

Similarity in Indicators of Attractiveness in Heterosexual Couples, and their Relationship with Satisfaction and Trust

Similitud en Indicadores de Atractivo en Parejas Heterosexuales y su Relación con Satisfacción y Confianza

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In our species, the formation and maintenance of romantic partners is a nonrandom process. In this sense, similarity between members of the couple can be relevant for the beginning of the relationship (i.e., assortative mating) and maintenance, being similarity in attractiveness one of the most interesting aspects of this phenomenon. Despite that similarity in attractive traits has been documented, there is a lack of studies including modern morphological measures like fluctuating facial asymmetry or body fat percentage when assessing the effect that similarity in attractiveness could provoke on behaviors and feelings necessary to maintain a long-term relationship (e.g., satisfaction and trust). We assessed the presence of similarity in attractiveness for self-perceived measures (attractiveness and mate value) and physical traits (body fat percentage, body mass index, and fluctuating facial asymmetry) in a population of 196 heterosexual young couples from Chile ($n = 392$). Then, using actor-partner interdependence models (APIM), we assessed whether satisfaction and trust within the couples were influenced by attractiveness. Our results indicated the presence of similarity for all studied traits with the exception of fluctuating facial asymmetry. In addition, we only found that self-assessment of attractiveness is important for satisfaction in women, and partner's physical attractiveness is important for satisfaction and trust in men. Our results suggest that similarity in attractiveness is not playing a major role in affecting relationship. It is probably that similarity could be better explained from the initial stages of relationship, where the mating market forces conduce to the conformation of similar couples.

Keywords: similarity, attractiveness, trust, marital satisfaction, romantic couples

La formación y el mantenimiento de parejas sentimentales es un proceso no aleatorio. En este sentido, la similitud entre los miembros de la pareja puede ser relevante para el inicio de la relación (es decir, el apareamiento selectivo) y su proyección, siendo la similitud en el atractivo uno de los aspectos más interesante de este fenómeno. Si bien se ha documentado similitud en las parejas, no existen estudios que incluyan variables morfológicas modernas, como la asimetría facial fluctuante o el porcentaje de grasa corporal al evaluar el efecto que la similitud en atractivo podría provocar sobre los comportamientos y sentimientos necesarios para mantener una relación a largo plazo (p. ej., confianza y satisfacción). En este estudio, evaluamos la presencia de similitud en atractivo desde rasgos

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Este estudio recibió apoyo económico de la Comisión Nacional de Investigación Científica y Tecnológica de Chile, a través de los proyectos FONDECYT Regular 1200607 y Postdoctorado 3170801 y al Plan de fortalecimiento de Universidades Estatales, Universidad de Playa Ancha, Ministerio de Educación de Chile, UPA 1799. No existe ningún conflicto de intereses que revelar.

La correspondencia relativa a este artículo debe ser dirigida a José Antonio Muñoz Reyes, Laboratorio de Comportamiento Animal y Humano, Centro de Investigación en Complejidad Social, Universidad del Desarrollo, Av. Las Condes 12461, edificio 3, piso 3, Las Condes, Región Metropolitana, Chile. Email: ja.munoz@udd.cl

autopercebidos (atractivo y valor de pareja) y físicos (porcentaje de grasa corporal, índice de masa corporal y asimetría fluctuante facial) en una población de 196 parejas jóvenes heterosexuales de Chile ($n = 392$). Utilizando modelos de interdependencia actor-pareja, evaluamos si el atractivo influenciaba la confianza y satisfacción. Encontramos similitud para los rasgos estudiados con la excepción de la asimetría fluctuante facial. En mujeres, solo el atractivo autopercebido es importante para la satisfacción. En hombres, el atractivo físico de la pareja es importante para la satisfacción y confianza. Nuestros resultados sugieren que la similitud en el atractivo no es relevante para el mantenimiento de la relación, lo que implica que la similitud podría ser el resultado de un efecto de mercado al inicio de esta.

Palabras clave: similitud, atractivo, confianza, satisfacción de la relación, parejas románticas

Mate preferences evolve to guide sexually reproducing organisms, including humans, toward fitness-promoting mate choices (Sugiyama, 2016). In this sense, individuals can assess different social, physical, or economic traits that they consider attractive (e.g., Bovet et al., 2012; Buss & Schmidt, 2019; Garza & Byrd-Craven, 2021; Little et al. 2001; 2006; Penke et al. 2007; Penke & Denissen, 2008), and choose the possible reproductive partner in function of this assessment (Buston & Emlen, 2003). Considering this capability, there is ample evidence that individuals nonrandomly pair with each other based on the similarity of physical, psychological, and social characteristics (e.g., Feingold, 1988; Luo, 2017). At the first glance, the similarity in attractive traits between couples could be considered as a paradoxical result because from an evolutionary perspective individuals should look and compete for access to highly attractive mates (Sugiyama, 2016). However, mate choice and preferences may differ due to limited access to attractive partners and individual differences in mating preferences (Widemo & Saether, 1999). In this sense, the presence of similarity in attractive traits between couples opens a discussion about the causes and consequences of similarity, especially over behaviors and feelings that are critically necessary to maintain a long-term romantic couple (i.e., satisfaction and trust).

