of partners who match their ideals. This viable process could take one of two forms. To illustrate one form, Yanna ideally likes people (in general) who are funny, and so she might join an improvisational comedy group and (by happenstance) meet a romantic partner there. To illustrate the other form, Yanna ideally wants a partner who is liberal, and so

she joins a group of young Democrats with the goal of meeting a romantic partner there. In both cases, ideals correlate with a partner's traits, even if she were no more or less likely to date humorous or liberal individuals within the reduced range of potential partners she meets. This process is analogous to the application of filter variables in online dating environments, which individuals can use to steer themselves toward specific types of potential mates (Heino, Ellison, & Gibbs, 2010).

This mate selection mechanism has not been directly examined, but speed dating findings offer indirect support. Kurzban and Weeden (2007) report several ideal–trait correlations, but the traits they examined were not those of the participant's chosen partner; instead, they were the traits of all the people who attended the participant's chosen speed dating event. For some events, participants had prior knowledge about the characteristics of the people who would attend the event (e.g., age ranges, events for Black or Jewish individuals). For these specific qualities (i.e., not for qualities that were not linked to a certain event, such as education or income), moderate-sized ideal–trait correlations emerged, suggesting that ideals influenced which event participants chose to attend. In principle, however, this mechanism could be tested more directly using the more rigorous A × B → C approach; in this case, C would be a situation-selection outcome (e.g., the choice of which speed dating event to attend).

Explanation 7: Partner Evaluation and Selection

If participants are more likely to positively evaluate and eventually select partners who match their ideals than partners who do not, participants' ideals should correlate with their partner's traits. As we have seen, ideal–trait correlations offer weak evidence for this mechanism, given that it is nearly impossible to rule out all six alternative explanations described above in a specific study. Even studies that collect objective measures of a partner's traits along with participants' ideals before they actually meet cannot estimate the extent to which Explanations 1, 2, and 6 may have contributed to the ideal–trait correlations they document. The findings of Campbell et al. (2016), for example, are consistent with Explanations 1, 2, and 6; the Gerlach et al. (in press) findings are consistent with Explanations 1, 2, 4, 5, and 6; and the Conroy-Beam and Buss (2016) findings are consistent with all six alternative explanations (although Explanations 4 and 5 apply only to Studies 2 and 3, not Study 1).

To demonstrate strong support for Explanation 7, researchers need to collect an outcome (C in Figure 1) that varies across and/or within participants. The A × B → C approach is stronger than A-B correlations because it actually assesses the outcome implied by the relevant conceptual model of partner evaluation and selection. In a study of initial attraction, for example, a researcher could measure the degree to which each participant is attracted to a particular partner or whether he or she did (vs. did not) go on a date with him or her (Sprecher & Duck, 1994). In a study of relationship formation, a researcher might measure the extent to which the participant initiated sexual contact with a partner or did (vs. did not) agree to date her or him exclusively (Asendorpf, Penke, & Back, 2011; Eastwick & Finkel, 2008). In a study of close relationships, a researcher might measure a participant's relationship quality (e.g., satisfaction, passion, commitment) or whether the participant did (vs. did not) want to end the relationship (Le, Dove, Agnew, Korn, & Mutso, 2010). If the match between participants' ideals and their partner's traits predicts any of these dependent measures reliably, the findings would support Explanation 7 and thus provide evidence for the predictive validity of ideal partner preference-matching.[4]

Ideals are surely worthy of empirical study, even if the direct A × B → C tests of Explanation 7 are unsuccessful. For example, many models posit an important causal role for ideals by highlighting one of the other explanations described above: Explanation 5 has been discussed extensively in the context of positive illusions (Murray et al., 1996b), and Explanation 6 is a form of a matching hypothesis that applies to preferences for attributes more generally (Ledgerwood, Eastwick, & Smith, 2018). Accordingly, researchers must design and test models/hypotheses that target which of the seven possible explanations best explain how people behave in mating contexts. Imagine that a researcher marshals strong evidence for Explanation 6 (situation selection). These data might fit sufficiently with the ideal standards model (or some extension of it), but more poorly with certain evolutionary models regarding the origin of ideals, especially given that available opposite sex mates were much less plentiful in our ancestral past and our ancestors may not have been able to selectively enter situations that contained mates who had certain desirable features (cf. Dunbar, 2014; Hazan & Diamond, 2000). This example illustrates how some models or theoretical frameworks may be easier to reconcile with certain explanations than others.

