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Couple similarity on stimulus characteristics and marital satisfaction



Darren George a,*, Shanhong Luo b, Jared Webb a, Jennifer Pugh a, Alan Martinez a, Jeremy Foulston a

- ^a Canadian University College, Canada
- ^b University of North Carolina, Wilmington, United States

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ABSTRACT

Murstein's (1970) "stimulus-value-role" theory suggests that mate selection consists of three stages. At each stage people seek different types of information. This study extends previous research on couple similarity by focusing on the "stimulus" stage where people attend to stimulus information—the most salient personal information. This stage has received less attention than the "value" and "role" stages. A sample of 641 married couples from Central Alberta, Canada provided information on a wide range of stimulus characteristics including background, physical and perceptual variables, as well as spirituality and growth orientation for comparison. Correlation results showed evidence for strong and consistent couple similarity on stimulus characteristics, suggesting that those characteristics are important domains to partner selection. Structural equation modeling results indicated that couple similarity (measured by absolute and directional difference score) overall was not a strong predictor of marital satisfaction; however, discrepancies in age, spirituality, and growth orientation were significant predictors of dissatisfaction.

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1. Introduction

"Birds of a feather flock together" and "opposites attract" are two contrasting statements dating from the 16th century. Over the past half century, many researchers have examined the scientific validity of these two folk beliefs (see Epstein & Guttman, 1984; Watson et al., 2004). Research along these lines addresses two fundamental questions about intimate relationships: (1) Is there evidence for systematic couple similarity? (2) Regardless of overall evidence for couple similarity, is variation in couple similarity associated with relationship satisfaction? To answer these questions, previous research has examined a wide range of domains, which largely fall into three categories: demographic variables (e.g., age, education, ethnicity, religion), attitudinal domains (e.g., attitudes, values, interests), and personality domains.

For the first question, "birds of a feather flock together" is the clear winner as there has been overwhelmingly consistent evidence for similarity, whereas evidence for "opposites attract" has been minimal (for a review see Epstein & Guttman, 1984). Couple similarity tends to be strong on demographic variables, substantial in attitudinal domains, but much weaker in personality dimensions (e.g., Watson et al., 2004). For the second question, when couple similarity is used to predict relationship outcomes, most research has focused on similarity in attitudinal and personality domains. Personality similarity tends to predict satisfaction better than attitudinal similarity (e.g., Luo & Klohnen,

E-mail address: dgeorge@burmanu.ca (D. George).

2005). Overall, actual couple similarity is not a strong predictor of satisfaction (e.g., Dyrenforth, Kashy, Donnellan, & Lucas, 2010).

Categorizing personal characteristics into a three-tier fashion nicely fits Murstein's (1970) partner selection theory—the stimulus-value—role theory, which suggests that people gain three different types of information about their partner as relationships progress. The first type is "stimulus" information, typically obtained at the beginning of a relationship. Stimuli include highly visible and easily identifiable characteristics such as demographic variables. When partners are satisfied with each other's stimuli, they progress to the next stage where they seek "value" information of each other, including important attitudes, values, and other preferences. If both partners are happy with each other's values, they move on to the last stage—the "role" stage, where they determine if their roles in the relationship are compatible. This largely depends on the two partners' personalities.

The "value" and "role" part of the stimulus-value-role theory have been well tested in terms of evidence for the existence and role of couple similarity. By comparison, the test for the "stimulus" part of the theory is much less extensive, primarily limited to establishing evidence for couple similarity on demographic variables. Little research has attempted to identify the associations between couple similarity on "stimulus" variables and satisfaction. It is important to note that "stimulus" includes more than just demographic background. For example, many physical characteristics such as height, weight, and perceptual characteristics such as physical attractiveness and vitality are highly salient in initial encounters and have important implications for partner selection and relationship functioning (Murstein, 1970).

The current study extends previous research on couple similarity by focusing on "stimulus" characteristics. Specifically, we attempted to test

^{*} Corresponding author at: Burman University 6730 University Drive Lacombe, AB T4L 2E5.