The study of similarity in romantic couples has a long history beginning in the mid-20th century (e.g., Burgess & Wallin, 1943; Burgess & Wallin, 1953; Hollingshead, 1950). These first studies indicated that Western married couples shared similar socioeconomic status, educational level, a religious cult, etc. In the last twenty years, several studies have been developed including similarity in measures of attractiveness (e.g., see face attractiveness in Little et al., 2006; body mass index in George, et al. 2015; fetal sex exposure to testosterone through 2D:4D digit ratio, in Richards, et al. 2020; height in Brewer & Riley, 2009, Stulp et al. 2017; complex mate value questionnaires in Watson, et al. 2014). However, modern and more precise measures of attractiveness derived from the body and the face, such as body fat percentage and fluctuating asymmetry, have not been deeply explored for physical traits and, especially, in relation to the maintenance of a long-term relationship.

On the one hand, the excess of body fat has a negative effect on health, longevity, and fecundity (e.g., Brewer & Balen, 2010, Huffman & Barziliai, 2010; Kayatas, et al. 2014). These relationships are on the basis of evolutionary arguments that explain attractiveness for some traits over others (Puts, 2010). Accordingly, higher body fat percentage is associated in men and women with lower attractiveness (Brierley et al. 2016; Faries & Bartholomew, 2012), and in women with negative dating opportunities (Halpern et al. 1999). On the other hand, fluctuating facial asymmetry has been proposed as an indicator of good quality genes that reflects the capacity of an individual to maintain a symmetric pattern of stable development (Klinenberg, 2003, van Dongen & Gangestad, 2011; but see; Pound et al. 2014), i.e., fluctuating asymmetry is attractive because it is thought to be a phenotypic marker of genetic quality. Some studies have supported this relationship linking fluctuating facial asymmetry to attractiveness (Perret, et al. 1999; Gangestad et al., 2010; but see Farrera et al. 2015; van Dongen, et al. 2020). In this sense, Burris et al. (2011) measured facial symmetry (a similar measure to fluctuating asymmetry) in heterosexual couples and showed that heterosexual romantic couples assort for symmetry. This result needs to be supported with new studies to understand the function of the conformation of romantic couples that share similarity in attractiveness, which seems to be widespread in our species and could be part of a strategy to build long-term relationships, through different mechanisms such as relationship satisfaction and trust.

The few existing studies that investigated the role of couples' similarity in physical attractiveness considering both morphological and self-perceived traits in the maintenance of long-term relationships have used as a proxy the relationship/marital satisfaction (Conroy-Beam et al., 2016; George et al., 2015; Lucas, et al. 2004) because having a direct incidence in the maintenance of the relationship is a robust predictor of individual and couple problems (Fincham et al., 2018). In this sense, the measure of attractiveness used has

transited from subjective measures, based on self-perceptions, to objective estimation through body traits. Regarding measures of self-perceptions, Conroy-Beam and colleagues (2016) employed the Euclidean distance between self-reported traits and average preferences from the other sex as a measure of individual mate value. This discrepancy was calculated as the difference in mate value within a couple. Their results indicated that these differences were positively related to satisfaction in those individuals with lower mate value than their partners, but negatively related in those individuals that have higher mate value than their partners and in the presence of more desirable alternatives (Conroy-Beam, 2016). However, another study employing self-perception of attractiveness measured from a single item found that a higher attractiveness value of men over women explained an increase in man's marital satisfaction (Lucas et al., 2004). In this regard, both studies have some methodological issues that may limit these results. For example, they were using online data where only one member of the romantic dyad answered the questions (Conroy-Beam et al., 2016) and applying questions of attractiveness perceived for the spousal rather than individual measures (Lucas et al., 2004). Alternatively, studies that used a physical indicator of attractiveness, i.e., body mass index, have shown that this variable is positive but weakly correlated within couples ($r = .24$), and that spouses have a better marital satisfaction when their partners possess lower values than them (George et al., 2015). Overall, these results suggest that when couples are dissimilar in attractiveness the satisfaction of both individuals is affected through the generation of asymmetries in the couple for this relevant dimension. However, while some studies found that having a more attractive partner improves relationship satisfaction (Conroy-Beam et al., 2016; George et al., 2015), other studies found a decrease in satisfaction (Lucas et al., 2004). These controversial results indicate the need of perform new studies to shed light about the relationship between similarity and satisfaction and whether dissimilarity produces a decrease in satisfaction of both or only one of the partners.

As occurs with satisfaction, trust has significant relevance to explain long-term romantic relationships (Campbell & Staton, 2018; Simpson, 2007). In fact, trust positively impacts the quality of relationships influencing several aspects such as love, confidence, commitment, and general happiness (Campbell et al., 2010; Kleinert, et al. 2020; Kosfeld, et al. 2005; Rempel, et al. 1985; Wieselquist, et al. 1999). Although trust is a relevant predictor of a long-term romantic relationship, only one study investigated the potential effect of similarity in attractiveness in couples over trust (Conroy-Beam et al., 2016). They found similar results that those found with satisfaction, since trust increased in those individuals lower in mate value than their partners but decreased in those individuals higher in mate value than their partners (Conroy-Beam et al., 2016). However, more studies are needed to increase our knowledge about the role of similarity in attractiveness in maintaining the relationship through time, allowing reproduction and care of the offspring, especially from applying new methodologies that enrich the field, for example, working with real romantic couples and collecting behavioral measures of trust.

In the present study, first, we assessed the presence of similarity in attractiveness of romantic couples from self-perceived measures (i.e., attractiveness and mate value) and physical traits (body fat percentage, body index mass, and facial fluctuating asymmetry), for the first time in a Chilean population of 196 heterosexual couples ($n = 392$). Then, we tested the possible effect of similarity over satisfaction and trust. Following an evolutionary perspective, individuals should look and compete for access to highly attractive mates in order to increase their fitness (Sugiyama, 2016). Accordingly, we investigated whether similarity in the mentioned attractive traits affects long-term relationship maintenance by avoiding that one of the partners (the most attractive) decreases its levels of satisfaction and trust. Our specific predictions are as follow:

(1) Following previous evidence about similarity in couples, we expect to find positive correlations (similarity) between all attractiveness measures within couples.