What Analytical Approaches Test the Predictive Validity of Ideal Partner Preference-Matching and What Do They Reveal?

In the existing literature, there are four approaches that bypass ambiguous A-B correlations and offer strong and precise tests of the matching hypothesis anticipated by the ideal standards model. These approaches make use of all three components depicted in Figure 1: ideal partner preferences, the partner's traits, and romantic outcomes. Some of these approaches have better statistical properties than others, but they all test the same basic A × B → C conceptual question regarding the extent to which the match between an individual's ideals and a partner's traits forecast some outcome.

Overall, we recommend that researchers avoid relying heavily on the first two approaches (direct-estimation items and raw pattern metric) and instead rely on the latter two (corrected pattern metric and level metric) to draw conclusions about ideal partner preference-matching.

Approach 1: Direct-Estimation Items

The direct-estimation items approach considers all three components, but blends the match between ideals and traits into a single item (e.g., "Does _____ exceed your standards for *attractiveness*?" Fletcher, Kerr, Li, & Valentine, 2014). Many studies have shown that these items predict outcomes such as initial attraction (Fletcher et al., 2014) and relationship satisfaction (Campbell, Overall, Rubin, & Lackenbauer, 2013; Campbell, Simpson, Kashy, & Fletcher, 2001; Lackenbauer & Campbell, 2012; Overall, Fletcher, & Simpson, 2006) with moderate to large effects sizes (e.g., $r = \sim.40$; see Eastwick et al., 2014, for a review). However, these items tend to correlate extremely highly with perceptions of their partner's positive traits (i.e., Component B, "is _____ *attractive*?") sometimes as high as .90 (e.g., Rodriguez, Hadden, & Knee, 2015). Using existing measures, therefore, it appears as if direct-estimation items and perceptions of a partner's traits tap the same construct. Some studies indicate that direct-estimation items predict outcomes when statistically controlling for the partner's traits, but none of these demonstrations of incremental validity have employed the type of structural equation modeling approaches that can mitigate the high false positive rates in these contexts (Westfall & Yarkoni, 2016). Thus, although the subjective sense that a partner matches one's ideals is an important and interesting construct to study in its own right, researchers need to develop more refined measures of this construct that capture something other than a reassessment of the partner's traits.

Approach 2: Raw Pattern Metric

The second approach is the *raw pattern metric*, which involves calculating the within-person correlation (i.e., a profile correlation) between ideals and partner traits across several traits, and then using this value (following a Fisher z transformation) to predict a romantic outcome. This operationalization answers the question, "To the extent that a participant's pattern of ideals matches his or her partner's pattern of traits over multiple traits, does the participant report more positive romantic outcomes?" This was the original method used to test the predictive validity of ideal partner preference-matching (Fletcher et al., 2000; Fletcher et al., 1999) and it continues to be used in many subsequent articles (e.g., Eastwick, Finkel, et al., 2011; Lam et al., 2016). This measure tends to predict outcomes moderately strongly in established relationships, with correlations ranging from $r = .20$ to .40 (Eastwick et al., 2014).

This approach also has some limitations, however. As Wood and Furr (2016) note, the predictive power of these metrics can be inflated by the *normative desirability confound*. This confound refers to the fact that any similarity metric (e.g., similarity between a set of ideals and a set of partner traits) can be inflated by the average desirability of the items used to calculate it (see also Rogers et al., 2018). In the typical case where many positive traits are used to calculate the pattern metric, the metric will correlate with positive outcomes (e.g., attraction, relationship satisfaction) due to processes such as *sentiment override* (Weiss, 1980) rather than similarity per se. Cast another way, any association between the pattern metric and a romantic outcome might simply reflect the fact that people tend to report more positive romantic outcomes if their partner has more positive traits, regardless of ideals.