(1) to what degree couples are similar on "stimulus" characteristics and (2) whether variation in couple similarity in "stimulus" predicts marital satisfaction. We examined a comprehensive list of "stimulus" variables and grouped them into three categories for simplicity: background characteristics (i.e., education, ethnicity, denomination), physical characteristics (i.e., age, age at marriage, height, weight, body mass index [BMI], physical exercise), and perceptual characteristics (i.e., physical attractiveness, health/vitality). We also included two personal attributes—spirituality (a "value" item) and growth orientation (a "role" item), which are disclosed early in the relationship and would provide a nice comparison to stimulus variables.

1.1. Previous research regarding couple similarity on stimulus characteristics

1.1.1. Background characteristics

Previous research has indicated a moderate to strong level of positive assortative mating on ethnicity/race, religion, and education in couples (for a review see Watson et al., 2004). Moreover, sharing a similar background with the spouse tends to be associated with positive marital outcomes. For example, same-race relationships are more stable than their interracial counterparts (e.g., Zhang & Hook, 2009). Mixed-faith marriages experience more challenges and lower satisfaction (e.g., Myers, 2006). Findings with regard to the role of education similarity are less consistent: discrepancy in education level predicted higher satisfaction for husbands in one study (Watson et al., 2004), but lower satisfaction for wives in another (Groot & Van Den Brink, 2002).

1.1.2. Physical characteristics

Age usually shows the highest level of couple similarity among all personal characteristics (e.g., Watson et al., 2004). A few studies examined the link between age discrepancy and satisfaction. Whereas two studies found that spouse age discrepancy was not an important factor to satisfaction (Kirkpatrick & Cotton, 1951; Watson et al., 2004), another suggested that both partners were happier when the husband was older (Groot & Van Den Brink, 2002). Additional research has linked marriage age with satisfaction. These studies consistently showed that older marriage age was related to greater satisfaction later (e.g., Larson & Holman, 1994; Lee, 1977). However, no research has explored the associations between spouse age discrepancy at marriage and future marital outcomes.

While obesity is frequently linked to physical health, little research has examined how height, weight, and BMI are associated with marital satisfaction. An old study reported a small amount of assortative mating on height, weight, and other physical characteristics (Price & Vandenberg, 1980). More recent evidence has indicated that spouses tend to be happier with their marriage when they both gain weight (e.g., Meltzer, Novak, McNulty, Butler, & Karney, 2013). However, no research has specifically tested the function of couple similarity on height, weight, and BMI in marriages.

We also did not find any direct test of the link between physical exercise and synchrony in exercise and marital satisfaction, although some evidence suggests that two spouses' exercise amount/frequency tends to be positively correlated (Homish & Leonard, 2008). Moreover, spouses are happier if they are supportive of each other's exercise regimen (Hancher-Rauch, 2005).

1.1.3. Perceptual characteristics

Physical attractiveness is one of the strongest predictors of initial attraction (e.g., Luo & Zhang, 2009). Greater attractiveness in either spouse is associated with enhanced satisfaction for both husbands and wives (e.g., Kirkpatrick & Cotton, 1951). In terms of similarity on attractiveness, there has been strong support for the matching hypothesis—husbands and wives tend to be similar in attractiveness (e.g., Berscheid & Walster, 1974). However, McNulty, Neff, and Karney (2008) reported that spouse similarity in attractiveness was unrelated to satisfaction in their newlywed sample, although spouses behaved more positively when the wife

was more attractive and more negatively when the husband was more

Physical health is generally positively associated with marital satisfaction (e.g., Umberson, Williams, Powers, Liu, & Needham, 2006). However, no research has tested evidence for couple similarity on physical health or its role in intimate relationships.

1.1.4. Personal attributes

A number of studies have considered the influence of spirituality on marital satisfaction. Common findings include that (1) higher religiosity is associated with greater satisfaction for both spouses (e.g., Orathinkal & Vansteenwegen, 2006), (2) spouses tend to be similar in their spirituality level (e.g., Watson et al., 2004), (3) shared spirituality between the spouses has a positive association with satisfaction (e.g., Brimhall & Butler, 2007), and (4) husbands' spirituality has a greater influence on satisfaction for both partners than wives' spirituality (e.g., Wolfinger & Wilcox, 2008).

The construct of "Constant and Never-ending Improvement" (CANI) popularized by Robbins (1997) represents a growth orientation—the personal quality of ever striving to improve. While this concept has not been explored in relationship research particularly in the area of couple similarity, a related construct—need for achievement has been found to be a robust predictor of marital satisfaction; however, spouses showed little similarity on this quality (MacEwen & Barling, 1993).