(2) If similarity affects long-term relationship maintenance because it prevents that one of the partners (the most attractive) decreases their levels of relationship satisfaction and trust, we expect that, as the level of similarity decreases, the satisfaction and trust will increase in the less attractive partner while decrease in the most attractive one.

Method

Participants

The sample consisted of a total of 392 participants of Chilean nationality (196 men and 196 women), who together constituted 196 heterosexual couples, with an 18 to 38 age range, $M = 22.83$, $SD = 3.30$. For men, $M = 23.19$ and $SD = 3.34$. For females, $M = 22.46$ and $SD = 3.22$. We selected an age range for potential participants of 18 to 40 years because we were interested in couples whose members were potentially fertile (Dunson et al., 2004). The participants were all from the Valparaíso region, Chile. The mean time in the relationship was $M = 28.8 \pm 1.38$ months.

Procedure

The sample was recruited through the delivery of brochures and posters put up at different universities of the Valparaíso region and distributed among the general population. Beforehand, the research was evaluated and authorized by the Bioethics Committee of the Universidad de Playa Ancha, Chile. All participants signed an informed consent form, where the objective of the study was communicated to them, and they were assured of the confidentiality and anonymity of the information provided. They also received an economic incentive as a result of their participation in economic games, which ranged from \$5,000 to \$15,000 Chilean pesos (which are represented by the \$ sign). The procedure, after the participants signed the informed consent, was carried out in the behavioral experimentation booths of the Animal and Human Behavior Laboratory of the University of Playa Ancha. It was divided into two stages and had an average duration of one hour and thirty minutes. The first stage consisted of the application of an instrument to measure satisfaction in the relationship (in paper and pencil format) and playing the economic trust game in this order. The entire first stage was performed individually in the behavioral experimentation rooms. In the second stage, anthropometric variables were measured.

Psychometric Measurements

Sociodemographic Sheet for the Characterization of the Sample

Data were recorded for each participant related to age, relationship time (months), number of children, and number of past relationships, among others.

Relationship Satisfaction

The satisfaction with the relationship was measured for each member of the couple, with an instrument called the Relationship Assessment Scale (RAS; Hendrick, 1988), adapted to the Chilean population, which has demonstrated adequate internal consistency $\alpha = .87$ (Heresi, et al. 2014). It consists of seven items answered on a 5-point Likert scale (1 = *low satisfaction*, 5 = *high satisfaction*) with statements like "How well does your partner meet your needs?". For this investigation, the total internal consistency was $\alpha = .74$. For the full scale, please see Appendix A.

Self-Perception of Attractiveness

This was assessed with a question that evaluate how attractive people perceived themselves ("Of 100 people of the same age and sex, you would be physically more attractive than _____% of them"). The answer was given as an approximate self-rated percentage.

Mate Value Scale

We applied a Chilean version (non-published) of the mate value scale (Edlund & Sagarin 2014), which measures the self-perception of desirability that an individual self-rate as a romantic partner. This scale is composed of 4 items that are answered in a 7-point Likert scale with statements like "Overall, how would you rate your level of desirability as a partner on the following scale?". The scale is different according to the item. For items 1 and 2 the scale is: 1 = *extremely undesirable*, 7 = *extremely desirable*. For item 3 the scale is: 1 = *very much lower than the average*, 7 = *very much higher than the average*. And for item 4 the scale is: 1 = *very bad catch*, 7 = *very good catch*. The original version possessed an adequate internal consistency of

$\alpha = .86$. In this study the internal consistency was close to the original values $\alpha = .85$. For the full scale, please see Appendix B.

Anthropometric measures

Fluctuating Facial Asymmetry

In both sexes, the variable was measured following the protocol of Sánchez-Pages & Turiégano (2010). Three photographs of each face were taken with a Nikon D7000 digital camera and an 18-105 mm lens. Each participant was stripped of accessories and/or makeup and asked to look at the camera frontally and with a neutral expression. Subsequently, the TPS software for image processing (see <http://www.life.bio.sunysb.edu/morph>) was used, and 39 points (landmarks) were placed on specific sites of the face according to the protocol mentioned above. Finally, the software MorphoJ version 1.03a (see Klinberger, 2011) was used to obtain the measurement of fluctuating asymmetry from the analysis of Procrustes ANOVA.

Body Fat Percentage

Participants were measured first with a manual stadiometer (SECA© 203) to find their height in centimeters. With this information, the participants were measured in a body composition analyzer InBody 370 bodyR©. This machine uses the passage of imperceptible electric currents of low amplitude that measure, in the four extremities and the trunk, the values of resistance and reactance (bioelectrical impedance). A direct measurement of total and segmentary body composition is obtained from these data, including the body fat percentage. Previous studies have validated this method by comparing it with dual-energy X-ray absorptiometry, obtaining an intraclass correlation coefficient of .96 (Bosy-Westphal, et al. 2017; Ling, et al. 2011). In addition, we measure body mass index as a control variable in our sample.