Approach 3: Corrected Pattern Metric

Fortunately, researchers can recalculate the pattern metric after subtracting the normative desirability confound by mean-centering each item before calculating the within-person correlation (see Wood & Furr, 2016). One recent study (Lam et al., 2016) adopted this approach and found that the corrected pattern metric did not predict romantic outcomes in American couples ($r = .05$) but did in Taiwanese couples ($r = .22$). To date, Lam et al. (2016) is the only published study that has reported the pattern metric predictive validity test correcting for the normative desirability confound.

In the past, we have also relied too heavily on the pattern metric without subtracting the normative desirability confound. For example, in one of our previous studies (Eastwick, Finkel, et al., 2011, Study 3), we assessed the ideal partner preferences of single individuals and then recruited them for part two of the study 27 months later. Approximately half of the sample ($N = 281$) was in a relationship at this second time-point. We claimed to have found support for the pattern metric, but our conclusions were probably mistaken: We used the raw pattern metric to predict romantic outcomes (C variables) but did not subtract the normative desirability confound prior to conducting these analyses. When we did so, our published effect of ideal–trait match on relationship outcomes for participants who entered relationships (average $r = .19$, $p < .05$) drops substantially (average $r = –.04$, *ns*), which replicates Lam et al.'s (2016) null effect for American samples.[5] In sum, the type of data analytic strategy used can have an enormous effect on what scholars conclude from their data.

Approach 4: Level Metric

The fourth approach is the *level metric*. There are two ways of operationalizing this test. First, a researcher can test whether the statistical interaction between a participant's ideal (A) and his or her partner's trait (B) positively predicts

Table 3. Published Examples of the Level Metric Test of the Predictive Validity of Ideal Partner Preference-Matching in Non-Face-to-Face Contexts.

Citation	Partner stimulus	Predictive validity support?	Attribute	Description and location
DeBruine et al. (2006)	Photograph	Yes	Masculinity	Ideal preference predicted the strength of the association between photograph-masculinity and choice, B = .296, t = 3.54, p = .001. (p. 1358)
Wood and Brumbaugh (2009)	Photograph	Yes	Various	Ideal preferences predicted the strength of the association between the photograph-trait and dating interest, average r = .18, p < .001. (Table 6)
Eastwick, Eagly, Finkel, and Johnson (2011, Study 3)	Photograph	Yes	Attractiveness	Ideal preference moderated the association of photograph-attractiveness with romantic interest, β = .07, t = 1.93, p = .054. (p. 1000)
Eastwick, Eagly, et al. (2011, Study 5)	Photograph	Yes	Attractiveness	Ideal preference moderated the association of photograph-attractiveness with romantic interest, β = .10, t = 2.44, p = .015. (p. 1004)
Eastwick, Finkel, and Eagly (2011, Study 1)	Online-dating-like profile	Yes	Various	Ideal preferences predicted the strength of the association between the presence of the trait on a profile and romantic interest, r = .35, p < .001. (p. 1017)
Brumbaugh and Wood (2013)	Photograph	Yes	Various	Ideal preferences predicted the strength of the association between the photograph-trait and dating interest, average r = .17, p < .001. (Table S3)
Li et al. (2013, Study 2)	Photograph	Yes	Attractiveness	Ideal preference (minimum required attractiveness) moderated the association of photograph-attractiveness with romantic interest, β = .01, t = 2.21, p = .028. (p. 764).
Li et al. (2013, Study 2)	Photograph	No	Social status	Ideal preference (minimum required social status) did not moderate the association of photograph-social status with romantic interest, p = .220. (p. 764).
Eastwick and Smith (in press)	Photograph	Yes	Attractiveness	Ideal preferences predicted the strength of the association between the photograph-trait and romantic desire, r = .27, p < .001. (Table 3)

Note. All tests examine the level metric conceptual question, "If participants have high (vs. low) ideals on a particular trait, do they report more positive romantic outcomes if their partner possesses that trait?" Tests are usually in the form of (a) the Ideal preference × Partner trait interaction predicting romantic outcomes or (b) the correlation between the ideal preference and a revealed preference (i.e., the strength of the association between the trait and a romantic outcome).

