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Norman P. LI
Singapore Management University, normanli@smu.edu.sg

J. Michael BAILEY
Northwestern University

Douglas T. KENRICK
Arizona State University

Joan A. W. Linsenmeier
Northwestern University

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The Necessities and Luxuries of Mate Preferences: Testing the Tradeoffs

Norman P. Li
Arizona State University

J. Michael Bailey
Northwestern University

Douglas T. Kenrick
Arizona State University

Joan A. W. Linsenmeier
Northwestern University

Social exchange and evolutionary models of mate selection incorporate economic assumptions but have not considered a key distinction between necessities and luxuries. This distinction can clarify an apparent paradox: Status and attractiveness, though emphasized by many researchers, are not typically rated highly by research participants. Three studies supported the hypothesis that women and men first ensure sufficient levels of necessities in potential mates before considering many other characteristics rated as more important in prior surveys. In Studies 1 and 2, participants designed ideal long-term mates, purchasing various characteristics with 3 different budgets. Study 3 used a mate-screening paradigm and showed that people inquire 1st about hypothesized necessities. Physical attractiveness was a necessity to men, status and resources were necessities to women, and kindness and intelligence were necessities to both.

Relationship researchers adopting social exchange and evolutionary perspectives have used economic principles (e.g., Hatfield, Utne, & Traupmann, 1979; Kenrick, Groth, Trost, & Sadalla, 1993). However, a key distinction from economics has been omitted—necessities versus luxuries (e.g., Varian, 1984). Though people with high incomes may dedicate a large proportion of their income to luxury items, people with limited budgets tend to first purchase sufficient quantities of essential items before buying luxuries. Given no constraints on his or her "mating budget," a participant in a typical mate preference study is often put in the position of someone answering a question about how to spend imaginary lottery winnings. We suggest that previous research has, by placing no constraints on participants' mating preferences, led to some ambiguities in the field's understanding of the differential priorities of men and women.

A Paradox: Do the Sexes Differ in Characteristics That Do Not Really Matter?

The distinction between necessities and luxuries may help clarify an apparent paradox in the mate selection literature. Researchers have repeatedly found that men prefer physical attractiveness more than women do and women prefer status and resources more than men do (e.g., Buss, 1989; Hill, 1945; McGinnis, 1958; Sprecher, Sullivan, & Hatfield, 1994). This difference has been explained from at least two theoretical perspectives. First, according to a sociocultural perspective, women in most societies have relatively less access to status, power, and resources, so they seek men with these traits to gain upward mobility. In contrast, men have better access to resources and, thus, are in a better position to place premiums on the quality (i.e., attractiveness) of the exchange object itself (e.g., Howard, Blumstein, & Schwartz, 1987).

Second, according to some evolutionary theorists, evolved mental mechanisms (Tooby & Cosmides, 1990) direct preference toward traits linked with production and survival of offspring (Symons, 1979). Mechanisms differ between the sexes because a man's reproductive value may be associated more closely with his ability to provide economic resources to support his offspring, whereas a woman's reproductive value may be related more to health and fertility (Buss, 1989; Symons, 1979). Because the latter can be assessed by visual cues of physical attractiveness and age, men may have evolved to value these fitness cues. On the other hand, resource acquisition is gauged by characteristics such as a man's status (Symons, 1979), earning capacity, ambition, and industriousness (Buss, 1989), so women may have evolved to scrutinize these cues in men.

Despite the empirical sex differences and theoretical claims from both camps, a careful examination of the literature reveals that physical attractiveness and status are commonly rated as relatively neutral in importance and sometimes ranked at the bottom of lists. For instance, Powers (1971) compiled the results of six mate preference studies from 1939 to 1967, looking at 14 traits. "Good financial prospect" received a mean rank of 9.5 from women, versus 13.1 from men, and "favorable social status" received a mean of 11.5 from women, versus 12.8 from men. "Good looks" received a mean rank of 12.0 from men, versus 13.3 from

Norman P. Li and Douglas T. Kenrick, Department of Psychology, Arizona State University; J. Michael Bailey and Joan A. W. Linsenmeier, Department of Psychology, Northwestern University.

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Correspondence concerning this article should be addressed to Norman P. Li, Department of Psychology, Arizona State University, P.O. Box 871104, Tempe, Arizona 85287-1104. E-mail: normli@asu.edu

women. More recently, when participants from 37 cultures rated the importance of various characteristics in potential marriage partners, significant sex differences were found for good looks, good financial prospect, and ambition–industriousness, yet neither sex considered them especially important (Buss, 1989).

Past Research Designs and Some Shortcomings

So are these sex-typed preferences important or not? The answer may have been obscured by methods used in prior studies: Rating traits one at a time, unconstrained, may not reveal trade-offs normally made when people select mates, whose traits come in bundles. For example, creativity should surely make someone more desirable. Yet creativity might be irrelevant if a person is below threshold on attractiveness. Thus, the importance of creativity may depend on levels of other traits, just as the simple effect of one variable on a function may depend on the levels of other variables that compose the function. Participants considering characteristics in isolation might simply assume acceptable levels on other desirable traits, such as social status and attractiveness. If this is so, the importance of traits such as creativity may be distorted by previous methods.