Behavioral measurement

Trust

It was measured through a standard version of a trust game, the “Investment game” (Berg et al., 1995). Couples were informed that they would play against real people, although in all cases, they interacted only with the program at the same time in the isolated experimental cabins. The experiments were performed using the software z-Tree 3.6.7 for economic experiments (see Fischbacher, 2007). In this study, we assessed the trust of participants in the role of trustors. The role is as follow: The trustor has an initial sum of \$5,000 Chilean pesos: they could keep all of it or, if they preferred, give all or some of it to a second player (the trustee). The trustor is informed that if they decided to “invest” a given amount in the trustee, a complementary contribution of money would be generated, such that the trustee would get three times the amount sent by the investor (i.e., if the investor allocated \$5,000 Chilean pesos, the recipient would obtain \$15,000 Chilean pesos, the maximum possible). In addition, the investor is informed that the receiver could send them back the amount they consider appropriate (with the possibility of sending them nothing).

Conditions

We had two conditions that were counterbalanced in the game. Each member of the couple played at the same time and under the same conditions. The conditions were presented in a counterbalanced manner. In the first condition both members of the couple playing against a stranger in the role of the trustee, they were informed that their partner was also interacting in the role of the trustor with another sex anonymous participant in the role of the trustee. We used this data to construct a control baseline variable for a general tendency to trust. In the second condition, both members of the couple were informed that this time they would have to play against a stranger or against his partner, who would be chosen at random, and they could not know who it would be. At the end of this condition, we ask to the participants if they believed they played with their partner or a stranger. We use for analyses of trust only the data of romantic couples when both members of the couple chose the option to believe that they were playing with their partner (N = 134 participants, 67 couples). We choose this method of two condition and a final question to ensure that we could measure trust between members of the couple controlling by the general tendency to trust.

Data Analyses

To test our first prediction, we performed a Pearson’s correlation analysis between all the attractive measures within couples ($n = 196$ couples). According to a post-hoc analysis, this sample size allowed to detect medium-low Cohen’s effect sizes for Pearson’s r ($r = 0.2$) with a power of 0.80, considering a value of $\alpha = .05$ and two tail tests. Values around 0.2 and higher are reported in previous studies of similarity in height (Stulp et al., 2017) or body fat (Speakman, et al. 2007). Then, we selected those traits that were correlated within couples and performed Principal Component Analysis (PCA) with a varimax rotation, as some of these traits were highly correlated in both men and women. As a result of PCA, we obtained two components that were similar in both sexes: one related to anthropometric measures (body mass index and body fat percentage) and the other one related to self-perceived measures (self-perception of attractiveness and mate value). With these two components, we fitted two actor-partner interdependence models or APIM with the use of structural equation modeling (Kashy & Kenny, 2000) to test our second prediction. APIM is a common model used to study the influence that members of a distinguishable dyad have on each other and allows to compare different types of dyadic patterns that can characterize the interpersonal influences of actors and partners (Kenny & Ledermann, 2010). In the first model ($n = 196$ couples), we tested whether satisfaction of men and women was related to their own measures of attractiveness and their partners measures of attractiveness. In the second model ($n = 67$ couples), we tested whether trust of men and women was related to their own measures of attractiveness and their partners measures of attractiveness, controlling with their basal levels of trust. The statistical software IBM SPSS 25 was used for correlation and PCA, AMOS 23 software was used to fit the actor-partner interdependence models and G*Power 3.1.9.7 was used in the power analysis. All the predictions were two-tailed and the value of α was set at .05. Data is available in the following link: https://osf.io/uzrvx/?view_only=85aade9d7c664314858a5b98ebaa6887

Results

Descriptive results can be observed in Table 1. For the first hypothesis, we found positive correlations within couples for self-perceived attractiveness ($r = .26, p < .01$), mate value ($r = .26, p < .01$), body fat percentage ($r = .25, p < .01$), and body mass index ($r = .30, p < .01$). However, we did not find that fluctuating facial asymmetry were correlated within couples ($r = .04, p = .52$).

Table 1
Descriptive Statistics (Mean and Standard Deviation) for Men and Women

Variables	Men		Women	
	Mean	SD	Mean	SD
% of body fat	21.61	6.90	33.51	7.08
Facial fluctuating asymmetry	0.02	0.01	0.02	0.01
Body Mass Index	24.83	3.37	23.98	3.72
Self-perceived physical attractiveness	57.37	20.40	52.22	17.65
Self-perceived mate value	19.88	3.52	20.54	3.63
Relationship satisfaction	30.49	3.15	30.53	3.34
Baseline offer in trust game	2998.27	1592.91	2775.24	1482.52
Offer in trust game	3250.31	1522.71	2745.86	1502.37

The second hypothesis included different steps to reach the final analyses. First, we performed a reduction of dimensions through a principal component analysis. We included the variables tested in previous analysis, and that were positive correlated between the two members of the romantic couple. We performed two principal component analyses, one for each sex. Results indicated the presence of two components of attractiveness that were similar in both sexes. First, the physical component of attractiveness, that included body fat percentage and body mass index, and therefore, higher values of this component were related to less physical attractiveness and second, the psychological component that included self-perceived attractiveness and mate value, and therefore, higher values indicated higher attractiveness. The physical component

explained 45.03% of the variance in men and 48.80% of variance in women. The psychological component explained 37.90% of the variance in men and 35.05% of variance in women. Once we obtained these components, we fitted two actor-partner interdependence models to assess the effect of these components over satisfaction and trust of both sexes.

