



Mating markets and bargaining hands: Mate preferences for attractiveness and resources in two national U.S. studies



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ABSTRACT

According to a “mating market” approach, people with desirable traits have a stronger “bargaining hand” and can be more selective when choosing partners. We examined how heterosexual mate preferences varied by gender, age, personal income, education, and appearance satisfaction (Study 1 $N = 22,815$; Study 2 $N = 4790$). Men and women differed in the percentage indicating it was “desirable” or “essential” that their potential partner was good-looking (92% vs. 84%; $d = .39$), had a slender body (80% vs. 58%; $d = .53$), had a steady income (74% vs. 97%; $d = 1.17$), and made/will make a lot of money (47% vs. 69%; $d = -.49$). There were also gender differences in whether it was “very important” or “a must have” their partner made at least as much money as they do (24% vs. 46%; $d = .60$) and had a successful career (33% vs. 61%; $d = .57$), but not in whether their partner was physically attractive to them (40% vs. 42%; $d = .03$). Wealthier men and people with better appearance satisfaction had stronger preferences for good looking and slender partners. Preferences varied within and between genders, and were linked to bargaining hand in the mating market.

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1. Introduction

The metaphor of the “mating market” has been used to explain sources of systematic variation and individual differences in mate preferences (Pawlowski & Dunbar, 1999). The “mating market” describes the phenomenon whereby, in a heterosexual context, individuals compete with others of the same gender to make “bids” to members of the other gender for the purposes of securing a romantic partner. Bidding is a two-way process, and with whom individuals enter into romantic relationships depends on a) the qualities *they themselves prefer*, and b) the extent to which they possess qualities that *potential partners prefer*. If an individual possesses attractive traits, then he or she has a strong bargaining hand and can be relatively choosy

about what bids to accept. If an individual possesses less attractive traits, then he or she has a relatively weak bargaining hand. In the context of heterosexual mate choice, the “mating market” metaphor highlights how mate preferences of one gender predict the bargaining hands of members of the other gender. Thus, when people are free to choose their mates, each gender’s preferences influence which members of the other gender will themselves have the bargaining power to demand that a romantic partner possess the traits they most desire.

The mating market metaphor can be further extended to include a distinction between partner “necessities” versus “luxuries” (Li, Bailey, Kenrick, & Linsenmeier, 2002). Viewing a trait as essential (a “necessity”), rather than merely desirable (a “luxury”), will exclude a larger number of prospective partners. Therefore, examining the traits an individual labels as necessities or luxuries can provide a sensitive measure of the demands he or she makes when evaluating potential romantic partners. In the mating market, people possessing desirable traits can expect to attain a partner who embodies both their necessities and luxuries. In addition, those with desirable traits might be in a position to hold more traits as necessities.

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Drawing on evolutionary and mating market perspectives, we examined how men's and women's mate preferences vary by their own bargaining hand, including age, income, education, and appearance satisfaction. We further examined gender differences and similarities in the links between these traits and the importance individuals place on physical appearance and material financial resources when seeking a long-term partner. In contrast to much of previous research (see Li et al., 2002), we not only measured mate preferences but also the extent to which individuals considered these traits necessities—"essential" or "must haves"—versus luxuries. Furthermore, and also in contrast to much of previous research, rather than relying on college or small community samples to assess preferences, we present findings from two large U.S. datasets: a large web-based national study and a large nationally representative study of single adults. The current research provides the ability to examine mate preferences in national studies, and the large sample sizes enable tests of how different sociodemographics and personal characteristics interact when predicting mate preferences.

1.1. Reproductive biology and sex differences in long-term mate preferences

Human evolution was likely characterized by a mating system of mostly socially monogamous long-term pair-bonds, with some sexual polygyny (Fisher, 2016; Gray & Garcia, 2013). As a consequence of being a primarily pair-bonding species, both men and women faced the challenge of securing a cooperative long-term partner (Fisher, 2016; Gray & Garcia, 2013; Hrdy, 2009). However, as a result of differences in reproductive biology, men and women also face unique challenges when seeking a long-term mate. Two key differences in reproductive costs for human males and females are differences in the obligatory energetic investment of reproduction, including the costs of pregnancy and lactation (Trivers, 1972) and differences in potential reproductive rate (Clutton-Brock & Parker, 1992). Due to men's higher potential reproductive rate and women's greater obligatory reproductive costs, women are expected to have evolved relatively stronger preferences for partners who are willing and able to provide resources, and men are expected to have evolved relatively stronger preferences for partners with physical cues of reproductive potential.

The presence of a provisioning long-term partner can enable women to more easily meet their heightened parental costs when pregnant and nursing (Marlowe, 2003). While men and women generally value resources in a long-term romantic partner, previous studies have demonstrated that women more than men prefer partners with financial stability and higher income (e.g., Anderson & Klofstad, 2012; Buss, 1989; Li et al., 2002; Townsend & Levy, 1990; although this is not necessarily true in some ecological contexts, e.g., Pillsworth, 2008). As a contemporary example of this, in one study of a U.S. online dating website, men who reported higher incomes received more interest from women (Hitsch, Hortaçsu, & Arieli, 2010).

Women, more than men, prefer partners who are older, possibly because older age in men serves as a cue of greater access to resources and social status (de Sousa Campos, Otta, & de Oliveira Siqueira, 2002; Kenrick & Keefe, 1992). In addition to income, higher educational attainment may also be valued either because it is viewed as prestigious or because it is a cue to resources. Women, more so than men, tend to value a partner with higher educational attainment (Buunk, Dijkstra, Fetschenhauer, & Kenrick, 2002; Sprecher, Sullivan, & Hatfield, 1994).

