Empirical

Check for updates

Is (Actual or Perceptual) Personality Similarity Associated With Attraction in Initial Romantic Encounters? A Dyadic Response Surface Analysis

Sarah Humberg[1] , Tanja M. Gerlach[2,3], Theresa Franke-Prasse[1], Katharina Geukes[1] ,

Mitja D. Back[1]

[1] *Department of Psychology, University of Münster, Münster, Germany.* **[2]** *School of Psychology, Queen´s University Belfast, Belfast, Northern Ireland.* **[3]** *Department of Psychology, University of Göttingen, Göttingen, Germany.*

Abstract

A central assumption in lay and psychological theories is that people are attracted to potential mates who are similar to themselves in personality traits. However, the empirical findings on this idea have been inconclusive. Only a few studies have considered real-life dating contexts, and the statistical approaches they applied have sometimes spuriously identified similarity effects. In our study, 397 heterosexual singles (aged 18–28) participated in real speed-dates (N_dates = 940). Using dyadic response surface analysis, we investigated effects of actual similarity (similarity between self-reported personality trait levels) and perceptual similarity (similarity between an actor's personality and his/her perception of the partner's personality) concerning the Big Five traits. Neither type of similarity was related to initial romantic attraction. That is, the empirical evidence contradicted the idea that attraction occurs when people's personalities match. We conclude that understanding initial attraction requires a deeper understanding of interpersonal dynamics in first encounters.

Keywords

personality similarity, romantic attraction, speed-dating, mate selection, dyadic response surface analysis

Non-Technical Summary

Background

A central developmental task in many people's lives is the search for a romantic partner, a "good match." A widespread assumption among laypersons and psychologists is that people are particularly attracted to individuals who are similar to them in personality traits (i.e., in stable behavioral tendencies; e.g., being similarly extraverted).

Why was this study done?

Surprisingly, the question of whether personality similarity fosters initial attraction is still empirically unresolved.

What did the researchers do and find?

In our study, individuals who were currently looking for a romantic partner participated in five speed-dates each. Our findings challenge the widely held assumption of the appeal of personality similarity: Whether individuals were attracted to their dating partner was independent of whether the two individuals were similar in personality—and even independent of perceiving the dating partner's personality as similar to one's own personality.

What do these findings mean?

Our evidence indicates that actual and perceptual personality similarity might not contribute to solving the task of finding a "good match."

Relevance Statement

Does personality similarity matter when people search for a "good match" for them? We investigated this question with two perspectives on similarity (actual and perceptual similarity), naturalistic speed-dating data, and advanced statistical methods.

Key Insights

- The role of personality similarity for initial attraction is unknown.
- Recent statistical developments allow a stringent test of similarity effects.
- Personality similarity does not seem to matter for initial attraction.
- Even perceptual personality similarity does not seem to matter.
- Actor and partner personality are related to attraction.

The question of how people decide whether someone they meet is a "good match" for them has fascinated laypeople and scholars alike. A central but still unsettled assumption is that people prefer mates who are similar to themselves in personality traits. We refer to such a link between partners' similarity and their attraction to one another as

personality similarity effects.[1] But is personality similarity really appealing? That is, when people meet potential romantic partners for the first time, are they more attracted to those who resemble themselves in personality traits?

Whereas effects of personality similarity on initial romantic attraction have been reported in studies involving hypothetical partners (for an overview, see Montoya et al., 2008), empirical work on whether similarity plays a role in more naturalistic, real-life interactions is sparse and has yielded inconsistent findings (Asendorpf et al., 2011; Luo & Zhang, 2009; Tidwell et al., 2013). Here, we provide a comprehensive investigation of personality similarity effects in real-life first encounters by using data from a large naturalistic speed-dating study. We differentiate between effects of *actual similarity* (i.e., similarity in two people's personality trait levels) and *perceptual similarity* (i.e., similarity between one person's trait level and his/her perception of another person's trait level[2]) because prior research has carved out theoretical and empirical differences between these two complementary perspectives (Decuyper et al., 2012). Finally, we use Dyadic Response Surface Analyses (DRSA; Schönbrodt et al., 2018) for the statistical test of similarity effects because this method overcomes the systematic biases of approaches that have typically been applied to this aim (see Edwards, 2002; Weidmann et al., 2017).

Is (Actual and/or Perceptual) Similarity Appealing?

The attraction literature has long sought to establish similarity as a major attraction principle. In his seminal work on the *"similarity-attracts" hypothesis*, Byrne (1971) suggested that similarity might be appealing due to its adaptive functions, such as facilitating dyadic interaction, stimulating feelings of familiarity or safety, and validating people's self-concepts. Sharing personality traits implies similarity in affective needs and ways of expressing affect, thereby easing communication (Izard, 1960; Prager, 1995). The similarity-attracts hypothesis thus implies that personality similarity should be relevant both (a) in the initial screening phase of partner selection and (b) in existing romantic relationships (dating phase or long-term relationships). In this article, we focus on the very early stages on getting-to-know each other, but note that the empirical evidence concerning similarity effects in existing relationships also remains equivocal.[3]

---

1) With the term personality similarity, we refer to the degree of congruence between two people's *levels* of a personality trait (not similarity of their personality profiles).

2) We use the term "perceptual similarity" and not "perceived similarity" because the latter term has (also) been used to refer to a person`s direct estimation of another person´s similarity to themselves (Decuyper et al., 2012).

3) Despite a relatively large body of empirical research on similarity effects in romantic relationships, there is yet no consensus about their existence. For example, some studies reported positive associations of partners' personality similarity with relationship satisfaction (e.g., Gonzaga et al., 2007), others found similarity effects only for specific traits (e.g., Hudson & Fraley, 2014) and some concluded to find no substantial effects of similarity (e.g., Gattis et al., 2004; Park et al., 2023; Watson et al., 2004; Weidmann et al., 2017).

PsychOpen GOLD

Empirical research on effects of actual similarity on initial romantic attraction is yet inconclusive. Positive effects of personality similarity have typically been found in studies involving hypothetical partners, akin to the bogus stranger paradigm (Byrne, 1961). When people are given explicit information about hypothetical romantic partners (e.g., in the form of written vignettes or bogus questionnaire results), they tend to prefer those who resemble their (self-concept about their) own personality (Klohnen & Luo, 2003; Montoya et al., 2008). By contrast, studies employing more naturalistic designs (e.g., speed-dating studies with real first-time encounters with potential romantic partners) have reported few and inconsistent effects of actual personality similarity on initial attraction (Asendorpf et al., 2011; Luo & Zhang, 2009; Tidwell et al., 2013).

Actual similarity refers to a comparison of two people's personality trait levels, which implies that it can influence the persons' attraction to each other only through the indirect path of behavioral expression and perception processes (Back, 2021). By contrast, perceptual similarity—the similarity of one person's (self-concept about his/her) personality with his/her *perception* of the other person's personality— is closer to an individual's cognitions when evaluating the respective other person in terms of attraction. Therefore, perceptual similarity might act as a more proximate predictor of initial attraction than actual similarity (Klohnen & Mendelsohn, 1998; Selfhout et al., 2009). Empirical findings from the few studies that involved at least some amount of dyadic interaction indeed indicated mostly positive effects of perceptual personality similarity on romantic attraction and only a few effects of actual similarity (Montoya et al., 2008; Tidwell et al., 2013).