a romantic outcome (C) after controlling for the main effects of the participant's ideal and his or her partner's trait. Second, when participants evaluate multiple targets (e.g., photographs of potential partners, multiple speed dating partners), the researcher can calculate a *revealed preference* for each participant (Wood & Brumbaugh, 2009): the degree to which the targets' traits (B) predict the participant's evaluations (C) across different targets. In this case, the level metric test is the correlation between the participant's ideal partner preference (A) and his or her revealed preference (i.e., the B-C slope parameter). The two operationalizations of the level metric are conceptually similar although the latter test may have stronger reliability (Eastwick & Smith, in press). Both address the question, "If participants have high (vs. low) ideals on a particular trait, do they have more positive romantic outcomes if their partner possesses that trait?" This is the mechanism implied by research on sex differences in partner preferences for specific traits; if men place greater weight than women on attractiveness in a partner, the partner's physical attractiveness should affect men's romantic outcomes more strongly than women's (for a meta-analysis, see Eastwick et al., 2014).[6]

Previous research suggests that the predictive validity of the level metric varies considerably across different research contexts (Eastwick, Finkel, et al., 2011). For example, when participants rate online dating-like profiles or photographs—stimulus people they have never met—the level metric has revealed good support for the predictive validity of ideal partner preference-matching (see Table 3). But once participants meet a target face-to-face, the level metric has generally revealed null effects (see Table 4). In other words, ideal partner preferences and revealed preferences are uncorrelated when people actually meet each other. Although some studies imply that null predictive validity effects primarily derive from speed dating studies (e.g., Conroy-Beam & Buss, 2016; Gerlach et al., in press), the studies listed in Table 4 used a wide variety of paradigms, only some of which were speed dating studies. It is still possible that some Ideal × Trait interactions may predict romantic evaluations or choices with effect sizes reliably different than zero in

Table 4. Published Examples of the Level Metric Test of the Predictive Validity of Ideal Partner Preference-Matching in Face-to-Face Contexts.

Citation	Partner stimulus	Predictive validity support?	Attribute	Description and location
Botwin, Buss, and Shackelford (1997)[a]	Romantic partner	No	Various	Difference-score between ideal preferences and partner-traits "did not contribute any unique variance" (p. 128) to relationship satisfaction (above and beyond main effects).
Fletcher, Simpson, Thomas, and Giles (1999, Study 5)	Romantic partner	No	Various	Ideal preferences did not moderate the association of partner-trait with relationship quality (two out of three nonsignificant; p. 84).
Eastwick and Finkel (2008)	Speed-dates	No	Various	Ideal preferences did not predict the strength of the association between partner-trait and romantic interest, average r = .03. (Tables 4, 5, and 6)
Eastwick (2009, Study 2)	Opposite sex peers	No	Various	Ideal preferences did not predict the strength of the association between partner-trait and romantic interest, average r = –.03. (p. 56)
Eastwick, Eagly, Finkel, and Johnson (2011, Study 4)	Speed-dates	No	Attractiveness	Ideal preference did not moderate the association of photograph-attractiveness with romantic interest, β = .00, t = 0.31, p = .759. (p. 1002)
Eastwick, Eagly, et al. (2011, Study 5)	Confederate	No	Attractiveness	Ideal preference did not moderate the association of photograph-attractiveness with romantic interest, β = .09, t = 1.27, p = .208. (p. 1005)
Eastwick, Finkel, and Eagly (2011, Study 1)	Confederate	No	Various	Ideal preferences did not predict the strength of the association between the presence of the trait on a profile and romantic interest, r = .08, p = .430. (p. 1017)
Eastwick, Finkel, et al. (2011, Study 3, Single participants)	Desired partner	No	Various	Ideal preferences did not moderate the association of partner-trait with romantic interest, average β = .01. (p. 1025)
Eastwick, Finkel, et al. (2011, Study 3, Coupled participants)[b]	Romantic partner	No	Various	Ideal preferences did not moderate the association of partner-trait with romantic interest, average β = .02. (p. 1025)
Eastwick and Neff (2012)	Romantic partner	No	Various	Ideal preferences did not moderate the association of partner-trait with divorce, $\chi^2(6) = 6.66$, p = .354. (p. 670)
Li et al. (2013, Study 3)	Speed-dates	Yes	Social status	Ideal preference moderated the association of partner-social status with romantic interest, average β = .21. (p. 767)
Li et al. (2013, Study 4)	Speed-dates	Yes	Attractiveness	Ideal preference moderated the association of partner-attractiveness with romantic interest, average β = .31. (p. 769)
Lam et al. (2016, Study 4)	Romantic partner	No	Various	Ideal preference did not moderate the association of partner-trait with relationship quality, average β = .05. (p. 719)

