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Too Much Matching:

A Social Relations Model Enhancement of the Pairing Game

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Abstract

The Pairing Game (Ellis & Kelley, 1999) is a popular classroom demonstration that illustrates how people select romantic partners who approximate their own desirability. However, this game produces matching correlations that greatly exceed the correlations that characterize actual romantic pairings, perhaps because the game does not incorporate the Social Relations Model concept of the relationship effect. We conducted a straightforward variant of the Pairing Game that included relationship effects. As predicted, the matching correlation decreased in the modified vs. the original version of the game, and the modified game also clarified difficult Social Relations Model concepts for students. Actual romantic evaluations exhibit both consensus and idiosyncratic variability; this modification of the Pairing Game adds realism by representing both elements.

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Romantic partners are similar to each other on a variety of dimensions, a phenomenon known as homogamy or assortative mating (Burley, 1983; Buss, 1985). Homogamy emerges on some dimensions (e.g., religion, education, attitudes) because people are more likely to encounter potential partners in their "field of eligibles" who are similar rather than dissimilar on these variables (Schellenberg, 1960; Watson et al., 2004). However, homogamy also emerges on variables that are normatively desirable and vary within a population, such as physical attractiveness (Feingold, 1988) and related indicators of mate value (e.g., popularity; Shaw Taylor, Fiore, Mendelsohn, & Cheshire, 2011). Scholars have long investigated why matching effects emerge for such socially desirable qualities; some assert that people have a preference for similarly desirable (or undesirable) partners (i.e., the matching hypothesis), whereas others contend that people internalize their mate value via repeated experience with acceptance and rejection and settle for the best mate they can realistically obtain (Berscheid, Dion, Walster, & Walster, 1971; Kalick & Hamilton, 1986; Shaw Taylor et al., 2011; van Straaten, Engels, Finkenauer, & Holland, 2009; Walster, Aronson, Abrahams, & Rottmann, 1966).

To illustrate this mate selection process for students, Ellis and Kelley (1999) developed the Pairing Game, which has become a particularly beloved demonstration in psychology classrooms. In this game, students are randomly assigned a numbered card[1] and told to place the card on their forehead—facing out—without looking at it. Students then attempt to pair up with another student with the goal of obtaining a partner with a high value card. A student can make an offer to a potential partner by extending a handshake, and the potential partner can then accept or reject the offer. Typically, the desirable people pair up first, and the low value students ultimately settle for each other "in a crestfallen sort of way" (Fletcher et al., 2013, p. 126). Once all students have formed pairs, the matching correlation (i.e., the correlation between values in a pair) is calculated and the students guess their value. The Pairing Game consistently produces matching correlations of at least r=.70, and students' estimates of their own mate value correlate approximately r=.70 with their actual value (Ellis & Kelley, 1999; Fletcher, Simpson, Campbell, & Overall, 2013). In other words, the degree of assortative mating produced by the demonstration is quite pronounced, and students internalize their assigned value with great accuracy.

Nevertheless, emerging research suggests that the numeric Pairing Game may incompletely capture—and perhaps even misrepresent—certain elements of the process of mate selection as people experience it in the real world. Importantly, the game produces matching correlations that vastly exceed the matching correlations that emerge in real-life couples: When researchers assess third-party, consensus-driven ratings of popularity and/or attractiveness, the matching correlations range from approximately r=.20 among pairs who have met online and have started communicating (Shaw Taylor et al., 2011) to r=.40 in established couples (Feingold, 1988). Part of the source of this difference could be due to way the Pairing Game represents consensus about people's romantic desirability. In the game, consensus is perfect, as all students see the same value on a given partner's card. In real life, however, the degree of consensus about potential romantic partners' mate value is far from perfect (Eastwick & Hunt, 2013). Rather, people exhibit great variability in their judgments of romantic partners' overall romantic desirability and attractiveness, and such subjective judgments are more important predictors of romantic outcomes (e.g., the decision to initiate a relationship) than consensus measures (Eastwick, Luchies, Finkel, & Hunt, in press). Given that real-life romantic consensus is masked by considerable idiosyncrasy, most people will be able to pair up with a partner who is especially desirable to them, and the amount of matching should be modest.