Statistical Challenges in Investigating Similarity Effects

Similarity effects in initial encounters are usually tested by computing absolute (or squared) difference scores between the dyad members' trait levels and using these scores to predict romantic attraction in a (dyadic) regression model (e.g., Asendorpf et al., 2011). The main effects of trait variables are often included as predictors in the model, which avoids the risk of confounding linear main effects of individuals' trait levels with similarity effects (Luo & Zhang, 2009). For example, if there is a linear *actor effect* in the sense that a person's own trait level (e.g., his/her agreeableness) predicts how attracted he/she tends to be to potential mates, this effect can be detected only when the person's trait level is included as a predictor that is separate from the difference score variable. If an actor effect is present in the data but not explicitly modeled, it can lead to spurious evidence of an effect of personality similarity, even if the other person's trait level or the similarity between the two people is in fact irrelevant for attraction. An analogous situation occurs for *partner effects* (i.e., when the partner's trait level is related to the actor's feelings of attraction).

Using the difference score approach while controlling for linear actor and partner effects, however, is still systematically biased toward false-positive conclusions about

similarity effects. The reason is that this approach falsely indicates evidence of a similarity effect when there are actor or partner effects that are *curvilinear* instead of linear or when attraction is maximized for a certain, nonzero discrepancy between actor and partner personality (Edwards, 2001).[4] To overcome these limitations, we applied Dyadic Response Surface Analysis (DRSA; Nestler et al., 2015; Schönbrodt et al., 2018), a combination of the Actor Partner Interdependence Model (APIM; Kenny et al., 2006) with Response Surface Analysis (RSA; Edwards, 2002). (D)RSA is increasingly recommended and used in romantic relationship research (e.g., Eastwick, Finkel, & Simpson, 2019; Park et al., 2023; Weidmann et al., 2017) because it avoids the use of difference scores and can thereby detect effects of dyadic similarity and differentiate them from linear and curvilinear actor/partner main effects.

The Present Study

We aimed at a comprehensive investigation of whether personality similarity matters for initial romantic attraction. Our data stemmed from a real-life study in which 940 real speed-dates between 397 participants took place, capturing the initial screening stage of the partner selection process. We considered *actual similarity* and *perceptual similarity* with regard to the Big Five traits. For each of the 10 combinations of similarity perspective (actual, perceptual) and personality trait (Big Five), we used DRSA to test whether (actual/perceptual) personality similarity was related to romantic attraction in first encounters. We tested the robustness of our findings across different instruments to measure the Big Five (BFI vs. adjective list scales) and across outcome measures (romantic attraction vs. date quality) and tested for gender differences in the detected effects.

Method

We used data from a real-life speed-dating study that took place between April 2015 and December 2015 in Münster, Germany ("Date me for Science" study, Wurst & Back, 2016).

Transparency, Openness, and Reproducibility

A full codebook of the "Date me for Science" study can be found at https://osf.io/n7dw9/. The codebook contains detailed descriptions of the procedures and all applied instruments, and thereby allows independent replication of the study. The processed data and the R code that can be used to reproduce our results are provided in the folder "data_and_code" in the Supplementary Materials. The "Date me for Science" data was

---

4) Note that other approaches that have been used to test for similarity effects for related research questions (e.g., interaction terms, profile correlations) cannot solve this problem (Edwards, 2001; Weidmann et al., 2017).

used in other studies (enlisted at https://osf.io/hmr6j/). Whereas some variables used here were also used in those previous analyses, the research questions do not overlap; the present paper presents the first analysis of similarity effects with these data.

We preregistered the study background, our expectations, and the analytical procedures and interpretation rules, after the data was assessed but before it was analyzed (see Supplementary Materials). The test for similarity effects was exploratory. If similarity effects occurred, we expected perceptual similarity to have stronger effects than actual similarity. In analyses that showed no evidence of similarity effects, we explored linear actor and partner main effects. We expected rather weak and nonsignificant actor and partner main effects on romantic attraction; if anything, on the basis of previous research, we expected positive partner effects of males' self-reported extraversion and openness on female attraction (Asendorpf et al., 2011; Back, Penke, et al., 2011). All analyses were conducted as described in the preregistration; we only corrected one mistake that concerned the equality constraints in additional analyses on gender differences (see the description in the Supplementary Materials for details), and we conducted one further robustness check that was not preregistered (see below).

Participants

We recruited participants who were between the ages of 18 and 28, heterosexual, single, and currently looking for a romantic partner. We obtained 400 participants within our time frame for data collection (April–December 2015). Three participants objected to the use of their data afterwards, so the final sample consisted of 397 participants (200 women; M_{age} = 22.87, SD_{age} = 2.62) who formed 940 speed-dating dyads. No other data was excluded from the analyses. Most participants were students (91%) from a variety of different majors; the remaining participants were about to acquire their university entrance diploma. No compensation was provided apart from the opportunity to meet a romantic partner.

Procedures

Participation in the study began with a pre-event online questionnaire on demographics and self-ratings. Participants were then invited to one of 42 evening speed-dating events in the laboratory. For each event, we invited five women and five men. Most speed-dating events involved 10 participants (26 events with 10 people, 11 with nine, 3 with eight, 2 with seven). The female and male participants were kept separate during the welcoming, instructional, and waiting periods so that no interaction with opposite-sex participants was possible before the speed-dates. Each participant dated each opposite-sex participant who was present at the event. One speed-date took place at a time. The respective female and male participants were led separately (the woman first) into the speed-dating room, where they were seated on a couch at a 90° angle. The speed-date

took 3 min, during which the daters were alone in the room and free to choose what to say or do. The dates were videotaped. After the speed-date, the daters were separated and answered a post-date questionnaire. The "Date me for Science" study was approved by the local ethical committee.

Measures

Table 1 shows the applied instruments. Descriptive statistics, item-, and scale-intercorrelations for the measures can be found in the Supplement 3 (see Supplementary Materials).

Attraction

Romantic Attraction — After each date, participants rated their speed-dating partner concerning appeal, fit, likeability, interest, and sexual attraction (see Table 1). Romantic attraction was operationalized as the mean of these five items.

Date Quality — Participants also rated the date concerning being in tune, comfortableness, enjoyment, unpleasantness (reverse coded before aggregation), and whether it went well. The mean of these five items was used as a measure of perceived date quality in the robustness analyses.

Personality

Self-Reported Personality (BFI-S) — The Big Five personality traits were assessed with the Big Five Inventory-SOEP (BFI-S; Schupp & Gerlitz, 2008) and two additional agreeableness items (Rammstedt & John, 2007; see Table 1).[5]

Self-Reported Personality (Adjective List) — Big Five self-reports were also assessed with an adjective list. For 29 personality-related adjectives, participants indicated how pronounced the respective characteristic was in themselves. From these items, we constructed a two-item scale for each of the Big Five traits (see Supplement 2 in the Supplementary Materials for details on scale construction and all item- and scale-intercorrelations). The adjectives that constituted the final scales are shown in Table 1.[6] Correlations of the two-item self-report scales and the BFI scales indicated that the

---

5) Internal consistencies of the BFI-S were .71 (neuroticism), .84 (extraversion), .55 (openness), .62 (agreeableness), .61 (conscientiousness). Note that these numbers should be interpreted with caution due to the short scales (3 items). While retest-reliabilities of short personality measures tend to be satisfactory, internal consistencies are necessarily low when the few items cover different aspects of the respective Big Five dimension to allow a valid assessment of the trait (see also Gosling et al., 2003).