In actual mating markets, people's field of eligibles may consist of those who already meet minimal levels on variables such as social status. The implicit presumption of sufficiency may lead unconstrained judges to gloss over necessities and emphasize traits that may otherwise be luxuries. A college woman, for example, may normally interact with men with similar socioeconomic status and career opportunities. When evaluating potential mates, she may not routinely think about social status and earning prospects because most men she encounters are within the range she considers sufficient. Instead, she may pay more attention to factors with greater perceived variation among the men with whom she interacts. Yet if she were comparing men whose economic conditions ranged much lower, the importance of status might quickly rise to the surface (Townsend, 1993). Similarly, a college man typically encounters 18–22-year-old, generally healthy women.

This problem also applies to surveys in which traits are *ranked* (e.g., Buss & Barnes, 1986, Study 2). For instance, if asked to rank the importance of food, water, and oxygen, one might choose that exact order in terms of the amount of daily thought processes devoted to obtaining such items (people rarely think about obtaining oxygen because it is abundant). However, the reverse order is true in terms of essentiality to life (i.e., the amount of time one could survive if completely deprived of each item).

To date, a few studies have tapped into trade-offs among mate characteristics. Regan (1998) asked participants for acceptable percentile ranges on several characteristics (one at a time). Cunningham, Druen, and Barbee (1997) offered choices of three different mates and found that windfall wealth was not as important as physical attractiveness or a desirable personality for both dating and marriage. Though this study provided an initial test of trade-offs, it offered only two states on each of three variables, and wealth obtained through luck does not signify status or resourcefulness. Trade-offs are also apparent in studies using singles ads (e.g., Baize & Schroeder, 1995; Harrison & Saeed, 1977; Wiederman, 1993). People taking out singles ads are limited in space and must pay for specifications. Under these constraints, women are more likely to specify economic requirements, whereas men are more likely to ask for physical characteristics. Although singles ads are consistent with our predictions below, the current research adds value because it explains these findings in a theoretical framework. Also, the current studies allowed participants to make precise choices among various characteristics presented simultaneously. Accordingly, we are able to directly analyze the inherent trade-offs between various mate characteristics.

The Current Research

Overview

To provide insight into the paradox of physical attractiveness and social status, we created two new methodologies to examine mate preferences when preexisting assumptions about the levels of characteristics are removed and choices are constrained across characteristics. Our methods allow us to ask three questions about the selection of long-term mates: (a) Which characteristics are most essential when choices are highly constrained? (b) Do priorities change as constraints are relaxed? and (c) When one is considering a mate's acceptability, which characteristics matter at all?

The current research should be important to anyone interested in general issues of mate selection. By directly examining trade-offs and identifying necessities and luxuries, we hope to clarify the paradox on attractiveness and status and better understand the judgmental processes, acquired through natural selection or societal pressures, that guide mate selection. For example, given the emphasis that evolutionary and sociocultural theorists have placed on status for women and attractiveness for men, one might expect that women (men) are predisposed to obtain as much status (physical attractiveness) in a mate as possible, even at the expense of other traits. Yet other traits clearly are important for relationship maintenance and child rearing. As outlined below, we believe people prioritize attractiveness and status, but only until sufficient levels have been reached. Beyond that, the search for other characteristics should be more important.

Desires for Necessities Receive High Priority but Are Satiable

A necessity is an essential consumption item that tends to be favored when budgets are low and choices are highly constrained. However, once sufficient quantities have been purchased, a necessity faces diminishing marginal utility and receives a decreasing proportion of the budget as budget constraints are lifted. In contrast, a luxury is an item that tends be an insignificant part of low budgets but receives an increasing proportion of the budget as income increases. Both types of items are arguably important, but necessities are more essential. We hypothesize that for long-term mates, women consider characteristics related to social status and resources as necessities, and men consider physical attractiveness a necessity.

Many female characteristics can influence reproduction and child rearing (e.g., sociability, creativity). However, most traits have no reproductive utility if a woman is not fertile. From an evolutionary view, when choices are constrained, obtaining verification of fertility should be a high priority underlying male mate choice. To the extent that a woman's fertility is related to her

observable physical features (Symons, 1979), men may strongly desire at least a moderate level of physical attractiveness, in order to have a reasonable probability of fertility. Though more is always better, further attractiveness provides increasingly fewer benefits in terms of fertility probability. That is, the reproductive gain in going from an infertile mate (hence, zero offspring) to one who is probably fertile is immense, but the gain in going to a more probably fertile mate is much smaller. If the probable fertility gains decrease with greater attractiveness, then the value of attractiveness relative to other traits also decreases, and other traits should be weighted more heavily as the budget increases and choices expand. For example, expending effort to obtain an extremely attractive woman with little else to offer is less reproductively profitable than is finding one who is sufficiently attractive and also has other positive traits, such as access to resources. Yet it makes less sense for a man to find a resourceful mate first, because a wealthy and infertile mate is less reproductively viable than a fertile but poor mate is.