2. The current study

Our review shows that previous research has not examined couple similarity on some important stimulus characteristics. On the ones that previous research did explore, they were usually studied in an isolated fashion through correlation and/or regression techniques. In the current study, we aim to extend previous research by first testing the evidence for couple similarity on an array of stimulus characteristics in a large married sample. Moreover, we seek to test the role of couple similarity on stimulus characteristics in marital satisfaction by a structural equation modeling (SEM) approach that allows us to model husbands and wives' satisfaction simultaneously. Based on the review above, we propose that couples will show strong similarity correlations on stimulus characteristics (Hypothesis 1) and that variation in couple similarity on stimulus characteristics will be a positive yet modest predictor of satisfaction (Hypothesis 2).

3. Method

3.1. Participants

A sample of 641 married couples was recruited from Central Alberta, Canada. The average age for men was 44.5 years; for women, 42.2 years. The sample included 82% Caucasian, 8% Asian, 6% Black, 2% Hispanic, and 2% other. These numbers closely parallel Alberta demographics (based on 2006 census data). The sample's denominational background included 78.7% from a variety of protestant denominations, 10% Catholic, 4.2% atheist or agnostic, and 7% other. The sample was fairly educated, with 75.5% having at least some college education and 38.9% having a Bachelor's degree or higher.

3.2. Procedure

Three different cohorts of students (N=35) enrolled in research methods classes at a small private university in Central Alberta collected data as a partial fulfillment of course requirement. They were instructed to contact married couples and provide them with the questionnaires after consent was obtained. For all variables (except for certain demographics, spirituality, and marital satisfaction), participants provided a rating for both themselves and their spouse. The value used in

data analysis was the mean of the self-rating and spouse rating. Research suggests that such a procedure may reduce response bias (e.g., Szinovacz & Egley, 1995).

3.3. Measures

3.3.1. Demographics

Participants provided information regarding their birth date, ethnicity, highest level of education (on a progressive scale from "less than high school" to "Doctorate"), denomination (from 13 specific denominations with a final "other" category), wedding date, dating length, and acquaintance length.

3.3.2. Height, weight, and BMI

Participants provided information about their own and spouse's weight and height, from which BMI was calculated.

3.3.3. Exercise

Participants indicated how many days they and their spouse had participated in each of the 10 common exercises during the previous year (e.g., running/jogging, bicycling, swimming), and two blanks for them to list other types of exercise. The number of exercise-days was then computed. Exercise and physiology experts such as Nieman (2010) suggest a gradated scale reflecting greater differentiation for people who exercise less frequently. Following their suggestions, we recoded the raw scores as follows: 7 (>180 days), 6 (121–180 days), 5 (61–120 days), 4 (41–60 days), 3 (21–40 days), 2 (11–20 days), 1 (<10 days).

3.3.4. Physical attractiveness

Participants rated their own and spouse's physical attractiveness on a 10-point scale ranging from 1 (*extremely unattractive*) to 10 (*extremely attractive*).

3.3.5. Health/vitality

Participants rated their own and spouse's health and vitality relative to others of their age and gender on a 7-point scale: 1 (*much poorer*), 2 (*poorer*), 3 (*a little poorer*), 4 (*about the same*), 5 (*a little better*), 6 (*better*), and 7 (*much better*).

3.3.6. Spirituality

Participants answered 13 questions selected from the 18-item George–Mabb–Walsh Spirituality Scale (George et al., 1994). The scale measures personal spirituality without reference to church attendance, denomination or belief system. Questions include beneficial change due to faith, living consistent with spiritual values, inspirational reading, altruistic giving, and others. All items were rated on 7-point scales with varying anchors depending on the nature of the question. The alpha reliability values were .94 for men and .91 for women.

3.3.7. Growth orientation/CANI

Participants first identified "four areas in your life that are central to your identity or activities that bring you pleasure or satisfaction." Then they rated their anticipated growth in each of the areas in the next ten years on a 7-point scale: 1 (regress substantially), 2 (regress a little), 3 (satisfied at present level), 4 (hope to improve but no plans), 5 (plan to make progress), 6 (committed to major progress), and 7 (aim to be the best possible). They then repeated this procedure for their spouse. We computed an average of the four ratings as the CANI score.