6) Internal consistencies of the self-report adjective list scales were .61 (neuroticism), .72 (extraversion), .69 (openness), .64 (agreeableness), .54 (conscientiousness). These numbers should be interpreted with caution (see Footnote 5).

constructs measured with the two instruments converged for neuroticism ($r = .62$), extraversion ($r = .66$), and conscientiousness ($r = .64$). For openness ($r = .32$) and agreeableness ($r = .28$), the two-item scales seemed to tap into slightly different aspects of the respective constructs than the BFI. Note that the adjective list scales capture the core of the respective Big Five traits, but, owing to their shortness, do not cover all facets of the traits (e.g., the extraversion scale covers the sociability facet of extraversion, but not so much assertiveness). Moreover, the preregistered strategy for scale construction led to some items that overlap conceptually with another trait ("self-confident" in the neuroticism scale and "adventurous" in the scale for openness overlap conceptually with extraversion). We conducted several robustness analyses (one of which was preregistered) to evaluate the effects of these observations on the results (for details, see below, Supplement 5, and Supplement 10 in the Supplementary Materials).

Perceived Personality (Adjective List) — After each date, participants rated the same adjectives as for self-reported personality about their previous dating partner. We computed the same two-item scales as for the self-reports to obtain commensurable measurements.[7]

Table 1

Items Used in the Present Study

Construct [assessment occasion in brackets]	Items
Romantic attraction [post-date questionnaire]	Rated on a scale from 1 (*do not agree at all*) to 7 (*agree completely*): *appeal*: "I think this person is romantically appealing" *fit*: "I think that this person and I are a good fit" *likeability*: "I find this person likeable" *interest*: "I find this person interesting" *sexual attraction*: "I feel sexually attracted to this person"
Date quality [post-date questionnaire]	Rated on a scale from 1 (*do not agree at all*) to 7 (*agree completely*): *being in tune*: "My dating partner and I were in tune with each other" *comfortableness*: "I felt comfortable in the presence of my dating partner" *enjoyment*: "I enjoyed this date" *unpleasantness* (reverse coded): "Compared to previous dates I have been on, there were many unpleasant situations during this date" *whether it went well*: "Our date went well"

7) Internal consistencies of the perceived personality adjective list scales were .75 (neuroticism), .86 (extraversion), .80 (openness), .61 (agreeableness), .54 (conscientiousness). These numbers should be interpreted with caution (see Footnote 5).

PsychOpen GOLD

Construct [assessment occasion in brackets]	Items
Self-reported personality (BFI-S) [pre-event online questionnaire]	Rated on a scale from 1 (*do not agree at all*) to 7 (*agree completely*): *all 15 items from the BFI-S*: see Schupp and Gerlitz (2008) *two additional agreeableness items:* - "I am a person who is generally trusting" - "I am a person who tends to find fault with others" (reverse coded)
Self-reported personality (adjective list) [pre-event online questionnaire] and perceived personality (adjective list) [post-date questionnaire]	"Please state how much the following characteristics are pronounced in yourself." / "Please state how strongly the following characteristics applied to your last dating partner." (rated on a scale from 1 = *not at all*, to 7 = *very much*) *neuroticism:* - "rarely anxious, nervous, worried" (recoded) - "self-confident" (recoded) *extraversion:* - "relaxed, easy when interacting with others" - "entertaining, humorous" *openness:* - "having diverse interests, broad-minded" - "adventurous" *agreeableness:* - "cordial, empathic, supportive, considerate" - "invests a lot in a relationship (e.g., time, little tokens, gifts)" *conscientiousness:* - "reliable, responsible" - "ambitious, goal-oriented"

Note. The full study codebook can be found in the Supplementary Materials.

Analytical Strategy

We investigated similarity effects in 2 (actual vs. perceptual similarity) x 5 (Big Five traits) = 10 separate analyses, using DRSA for dyads that are distinguishable by gender (Schönbrodt et al., 2018; see also Nestler et al. 2015). In analyses referring to actual similarity, we used the BFI-S measures of the respective trait. In analyses referring to perceptual similarity, we used the adjective-list assessments of the actor's self-reported personality and the actor's perception of the partner's personality to achieve commensurability of the predictor variables as required for DRSA (Schönbrodt et al., 2018).

Analytical Procedure for Investigating Similarity Effects

Each of the 10 analyses comprised several steps; this strategy was inspired by the analytical procedure in Weidmann et al. (2017) but adapted to more recent recommendations

on (dyadic) RSA (Humberg et al., 2019; Schönbrodt et al., 2018). As the first step, for each speed-date, the female participants' rating Z_f of her attraction to her male dating partner and the man's rating Z_m of the woman were predicted from their respective personality variables in the *DRSA model* (Schönbrodt et al., 2018):

$$Z_f = b_{0f} + b_{1f}X_f + b_{2f}Y_f + b_{3f}X_f^2 + b_{4f}X_fY_f + b_{5f}Y_f^2 + e_f$$

$$Z_m = b_{0m} + b_{1m}X_m + b_{2m}Y_m + b_{3m}X_m^2 + b_{4m}X_mY_m + b_{5m}Y_m^2 + e_m \qquad (1)$$

$$e_f \sim\sim e_m$$

Here, X_f denotes the woman's self-reported personality trait level, Y_f denotes the man's trait level (self-reported for the analyses on actual similarity, perceived by the woman for analyses on perceptual similarity), X_m denotes the woman's (self-reported/male-perceived) trait level, and Y_m denotes the man's self-reported trait level (see Table 1 in the preregistration (see Supplementary Materials) for a systematic overview of the variables). The correlation between the error terms e_f and e_m was freely estimated to account for dependencies within the dyads. The DRSA model reflects how the female participant's attraction ratings (Z_f) and the men's ratings (Z_m) relate to all possible combinations of the two people's personality (e.g., X_f and Y_f). Owing to the second-order terms (X^2 etc.), the DRSA model can represent curvilinear relationships that would be present, for example, in the case of a similarity effect (see Figure 1; see below for explanations of the figure).

Second, we estimated a corresponding *APIM model* that included only the main effects of the two participants' trait levels:

$$Z_f = b_{0f} + b_{1f}X_f + b_{2f}Y_f + e_f$$

$$Z_m = b_{0m} + b_{1m}X_m + b_{2m}Y_m + e_m \qquad (2)$$

$$e_f \sim\sim e_m$$

The APIM model is nested in the DRSA model but includes only linear terms, so that it represents only linear, no curvilinear, actor effects (b_{1f} and b_{2m}) and partner effects (b_{2f} and b_{1m}).