According to relationship satisfaction (Table 2, Figure 1), we found that women's satisfaction is positively explained by their own self perception of psychological attractiveness (actor effect), but not by their couple's self-perception of psychological attractiveness (partner effect). In women, their own physical component of attractiveness and those of their romantic couple were not related to relationship satisfaction (i.e., there are neither actor nor partner effects). For men, the relationship satisfaction was negatively influenced by the physical attractiveness component of their partner, but not by their own physical attractiveness component (i.e., there was only a partner effect). In addition, we found a tendency in line with women's results, where own self-perception in psychological attractiveness positively influences relationship satisfaction, however the partner values of psychological attractiveness have not an effect over men's relationship satisfaction.

For the measure of trust, we have only considered data where both members of the romantic couple were convinced that they played with their partners, which reduced our sample size to 134 participants, i.e., 67 romantic couples. We have only found one uniquely significant result (see Table 3, Figure 2). This result indicates that men are negatively affected by the physical component of their partner's attractiveness. i.e., while fat and general size increased in their partners, the donations of men decreased.

Table 2

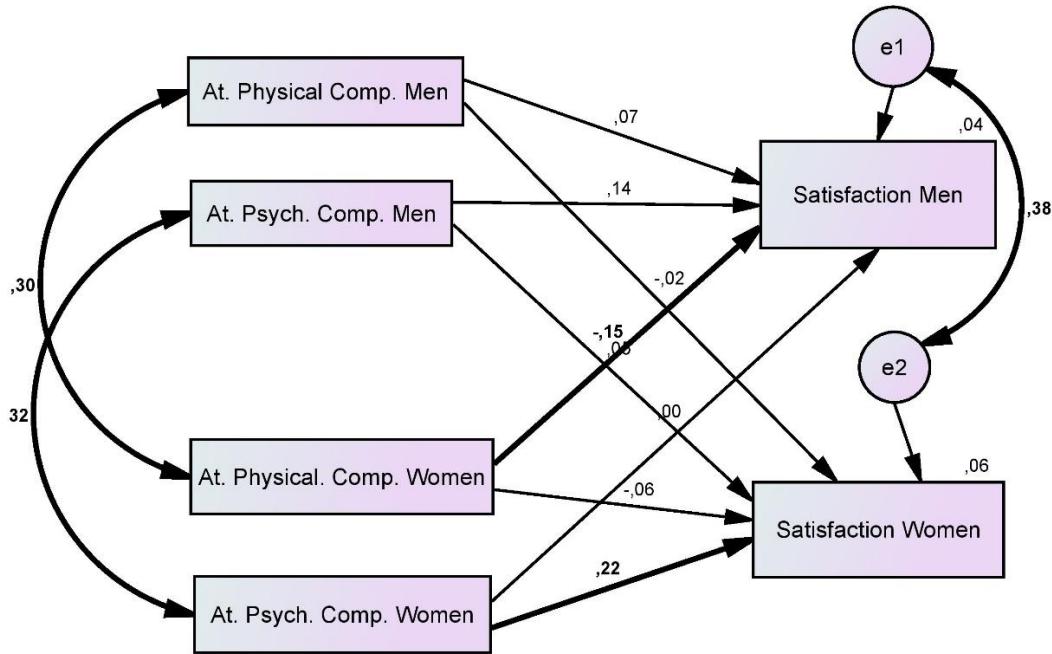
Actor-Partner Interdependence Models for the Effect of Principal Components of Attractiveness in Each Sex Over Relationship Satisfaction

	Satisfaction	Actor/partner variables	Estimate	S.E.	C.R.	<i>p</i> value
Men	<---	At. Psych. Comp. Men	0.43	0.23	1.86	.06
Women	<---	At. Psych. Comp. Men	0.15	0.24	0.62	.53
Men	<---	At. Psych. Comp. Women	-0.00	0.23	-0.01	.99
Women	<---	At. Psych. Comp. Women	0.74	0.24	3.05	<.01
Men	<---	At. Physical. Comp. Men	0.22	0.23	0.94	.34
Women	<---	At. Physical. Comp. Men	-0.06	0.24	-0.24	.81
Men	<---	At. Physical. Comp. Women	-0.46	0.23	-1.98	<.05
Women	<---	At. Physical. Comp. Women	-0.20	0.24	-0.83	.41
$R^2_{\text{men}} = .04$						
$R^2_{\text{women}} = .06$						

Note. Model fit: $\chi^2/df = 1.13$, NFI = 0.95, CFI = 0.99, IFI = 0.99, RMSEA = 0.03. At. Psych. Comp.: Attractiveness psychological component; At. Physical Comp.: Attractiveness psychological component; S.E.: Standard error; C.R.: Critical ratio.

Figure 1

Actor-Partner Interdependence Model for Relationship Satisfaction. Standardized Estimated are Showed for Each Effect and Significant Effects are Showed by Bold Lines and Figures



Note. At. Psych. Comp.: Attractiveness psychological component; At. Physical Comp.: Attractiveness psychological component