3.3.8. Marital satisfaction

Two satisfaction measures were employed: The 3-item Kansas Marital Satisfaction Survey (KMS; Schumm, Nichols, Schectman, & Grigsby, 1983) and the 18-item Marital Adjustment Test (MAT; Locke & Wallace, 1959). The KMS assesses the global happiness of current marriage. All three questions were rated on a 7-point scale ranging from 1 (*very*

unsatisfied) to 7 (very satisfied). The KMS score was the mean of the three items. The more extensive MAT assesses a variety of relationship issues. Depending on the nature of the issue, the rating scale ranges from two to five points. The MAT score was the sum of the 18 items. To compute the composite satisfaction score, we first *z*-scored the KMS and MAT scores within each gender and then averaged the two *z*-scores.

4. Results

4.1. Gender differences between spouses' scores

Of the 13 characteristics we examined in this study, 11 were continuous variables, for which we present the mean and standard deviation of husbands' and wives' score, absolute difference score (ADS), and directional difference score (DDS) in Table 1. To compute ADS and DDS, we first standardized the scores within each gender and then subtracted the wife's *z*-score from the husband's *z*-score. Independent-sample *t*-tests were conducted to test the gender differences on the raw scores of the continuous variables. The *t*-test results are presented in Table 2. Tables 1 and 2 also included the three marital satisfaction variables—MAT, KMS, and the composite satisfaction score. There were several significant gender differences. Specifically, the husbands received higher education, were significantly older, taller, heavier, had a higher BMI, exercised more, and reported greater satisfaction on KMS, whereas the wives were significantly more spiritual and rated more physically attractive.

4.2. Similarity correlations between spouses' scores

Pearson correlations were computed between husbands' and wives' score on each of the 11 continuous characteristics as well as on the three satisfaction variables (see Table 2). The size of the correlations on the nine stimulus variables ranged from .22 to .95 with an average of .56; a strong effect according to Cohen (1977) and comparable to the size of the similarity correlation on spirituality and CANI. When marriage length was partialled out from these raw correlations, the new partial correlations showed little change from the raw correlations (see Table 2), suggesting that couple similarity did not increase as marriage length increased. For the two nominal variables—ethnicity and denomination, we performed chi-square tests to test for couple similarity. The

Table 1Means and standard deviations for all variables.

Variable	Husband (raw score)		Wife (raw score)		Absolute difference (z-based)		Directional difference (z-based)	
	M	SD	M	SD	Μ	SD	Μ	SD
Measures of satisfaction								
MAT	40.93	6.57	41.10	6.54	-	-	-	-
KMS	5.96	1.16	5.86	1.27	-	-	-	-
Composite	.00	.90	.00	.92	-	-	-	-
Background								
characteristics								
Education	4.51	2.76	4.30	2.20	.77	.67	.01	1.00
Physical characteristics								
Age	44.54	12.59	42.17	11.78	.23	.24	.00	.33
Age at marriage	27.54	7.29	25.17	6.63	.40	.43	.00	.59
Height	70.14	2.92	64.62	2.54	.98	.73	.02	1.22
Weight	186.70	31.41	149.03	29.84	.97	.80	.00	1.26
BMI	26.61	4.02	25.10	4.65	.95	.79	.00	1.24
Physical exercise	3.10	2.07	2.90	1.92	.65	.70	.01	.95
Perceptual characteristics								
Physical	6.54	1.13	6.65	1.13	.77	.67	.00	1.02
attractiveness								
Health/vitality	4.93	1.25	4.83	1.16	.82	.77	01	1.12
Personal attributes								
Spirituality	4.45	1.40	4.87	1.16	.71	.59	.01	.93
CANI	5.26	.83	5.30	.80	.57	.49	.01	.75

Note. N = 641.

Table 2 t-Test differences, zero-order correlations, and partial correlations between spouses' scores with marriage length controlled.