Third, we compared the fit of the DRSA model with the fit of the APIM with a chi-square likelihood ratio test. If the DRSA model did *not* fit the data significantly better than the APIM, the similarity-attracts hypothesis was rejected. This is admissible because in such a situation, curvilinear effects (which would have to be present for a similarity effect) do not explain a meaningful amount of variance beyond linear actor and partner effects.

Fourth, if the DRSA model had a significantly better fit than the APIM, we used the coefficient estimates from the DRSA model to calculate auxiliary parameters a_{1f} to a_{5f} for the female part of the model and a_{1m} to a_{5m} for the male part (Edwards, 2002; Schönbrodt et al., 2018). Evidence of a similarity effect for predicting female attraction would be found if a_{4f} was significantly negative, a_{3f} was nonsignificant, and a_{5f} was nonsignificant; and for male attraction accordingly (Schönbrodt et al., 2018). We imposed no conditions on a_1 and a_2 to allow for the possibility that women's and men's personality trait levels had (linear or curvilinear) main effects on attraction in addition to a similarity effect (e.g., Edwards, 2002; Humberg et al., 2019).

Figure 1

Prototypical Similarity Effect
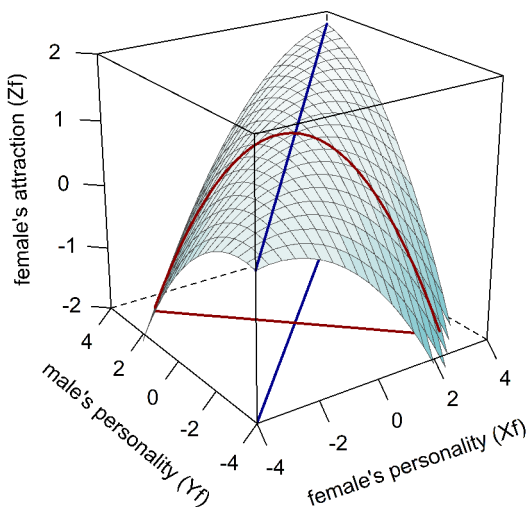
Note. Response surface indicating a similarity effect (with additional linear main effects of male and female personality, reflected in the rising nature of the ridge line). Surface of the estimated regression equation $Z_f = 1 + 0.1\,X_f + 0.1\,Y_f - 0.08\,X_f^2 + 0.16\,X_f Y_f - 0.08\,Y_f^2$

Figure 1 shows the graph (the *response surface*) of the female part of an estimated DRSA model. The predictions of this prototypical model are in line with a similarity effect, as the highest female attraction is predicted for male-female personality combinations that lie on the blue line, which consists of dyads with congruent actor versus partner personality. The auxiliary parameters a_{4f}, a_{3f}, and a_{5f} are statistical descriptions of properties of the graph. They satisfy the three conditions mentioned above if and only if the corresponding graph is shaped roughly like the surface in Figure 1; that is, if the model predictions are in line with a similarity effect (for detailed explanations, see Schönbrodt

et al., 2018; see also Edwards, 2002; Humberg et al., 2019). More specifically, the parameters a_4 and a_3 reflect the shape of the response surface along the *line of incongruence* (red line in Figure 1; formally defined as $Y = -X$), which describes the predicted attraction rating for dating partners whose personality scores are equal in magnitude but opposite in sign; in particular, this line ranges from dyads where the man's personality score is much higher than the woman's (left corner of the coordinate cube) to dyads with similar personalities, to dyads where the woman's score is much higher than the male's (right corner). This line can be expressed as the quadratic equation $Z_f = b_{0f} + a_{3f}X_f + a_{4f}X_f^2$. Therefore, a negative a_4 and a non-significant a_3 imply that the line of incongruence has an inverted U-shape with the highest attraction predicted for dyads with the congruent personality constellation (0,0). When this is the case and when the parameter a_5 (which has no direct graphical representation) is non-significant, the ridge of the surface matches the blue *line of congruence*, so that highest attraction is predicted for congruent dyads for all possible personality constellations.

Implementation and Analytical Details

Before each analysis, we centered the respective pair of predictor variables that occurred within the same line of Equation 1 at their grand mean and scaled them at their grand standard deviation (Schönbrodt et al., 2018), and we standardized the attraction variable. As a pre-analysis, we inspected the numbers of discrepant predictor combinations for both directions of incongruence (Edwards, 2002), and we considered the distributions sufficient for investigating similarity effects (see Supplement 4). The only potential exception was that only 6% of women's perceptions of men's agreeableness exceeded the respective woman's self-reported agreeableness by more than half a grand standard deviation. However, given that only linear effects were detected for these variables, it is unlikely that this restriction masked a similarity effect, which required a curvilinear association for the whole range of the predictor variable.

All model estimations and comparisons were conducted with the *lavaan* package in R (Version 0.6-6; Rosseel, 2012). We used FIML estimation to treat missing data that resulted from one participant not filling out the questionnaires after two of his dates. Standard errors were bootstrapped with 10,000 replications. When estimating the DRSA models, we screened for influential cases according to three criteria that had been suggested for RSA (Edwards, 2002), but none were detected. Response surface plots were generated with the RSA package (Schönbrodt & Humberg, 2020). In all significance tests, we used an alpha level of .01 to account for the dependencies in the data (each participant evaluated up to five targets and vice versa), but all conclusions would have been the same if an alpha level of .05 had been used. A simulation study indicated that with our sample of 940 dates involving 397 distinct individuals, we were able to detect even a weak similarity effect ($R^2 = .04$) with a power of 97% (see Supplement 11 for more details).

Additional Analyses

We preregistered several exploratory and robustness analyses (see Supplementary Materials). First, in analyses in which the similarity-attracts hypothesis was not supported, we explored the results to reveal whether attraction was associated with personality in another way. To this aim, if the DRSA model did not fit significantly better than the APIM, we interpreted the estimated coefficients of the APIM. This allowed us to detect linear actor and partner effects. If the DRSA model had a significantly better fit, we interpreted it by using response surface methodology (e.g., Edwards, 2002). Second, we tested the robustness of our results with further sets of analyses: To evaluate the effect that the measurement instrument (BFI vs. adjective list scales) had on the results, we (a) repeated the analyses involving only self-reported personality with the adjective list self-report measure, (b) repeated the analyses involving personality perceptions with BFI self-reports instead of the adjective list self-reports (*extending the preregistration*; note that these analyses could be used only to replicate main effects and not to test similarity effects, because the predictor scales [BFI self-reports vs. adjective list perceptions] are not commensurate). To evaluate the impact of the strategy chosen to construct the adjective list scales, we (c) repeated the analyses involving personality perceptions with scales resulting from alternative construction strategies, where some of the alternative scales are less narrow than our original scales and avoid the conceptual overlap (*extending the preregistration*; see Supplement 10 for details). To inspect the robustness of results across outcome measures, we (d) repeated all analyses with the outcome date quality instead of attraction. Third, in all (main and robustness) analyses, we inspected whether the effects differed between genders by comparing the fit of the final model that was used for interpretation (DRSA or APIM) against a corresponding model with coefficient constraints that forced the female and male models to estimate identical (linear and squared) actor and partner effects and an identical coefficient for the interaction term (Schönbrodt et al., 2018).