Indeed, this emerging research on the actual process of mate selection affords an opportunity to introduce students to a related set of concepts: the Social Relations Model (SRM; Kenny, 1994; Kenny & LaVoie, 1984). The SRM posits that a given social judgment (i.e., Joey's rating of Cora's attractiveness, extraversion, or any other construct of interest) consists of three independent components. The first is the actor effect, which is a perceiver's average rating of others (i.e., Joey rates women as unattractive on average). The second is the partner effect, which is the average rating a target receives from others (i.e., Cora is rated as unattractive on average). The third is the relationship effect, which is the portion of the judgment that cannot be accounted for by the perceiver's actor effect or the target's partner effect (i.e., Joey rates Cora as highly attractive). Although complex statistics underlie actual SRM calculations, SRM concepts are both accessible to undergraduate students and vital to achieve a complete understanding of humans' social world (Back & Kenny, 2010).

In fact, the SRM concept of the relationship effect could enhance the real-life relevance of the Pairing Game. As is, the game only models partner effects: the numerical values assigned to each potential partner that are perfectly consensual for all students. The game fails to incorporate relationship effects, which may partially explain why the matching correlations are so large; when relationship effects exist, pairs that seem mismatched to others may feel both equitable and wonderful to the two members of the dyad. We developed a version of the Pairing Game that included relationship effects with two goals in mind: (a) to reduce the magnitude of the (excessively large) matching correlation, and (b) to teach the social relations model. We also examined subsidiary hypotheses regarding two other correlations that should decrease with the addition of relationship variance: the accuracy of students' own mate value estimates and the amount of time it takes low vs. high value students to find a partner. The Pairing Game mate value estimation correlations (r=~.70) may also be much larger than those found in real life (e.g., r=.11 in Back, Penke, Schmukle, & Asendorpf, 2011), and we know of no real-world evidence that desirable people pair up faster than undesirable people.

Method

Participants

Forty-six students taking a class called "Evolution of Relationships" participated in the current demonstration. Forty-five of them were women; 78% were seniors and the remaining 22% were juniors.

Procedure and Materials

First, students played the original Pairing Game with playing cards (Jack=11 points, Queen=12, King=13, Ace=14). Students lined up immediately after forming a pair so that we could record how long it took students (relatively) to find a match. The instructor and teaching assistant recorded the pairs' values and asked the students to guess their own "mate value". The matching correlation and the correlation between students' guesses and their actual values were then reported to the class.

This game was followed by a ~5-minute lecture on the matching phenomenon and a ~10-minute lecture on the SRM. Then, using iClickers (Stowell & Nelson, 2007), students answered two difficult SRM questions:

Q1. What situation will produce more "matching" on attractiveness?

Q2. What situation will make it more difficult to assess one's overall mate value?

The possible responses were (a) a situation with big partner effects and no relationship effects, or (b) a situation with big partner effects and big relationship effects. The correct answer is (a) for Q1 and (b) for Q2. Students were not shown the outcomes of their iClicker responses, nor were they told the correct answers.

Next, students played a modified version of the Pairing Game. The modified version also used playing cards, but students were awarded 3, 6, 9, or 12 additional points based on the partner's suit (i.e., heart, spade, diamond, club). Each student was randomly assigned a small card that indicated how many points they would receive for their partner's suit (see Appendix A), and they were told to keep the card private and to carry it with them during the game. Thus, the playing card values reflect partner effects and the suit points reflect relationship effects, although we did not draw this explicit parallel for the students until after the game was completed. We chose these relationship effect point values so that the means and standard deviations of the partner and relationship effects would be approximately equal (partner effects M=8.0, SD=3.8; relationship effects M=7.5, SD=3.4). After completing this modified version of the Pairing Game (which was otherwise identical to the original version), the matching and mate value estimation correlations were reported to the class, and students answered the same two difficult SRM questions using iClickers.

Results

Game results and learning outcomes for the two versions of the game are displayed in Table 1. As expected, the matching correlation (i.e., the correlation between the card value of the student who made the offer and the student who accepted the offer) was higher in the original version of the Pairing Game (r=.86) than the new version of the game (r=.55), and this difference between correlations was significant, z=2.16, p=.031. Also, participants were (marginally) more accurate in assessing their mate value in the original version (r=.86) than the new version (r=.72) of the game, z=1.83, p=.067. Finally, high value participants tended to pair up faster than low value participants in the original version of the game (r=.76), but there was a trend for this tendency to be weaker in the new version (r=.57), z=1.62, p=.105. In summary, in the modified (relative to the original) version of the game, students exhibited less matching on overall mate value, students' estimates of mate value were less accurate, and the tendency for high value students to pair up quickly and exit the market was weaker. All of these shifts produced findings that better approximated real-life mating outcomes.