Table 3

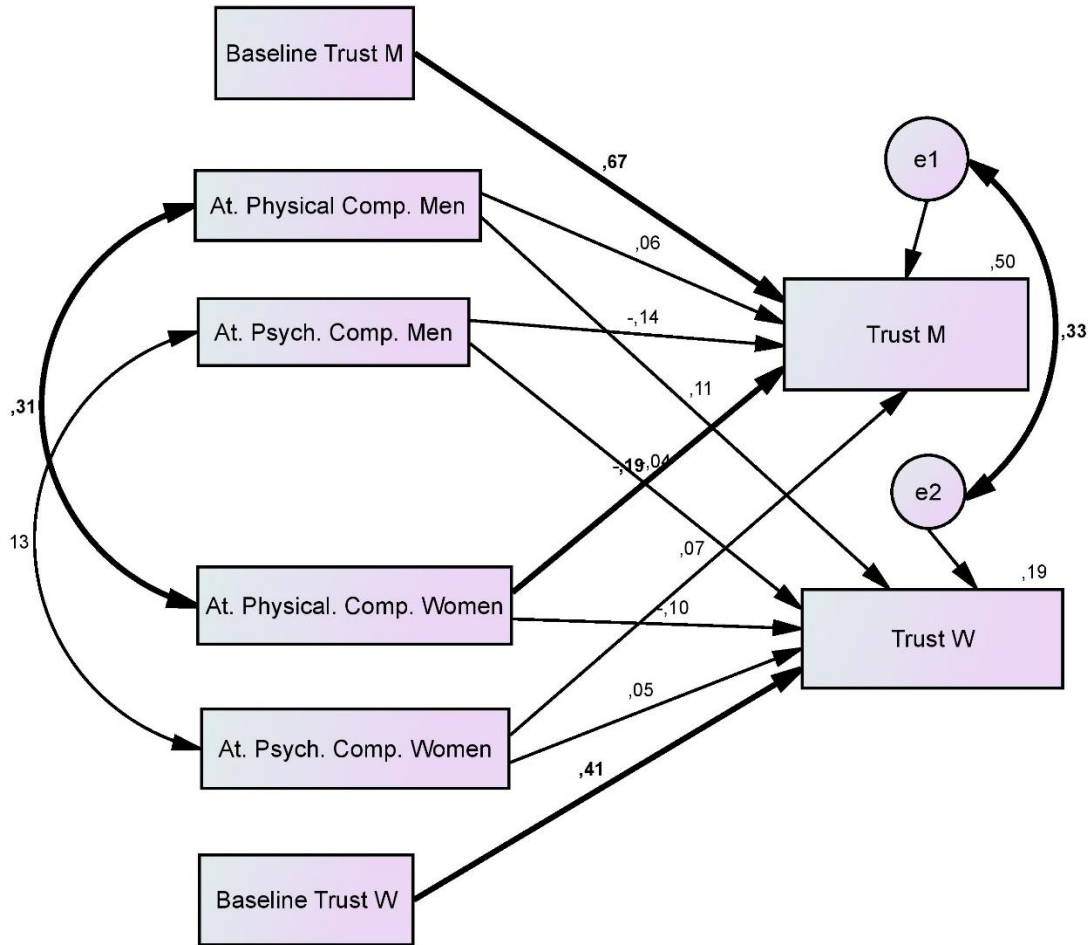
Actor-Partner Interdependence Models for the Effect of Principal Components of Attractiveness in Each Sex Over Offer Given in the Trust Game

Offer in trust game	Actor/partner variables	Estimate	S.E.	C.R.	P value
Men Offer	<--- Baseline trust men	0.64	0.08	8.13	<.001
Men Offer	<--- At. Physical. Comp. Men	84.38	140.40	0.60	.55
Men Offer	<--- At. Psych. Comp. Men	-192.70	122.55	-1.57	.12
Women Offer	<--- At. Physical. Comp. Men	134.52	142.20	0.95	.34
Women Offer	<--- At. Psych. Comp. Men	-48.75	124.14	-0.39	.70
Men Offer	<--- At. Physical. Comp. Women	-264.60	126.98	-2.08	<.05
Women Offer	<--- At. Physical. Comp. Women	-105.80	128.62	-0.82	.41
Men Offer	<--- At. Psych. Comp. Women	125.97	150.97	0.83	.40
Women Offer	<--- At. Psych. Comp. Women	69.79	152.92	0.46	.65
Women Offer	<--- Baseline trust women	0.38	0.10	3.95	<.001
R ² _{men} = .50					
R ² _{women} = .19					

Note. Model fit: $\chi^2/df = 1.21$, NFI = 0.80, CFI = 0.95, IFI = 0.96, RMSEA = 0.06. Baseline trust are the donation performed in the first round with an anonymous person; At. Psych. Comp.: Attractiveness psychological component; At. Physical Comp.: Attractiveness psychological component; S.E.: Standard error; C.R.: Critical ratio.

Figure 2

Actor-Partner Interdependence Model for Trust. Standardized Estimated are Showed for Each Effect and Significant Effects are Showed by Bold Lines and Figures



Note. Baseline trust are the donation performed in the first round with an anonymous person; At. Psych. Comp.: Attractiveness psychological component; At. Physical Comp.: Attractiveness psychological component

Discussion

In the current study, we investigated the presence of similarity for self-reported (i.e., self-perceived attractiveness and mate value) and physical indicators of attractiveness (i.e., body fat percentage, body mass index, and fluctuating facial asymmetry) for the first time in a Chilean population of young heterosexual couples. In addition, we extended previous research to study the impact of differences in similarity over two critical psychological traits, which in turn are predictors of long-term relationships, i.e., relationship satisfaction and trust. Our results confirmed the similarity for attractiveness for almost all studied traits, except for fluctuating facial asymmetry. According to the effect of similarity and their effect over long-term relationship, the results did not support our predictions. In this sense, in women only their own self-reported attractiveness affected relationship satisfaction and no significant results were found for trust. In contrast, in men, the physical attractiveness of their partners affected relationship satisfaction and trust. These results support the notion of a universal pattern of similarity in romantic couples and remark the divergent relevance between sexes for the maintenance of long-term relationship of physical and self-perceived traits reflecting attractiveness at self and couple level. However, results failed to show that the degree of similarity is important in the maintenance of long-term relationships as only actor effects were found in women and partner effects in men.