Results

Tables showing detailed results of all main and additional analyses are provided in the Supplementary Materials (see Supplement 5 for a schematic summary and a comparison with the preregistration).

Effects of Similarity on Attraction

Table 2 shows the results of the model comparison in the first analytical step. In the analyses on effects of *actual similarity*, the DRSA model did *not* fit the data significantly better than the APIM (at α = .01) for any of the Big Five traits. The similarity-attracts

hypothesis had to be rejected in all cases; actual similarity did not seem to be related to attraction.

Table 2

Results of Model Comparisons DRSA Versus APIM

Analysis	N	E	O	A	C
Actual similarity					
$\Delta\chi^2$	6.91	5.05	13.09	15.94	6.43
$p\,(\Delta\chi^2)$	.330	.537	.042	.014	.376
Perceptual similarity					
$\Delta\chi^2$	7.86	33.89	11.72	11.50	3.74
$p\,(\Delta\chi^2)$	.249	< .001	.069	.074	.712

Note. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness; $\Delta\chi^2$ = difference in chi-square values of the APIM versus DRSA model; $p\,(\Delta\chi^2)$ = p-value of the chi-square difference test of the APIM versus DRSA model; in all analyses, $\Delta\chi^2$ follows a $\chi^2(6)$ distribution.

Concerning the analyses for *perceptual similarity*, the model comparison was again nonsignificant for the traits neuroticism, openness, agreeableness, and conscientiousness, so the similarity-attracts hypothesis was rejected for these traits. For extraversion, the DRSA model had a significantly better fit than the APIM. However, neither the women's nor the men's auxiliary RSA parameters satisfied the conditions for a similarity effect because, for example, the a_4 parameter was not significantly negative (female attraction: a_{4f} = .06, 99% CI [-.08, .21]; male attraction: a_{4m} = -.02, 99% CI [-.11, .07]; see Supplement 7 for all results). That is, there was no evidence of an association between perceptual similarity and attraction.

In sum, none of the 10 analyses supported the idea that actual or perceptual personality similarity between a male and female dating partner was related to their attraction to each other. We further inspected the results in an exploratory way and revealed a nuanced pattern of actor and partner effects.

Exploratory Inspection of Main Effects of Self-Reported Personality

Concerning actor and partner effects of *self-reported* personality, the coefficients from the APIM models (which were sufficient for describing the data, see Table 2) are provided in the first two rows of Table 3.

Table 3

Coefficient Estimates of the APIM/DRSA Models That Were Selected on the Basis of the Model Comparison

Effect	female N	male N	female E	male E	female O	male O	female A	male A	female C	male C
Models with self-reported personality (BFI) as predictors										
Actor effect of self-reported personality (b_{1f}, b_{2m})	.12 (p < .001) [.04, .20]	.03 (p = .438) [-.06, .11]	-.06 (p = .084) [-.16, .03]	0 (p = .967) [-.09, .08]	.11 (p < .001) [.04, .19]	0 (p = .973) [-.09, .09]	.07 (p = .034) [-.02, .14]	.09 (p = .006) [.01, .18]	0 (p = .989) [-.09, .08]	.03 (p = .443) [-.06, .12]
Partner effect of self-reported personality (b_{1m}, b_{2f})	0 (p = .910) [-.08, .09]	-.18 (p < .001) [-.27, -.09]	.16 (p < .001) [.07, .26]	.22 (p < .001) [.14, .30]	0 (p = .953) [-.08, .09]	.06 (p = .057) [-.02, .15]	.01 (p = .675) [-.07, .09]	.05 (p = .137) [-.03, .13]	.06 (p = .064) [-.03, .14]	.12 (p < .001) [.03, .20]
Models with self-reported personality (adjective list; coefficients not shown)[b] and perceived personality as predictors										
Partner effect of perceived personality (coefficients of linear terms b_{1m}, b_{2f})	-.45 (p < .001) [-.53, -.38]	-.50 (p < .001) [-.56, -.43]	.63[a] (p < .001) [.56, .69]	.72[a] (p < .001) [.63, .81]	.59 (p < .001) [.51, .67]	.59 (p < .001) [.53, .66]	.40 (p < .001) [.31, .50]	.40 (p < .001) [.31, .49]	.27 (p < .001) [.18, .36]	.32 (p < .001) [.24, .41]
Partner effect of perceived personality (coefficients of quadratic terms b_{3m}, b_{5f})			.05[a] (p = .001) [.01, .10]	.08[a] (p < .001) [.03, .13]						

Note. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness. All cells except those for partner effects of perceived extraversion show the coefficients of the APIM: the respective actor effect of female personality on female attraction (b_{1f} in Equation 2), the actor effect of male personality on male attraction (b_{2m}), the partner effect of female personality on male attraction (b_{1m}), and the partner effect of male personality on female attraction (b_{2f}). Respective *p*-values are given in parentheses and 99% confidence intervals in brackets. Coefficients that are significant at α = .01 are in bold. [a]The cells for partner effects of perceived extraversion show the effects that were estimated with the DRSA model, as this model fit the data significantly better than the APIM in this analysis. As defined in Equation 1, b_{1m} and b_{2f} refer to the *linear* partner effects of female/male personality on male/female attraction, and b_{3m} and b_{5f} refer to the respective *quadratic* partner effects. The other coefficients in the DRSA model were nonsignificant (see Supplement 7 for all results). [b]For the models with self-reported and perceived personality as predictor variables, the actor effects of self-reported personality (assessed with the adjective list) are not reported because their interpretation (effects of self-reported personality that are controlled for the actor's perception of the dating partner) is not meaningful in the present research context (see Supplements 7 and 8 for all results).

For *neuroticism*, there was a positive actor effect and a negative partner effect on female attraction: Women felt more attracted to men the higher their own level of neuroticism and the lower the men's level of neuroticism. There were significant partner effects of *extraversion* for both genders: Men and women preferred more extraverted partners. Concerning *openness*, there was a positive actor effect for women, indicating that women with higher levels of openness felt more attracted to potential partners. Results also postulated a positive actor effect of men's *agreeableness*, indicating that more agreeable men were more attracted to their dating partners. Finally, women considered men to be more attractive the more *conscientious* the men were (i.e., a positive partner effect).

Exploratory Inspection of Main Effects of Perceived Personality

Concerning *perceived* personality, the partner effects for neuroticism, openness, agreeableness, and conscientiousness estimated in the APIM are displayed in the last row of Table 3. The coefficients for self-reported personality are not shown because the association that they reflect (effect of actors' self-reported personality while controlling for their perceptions of the partner) is not meaningful in this context (see Supplement 8 for all coefficients). The partner effects for all four traits were strong and significant. Women and men preferred romantic partners whom they perceived to be less neurotic, more open, more agreeable, and more conscientious.