Learning outcomes also improved after playing the modified version of the game. Specifically, students were more likely to select the correct answer to both the first, $\chi^2(1)=5.50$, p=.019, and second, $\chi^2(1)=12.29$, p<.001, difficult SRM test questions after playing the new rather than the original version of the Pairing Game. After playing the original version of the game, students performed marginally worse than chance on the first iClicker question, $\chi^2(1)=2.81$, p=.093, and at chance on the second question, $\chi^2(1)=0.21$, p=.647. Yet after playing the new version of the game, students performed marginally better than chance on the first question, $\chi^2(1)=2.69$, p=.101, and significantly better than chance on the second question, $\chi^2(1)=18.69$, p<.001. In other words, the game corrected the students' overall misconceptions about the first question and helped them to achieve very accurate responses to the second question.[2]

Discussion

We added relationship variance to the classic Ellis and Kelley (1999) Pairing Game by giving students additional points based on the partner's suit. Data suggested that this simple modification may offer two benefits for students. First, the modified version seems to better approximate real-life mate selection processes; the matching correlations produced by the original version of the game are extraordinarily high and could mistakenly imply that idiosyncratic factors are of little consequence in romantic judgments. By simply adding relationship effects, the matching correlation decreased substantially. Furthermore, this modification marginally reduced the correlation between students' estimates of their own value and their consensus value (i.e., their partner effect), a correlation which tends to be small in real life (Back et al., 2011). Also, the low-value students may not have been as crestfallen about their situation in the modified (vs. the original) version of the game, as there was a trend for students' card values to be a weaker predictor of the time taken to find a partner. Collectively, these differences bring the experience of the Pairing Game closer to real-life mate selection (Eastwick & Hunt, 2013; Feingold, 1988; Shaw Taylor et al., 2011), although the matching correlation that emerged in the modified game was still quite high (r=.55). It is possible that this correlation remained high because we equated partner and relationship variance in this demonstration; for actual romantic judgments, relationship variance typically exceeds partner variance, sometimes by a factor of five or more (Eastwick & Hunt, 2013).

A second benefit of this modified Pairing Game is that it could be a valuable tool for teaching the SRM (Kenny, 1994; Kenny & LaVoie, 1984). Specifically, the modified game demonstrates (especially in conjunction with the original version of the game) how the relative presence of partner vs. relationship effects impacts social processes. The SRM is a sophisticated set of concepts, and our findings for learning outcomes tentatively suggest that the modified version of the Pairing Game can help students better grasp the insights generated by the SRM. Instructors who wish to use the Pairing Game to teach SRM concepts might consider administering more ambitious learning outcome measures, such as essays that test students' ability to explain the SRM's more realistic depiction of romantic partner selection processes.

Nevertheless, this study has limitations for instructors to consider. First, some of our findings could be due to the nature of our sample: female upperclassmen taking a class on the evolution of relationships. Second, the size of the sample (46; nearly a single deck of cards) meant that students could intuit the total number of high and low values in the market. This feature might have helped desirable people to pair off faster than if the total number of face cards was unknown, for example. Third, by reporting the matching correlations for the class, we ensured that all students—not just the (large) group of students who paired up with someone more discrepant from their own value in the second relative to the first version of the game—correctly perceived how the two versions of the game differed. Nevertheless, this pedagogical choice means that we do not know if students would have performed better on the learning outcomes had they only relied on their subjective experience while playing the games. Finally, different psychological processes might be activated if researchers used positive and negative values to represent relationship effects. In fact, such a scoring shift might prompt students to experience differing degrees of unique desire *and aversion* (Cacioppo, Gardner, & Berntson, 1997), which could add to the realism of the demonstration.

Classroom instructors are limited in the topics that they can cover. Yet we contend that a complete understanding of person perception and human mating requires SRM concepts, and the current data suggest that undergraduates can comprehend such concepts. Moreover, the SRM has tremendous real world relevance. In the present case, the SRM illustrates that there are independent ways of achieving happiness in a romantic partnership: obtain either a consensually desirable partner or a partner who is especially desirable to you. In this game, as in real life, romance is not merely a story about “haves” and “have-nots”; it would be a shame to teach such a bleak story when the reality is much more interesting and inspiring.

References

Back, M. D., & Kenny, D. A. (2010). The social relations model: How to understand dyadic processes. *Social and Personality Psychology Compass, 4*, 855-870.

Back, M. D., Penke, L., Schmukle, S. C., & Asendorpf, J. B. (2011). Knowing your own mate value sex-specific personality effects on the accuracy of expected mate choices. *Psychological Science, 22*, 984-989.