In terms of potential reproductive rate, the maximum number of children a man can have with a long-term female partner is constrained by her inter-birth intervals. Men who form pair-bonds with relatively younger women would therefore have the potential to have more offspring with that partner than men who pair-bond with relatively older women. Thus, it has been hypothesized that human males evolved a preference for younger partners and for factors linked to attractiveness (e.g., smooth skin, facial and body symmetry), which serve as cues of youth and fecundity (Gallup & Frederick, 2010; Sugiyama, 2005). Consistent with this view, adult men tend to prefer partners

who are younger than themselves (Alterovitz & Mendelsohn, 2009; Buunk, Dijkstra, Kenrick, & Warntjes, 2001; Kaufman & Phua, 2003; Kenrick & Keefe, 1992; Marlowe, 2004).

Both men and women value physical attractiveness in a long-term romantic partner (Buss, 1989). Traits associated with physical attractiveness may be cues of a person's health, fertility, robustness, and/or social status (e.g., Buunk et al., 2002; Frederick & Haselton, 2007; Gallup & Frederick, 2010; Gangestad & Scheyd, 2005; Sugiyama, 2005). Both men and women consider physical attractiveness to be important in a long-term partner, but men typically rank or rate physical attractiveness as being of greater importance than do women, possibly because women's physical attractiveness is more strongly linked to cues of youth and therefore reproductive potential (Buss, 1989; Li et al., 2002; for an exception, see Pillsworth, 2008).

With respect to one's own bargaining hand in the mating market, attractiveness impacts a person's mating opportunities (Eastwick & Finkel, 2008), and past research has found that more attractive women indicate that a wider variety of desirable traits are indispensable in a romantic partner than do less attractive women (Buss & Shackelford, 2008). A person's satisfaction with their own appearance might also influence their demands on the mating market — people who feel more attractive or more satisfied might expect partners with more desirable traits.

Past research has generally not distinguished between whether men and women place different importance on having a partner who is generally good-looking versus a partner who is specifically attractive to them. But there may be different benefits to each. In some social settings, having a generally physically attractive partner might have greater benefits for men (e.g., increasing their perceived social status) than for women (Winegard, Winegard, & Geary, 2013), whereas being specifically attractive to them is based partly on idiosyncratic preferences.

Body fat level plays an important role in determining attractiveness and peoples' satisfaction with their own appearance, particularly for women. Men's preferences for body fat levels in women vary substantially across cultures, with relative thinness being considered most attractive in most industrialized countries (Frederick, Forbes, & Berezovskaya, 2008; Gray & Frederick, 2012; Swami et al., 2010). Body mass index (BMI) is a particularly strong predictor of attractiveness rating, with women at the lower end of the "normal" range of body mass generally rated most attractive (Swami & Tovee, 2005; Tovee, Reinhardt, Emery, & Cornelissen, 1998). Men who are lean and toned are rated most attractive by women (Frederick & Haselton, 2007). When compared with those with lower body masses, both men and women who have higher body masses tend to be least satisfied with their own appearance (Frederick, Forbes, Grigorian, & Jarcho, 2007; Frederick, Peplau, & Lever, 2006). Popular media and news outlets often promote the idea that body mass is linked to poorer health, and experimental research shows these beliefs cause people to have more negative attitudes towards both men and women with higher body masses (Saguy, Frederick, & Gruys, 2014). Therefore, in addition to examining the overall importance people attach to attractiveness in a partner, we also specifically examined importance placed on a slender partner, which was expected to be a particularly strong preference among men given the valuation of female thinness in the U.S.

Hypothesis 1. Preferences for income and attractiveness by gender, age, own income, and appearance satisfaction

We predicted gender differences in preferences for income and attractiveness, with men placing more importance than women do on a good looking partner and women placing more importance than men do on factors related to resources. We also explored gender differences in how important it is to be physically attracted to a potential or current partner.

We did not predict that age would generally be associated with preferences for attractiveness and income. Whereas men were expected to

become overall choosier as they age (and as they acquire resources and status), women were expected to become less choosy as they age (as they lose markers of reproductive potential). Therefore, we predicted an interaction between gender and age, with older men being more selective and younger women being more selective.

We predicted main effects of income, education, and appearance satisfaction, with wealthier, more educated, and more satisfied individuals having higher expectations for attractiveness and income in their partners.

Hypothesis 2. Preferences for income and attractiveness: interactions between age, own income, appearance satisfaction, and education

We also explored the interactions among the traits, examining whether people with combinations of highly attractive traits would be particularly selective above and beyond additive effects of these attractive traits. For example, we examined whether the association between younger age and greater selectivity was particularly pronounced among women with relatively high incomes, as well as whether the association between older age and greater selectivity was particularly pronounced among men with relatively high incomes.

2. Study 1: mate preferences in a national U.S. sample: NBC News website sample

Study 1 examined the full set of hypotheses in a broad sample of adults. We examined whether there are associations between people's gender, age, income, or appearance satisfaction and the importance they placed on having a partner who is good looking, has a steady income, and who makes or will make a lot of money.

2.1. Methods

2.1.1. Participants

A total of 22,815 heterosexual participants aged 18–65 years completed the survey. This sample included 11,203 men and 11,612 women. On average, men were 44 years old ($SD = 12$), and women were 38 years old ($SD = 12$).

2.1.2. Survey recruitment

Study 1 is based on secondary analyses of data collected via an anonymous survey posted on the official website of NBC News (formerly msnbc.com, now NBCNews.com) for 10 days in 2010. Market research shows that at the time of the survey the website routinely ranked among one of the most popular non-pornographic websites in the United States. The site received roughly 58 million unique monthly visitors (NBCNews.com Media Kit, 2012). Datasets garnered through this site have been used to examine sexual jealousy (Frederick & Fales, in press), sexual regrets (Galperin et al., 2013), sexual behavior (Frederick & Jenkins, in press), friendship (Gillespie, Frederick, Harari, & Grov, 2015; Gillespie, Lever, Frederick, & Royce, in press), and aspects of body image (Frederick et al., 2006; Frederick, Lever, & Peplau, 2007; Frederick, Peplau, & Lever, 2008; Lever, Frederick, Laird, & Sadeghi-Azar, 2007; Lever, Frederick, & Peplau, 2006; Peplau et al., 2009).