For extraversion, the DRSA model had a significantly better fit than the APIM. For female attraction, the model coefficients revealed a monotonously positive but nonlinear partner effect of perceived male extraversion (indicated by b_{2f} = .72, 99% CI [.63, .81] and b_{5f} = .08 [.03, .13], whereas the other coefficients were nonsignificant: b_{1f} = -.07 [-.16, .03], b_{3f} = -.03 [-.10, .05], b_{4f} = 0 [-.09, .07]; see Supplement 7 for all results). Women were more attracted to men the more extraverted they perceived the men to be, and this effect was stronger for higher levels of perceived male extraversion than for lower levels (see also Figure 2, left). An analogous pattern was found for men's attraction to women (Figure 2, right): Men were more attracted to women the more extraverted they perceived the women to be, and this positive association was stronger for higher extraversion levels than for lower levels (indicated by b_{1m} = .63 [.56, .69] and b_{3m} = .05 [.01, .10], whereby b_{2m} = 0 [-.07, .08], b_{5m} = -.05 [-.11, .00], b_{4m} = .02 [-.04, .08]).

Figure 2

Response Surfaces of the DRSA Model for Self-Reported and Perceived Extraversion
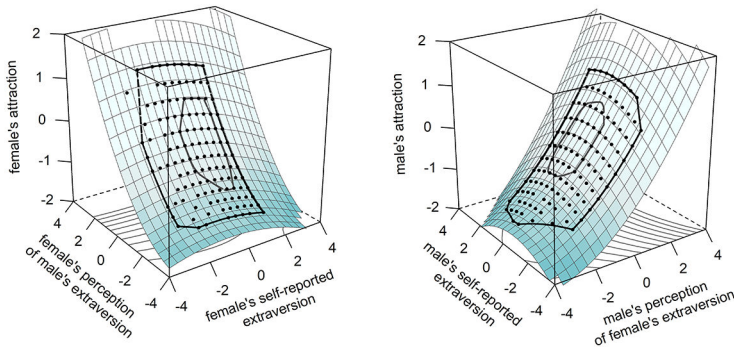
Note. The figure shows the response surfaces for female attraction (left) and male attraction (right) predicted by the actor's self-reported extraversion level and his/her perception of the dating partner's extraversion level. The points on the surfaces represent the model-predicted attraction values for the predictor combinations in the data. The lines on the surface represent the bagplot of the data, where the outer black line demarcates the region of the surface that can be interpreted.

Robustness Analyses

Consistent with the main analyses, the robustness analyses with different choices of the self-report measures (adjective list in the analyses on actual similarity; BFI-S in the analyses on perceptual similarity), of the adjective list scales, and/or date quality as the outcome variable yielded no evidence of similarity effects (see Supplements 6 to 8 and Supplement 10 for all results). In addition, the patterns of actor and partner effects reported above were largely replicated (see Supplement 5 for a summary of results and more information). The only substantial exceptions implied that (a) the positive actor effect of women's self-reported neuroticism should be considered tentative (as it was replicated in only one analysis) and (b) the two-item openness scale seemed to yield systematically different effects than the established BFI scale (see Supplement 5 for details). The latter observation concerns only the partner effects of perceived openness (the only result that was based on the two-item measure). When we repeated the analyses with an alternative scale for perceived openness, this partner effect replicated (see Supplement 10), but the effect nonetheless awaits replication with a more established instrument.

Gender Differences

Table 3 shows that the analyses involving only self-reported personality revealed a differentiated pattern of actor and partner effects, where some effects seemed to differ between genders and others did not. A formal test of gender differences (see Supplement 9 for all results) supported the respective pattern for *neuroticism* (significant difference

between genders, $\chi^2(2, N = 940) = 20.19$, $p < .001$; i.e., more positive actor effects for women than for men and more negative partner effects of men's neuroticism than of women's), for *extraversion* (no significant difference, $\chi^2(2, N = 940) = 2.92$, $p = .232$), and tentatively for *openness* (marginally significant difference, $\chi^2(2, N = 940) = 7.86$, $p = .020$; i.e., more positive actor effects for women). The main analyses also suggested gender-specific effects for *agreeableness* (stronger actor effects for men) and *conscientiousness* (stronger partner effects for men). The differences between the equality-constrained versus the gender-specific APIMs were, however, nonsignificant (agreeableness: $\chi^2(2, N = 940) = 1.00$, $p = .608$; conscientiousness: $\chi^2(2, N = 940) = 1.84$, $p = .399$). The respective equality-constrained APIMs showed a positive actor effect of agreeableness ($b = .08$, 99% CI [.02, .14]) and a positive partner effect of conscientiousness ($b = .09$, 99% CI [.02, .15]). This pattern was replicated in most robustness analyses and tentatively indicates that the two effects might also occur for women, a conjecture that awaits future replication. For the analyses involving perceived personality, none of the detected effects differed significantly between genders (see Supplement 9).

Discussion

We investigated whether people feel more attracted to potential romantic partners who resemble themselves in personality traits. We used data from a naturalistic speed-dating setting, applied DRSA, and differentiated between two perspectives on similarity. Neither actual nor perceptual similarity was related to initial romantic attraction. Instead, there was a differentiated and partly gender-specific pattern of actor and partner effects.

No Evidence of Similarity Effects on Initial Romantic Attraction

The lack of evidence of similarity effects was consistent across all Big Five traits, both perspectives on similarity (actual vs. perceptual), and all robustness analyses. Along with the observation that earlier studies found only a little and inconsistent evidence of similarity effects (though the applied statistical approaches were even biased toward false-positive results), we consider it increasingly unlikely that the similarity-attracts hypothesis is empirically supported in the personality domain. Our findings could also help to explain why—with regard to existing relationships—romantic partners do not seem to be more similar in their personalities, whereas they notably resemble each other on a number of other characteristics, such as attitudes, religiosity, and physical attractiveness (Luo, 2017). Moreover, our findings are consistent with recent evidence that, although the largest share of variance in romantic attraction is unique to the specific dyad in question, it is difficult to predict this unique attraction from distal person variables, such as personality traits (Joel et al., 2017). Consequently, understanding how people decide who is a "good match" for them, and understanding the role that similarity plays in this

context, may require higher resolution investigations (Joel et al., 2017). Specifically, researchers might focus on (the degree of congruence between) dating partners' expressed behaviors (e.g., how dominantly someone acts on a date) and actors' affective preferences for respective behaviors (e.g., the extent to which dominant behavior evokes positive affect in the dating partner; see also Back, 2021; Back, Schmukle, et al., 2011).

Actor and Partner Effects of Actual and Perceived Personality

Considering *actual* (self-reported) personality, we found that women preferred men who were less neurotic, more extraverted and more conscientious, and that men preferred more extraverted women. These partner effects are largely consistent with effects attained in prior studies (Asendorpf et al., 2011; Humbad, 2012; Jauk et al., 2016; Luo & Zhang, 2009). The actor effects (more open women and more agreeable men felt more attracted to potential partners) that we found in our main and robustness analyses were of small sizes and have not been frequently reported in previous studies on initial attraction. They thus await replication.

Personality *perceptions* were consistently related to attraction. Men and women were more attracted to dating partners the less neurotic and the more extraverted, open, agreeable, and conscientious they perceived the partners to be. In other words, people were more attracted to partners whom they perceived to have more normative (e.g., Furr, 2008; Wood & Wortman, 2012), healthier (e.g., Bleidorn et al., 2020), and more mature personality trait levels (e.g., Roberts & Wood, 2006). Future research should explore whether this pattern results from people preferring partners whose personality profiles promise high psychological adjustment (Ozer & Benet-Martínez, 2006), from people generalizing their attraction to someone to favorable evaluations of that person's personality (Thorndike, 1920), and/or from individual differences in the tendency to evaluate others more or less positively (i.e., perceiver effects; Rau et al., 2021).