Note. All tests examine the level metric conceptual question, "If participants have high (vs. low) ideals on a particular trait, do they report more positive romantic outcomes if their partner possesses that trait?" Tests are usually in the form of (a) the Ideal preference × Partner trait interaction predicting romantic outcomes or (b) the correlation between the ideal preference and a revealed preference (i.e., the strength of the association between the trait and a romantic outcome).

[a]It appears that the studies of Botwin et al. (1997) and Conroy-Beam and Buss (2016, Study 1) are analyses of the same data set of 107 married couples. Botwin et al. (1997) conduct the appropriate matching test (using a difference score that controls for the main effects—an approach conceptually analogous to the level metric). Conroy-Beam and Buss (2016), however, interpret the ideal–trait (A-B) correlation as evidence for the predictive validity of ideals.

[b]The design of this study is functionally identical to the one used by Gerlach, Arslan, Schultze, Reinhard, and Penke (in press).

face-to-face initial attraction, newly formed relationships, or long-established relationships, but no such evidence has consistently been found thus far.

In summary, the *corrected pattern metric* and the *level metric* are the only strong and precise tests of Explanation 7. In our view, the strengths and weaknesses of these two approaches are complementary (e.g., only the pattern metric weighs the relative importance of multiple trait-ratings, whereas only the level metric weighs individual differences in the elevation of ideal ratings). Given that the extent of pattern and level matching are statistically and conceptually independent (Cronbach, 1955), and given provisional evidence that the preference-matching hypothesis might receive support from the pattern but not the level metric (Lam et al.,

2016), future articles should include both tests. For scholars working in applied contexts, an approach that amalgamates the two sources of variance might prove practical. For example, users of an online dating site might want a single "matching quotient" that indicates how well a potential partner matches their ideals. But for scholars conducting and publishing basic psychological research on ideal partner preferences, especially those interested in accruing data that can help to unpack underlying mechanisms, we recommend that results for the corrected pattern metric and level metric be reported separately (for a paradigmatic example of this approach, see Lam et al., 2016). Doing so strengthens both clarity and transparency.

Do Other Literatures Consider A-B Correlations Evidence for a Matching Hypothesis?

Generally speaking, scholars in other literatures have not considered A-B correlations to be relevant tests of matching hypotheses. But recent A-B correlation articles in the ideal partner preferences domain could easily serve as precedent for other areas that test matching hypotheses. Recall one of the earlier examples: Strauss and colleagues (2001) could have examined whether personality similarity between supervisors and supervisees was greater than zero and, if so, cited Campbell et al. (2016), Conroy-Beam and Buss (2016), and Gerlach et al. (in press) to support the implication that supervisors choose supervisees on the basis of that similarity. Given that social and personality psychology are hub sciences from which applied sciences often draw (Boyack, Klavans, & Börner, 2005), this scenario is not particularly farfetched.

One major topic area in relationship science has already dealt with similar data analytic issues—the literature examining the hypothesis that people pursue partners who match *themselves*. This literature on *similarity-attraction* (also called *the matching hypothesis*) has investigated whether people pursue and select partners based on the degree to which those partners possess traits that match the ones they have (e.g., Byrne, Ervin, & Lamberth, 1970; Kalick & Hamilton, 1986; Luo, 2017; Walster, Aronson, Abrahams, & Rottman, 1966). For decades, scholars addressing this topic have recognized that an A-B correlation (e.g., the correlation between two couple members' attractiveness levels) does not indicate that couple members *chose* each other based on their similarity (Burley, 1983; Walster, 1970). Indeed, all contemporary studies of this topic adopt an A × B → C approach. Typically, an index of similarity is used to predict an outcome such as attraction (e.g., Byrne et al., 1970; Tidwell, Eastwick, & Finkel, 2013) or relationship satisfaction (e.g., Watson et al., 2004). In rare cases, when only A-B correlations are available, researchers examine whether these correlations are stronger when individuals from a given population have an opportunity to choose to interact than they are for "pseudocouples" randomly assigned to interact (e.g., Bahns, Crandall, Gillath, & Preacher, 2017; see also Note 4). Scholars stopped using trait-matching effects to infer the active preference for similarity long ago; researchers who want to test ideal-partner trait effects should do the same.