2.1.3. Outcome variables

Respondents were presented with the base question: "What traits do you find desirable or undesirable in a marriage partner/long-term relationship partner?" followed by a randomized list of items, including: *Is good looking*; *Has a steady income*; and *Makes or will make a lot of money*. Participants rated each trait on a 5-point Likert scale [1 = Very undesirable—a deal breaker; 2 = Undesirable; 3 = Neutral—neither desirable nor undesirable; 4 = Desirable, but not essential; 5 = Absolutely essential].

2.1.4. Predictor variables

2.1.4.1. Income. Participants were asked "What is your personal annual income, including your wages or salary, bonuses, and other sources of income? (Do not include your partner's income)". The 18 response categories ranged from "\$0–4999" to "\$1 million or more." To prevent outliers from having a disproportionate effect on the results, we winsorized all cases in which participants reported an income of greater than \$250,000 (2% of sample) to \$250,000. Responses were coded so that the midpoint of each category was taken (e.g., \$0–4999 was recoded as \$2500).

The sample was diverse in terms of educational status, including participants with some high school education or less (8%), some college or associates degrees (31%), college degrees (32%), and post-graduate degrees (29%). In order to retain the ordered relationship between levels of education, we entered education as a continuous variable in regression analyses (Pasta, 2009).

2.1.4.2. Satisfaction with appearance. Participants were asked "On a scale from 1 to 7, how dissatisfied or satisfied are you with your overall physical appearance?" [1 = Very dissatisfied; 4 = Neutral; 7 = Very satisfied]. In a separate sample of 550 participants, scores on this measure were highly correlated with the widely used and validated Appearance Evaluation measure (Cash, 2000) for both men and women ($r_s = .85$; Sandhu & Frederick, 2015).

2.1.5. Data analysis strategy

Our large sample size provided the power to detect even miniscule effects. As a result, beta (β) values as small as .02 in linear regressions are statistically significant. Due to the high power to detect effects and the multiple analyses conducted, we only considered results statistically significant if they reached the $p < .001$ level, although we note in tables whether associations were significant at the $p < .05$, .01, or .001 level. We also emphasized effect sizes. To our knowledge, there are no established rough guidelines for interpreting the size of β values. For readers not accustomed to these analyses, we suggest as a rough guide that $\beta = .10$ is small, $\beta = .20$ is moderate, and $\beta = .30$ is large. For example, an extremely large difference would be the gender difference in height, which in this study was $d = 1.98$ ($\beta = -.70$). Gender differences in appearance satisfaction are generally small to moderate. For example, on the Appearance Evaluation scale, men report higher appearance satisfaction than do women, $d = .37$ ($\beta = .18$; Frederick, Forbes, et al., 2007).

We first examined the overall gender differences using t-tests and reported the differences in the form of Cohen's d (Cohen, 1988). Then, linear regression analyses examined the relationships between the predictor variables and mate preferences for the entire sample and also separately for men and women. Although we did not have a priori predictions about curvilinear effects, we followed up this main set of regression analyses with a separate set of analyses examining the curvilinear as well as linear associations between the predictor and outcome variables, and describe any statistically significant curvilinear patterns where $\beta > |.09|$. All continuous variables were standardized prior to conducting analyses. Men were coded as 0, women were coded as 1, and the continuous mate preferences variables were used as outcome measures. All tolerance and VIF statistics were in commonly accepted ranges for all predictors for all analyses.

To facilitate the data presentation, we also present some of the key results in percentages (Tables 1 and 2). For overall gender differences, we report the results of Fisher's Exact Tests and the resulting Phi coefficient (ϕ), which is a measure of the strength of the association between two nominal variables and can be interpreted in the same manner as a Pearson's r correlation.

Table 1
Percentage indicating importance of each trait in a long-term partner in Study 1.

	Study 1: national news website															
	Good looking				Slender body				Steady income				Makes or will make a lot of money			
	Essential		Desirable		Essential		Desirable		Essential		Desirable		Essential		Desirable	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
<i>Age</i>																
18–25	40	18	56	75	18	7	65	54	17	56	61	41	4	8	47	64
26–35	39	17	57	73	18	5	65	52	23	68	57	30	3	8	46	61
36–45	31	12	62	73	16	6	65	52	21	74	56	23	3	9	45	61
46–55	24	8	67	68	14	5	66	51	16	70	58	25	2	9	44	59
56–65	16	5	70	64	12	7	64	47	11	67	58	27	2	9	43	59
<i>Income</i>																
0–25 K	29	13	61	71	15	6	62	53	6	62	56	35	3	8	42	61
35–55 K	25	13	65	70	12	5	65	49	21	69	58	28	3	8	45	60
65–85 K	26	12	65	74	14	6	65	53	19	74	59	24	3	9	47	63
95 K+	30	13	64	73	17	7	66	55	14	71	56	26	2	12	43	61
<i>Appear. sat.</i>																
Dissatisfied	22	10	67	70	11	4	64	45	19	71	58	26	3	9	45	60
Neutral	21	10	68	69	10	5	64	45	16	66	58	30	2	8	44	57
Satisfied	32	16	62	73	17	7	65	57	18	67	57	30	3	8	45	62
<i>Education</i>																
H.S. or less	18	13	59	64	12	7	55	47	19	65	49	29	4	12	42	59
Some college	23	12	66	69	12	5	64	49	18	67	57	29	3	9	44	59
College	30	15	64	72	15	6	67	54	18	70	59	28	2	8	46	63
Adv. degree	32	13	63	75	18	6	66	45	16	68	57	30	3	7	44	62

3. Study 1 results and discussion

Hypothesis 1. Preferences for income and attractiveness by gender, age, own income, and appearance satisfaction

Hypothesis 1a. Men will be more selective in terms of appearance, women will be more selective in terms of resources

In both the *t*-test and regression analyses, consistent with the hypotheses, men had stronger preferences than women did for a partner who is good looking ($d = .39$; $\beta = -.21$) and slender ($d = .53$; $\beta = -.24$), and women had stronger preferences than men did for a partner who has a steady income ($d = 1.17$; $\beta = .51$) and will make a lot of money ($d = .49$; $\beta = .25$; all $ps < .001$, see Table 3 for full regression results).