Limitations and Future Directions

The present study was the first to test for similarity effects in initial encounters using DRSA. Despite the relatively high power for detecting similarity effects, our results await direct replications in further large-scale and similarly naturalistic studies (e.g., via multilaboratory collaborations).

One limitation of our study concerns the Big Five scales for perceived personality that were constructed from the adjective list items. While it is standard to collect personality perceptions with adjective lists in speed dating (or round robin) designs to achieve a rapid and broad coverage of interpersonal judgments, the items cannot represent the Big Five as comprehensively as specialized Big Five instruments. The robustness analyses with different construction strategies and accordingly different scales indicate that the relative narrowness of the scales and their partial overlap did not essentially influence

the results (see Supplement 10). Nevertheless, future studies should aim at assessments of personality perceptions and respective self-reports that, besides the necessary briefness, capture the Big Five more broadly.

The participants of our study were young adults (18–28) who were mostly students and who were heterosexual. Whereas we expect our results to generalize to other age groups and people without an academic background, we do not necessarily expect generalization to homosexual individuals. Furthermore, the present research question and study procedure referred to the initial screening phase of two unacquainted individuals; a direct replication of our study would therefore use a similarly short time frame (e.g., 3 minutes) that the two dating partners have to get an impression of the other person and form an initial attraction evaluation. Future research might explore whether the present results generalize across design variants, for example, across speed-dating designs with and without videotaping of the dates. However, we expect our findings to not be specific to an "organized" encounter in a speed-dating event, but to generalize to real-life initial encounters (e.g., in a pub). We have no reason to believe that the results depend on other characteristics of the participants, materials, or context.

Finally, future studies could extend our perspective by (a) zooming in on the dynamic processes (e.g., the interplay of expressed behaviors, perceptions, cognitions) involved in real-life first encounters and (b) taking a closer look at alternative forms of the initial screening phase (e.g., online dating; e.g., Bruch & Newman, 2018) and subsequent steps of the dating phase (e.g., relationship formation and development; Campbell & Stanton, 2014). We are convinced that these avenues will lead to a deeper understanding of how people make one of the most relevant decisions in their lives—who is a "good match" for them.

Supplementary Materials

For this article, the following Supplementary Materials are available (for access see Index of Supplementary Materials below):

- Pre-processed data used in the main and robustness analyses
- Full codebook of the "Date me for Science" study
- Detailed explanations on the R code files
- R code files for data preparation and all analyses
- Supplements 1 to 11
- Preregistration
- Open peer-review

Index of Supplementary Materials

Franke-Prasse, T., Geukes, K., Humberg, S., & Back, M. D. (2018). *Is similarity appealing?* [Preregistration. Date registered: December 5, 2018]. OSF Registries. https://doi.org/10.17605/osf.io/mwfgx

PsychOpen GOLD

Humberg, S., Gerlach, T. M., Franke-Prasse, T., Geukes, K., & Back, M. D. (2023). *Supplementary materials to "Is (actual or perceptual) personality similarity associated with attraction in initial romantic encounters? A dyadic response surface analysis"* [Data, codebook, code, additional analyses]. PsychOpen GOLD. https://doi.org/10.23668/psycharchives.12546

Personality Science. (Ed.). (2023). *Supplementary materials to "Is (actual or perceptual) personality similarity associated with attraction in initial romantic encounters? A dyadic response surface analysis"* [Open peer-review]. PsychOpen GOLD. https://doi.org/10.23668/psycharchives.12545

References

Asendorpf, J. B., Penke, L., & Back, M. D. (2011). From dating to mating and relating: Predictors of initial and long-term outcomes of speed-dating in a community sample. *European Journal of Personality, 25*(1), 16–30. https://doi.org/10.1002/per.768

Back, M. D. (2021). Social interaction processes and personality. In J. Rauthmann (Ed.), *The handbook of personality dynamics and processes* (pp. 183–226). Elsevier.

Back, M. D., Penke, L., Schmukle, S. C., Sachse, K., Borkenau, P., & Asendorpf, J. B. (2011). Why mate choices are not as reciprocal as we assume: The role of personality, flirting and physical attractiveness. *European Journal of Personality, 25*(2), 120–132. https://doi.org/10.1002/per.806

Back, M. D., Schmukle, S. C., & Egloff, B. (2011). A closer look at first sight: Social relations lens model analysis of personality and interpersonal attraction at zero acquaintance. *European Journal of Personality, 25*(3), 225–238. https://doi.org/10.1002/per.790

Bleidorn, W., Hopwood, C. J., Ackerman, R. A., Witt, E. A., Kandler, C., Riemann, R., Samuel, D. B., & Donnellan, M. B. (2020). The healthy personality from a basic trait perspective. *Journal of Personality and Social Psychology, 118*(6), 1207–1225. https://doi.org/10.1037/pspp0000231

Bruch, E. E., & Newman, M. E. J. (2018). Aspirational pursuit of mates in online dating markets. *Science Advances, 4*(8), Article eaap981. https://doi.org/10.1126/sciadv.aap9815

Byrne, D. E. (1971). *The attraction paradigm.* Academic Press.

Campbell, L., & Stanton, S. C. E. (2014). The predictive validity of ideal partner preferences in relationship formation: What we know, what we don't know, and why it matters. *Social and Personality Psychology Compass, 8*(9), 485–494. https://doi.org/10.1111/spc3.12126

Byrne, D. (1961). Interpersonal attraction and attitude similarity. *Journal of Abnormal and Social Psychology, 62*(3), 713–715. https://doi.org/10.1037/h0044721

Decuyper, M., De Bolle, M., & De Fruyt, F. (2012). Personality similarity, perceptual accuracy, and relationship satisfaction in dating and married couples. *Personal Relationships, 19*(1), 128–145. https://doi.org/10.1111/j.1475-6811.2010.01344.x

Eastwick, P. W., Finkel, E. J., & Simpson, J. A. (2019). Best practices for testing the predictive validity of ideal partner preference-matching. *Personality and Social Psychology Bulletin, 45*(2), 167–181. https://doi.org/10.1177/0146167218780689

Edwards, J. R. (2001). Ten difference score myths. *Organizational Research Methods, 4*(3), 265–287. https://doi.org/10.1177/109442810143005

PsychOpen GOLD

Edwards, J. R. (2002). Alternatives to difference scores: Polynomial regression analysis and response surface methodology. In F. Drasgow & N. W. Schmitt (Eds.), *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis* (pp. 350–400). Jossey-Bass.