Researchers who study nonhuman animals sometimes study "mate preferences," so perhaps animal mating scholars collect and interpret A-B correlations? They do not, primarily because there is no (A) construct in nonhuman animals; animals cannot report their preferences on rating scales. Instead, animal mating scholars often examine the B → C relationship (i.e., revealed or functional preferences): For example, a male's traits (B) might affect the willingness of a female to mate with him (C; Møller, 1988; see also Ledgerwood et al., 2018). Recent studies examining A-B correlations in humans exhibit both confusion and imprecision on this point. For example, Gerlach et al. (in press) state that ". . . if one could establish that mate preferences do not predict mate choice in humans, unlike any other sexually reproducing species, this would mean humans are a very special species . . ." (p. 12). Humans are indeed a very special species when it comes to understanding mate preferences but that is because we alone *possess* the self-reported partner preferences (A) to which Gerlach et al. (in press) are referring. If scholars do not properly differentiate between the three constructs depicted in Figure 1, they may incorrectly infer that the animal mating literature provides support for the predictive validity of ideal partner preference-matching.

Future Directions

As scholars continue to gather evidence on the effect sizes associated with corrected pattern metric and level metric A × B → C tests, there are two additional promising areas for growth on this topic: the development of experimental methods and the use of Response Surface Analysis (RSA).

Experimental Manipulations of Ideals

The corrected pattern metric and level metric offer precise tests of A × B → C hypotheses, but such tests share an important limitation with A-B correlations: All of these approaches are nonexperimental. We are aware of only three published articles reporting manipulations of participants' own ideal partner preferences (Eagly, Eastwick, & Johannesen-Schmidt, 2009; Kille, Forest, & Wood, 2013; Nelson & Morrison, 2005) and none of them tested downstream predictive validity questions. New paradigms that draw from social-cognitive approaches (e.g., Schaller & O'Brien, 1992) can illuminate how people form their ideal partner preferences in the first place (Eastwick et al., 2018; Ledgerwood et al., 2018). Once equipped with methods that experimentally shift participants' ideals, scholars can conduct even more precise A × B → C tests that rule out additional third-variable possibilities (e.g., conscientious people have more