As shown in Fig. 1, there were gender differences in the percentage of men versus women who considered it “Absolutely essential” (versus “Desirable,” “Neither desirable nor undesirable,” “Undesirable,” or “Very undesirable”) for a partner to be good looking (28% vs. 13%; $\phi = .18$, $p < .001$), slender (15% vs. 6%; $\phi = .15$, $p < .001$), have a steady income (17% vs. 68%; $\phi = .51$, $p < .001$), and make a lot of money (3% vs. 8%; $\phi = .13$, $p < .001$). Gender differences were also apparent in the percentage of men versus women who reported that it is “Desirable” or “Absolutely essential” (versus “Neither desirable nor undesirable,” “Undesirable,” or “Very undesirable”) for a partner to be good looking (92% vs. 84%; $\phi = -.11$, $p < .001$), slender (80% vs. 58%; $\phi = .24$, $p < .001$), have a steady income (74% vs. 97%; $\phi = .32$, $p < .001$), or make a lot of money (47% vs. 69%; $\phi = .23$, $p < .001$).

Hypothesis 1b. Older men and younger women will be more selective

In the overall sample, older people had weaker preferences than did younger people for a partner who is good looking in regression analyses ($\beta = -.24$; Table 3). Looking at the results for men and women separately, both older men and women had weaker preferences than younger men and women (Table 4). This pattern was expected for women

because younger women would have a stronger bargaining hand and thus would be expected to have stronger preferences for good looks. These findings, however, appear to contradict predictions that would

Table 2
Percentage indicating importance of each trait in a relationship partner in Study 2.

	Study 2: nationally representative sample											
	Is physically attractive to me				Makes at least as much money as I do				Has a successful career			
	Must have		Very import.		Must have		Very import.		Must have		Very import.	
	M	W	M	W	M	W	M	W	M	W	M	W
	%	%	%	%	%	%	%	%	%	%	%	%
<i>Age</i>												
21–25	46	45	42	47	9	12	22	28	16	21	35	52
26–35	44	50	45	42	10	14	19	31	11	21	37	52
36–45	44	47	46	44	5	19	21	30	8	18	35	53
46–55	39	41	51	47	6	19	17	36	7	16	33	52
56–65	37	36	53	50	4	17	13	39	2	14	26	47
66–75	27	29	56	57	4	17	11	38	3	10	20	45
<i>Income</i>												
0–25 K	38	41	48	47	7	16	17	30	7	17	26	44
25–49 K	39	42	51	47	5	15	19	36	6	15	35	53
50–74 K	40	41	53	50	7	19	18	36	11	17	35	54
75 K–99 K	48	40	44	54	7	18	15	43	10	18	33	58
100 K+	52	45	38	42	8	21	19	38	12	23	39	55
<i>Appear sat.</i>												
Very unhappy	44	50	44	39	3	20	23	26	4	23	24	39
Somewhat unhappy	35	38	54	50	4	15	16	36	5	14	28	51
Somewhat happy	39	40	51	49	5	15	17	35	6	14	33	53
Very happy	48	50	39	43	13	23	20	35	16	26	35	46
<i>Education</i>												
H.S. or less	40	45	47	44	8	16	19	32	10	17	25	45
Some college	40	43	49	45	6	18	18	34	8	16	31	49
College	41	40	50	51	5	15	17	35	6	16	38	54
Adv. degree	40	38	47	52	6	16	16	40	9	17	37	57

Table 3
Linear regressions examining predictors of preferences for appearance and resources.

	Study 1: national news website sample				Study 2: nationally representative sample		
	Good looking	Slender body	Steady income	Makes or will make a lot of money	Is physically attractive to me	Makes at least as much money as I do	Has a successful career
	β	β	β	β	β	β	β
Sex (male = 0)	-.21***	-.24***	.51***	.25***	.03	.30***	.30***
Age	-.24***	-.09***	-.09***	-.03**	-.08***	-.08***	-.22***
Income	.08***	.07***	-.09***	-.01	.07**	.03	.08***
Body satisfaction	.11***	.11***	.01	.01	.03	.09***	.14***
Education	.12***	.08***	.03**	.00	.02	.02	.09***
Sex \times Age	.00	.06***	.06***	.00	-.03	.11***	.05*
Sex \times Income	-.00	-.03**	.09***	.06***	-.03	.04	.01
Sex \times App. Sat.	-.01	.03**	-.01	.00	.01	-.04	-.06**
Sex \times Education	-.07***	-.03**	-.03**	-.02*	-.03	.00	-.04
Sex \times Age \times Income	-.01	.00	-.03***	-.02	.01	-.02	-.01
Sex \times Age \times App. Sat.	-.02*	-.02	-.01	-.01	-.01	-.03	.00
Sex \times Age \times Education	.02*	.02*	.02**	.00	-.01	.01	.00
Sex \times Income \times App. Sat.	.01	.01	.01	.00	.02	-.01	.00
Sex \times Income \times Education	-.02*	-.01	-.04***	-.01	.00	.00	-.01
Sex \times App. Sat. \times Education	-.02*	.03**	-.01	.00	.00	.00	.00
Sex \times Age \times Income \times App. Sat.	.01	.00	-.02**	.01	.00	-.04*	.00
Sex \times Age \times Income \times Educ.	.02	.00	.02*	-.01	-.03	-.02	.00
Sex \times Age \times App. Sat. \times Educ.	-.01	-.02*	.01	.00	.00	.02	-.01
Sex \times Income \times App. \times Educ.	-.02*	.00	-.01	-.01	-.02	.01	.00
Sex \times Age \times Inc. \times App. \times Educ.	.00	-.01	.00	.00	-.01	.02	.00
F	135***	121***	423***	130***	4.3***	26***	36***
Adjusted R ² (with interactions)	.11	.10	.27	.06	.01	.10	.13
Adjusted R ² (w/o interactions)	.10	.09	.26	.06	.01	.09	.13