In relation to our first hypothesis, there was similarity for almost all variables of physical and self-perceived attractiveness, i.e., both members had similar mate value, self-perceived attractiveness, body mass index and body fat percentage. This result is consistent with various studies that have found similar associations in reproductive couples for attractive traits (e.g., Little et al., 2006; Robinson et al., 2017; Stulp, et al., 2017; Burges & Wallin, 1944; Feingold, 1988; Nowak & Danel, 2014). That is, our results support studies that have proposed that nonrandom mating is a common feature in humans (Robinson et al., 2017; Yengo et al., 2018), but now, including new objective measures of attractiveness, i.e., the body fat percentage. From an evolutionary point of view, choosing a partner is a fundamental decision, not only because it represents the choice of a partner for cooperation, reproduction, and raising children (Conroy-Beam et al., 2019), which can maximize the chances of successful reproductive function (Hill & Reeve, 2004), but also because the existence of similarity can dictate the nature of reproduction, giving this choice the power to generate selection pressures that shape the patterns of inheritance through generations (Conroy-Beam et al., 2019). With this result, we support the notion of similarity as a universal and consistent pattern of human mating, that a new trait, the body fat percentage is linked to similarity.

An unexpected result was that we did not find similarities for fluctuating facial asymmetry. Several studies indicate that fluctuating facial asymmetry can be considered as a reliable indicator of the phenotypic condition and genotypic quality of people, as stressors of development, such as a disease, can cause deviations from perfect bilateral symmetry (e.g., Rodríguez-Ruiz et al., 2019; Van Dongen & Gangestad, 2011). In this way, fluctuating facial asymmetry can be understood as an indicator of long-term health (Van Dongen & Gangestad, 2011), of fertility in women (Singh, 1993; Roney, 2009), and a superior competitive capacity in men (Puts, 2010). In addition, faces seem to be a trait where the similarity between members of the romantic couple occurs, and that has been documented in several studies (e.g., Burris et al. 2011; Little et al., 2006; Wong et al. 2018). However, our result, calculating facial fluctuating asymmetry with a robust analysis technique (see Sánchez-Pages & Turiégano, 2010) in long-term couples, cannot support similarity for this variable. This result may indicate that facial fluctuating asymmetry is less critical than other facial traits, such as general symmetry that present similarity in young romantic couples (Burriss et al., 2011). In addition, this negative result is aligned with other studies that have not found a relationship between fluctuating facial asymmetry and relevant aspects of human mating, such as sociosexuality (Figueroa et al. 2020) or attractiveness (Farrera et al., 2015; Van Dongen et al., 2020), more replication studies are necessary.

The second prediction was centered into analyze the effect of similarity over long-term relationship maintenance to assess the psychological and physical indicators of attractiveness with two key predictors of relationship duration and quality, i.e., relationship satisfaction and trust, this last measured from observed behavior rather than from indirect estimations. Results in women open new questions about the role of similarity for the maintenance of long-term relationship, since that only self-perceived attractiveness affects to women's relationship satisfaction. In this sense, while women feel more attractive, they also are more satisfied with their romantic relationship. From a functional perspective, women in relationships are interested to ensure exclusive parental investment (Al-Shawaf et al., 2015; Buss & Shackelford, 1997; Buss et al., 1992), an objective that can be more easily obtained with a less attractive romantic couple, which usually are more prone to invest in offspring (Gangestad, 1993). In this sense, Danel and colleagues (2017) found that female perception of the intensity of controlling behaviors performed by both partners were more intense in couples where women possess the higher values of mate value over men. In addition, other research has established that asymmetry in mate value can significantly affect women's satisfaction in their relationships when they perceive themselves as having a higher mate value (Nowak and Danel, 2014). However, we did not find partner effects, that is, the self-perceived attractiveness of men did not affect women satisfaction, suggesting that is the self-perceived attractiveness of women and not the discrepancy of this trait in the couple the factor that affects satisfaction. A possible explanation for this lack of partner effect is that all measures were based on self-perceptions, and then it is possible that there was a mismatch between men self-perceptions and women perceptions about their partners. Moreover, our results are in contrast with previous studies that show that higher attractiveness of women over men is a negative predictor of relationship duration (Burriss et al., 2011), and with the study of Conroy-Beam and cols. (2016), which reported a negative relationship with satisfaction in member of the romantic couples that have higher mate value than their partners (Conroy-Beam, 2016). However, this last relationship emerges in the presence of more desirable alternatives, that is a contextual element which could be connected with the results of Burriss and colleagues (2011), to probably indicate that in presence of better candidates for mating, women decrease their relationship satisfaction to look for new partners. An alternative explanation of our results is that

women that are in a good quality relationship and as a consequence with high levels of satisfaction increase their self-esteem and their self-perception as a valuable and attractive partner. In fact, self-esteem and self-perception of mate value are correlated in different cultures (Goodwind et al., 2012). In addition, only the self-perceived component of attractiveness was related to satisfaction in women, but we did not find any effect of the physical component, that may support our explanation that the positive relationship between satisfaction and self-perceived component of attractiveness may be related to an increase in women self-esteem.