Berscheid, E., Dion, K., Walster, E., & Walster, G. W. (1971). Physical attractiveness and dating choice: A test of the matching hypothesis. *Journal of Experimental Social Psychology, 7*, 173-189.

Burley, N. (1983). The meaning of assortative mating. *Ethology and Sociobiology, 4*, 191-203.

Buss, D. M. (1985). Human mate selection. *American Scientist*, *73*, 47-51.

Cacioppo, J. T., Gardner, W. L. & Berntson, G. G. (1997). Beyond bipolar conceptualizations and measures: The case of attitudes and evaluative space. *Personality and Social Psychological Review, 1*, 3-25.

Eastwick, P. W., & Hunt, L. L. (2013). Relational mate value: Consensus and uniqueness in romantic evaluations. *Manuscript under review*.

Eastwick, P. W., Luchies, L. B., Finkel, E. J., & Hunt, L. L. (in press). The predictive validity of ideal partner preferences: A review and meta-analysis. *Psychological Bulletin*.

Ellis, B. J., & Kelley, H. H. (1999). The pairing game: A classroom demonstration of the matching phenomenon. *Teaching of Psychology, 26*, 118–121. doi: 10.1207/s15328023top2602_8

Feingold, A. (1988). Matching for attractiveness in romantic partners and same-sex friends: a meta-analysis and theoretical critique. *Psychological Bulletin*, *104*, 226-235. doi:10.1037/0033-2909.104.2.226

Fletcher, G. J. O., Simpson, J. A., Campbell, L., & Overall, N. C. (2013). *The science of intimate relationships*. Malden, MA: Wiley-Blackwell.

Kalick, S. M., & Hamilton, T. E. (1986). The matching hypothesis reexamined. *Journal of Personality and Social Psychology, 51*, 673-682.

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford.

Kenny, D. A., & La Voie, L. (1984). The social relations model. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 18, pp. 141-182). Orlando, FL: Academic Press.

Schellenberg, J. A. (1960). Homogamy in personal values and the “field of eligibles”. *Social Forces*, *39*, 157-162.

Shaw Taylor, L., Fiore, A. T., Mendelsohn, G., & Cheshire, C. (2011). “Out of my league”: A real-world test of the matching hypothesis. *Personality and Social Psychology Bulletin, 37*, 942-954.

Stowell, J. R., & Nelson, J. M. (2007). Benefits of electronic audience response systems on student participation, learning, and emotion. *Teaching of Psychology, 34*, 253-258.

Van Straaten, I., Engels, R. C., Finkenauer, C., & Holland, R. W. (2009). Meeting your match: How attractiveness similarity affects approach behavior in mixed-sex dyads. *Personality and Social Psychology Bulletin*, *35*, 685-697.

Walster, E., Aronson, V., Abrahams, D., & Rottmann, L. (1966). Importance of physical attractiveness in dating behavior. *Journal of Personality and Social Psychology, 4*, 508-516.

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*, 1029-1068.

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Footnotes

[1] Ellis and Kelley (1999) also described a trait-based version of the Pairing Game that was designed to elicit relatively idiosyncratic evaluations of potential partners. Our goal was to generate a straightforward version of the numeric Pairing Game (the most popular version) that could represent both consensus and idiosyncratic information simultaneously for the purposes of teaching the SRM.

[2] Students also completed four iClicker questions about basic SRM concepts (e.g., which of the following illustrates an actor effect, partner effect, relationship effect, error) after listening to the SRM lecture but before completing the two difficult SRM questions. Comprehension of these basic SRM concepts was generally good (84% correct response rate); we did not reassess students' comprehension of these items after playing the modified version of the Pairing Game due to class time constraints. However, we did assess these same four basic questions at the start of the next class, and learning outcomes had improved somewhat (94% correct response rate).

Table 1

Game type	Game results (r)			Learning outcomes			
	Matching	Mate value estimation	Timing	Q1		Q2	
				% Correct	Freq.	% Correct	Freq.
Original pairing game	.86	.86	.76	37%	16/43	47%	20/43
Social relations model pairing game	.55	.72	.57	62%	28/45	82%	37/45
Game comparison statistic	z =2.16*	z = 1.83†	z = 1.62	χ^2 = 5.50*		χ^2 = 12.29***	

Note: N=23 pairs for the matching correlations and N=46 for the mate-value estimation and timing correlations. Game comparison statistic tests the significance of the difference between the original and social relations model version of the game. Timing correlations are scored such that positive correlations indicate that high value participants paired up more quickly than low value participants. All correlations are significantly different from zero.

† $p < .10$
* $p < .05$
*** $p < .001$

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