Positive β s indicated that people who scored higher on the predictor variable placed greater importance on the trait in a long-term partner (e.g., men with higher incomes reported stronger preferences for a good looking partner, $\beta = .10$). The degrees of freedom were (20, 22,745) for Study 1 and (20, 4769) for Study 2.

*** $p < .001$.

** $p < .01$.

* $p < .05$.

emerge from a mating market perspective for men. In the overall sample, older people had weaker preferences for a slender partner (Table 3), although when analyzed separately by gender, only older men had weaker preferences for a slender partner than younger men (Table 4).

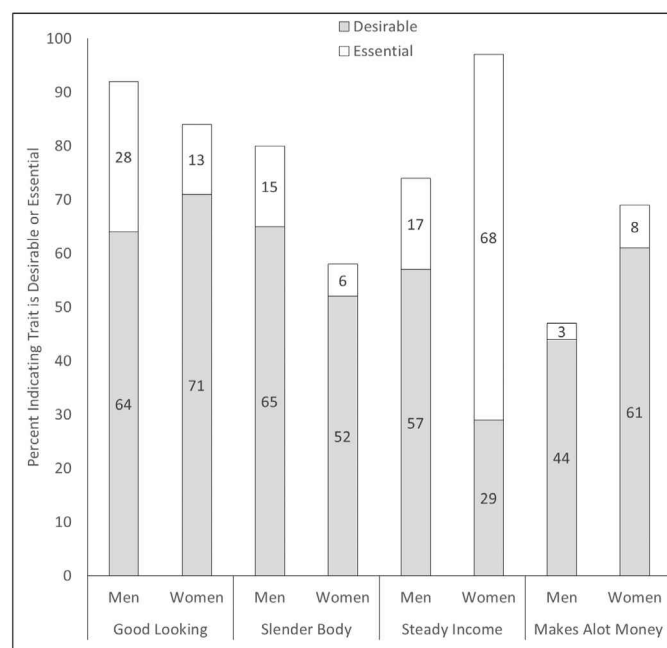


Fig. 1. Importance of appearance and resources to men and women, Study 1.

In the overall sample, older people placed less importance on a steady income (Table 3), but again this was true only for men (Table 4). In the supplementary analyses, there was, however, a curvilinear association between age and importance placed on income (age linear $\beta = .01$; age curvilinear $\beta = -.10$). Women's preferences for steady income started off lowest at age 18 and steadily increased up to age 40, then slowly declined. Preferences for a partner who makes a lot of money did not vary by age for men or women.

Hypothesis 1c. Men and women with higher incomes will be more selective

Consistent with the hypothesis, in the overall sample, people with higher incomes had somewhat stronger preferences for partners who are good looking (Table 3), and this was true for both men and women (Table 4). Also consistent with the predictions, in the overall sample people with higher incomes also had stronger preferences for a partner with a slender body (Table 3), but this was true only for men (Table 4). There were interactions between gender and income when predicting preferences for a partner with a steady income and who makes a lot of money (Table 3). Wealthier men had weaker preferences for a partner with a steady income, whereas wealthier women had a stronger preference for a partner with a steady income (Table 4). Wealthier women, but not men, had stronger preferences for a partner who makes a lot of money (Table 4).

Hypothesis 1d. Men and women with higher appearance satisfaction will be more selective

Consistent with the hypothesis, participants who were more satisfied with their appearance reported stronger preferences for partners who are good looking ($\beta = .11$) and slender ($\beta = .11$; Table 3), and this was true for both men and women (Table 4). In contrast to the

Table 4
Linear regressions examining predictors of preferences for appearance and resources for each sex.

	Study 1: national news website sample							
	Good looking		Slender body		Steady income		Makes or will make a lot of money	
	M	W	M	W	M	W	M	W
	β	<i>B</i>	β	β	β	β	β	β
Age	-.22***	-.24***	-.10***	.00	-.10***	.01	-.03	-.03*
Income	.10***	.07***	.09***	.01	-.10***	.09***	-.01	.07***
Appearance Satisfaction	.10***	.11***	.11***	.16***	.01	-.01	-.01	.02*
Education	.12***	.02*	.09***	.03	.03*	.01	.00	-.03*
F	68***	32***	32***	23***	19***	8.5***	1.9*	3.9***
Adjusted R ²	.08	.06	.03	.03	.02	.01	.00	.00
Adjusted R ² w/o interactions	.06	.06	.03	.03	.01	.01	.00	.00

	Study 2: nationally representative sample					
	Is physically attractive to me		Makes at least as much money as I do		Has a successful career	
	M	W	M	W	M	W
	β	<i>B</i>	β	β	β	β
Age	-.08***	-.12***	-.08***	.07***	-.21***	-.16***
Income	.08**	.02	.03	.07**	.09**	.08***
Appearance Satisfaction	.05*	.04	.10***	.04	.14***	.05*
Education	.02	-.02	.01	.01	.09***	.05*
F	2.9***	4.0***	3.6***	3.0***	14***	6.5***
Adjusted R ² (with interactions)	.01	.02	.02	.01	.08	.03
Adjusted R ² w/o interactions	.01	.02	.02	.01	.08	.03