Furr, R. M. (2008). A framework for profile similarity: Integrating similarity, normativeness, and distinctiveness. *Journal of Personality, 76*(5), 1267–1316. https://doi.org/10.1111/j.1467-6494.2008.00521.x

Gattis, K. S., Berns, S., Simpson, L. E., & Christensen, A. (2004). Birds of a feather or strange birds? Ties among personality dimensions, similarity, and marital quality. *Journal of Family Psychology, 18*(4), 564–574. https://doi.org/10.1037/0893-3200.18.4.564

Gonzaga, G. C., Campos, B., & Bradbury, T. (2007). Similarity, convergence, and relationship satisfaction in dating and married couples. *Journal of Personality and Social Psychology, 93*(1), 34–48. https://doi.org/10.1037/0022-3514.93.1.34

Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big Five personality domains. *Journal of Research in Personality, 37*(6), 504–528. https://doi.org/10.1016/S0092-6566(03)00046-1

Hudson, N. W., & Fraley, R. C. (2014). Partner similarity matters for the insecure: Attachment orientations moderate the association between similarity in partners' personality traits and relationship satisfaction. *Journal of Research in Personality, 53*, 112–123. https://doi.org/10.1016/j.jrp.2014.09.004

Humbad, M. N. (2012). *Exploring mate preferences* [Dissertation]. Michigan State University. https://d.lib.msu.edu/etd/1485

Humberg, S., Nestler, S., & Back, M. D. (2019). Response surface analysis in personality and social psychology: Checklist and clarifications for the case of congruence hypotheses. *Social Psychological & Personality Science, 10*(3), 409–419. https://doi.org/10.1177/1948550618757600

Izard, C. E. (1960). Personality similarity, positive affect, and interpersonal attraction. *Journal of Abnormal and Social Psychology, 61*(3), 484–485. https://doi.org/10.1037/h0043793

Jauk, E., Neubauer, A. C., Mairunteregger, T., Pemp, S., Sieber, K. P., & Rauthmann, J. F. (2016). How alluring are dark personalities? The dark triad and attractiveness in speed dating. *European Journal of Personality, 30*(2), 125–138. https://doi.org/10.1002/per.2040

Joel, S., Eastwick, P. W., & Finkel, E. J. (2017). Is romantic desire predictable? Machine learning applied to initial romantic attraction. *Psychological Science, 28*(10), 1478–1489. https://doi.org/10.1177/0956797617714580

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis.* Guilford Press.

Klohnen, E. C., & Luo, S. (2003). Interpersonal attraction and personality: What is attractive–self similarity, ideal similarity, complementarity or attachment security? *Journal of Personality and Social Psychology, 85*(4), 709–722. https://doi.org/10.1037/0022-3514.85.4.709

Klohnen, E. C., & Mendelsohn, G. A. (1998). Partner selection for personality characteristics: A couple-centered approach. *Personality and Social Psychology Bulletin, 24*(3), 268–278. https://doi.org/10.1177/0146167298243004

PsychOpen GOLD

Luo, S. (2017). Assortative mating and couple similarity: Patterns, mechanisms, and consequences. *Social and Personality Psychology Compass, 11*(8), Article e12337. https://doi.org/10.1111/spc3.12337

Luo, S., & Zhang, G. (2009). What leads to romantic attraction: Similarity, reciprocity, security, or beauty? Evidence from a speed-dating study. *Journal of Personality, 77*(4), 933–964. https://doi.org/10.1111/j.1467-6494.2009.00570.x

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships, 25*(6), 889–922. https://doi.org/10.1177/0265407508096700

Nestler, S., Grimm, K. J., & Schönbrodt, F. D. (2015). The social consequences and mechanisms of personality: How to analyse longitudinal data from individual, dyadic, round-robin and network designs. *European Journal of Personality, 29*(2), 272–295. https://doi.org/10.1002/per.1997

Ozer, D. J., & Benet-Martínez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57*, 401–421. https://doi.org/10.1146/annurev.psych.57.102904.190127

Park, Y., Gordon, A. M., Humberg, S., Muise, A., & Impett, E. A. (2023). Differing levels of gratitude between romantic partners: Concurrent and longitudinal links with satisfaction and commitment in six dyadic datasets. *Personality Science, 4*, Article e10537. https://doi.org/10.5964/ps.10537

Prager, K. J. (1995). *The psychology of intimacy.* Guildford Press.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five inventory in English and German. *Journal of Research in Personality, 41*(1), 203–212. https://doi.org/10.1016/j.jrp.2006.02.001

Rau, R., Carlson, E. N., Back, M. D., Barranti, M., Gebauer, J. E., Human, L. J., Leising, D., & Nestler, S. (2021). What is the structure of perceiver effects? On the importance of global positivity and trait-specificity across personality domains and judgment contexts. *Journal of Personality and Social Psychology, 120*(3), 745–764. https://doi.org/10.1037/pspp0000278

Roberts, B. W., & Wood, D. (2006). Personality development in the context of the neo-socioanalytic model of personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 11–39). Lawrence Erlbaum Associates.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2). https://doi.org/10.18637/jss.v048.i02

Schönbrodt, F. D., Humberg, S., & Nestler, S. (2018). Testing similarity effects with dyadic response surface analysis. *European Journal of Personality, 32*(6), 627–641. https://doi.org/10.1002/per.2169

Schönbrodt, F. D., & Humberg, S. (2020). RSA: An R package for response surface analysis (Version 0.10.1). https://cran.r-project.org/package=RSA

Schupp, J., & Gerlitz, J.-Y. (2008). Big Five Inventory-SOEP (BFI-S). *Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS).* https://doi.org/10.6102/zis54

Selfhout, M., Denissen, J. J. A., Branje, S., & Meeus, W. H. J. (2009). In the eye of the beholder: Perceived, actual, and peer-rated similarity in personality, communication, and friendship intensity during the acquaintanceship process. *Journal of Personality and Social Psychology, 96*(6), 1152–1165. https://doi.org/10.1037/a0014468

Thorndike, E. L. (1920). A constant error in psychological ratings. *The Journal of Applied Psychology, 4*(1), 25–29. https://doi.org/10.1037/h0071663

Tidwell, N. D., Eastwick, P. W., & Finkel, E. J. (2013). Perceived, not actual, similarity predicts initial attraction in a live romantic context: Evidence from the speed-dating paradigm. *Personal Relationships, 20*(2), 199–215. https://doi.org/10.1111/j.1475-6811.2012.01405.x

Watson, D., Klohnen, E. C., Casillas, A., Nus Simms, E., Haig, J., & Berry, D. S. (2004). Match makers and deal breakers: Analyses of assortative mating in newlywed couples. *Journal of Personality, 72*(5), 1029–1068. https://doi.org/10.1111/j.0022-3506.2004.00289.x

Weidmann, R., Schönbrodt, F. D., Ledermann, T., & Grob, A. (2017). Concurrent and longitudinal dyadic polynomial regression analyses of Big Five traits and relationship satisfaction: Does similarity matter? *Journal of Research in Personality, 70*, 6–15. https://doi.org/10.1016/j.jrp.2017.04.003

Wood, D., & Wortman, J. (2012). Trait means and desirabilities as artifactual and real sources of differential stability of personality traits. *Journal of Personality, 80*(3), 665–701. https://doi.org/10.1111/j.1467-6494.2011.00740.x

Wurst, S. N., & Back, M. D. (2016). *Date me for science speed-dating study* [Project documentation]. https://osf.io/n7dw9/