Characteristic	t-Score	Correlation	Partial correlation
Measures of satisfaction			
MAT	71	.57***	.57***
KMS	2.33*	.56***	.56***
Composite	.00	.62***	.62***
Background characteristics			
Education	2.11*	.47***	.48***
Physical characteristics			
Age	14.57***	.95***	.82***
Age at marriage	14.57***	.83***	.82***
Height	43.04***	.25***	.23***
Weight	25.77***	.22***	.22***
BMI	7.10***	.24***	.24***
Physical exercise	2.69**	.54***	.54***
Perceptual characteristics			
Physical attractiveness	-2.32^{*}	.48***	.48***
Health/vitality	1.90	.38***	.38***
Personal attributes			
Spirituality	-8.65^{***}	.57***	.56***
CANI	-1.69	.71***	.70***

Note. N = 641.

results indicated that couples were strongly matched on ethnicity, χ^2 (16) = 1034.52, p < .001, and denomination, χ^2 (132) = 3157.62, p < .001, with 90.3% of the couples sharing the same ethnicity and 77.2% sharing the same religious denomination. The kappa was .68 for ethnicity and .69 for denomination.

4.3. Model fit for the proposed model

We took an SEM approach to test the model in Fig. 1 using LISREL. SEM allows us to not only model husbands' and wives' satisfaction simultaneously, but model the unique contribution of self-score, partner-score, ADS, and DDS on each stimulus characteristic to satisfaction. The four predictors were allowed to be intercorrelated and also the two error terms of the composite satisfaction to be correlated. Because no substantial gender difference was expected, equality constraints were imposed on all paths concerning gender (i.e., a = a', b = b', c = c', and d = d'). Note that this model would be saturated with the test statistic (i.e., χ^2) being 0 if all paths vary freely to allow for gender difference. Thus the γ^2 of the constrained model can be used as a test of the imposed constraints for gender equality. Specifically, if the χ^2 of the constrained model is not statistically significant, that would suggest that there is no significant gender difference.

We tested this constrained model separately on each of the 11 continuous variables. The χ^2 s ranged from 1.34 to 8.04, with none being statistically significant in spite of the large sample size (N = 641). All goodness of fit indices and comparative fit indices were 1.00. The point estimate of root mean square error of approximation (RMSEA) ranged from 0 to .04. The lower limit of the 90% confidence interval of RMSEAs was 0 for all domains and the upper limit ranged from 0 to .08. These indices all indicated an excellent model fit (Hu & Bentler, 1999), suggesting that there was no systematic gender difference.

4.4. Predicting marital satisfaction from self-score, partner-score, and the two discrepancy scores

Next we examine the path coefficients of the four predictors, particularly those of the two discrepancy scores. Table 3 presents the path coefficients on each of the 11 characteristics. Note that we did not report path coefficients separately for husbands and wives because no significant gender difference was found. For self-scores, we can see that individuals' standing on seven characteristics significantly predicted satisfaction. Specifically, people tended to be more satisfied when they were more educated, older, more physically attractive, healthier, more spiritual, more growth-oriented, and exercised more. In terms of partner-scores, there were also seven statistically significant paths, suggesting that individuals tended to be more satisfied if their spouse was more educated, younger, married at a younger age, had a lower BMI, was more physically attractive, healthier, and more growth-oriented.

The ADS on five characteristics reached statistical significance. Specifically, the more discrepancy the couples showed on exercise, physical attractiveness, spirituality, and growth orientation, the less satisfied they were with the marriage. Interestingly, spouses tended to be happier when their age discrepancy was larger. The DDS had three significant effects, indicating that the more spiritual and growth-oriented the husbands were, the more satisfied both spouses were. However, spouses were less satisfied when the husbands were older. Overall, the discrepancy effects were only sporadic and relatively small in size.

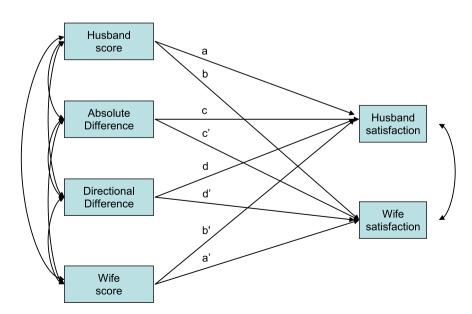


Fig. 1. General model predicting husbands' and wives' marital satisfaction from self-score, partner-score, absolute difference score (ADS), and directional difference score (DDS).

p < .05.

p < .01.

^{***} p < .001, all two-tailed.

Table 3Standardized path coefficients predicting marital satisfaction from self-score, partner-score, and the two discrepancy indices.