Positive β s indicated that people who scored higher on the predictor variable placed greater importance on the trait in a long-term partner (e.g., men with higher incomes reported stronger preferences for a good looking partner, $\beta = .10$). The degrees of freedom for the analyses with all interaction terms were: Study 1 men (15, 11,174), Study 2 men (15, 2249), Study 1 women (15, 11,560), and Study 2 women (15, 2497). Values are provided for the analyses that included the interaction terms. The interaction terms are not shown to conserve space and because only two were significant at the $p < .001$ level: between age and income ($\beta = -.05$) and between income and education ($\beta = -.07$) for women's ratings of importance of steady income in Study 1.

*** $p < .001$.

** $p < .01$.

* $p < .05$.

hypotheses, people who were more satisfied did not express stronger preferences for a partner with steady income or for a partner who makes or will make a lot of money (Tables 3 and 4).

Hypothesis 1e. Men and women with higher education will be more selective

Consistent with the hypothesis, people with more education had somewhat stronger preferences for partners who are good looking and slender (Table 3), but this was true only for men (Table 4). In contrast to the hypotheses, education level was not related to preferences for steady income or making a lot of money (Table 3) for men or women (Table 4).

Hypothesis 2. Preferences for income and attractiveness: interactions between age, own income, appearance satisfaction, and education

Although some interactions were technically significant, all were small in terms of effect size. Only two of the interaction terms were significant at the $p < .001$ level (see Table 4 note). These findings suggest that although each of these characteristics is related to mate preferences, they do not interact.

4. Study 2: mate preferences in a demographically representative survey of U.S. singles: Singles in America sample

One key limitation of the first study was that participants were visitors to a news website. Study 2 addresses this issue by drawing from a large, nationally representative sample of U.S. singles. Study 2 assessed preference for resources using two new items. In contrast to Study 1, this study also examined the importance people place on their partner

being physically attractive to them, specifically, as opposed to being generally good looking. It is possible that this variable captures an individual's desire to experience attraction or "chemistry" with his or her partner or to be well-matched with his or her partner in terms of physical attractiveness. Therefore, although it is plausible that the same patterns will emerge for this variable as emerged for preferences for good looks in Study 1, we do not advance any strong predictions here.

4.1. Methods

4.1.1. Participants

A total of 4790 single heterosexual participants ages 21–75 years completed the survey (the highest age category was "75+"). This sample included 2267 men and 2523 women. On average, men were 45 years old ($SD = 15$), and women were 47 years old ($SD = 15$). The reported ethnicities were 76% White, 13% Black, 5% Hispanic/Latino(a), 3% Asian, and 3% other. Inclusion criteria included being at least 21 years of age, English language proficiency, and identifying as currently single (including those currently separated, divorced, or widowed); those individuals identifying as married, in a domestic partnership, living with a partner, engaged, or who did not report their relationship status were not invited to participate.

4.1.2. Survey recruitment

Data were collected in 2011 as part of an ongoing annual study known as Singles in America (SIA). Participants were recruited by MarketTools® (San Francisco, CA, USA), using independent Internet research panels for a population-based cross-sectional survey. Nationally representative research panels were compiled based on demographic distributions reflected in the most recent Current Population Survey,

conducted by the United States Bureau of the Census. All data were collected over the Internet (see www.marketttools.com). Individuals on research panels within the sample frame received a recruitment message from MarketTools® that provided a brief description of the survey and invited them to participate in a questionnaire research study for financial remuneration. Datasets from Singles in America have been used to examine various aspects of sexuality, romantic attitudes and behaviors, and close relationships (e.g., Garcia & Fisher, 2015; Garcia, Lloyd, Wallen, & Fisher, 2014; Gray, Garcia, Crosier, & Fisher, 2015; Mark, Garcia, & Fisher, 2015).

4.1.3. Outcome variable

Participants read the following prompt: “People consider different attitudes and personal characteristics important when considering a person for a potential relationship. Using the scale below, please tell us how important each of the following characteristics is to you. Select one response for each.” They were then presented with the following characteristics relevant to the present study: *Makes at least as much money as I do*; *Has a successful career*; and *Is physically attractive to me*. Participants rated each trait on a 4-point Likert scale: [1 = Not at all important; 2 = Not very important; 3 = Very important; 4 = Must have].

4.1.4. Predictor variables

4.1.4.1. Income. Participants were asked, “What is your total yearly household income before taxes?” Response categories (6) ranged from “Under \$25,000” to “\$150,000 or more.” Responses were coded so that the midpoint of each category was taken, and the highest category was coded as \$150,000.

4.1.4.2. Satisfaction with appearance. Participants were asked “How happy have you been in the following areas of your life in the last 12 months?” Of relevance to this study are participants’ responses to: *Your appearance*. Participants responded on a 4-point Likert scale [1 = Very unhappy; 2 = Somewhat unhappy; 3 = Somewhat happy; 4 = Very happy]. Responses on this measure were highly correlated with scores on the Cash (2000) Appearance Evaluation measure for men and women ($r = .59$, $r = .65$; Sandhu & Frederick, 2015).

4.1.4.3. Education. The sample was diverse in terms of educational status, including participants with some high school education or less (2%), high school degree (19%), some college or associates degree (43%), college degree (24%), and post-graduate degree (12%).