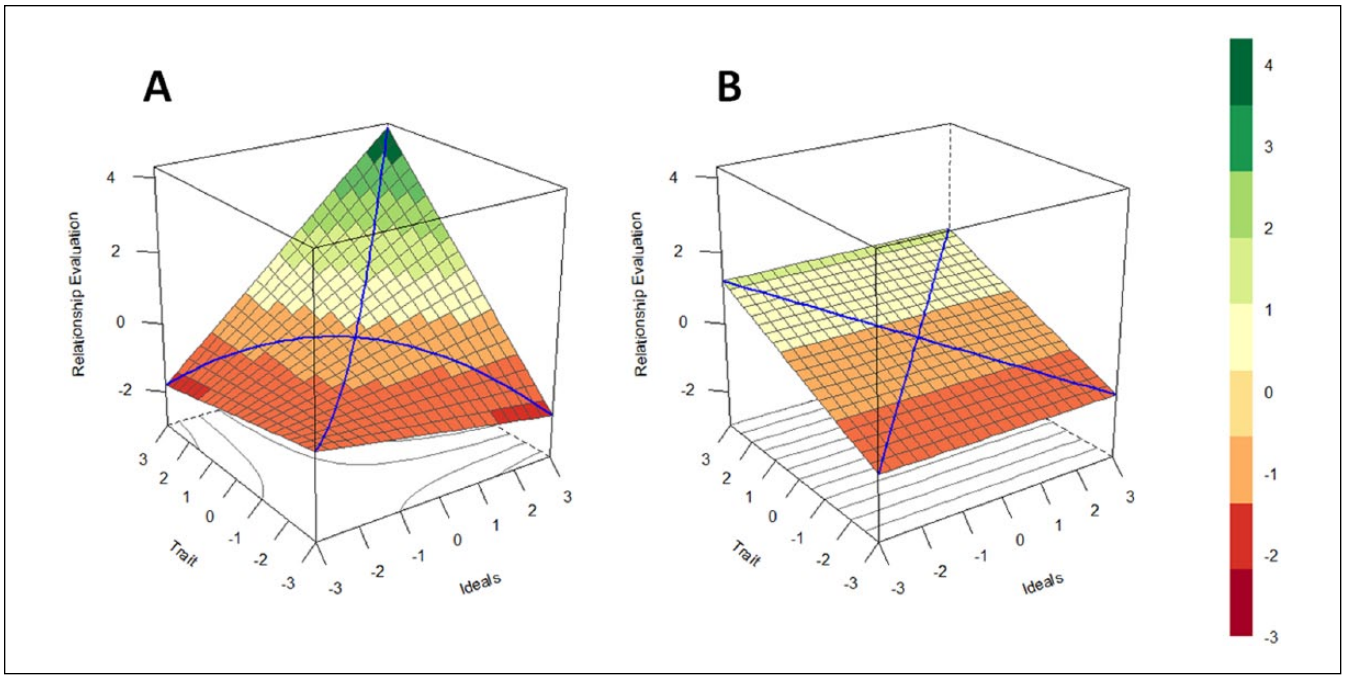

Figure 2. Response surface analysis approaches to the predictive validity of ideal partner preference-matching.
Note. Panel A depicts an idealized version of a congruence effect that would demonstrate support for the predictive validity of ideal partner preference-matching (i.e., this graph includes a main effect of ideals, a main effect of the partner's traits, an Ideal × Trait interaction, and no ideal or trait quadratic effects). Panel B depicts only the main effect of the partner's traits. Future research is required to determine whether real data more closely match Panel A or Panel B. Colors reflect *y*-axis values.

reliable pattern metric scores because they complete the scales carefully, and conscientious people also report more relationship satisfaction; Dyrenforth, Kashy, Donnellan, & Lucas, 2010). The creation of replicable experimental approaches that shift participants' ideals should be a major focus of future research.

Response Surface Analysis

Finally, RSA—a novel psychometric approach for testing the consequences of congruence or similarity—holds the potential to generate major new insights in this area (Barranti, Carlson, & Côté, 2017; Humberg et al., in press; Weidmann, Schönbrodt, Ledermann, & Grob, 2017). Applications of RSA to this domain would depict all three A, B, and C components required for tests of the matching hypothesis; such applications would be similar to the level metric in that they examine one trait at a time (see Figure 2). (Applications of RSA that incorporate multiple traits are not yet in widespread use, so they are not likely to imminently replace the corrected pattern metric; for details, see Edwards, 2007.)

Tests of congruence in RSA are more complex than the level metric, which infers support for the predictive validity of ideal-matching from the presence of a positive Ideals × Partner trait interaction. In RSA, a scholar must examine *four* parameters to conclude that a congruence effect is supported by the data. A full discussion of the meaning of these four parameters is beyond the scope of this report (for details, see Humberg et al., in press), but in brief, a significant positive Ideals × Partner trait interaction increases the likelihood (but in no way guarantees) that an RSA analysis will identify a congruence effect.[7] In short, RSA may eventually prove to be a more rigorous and precise version of the level metric test. Future studies should also report the four RSA parameters, as recommended by Humberg et al. (in press).