Following with women, neither self-perceived nor physical components of attractiveness of men and women was related to women's trust. We propose two possible explanations. In the first place, that our economic game cannot capture the complexity of trust in couples, being a probable oversimplification of this phenomena, at least for women. However, when research was performed, there was no valid research tool to assess partner-specific trust behavior, until last year when a new modification of economic trust game was proposed (Kleinert et al., 2020). We expect to use this game for future research. In the second place, the lack of effect could be sustained from the type of variables, it could be probably that for women traits that denote status and resource acquisition were more relevant than attractiveness in their effect over trust behavior. Evolutionary psychologists have proposed that women assess male partners for long-term relationship in basis of social and economic status (Buss, 1989; Danel et al., 2017), two dimensions that were not included in the present study, and that are commonly detected in the research of similarity (Luo, 2017). Therefore, we cannot wholly discard our trust game. Still, it is relevant to consider that other variables could be preferred as appropriate by women for a long-term relationship beyond social status and resources and were not included in our research (e.g., commitment, parenting disposition, personality traits). Future studies are needed to increase the number and complexity of factors in which asymmetries can affect trust in romantic couples.

Results from the second prediction in men showed a different pattern of effects. In this case, men's satisfaction and trust in the relationship were affected by partner physical component of attractiveness, but not by their own physical component. In this regard, men were more satisfied and showed more trust when their partners were more physically attractive. We did not find actor effects, and therefore, these results suggest that the degree of similarity in the physical attractive component is not important for men, as their satisfaction and trust are only affected by women traits. Again, these results contrast those of Conroy-Beam and cols. (2016), as they found that similarity was important for both men and women satisfaction. However, in their study 3 they also found that ideal partner fulfillment was also related to men satisfaction. In this sense, our results may be in accordance with that last result, as men mate preferences are mainly focused to identify cues of reproductive value and these, in turn, are related to physical attractive traits as body mass index (Buss & Schmitt, 2019). Then, our results may be indicating that men are more satisfied with more attractive partners regardless of their own attractiveness because they are closer from their ideal partner. In relation to this, this result is in accordance with biological market theory (Noë et al., 2006) suggesting that similarity in physical attractive traits between couples is the consequence of a market effect in which men of certain attractiveness are not able to access to more valuable partners (Shaw Taylor et al., 2011). Conversely to women, the self-perceived component of attractiveness seems to be of less relevance in men, as we only found a statistical trend for the actor effect, that is, the self-perceived component of men is positively related to satisfaction in men, but the effect did not reach statistical significance. Nonetheless, the direction of this potential effect was similar of that for women indicating that self-esteem in men involved in good quality relationships could be enhanced.

In conclusion, our results replicate previous studies and indicate that couples in a Chilean sample show similarity for attractive traits, both self-perceived and physical, except for fluctuating facial asymmetry. Despite that similarity of traits within couples, our major finding is that similarity does not seem to play an important role as a mechanism of maintenance of long-term relationships, as it has no effect on satisfaction nor trust in our sample. Therefore, it is probably that similarity could be better explained from assortative mating, i.e., the initial stages of relationship, where the mating market forces conduce to the conformation of similar couples. This study also emphasized sexual differences in the traits that are important for satisfaction and trust on long-term relationships; whereas for men their partners' physical component of attractiveness are important to satisfaction and trust; for women neither the physical nor the self-perceived component of their partners seems to play a role in their satisfaction and trust. Future studies must include more relevant variables for women to establish long-term relationship, and other indicators of physical attractiveness such as the third-rating measure of bodily and face attractiveness, which could fine tune the differences between objective measures and self-perception.

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Fecha de recepción: Julio de 2021.

Fecha de aceptación: Abril de 2022.

Appendix A
Relationship Assessment Scale (Escala de Satisfacción con la Pareja)

Por favor, marque con un círculo el número que mejor corresponde a su relación de pareja. Conteste lo más sinceramente posible, pues no hay respuestas ni buenas ni malas, o adecuadas o inadecuadas.				
1. ¿De qué manera considera Ud. que su pareja satisface sus necesidades?				
1	2	3	4	5
Pobremente		Término medio		Extremadamente bien
2. En general, ¿hasta qué punto está satisfecho/a con su relación de pareja?				
1	2	3	4	5
Insatisfecho		Término medio		Muy satisfecho
3. En comparación con la mayoría las parejas, ¿cómo calificaría a la suya?				
1	2	3	4	5
Pobremente		Término medio		Excelente
4. ¿Con qué frecuencia desea NO haber formado una relación con su pareja?				
1	2	3	4	5
Siempre		Con frecuencia		Nunca
5. ¿Hasta qué punto su relación de pareja satisface sus expectativas iniciales?				
1	2	3	4	5
En absoluto		Término medio		Absolutamente
6. ¿Cuánto ama a su pareja?				
1	2	3	4	5
Muy poco		Término medio		Mucho
7. ¿Cuántos problemas hay en su relación de pareja?				
1	2	3	4	5
Muchos		Lo normal		Pocos

Appendix B
Mate Value Scale (Escala de Valor de Pareja)

Por favor, a continuación (marque con un círculo), indique en qué medida Ud. se identifica con cada una de las características que las personas buscan para establecer una relación de pareja estable, con potencial de matrimonio o compañeros de vida.

Use la siguiente escala:

1 = Nada deseable

4 = Medianamente deseable

7 = Extremadamente deseable

	Yo soy
1. ¿Qué tan deseable como pareja se considera Ud.?	1 - 2 - 3 - 4 - 5 - 6 - 7
2. ¿Cuán deseable como pareja le consideran las personas del sexo opuesto?	1 - 2 - 3 - 4 - 5 - 6 - 7
3. ¿Cómo se compara con el resto de las personas en su deseabilidad como pareja?	1 - 2 - 3 - 4 - 5 - 6 - 7
4. ¿Qué tan “buen partido” como pareja es Ud.?	1 - 2 - 3 - 4 - 5 - 6 - 7