5. Results

Hypothesis 1. Preferences for income and attractiveness by gender, age, own income, and appearance satisfaction

Hypothesis 1a. Men will be more selective in terms of appearance, women will be more selective in terms of resources

The data analysis strategy was identical to that of Study 1. In contrast with Study 1 revealing a gender difference in preferences for a generally good looking partner, Study 2 did not reveal a gender difference in preferences for a partner who was “physically attractive to me” ($d = .03$; $\beta = .03$). However, consistent with the hypotheses and with Study 1’s findings, linear regressions showed that women, more than men, prefer potential partners who make at least as much money as they do ($d = .60$; $\beta = .30$) and have a successful career ($d = .57$; $\beta = .30$; Table 3).

Gender differences can be seen in the raw percentages (Fig. 2). Overall, there were no gender differences in the percentages of men and women who considered it a “must have” for a partner to be attractive to them (40% vs. 42%; $\phi = .01$, $p = .41$), but a greater percentage of

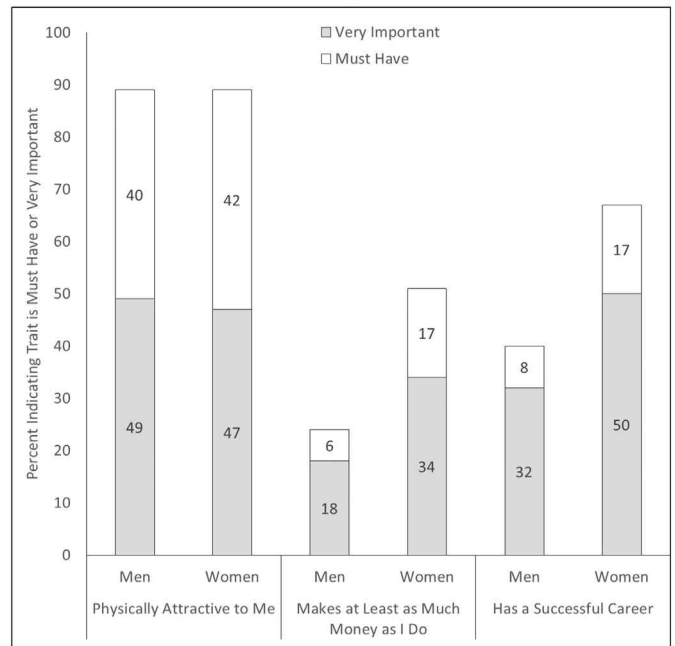


Fig. 2. Importance of appearance and resources to men and women, Study 2.

women than men considered it a “must have” for their partner to make at least as much money as they do (17% vs. 6%; $\phi = .16$, $p < .001$) and to have a successful career (17% vs. 8%; $\phi = .13$, $p < .001$).

Hypothesis 1b. Older men and younger women will be more selective

In contrast with the hypothesis, in the overall sample, older people had weaker preferences for a partner they find physically attractive ($\beta = -.08$), who makes as much money as they do ($\beta = -.08$), and who has a successful career ($\beta = -.22$; Table 3) and these patterns held for both men and women (Table 4). Although these findings are consistent with what would be expected according to mating market perspectives for women, this pattern was unexpected for men.

Hypothesis 1c. Men and women with higher incomes will be more selective

Consistent with the hypothesis, wealthier participants tended to have stronger preferences for a partner with a successful career, but the associations for the other preferences were not significant at the $p < .001$ level (see Table 3). For both men and women, the effects were all in the direction of wealthier people being more selective, but this link was only statistically significant at the $p < .001$ level for women’s preferences for a partner with a successful career (Table 4).

Hypothesis 1d. Men and women with higher appearance satisfaction will be more selective

Participants who reported greater satisfaction with their appearance did not have stronger preferences for a partner who is physically attractive to them, suggesting that this measure may capture something different from Study 1’s measure of preferences for physical attractiveness (see above). In the overall sample, consistent with the hypothesis, people who were more satisfied with their appearance had stronger preferences for someone who has makes as much money as they do and who has a successful career (Table 3), but these associations were only significant for men (Table 4).

Hypothesis 1e. Men and women with higher education will be more selective

In contrast to the hypotheses, more educated participants did not report stronger preferences for someone physically attractive to them or

who makes as much money as they do. They did, however, place greater importance on a partner with a successful career (Table 3), but this was true only for men (Table 4).

Hypothesis 2. Preferences for income and attractiveness: interactions between age, own income, appearance satisfaction, and education

No interactions were significant at the $p < .001$ level.

6. General discussion

The current research presented findings from two large U.S. studies on the relationships between one's own traits and preferences for traits in a potential romantic partner. The findings support and extend existing research, demonstrating that individuals show partner preferences that vary by gender and one's own bargaining hand on the "mating market."

Overall, the gender differences were the strongest effects identified across most of the analyses, highlighting the importance of considering gender differences in mate preferences. Consistent with past research (e.g., Buss, 1989; Townsend, 1989), women were more likely than men to value indicators of resources or financial stability in a partner. A partner with a steady income was a necessity for most women. Also consistent with past research, men were overall more likely than women to value physical appearance in a partner, and this was more likely to be a necessity for men than for women (Study 1).

This gender difference in valuation of appearance, however, was not found when asking about the importance of a partner who is specifically physically attractive to the participant. This finding indicates that it is important to distinguish between preferences for overall good looks versus feelings of physical attraction to one's partner. There are several possible interpretations for this pattern. The "attractive to me" item might partially assess feeling "chemistry" with a specific partner rather than thinking that someone has physically attractive traits. People develop idiosyncratic preferences that cause them to funnel their mating efforts towards more attainable targets who are more likely to reciprocate their interest and are less likely to be mate-poached away by rivals. Another possibility is that both men and women equally desire a partner who meets their minimum requirements for physical attractiveness ("attractive to me"), but men then also more strongly desire a partner who is "good-looking" or particularly sexually desirable.