Conclusion

Ideal–trait (A-B) correlations do not provide clear, rigorous support for the predictive validity of ideal partner preference-matching, and they tend to be absent from the vast psychological literatures that have examined matching hypotheses. Fortunately, appropriately rigorous methods are readily available to test the predictive validity of ideal-matching (i.e., the corrected pattern metric, the level metric, and RSA) and such approaches can and have revealed theoretically plausible contexts in which ideal-matching demonstrates predictive validity (e.g., Lam et al., 2016). The field cannot achieve greater theoretical and empirical precision if we use statistically and conceptually imprecise approaches in place of more precise and rigorous ones. For this reason, we strongly encourage scholars to exercise skepticism and avoid interpreting A-B correlations as reflecting the active fulfillment of ideals. Instead, scholars should use and

interpret the more rigorous and precise A × B → C approach when examining the active fulfillment of ideals. Framed another way, if researchers assess outcomes that index pursuit or choice, they can plausibly draw inferences about pursuit or choice.

Conducting sound, rigorous scientific studies involves not only generating plausible a priori hypotheses that are tested with appropriate and sufficiently large samples and with well-validated constructs and reliable measures, but it also involves using appropriate statistical methods to test specific hypotheses rigorously. By advocating this path, we aim to clarify and improve the body of research examining how ideal preferences relate to partner attributes en route to affecting actual relationship outcomes.

Authors' Note

All three authors generated the idea for this article together. P. W. Eastwick wrote the first draft of the article and E. J. Finkel and J. A. Simpson provided critical revisions and additions. All the authors approved the final version of the article. We are grateful to Alison Ledgerwood and Garth Fletcher for providing feedback on prior versions of this article and to Rebekka Weidmann for providing the R code used to generate the Response Surface Analysis (RSA) figure.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. For example, "These results provide new evidence that stated mate preferences guide actual mate selections" (Conroy-Beam & Buss, 2016, p. 53) and "Our partner choices seem, at least to some degree, to be guided by what we consider desirable in romantic partners while we are single" (Gerlach, Arslan, Schultze, Reinhard, & Penke, in press, p. 16).
2. On occasion, we have referred to this hypothesis as simply "the predictive validity of ideal partner preferences" (e.g., Eastwick, Luchies, Finkel, & Hunt, 2014). This shorthand description (with no reference to matching) may have contributed to the confusion that pervades the literature, so we are careful in the current article to more precisely describe the hypothesis as "the predictive validity of ideal partner preference-matching."
3. Burriss, Welling, and Puts (2011) also used a similar A-B approach, but because they examined a different kind of partner preference (i.e., an indirect measure that infers a participant's preference from a series of choices between faces), we do not discuss this article further. Todd, Penke, Fasolo, and Lenton (2007) also used an A-B approach in a speed dating context; Eastwick et al. (2014) have discussed the limitations of that analytic approach.
4. Researchers could use ideal–trait (A-B) correlations to marshal support for Explanation 7. However, they would also need to assess ideal–trait correlations for partners whom the participant did not wish to date but could have dated. Imagine a participant with a choice between dating partner X or Y. If the ideal–trait correlation is stronger for the chosen partner X than the unchosen partner Y, Explanation 7 would be supported. This analysis treats partner choice (X vs. Y) as an outcome variable (C) and is functionally identical to the pattern metric analysis recommended below.
5. In contrast, Gerlach et al. (in press) used a design nearly identical to Eastwick, Finkel, and Eagly (2011, Study 3) and inferred from A-B correlations (i.e., without assessing C outcomes) that participants pursue partners who match their ideals—a deeply problematic inference.
6. Similar to the level metric, the Euclidean distance metric is the (squared) distance between a trait and an ideal partner preference rating (Conroy-Beam, Goetz, & Buss, 2016). One advantage of this metric is that it can be summed across many traits, similar to the pattern metric. One disadvantage is that it has the same normative desirability confound as the pattern metric (e.g., low distances may emerge simply because one's partner has desirable traits). For this reason, Rogers, Wood, and Furr (2018) note that "there are few good reasons" to use this approach because such scores "are confounded with main effects and normative response tendencies" (p. 114).
7. It is possible for the data to reveal a congruence effect in RSA in the absence of an Ideals × Partner trait interaction; for example, a congruence effect could emerge if both ideals and partner traits have strong negative curvilinear effects of approximately equal magnitude. As a practical matter, however, equivalently strong curvilinear effects of ideals and partner traits are not likely to emerge in the ideal-partner-preferences domain.

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