Characteristic	Self-score (path a and a')	Partner-score (path b and b')	ADS (path c and c')	DDS (path d and d')
Background characteristics				
Education	.07*	.06*	03	.05
Physical characteristics				
Age	.14*	12 [*]	.10*	08^{*}
Age at marriage	.06	09^{*}	.08	06
Height	.01	.02	03	.06
Weight	02	04	06	.00
BMI	04	08^{*}	02	04
Physical exercise	.10***	.05	08^{*}	00
Perceptual characteristics				
Physical attractiveness	.15***	.19***	07^{*}	.03
Health/vitality	.15***	.14***	03	.05**
Personal attributes				
Spirituality	.16***	.03	11 [*]	.08*
CANI	.07*	.13***	15 ^{***}	.07*

Note. N = 641. ADS = absolute difference score. DDS = directional difference score.

5. Discussion

The current research tested the evidence for couple similarity on "stimulus" characteristics (Murstein, 1970) as well as the role of such similarities in marital satisfaction. With regard to evidence for similarity, our results provided strong support for Hypothesis 1. The similarity correlations on all nine stimulus characteristics were statistically significant, positive, strong, and comparable in magnitude to the correlations observed on spirituality and growth orientation. Furthermore, these strong similarities were unrelated to marriage length, suggesting that these similarities were likely due to initial choice rather than convergence over time. This is consistent with previous findings (e.g., Luo & Klohnen, 2005). In summary, our similarity results suggest that (1) similarity appears to be a primary principle of partner selection; (2) individuals are likely to rely on similarity on stimulus characteristics to screen potential partners in initial encounters. These findings provided strong support for Murstein's (1970) stimulus-value-role theory.

While the similarity correlations on age, education, ethnicity, denomination, and physical attractiveness nicely replicate previous findings (e.g., Luo & Klohnen, 2005), the current study also included a number of characteristics that have rarely been investigated before. For example, height, weight, and BMI produced the lowest similarity correlations (in the low .20s) among all stimulus characteristics, whereas exercise and health/vitality had stronger similarity correlations. The two personal attributes—spirituality and CANI yielded the strongest similarity correlations next only to age, suggesting that these qualities are critical in partner selection.

Regarding the links between couple similarity on stimulus characteristics and marital satisfaction, the SEM results showed several general patterns: First, we did not find evidence for gender difference when using similarity to predict satisfaction. Second, ADS and DDS overall made a relatively small contribution to predicting satisfaction, compared with self-scores and partner-scores, which supported Hypothesis 2 and was consistent with previous research (e.g., Dyrenforth et al., 2010). Third, greater couple discrepancy on physical exercise, physical attractiveness, spirituality, and CANI were associated with lower satisfaction, suggesting that similarity in those domains serves a positive (albeit small) function in relationships. However, a larger age discrepancy was associated with greater satisfaction. Fourth, the directional discrepancy results indicated that the more spiritual and more growth-oriented the husband is, the happier both spouses are. This result suggests that the traditional role of husband-as-head-ofhousehold may still have some lingering effects.

Perhaps, the most important new finding dealt with CANI—a variable that has not been tested in prior research. Similar to Need-for-Achievement research (MacEwen & Barling, 1993), a high CANI was associated with greater marital satisfaction, but results differed in that the CANI of husbands and wives were highly correlated. Further, all four paths reached statistical significance in predicting satisfaction in SEM. This indicates that similarity in growth orientation is not only an important dimension in partner selection, but also plays a significant role in both spouses' relationship satisfaction.

6. Limitations and conclusions

We conclude by noting the limitations of our study. First, although partial correlation findings indicate that convergence was unlikely to have occurred, an ideal design would be to follow up married couples and track their similarity longitudinally to rule out convergence. Second, even though most predictor variables in this study were based on the mean of the spousal ratings, response bias likely remains a daunting challenge. Despite these limitations, the current study has extended our understanding of two central issues in relationships—partner selection and relationship functioning in relation to couple similarity in a large married sample. The strong similarity correlations on stimulus characteristics suggest that stimulus characteristics are important domains to partner selection. However, similarity on these characteristics in general was not a strong predictor of satisfaction. It would be useful for future research to examine why people are strongly drawn to similarities on stimulus characteristics initially and yet these similarities only bring modest benefits to an established relationship.

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^{*} n < .05.

^{**} p < .01.

^{***} p < .001, all two-tailed.

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