In both studies, older men and women had weaker preferences for desirable partner traits. Although this pattern is consistent with a mating market approach for women, we did not predict this pattern for men. This finding may reflect that, overall, older men and women feel the need to make a trade-off in traits they value because of overall declining health and physical attractiveness associated with ageing, with these samples including participants up to 65 (Study 1) or 75 (Study 2) years old. Alternatively, as people age, life history tradeoffs also change in ways that affect romantic and sexual relationships (Gray & Garcia, 2012): attractiveness can become less important than traits promoting a close cooperative pair-bonded relationship as people shift their efforts away from direct reproduction and towards parenting, grandparenting, and building social status.

Having a partner with a successful career was less important among older adults. This might be due in part to the fact that, as people age, they accumulate financial and other material resources. Also, in the current samples the older participants had passed retirement age in the United States, and the ability to store wealth and receive stable income via Social Security after retirement is a novel social structure that could reduce the importance men and women place on resources in a partner as they age.

Consistent with the proposed hypotheses, wealthier and more educated men had stronger preferences for partners who are good looking and slender. The same was not true for women. It was not simply the case that wealthier men had stronger preferences for all traits. In fact,

wealthier men placed less importance on a partner with a steady income. This finding may indicate that men are motivated, consciously or unconsciously, to translate their greater socioeconomic status and stronger bargaining hand into securing a partner with higher fertility and/or who may bring them greater social prestige (Winegard et al., 2013). In contrast, wealthier women placed greater importance on attaining a partner with resources, which is in line with past research with college students and small community samples (e.g., Wiederman & Allgeier, 1992). These partners not only bring direct benefits in terms of resources, but can also enhance the woman's social prestige.

In the current study, men were more likely than women to place a premium on a partner being slender, with 80% of men finding this desirable/essential compared to only 58% of women. These findings fit with the general importance placed on thinness among men and women in industrialized contexts (Swami et al., 2010). Consistent with the hypotheses, both men and women who were more satisfied with their appearance placed greater importance on good looking and slender partners. One interpretation is that people more confident in their own appearance perceive they have a strong bargaining hand and in turn make greater demands for partners with desirable physical attributes.

6.1. Limitations and strengths

The mating systems and preferences of people, and of non-human animals more generally, are sensitive to local ecological and social contexts. For example, among the Shuar of Ecuador where women provide substantial caloric resources for the family, men and women do not differ in the importance they place on a partner who can provide resources (Pillsworth, 2008). The current studies provide a unique look at mate preferences in U.S. national samples, which represent a particular industrialized setting. In addition to examining how one's own traits relate to mate preferences, however, it will be important to examine how different social-ecological contexts shape these preferences and how they change the relative importance individuals place on different traits. For example, some researchers have proposed that physical appearance will be desired more in geographic locations in which parasites are prevalent, because physical appearance can be a cue to health (Gangestad, Haselton, & Buss, 2006). In these environments, relatively more attractive people might have a particularly strong bargaining hand.

Although Study 1 was unusually large and geographically diverse, it was not nationally representative. Participants were visitors to a news website who self-selected into this sample. Although self-selection into surveys is common to studies conducted with college and community samples, the generalizability to any specific population remains unknown. Despite the limitations of a volunteer sample, there were a number of advantages to our study. Internet samples tend to be more diverse than convenience samples of students with respect to gender, age, socioeconomic status, and geographic region (Gosling, Vazire, Srivastava, & John, 2004). Furthermore, surveys can be completed with ease from the privacy of respondents' homes or workplaces, thereby reaching individuals who would not otherwise have the opportunity to participate. Nonetheless, the possible limitations of Study 1 were partially offset by Study 2, which drew on a nationally representative sample of U.S. singles. That Study 2 only included singles, as opposed to those in established romantic relationships and marriages at time of survey, is a strength in that singles are likely to be more focused on what they desire in a mate than individuals who are already partnered.

Both Study 1 and Study 2 relied on people's self-reported preferences for what they would like in a long-term mate. However, the extent to which mate preferences actually predict real-life partnering decisions and satisfaction with these decisions remains an open question (Campbell & Stanton, 2014; Eastwick & Finkel, 2008). It is important to assess what people think they want, however, because this might be what people have in mind when they are out in the

world actively seeking a partner. Future research should also assess preferences for partners who are toned or muscular because these aspects of appearance in a partner are likely valued especially by women (e.g., Frederick & Haselton, 2007). One major strength of our measures is that, in contrast to most research examining the extent to which certain traits are desirable, our measures assessed the extent to which these traits were essential (necessities) versus simply desirable (luxuries). And, as predicted, individuals who themselves possessed more desirable characteristics were more likely to label desirable partner traits as necessities.

6.2. Conclusions and implications

The findings of these studies reinforce the general conclusion that, on average, men and women have preferences for attractiveness and material resources (income) in a partner, but there is systematic variation across people, and within individuals over time, in the strength of these preferences. Gender differences were typically the largest effects identified, even when other predictors were included in the models. These findings also highlight that the extent to which these differences emerge can depend on how preference items are operationalized (e.g., good-looking in general versus physically attractive specifically to the participant). The different patterns found for “attractive to me” versus “good-looking” merit further examination in future research to understand what these concepts mean to men and women.

The findings also highlight the importance of examining the factors that predict individual variation in preferences within each gender. Consistent with the evolutionary mating market perspectives, youth, higher income, and more education were frequently linked to greater demand for desirable qualities in mates. This implies that individuals with stronger bargaining hands within the mating market can afford to and do make greater demands when evaluating potential romantic partners.

Although the current studies document substantial differences between men and women in some preferences, particularly the importance of resources, there was also a considerable overlap in men's and women's preferences. The pair-bonding context of human mating in which both men and women contribute resources and effort into romantic relationships once formed is likely one factor that limits the size of gender differences in long-term partner preferences (Fisher, 1992; Gray & Garcia, 2013; Hrdy, 2009).

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