Similarly, variation in men's status and resources seems to be universal across human societies and groups, modern and primitive (e.g., Betzig, 1986; Hogan, 1979). To the extent that such variation affected survival rates of offspring in humanity's evolutionary past (see Buss, 1994), it makes sense that women may require some level of status or resources before being concerned about other mate characteristics. A man with sufficient status to generate a modest but steady flow of resources is much better than one who is destitute, but a very high-status man offers less of an improvement. Thus, it makes sense for women to first verify or obtain sufficiency in status and resources and then to seek positive levels of other characteristics.

The same predictions might be made from a sociocultural perspective. For instance, it may be argued that if women have less access to resources, then ensuring sufficiency of status and resources in a mate should take precedence over the search for a physically attractive mate, though both dimensions are clearly desirable. An attractive and financially destitute man does not make for a successful family, especially if it is more difficult for the woman to work if children are born, but an unattractive man with a reasonably promising career at least makes the prospect of having a family more feasible. Because men are not bound by the same restrictions, they are more able to focus their initial search on physical attractiveness.

Study 1

A three-factor, mixed model design was used. The between-subjects variable was participant sex (male or female). The within-subject variables were budget (low, medium, or high) and characteristic (physical attractiveness, creativity, friendliness/sociability, intelligence, work ethic, interesting personality, romance, sense of humor, special nonwork-related talents, yearly income). The characteristics were the 10 most frequently mentioned in a survey of 42 adults in which we asked, "What is important in a long-term mate?" Participants designed ideal marriage partners by allocating low, medium, and high budgets of points across characteristics.

Method

Participants

Participants (78) were solicited at O'Hare International Airport. Five questionnaires were returned in less time than the a priori cutoff (two standard deviations below the mean time that 10 college-educated adults took to fill out the forms in pretesting), and 2 were returned incomplete. The remaining 71 included 37 women, aged 23 to 55 (M = 36.8), and 34 men, aged 21 to 59 (M = 36.7). They were 83.7% Caucasian, 4.2% Asian, 4.2% Hispanic, 1.4% Middle Eastern, 1.4% Native American, and 1.4% other. The majority (52.1%) were currently married. The median income category was $30,000 to $45,000, and median education was a 4-year college degree.

Materials and Procedure

People waiting for flights were asked to participate in a mate selection study. Materials consisted of one page of instructions, three mate design pages, and one page for demographics. At the top of each mate design page, participants were asked to design their ideal marriage partner. Participants selected a percentile level for each characteristic. The zero percentile along with 10 deciles (i.e., 10th percentile through 100th percentile) were offered as choices. Each decile level corresponded clearly to a numerical level from 0 to 10, which was also the cost of obtaining the decile level in "mate dollars." Therefore, 80th percentile = Level 8 = 8 mate dollars. Instructions stated that the relevant population for comparison was all members of the sex that a person preferred to mate with. Each page specified a different budget constraint—20 (low), 40 (medium), or 60 (high) mate dollars. In all three studies, we balanced the presentation order of characteristics, and, in Studies 1 and 2, the order of budgets.

Results

In the first analysis, the dependent variables were percentages spent on each characteristic. Yearly income and work ethic were combined and labeled *resource acquisition*. We performed planned contrasts on the mixed model analysis of variance (ANOVA) to test our predictions.

Shopping for Necessities With a Low Budget

Mean expenditures are shown in Table 1. Women spent the highest proportion of their low budget on intelligence (M = 20.59, SD = 11.20) and yearly income (M = 14.19, SD = 5.56). The planned contrast of women's low budget spending on resource acquisition versus the other eight characteristics was significant, $F(1, 69) = 26.26$, $p < .001$. Men spent the highest proportion of their low budgets on physical attractiveness (M = 21.42, SD = 10.75) and intelligence (M = 15.94, SD = 11.00), and the planned contrast of men's low budget spending on physical attractiveness versus the other nine characteristics was significant, $F(1, 69) = 78.11$, $p < .001$.

Spending Across Budgets—Low Income Versus High Income Consumption

Sex differences. A significant three-way interaction of Budget × Characteristic × Sex, $F(18, 2502) = 3.58$, $p < .001$, indicated that the sexes had different spending patterns and that this phenomenon differed across the three budget levels. At the

Table 1
Low and High Income Consumption in Studies 1 and 2—Mean Percentage Allocated to Each Characteristic

	Low budget (first set of 20 mate dollars)		High incremental budget (third set of 20 mate dollars)		Change in % spent from the first 20 mate dollars to the third 20 mate dollars	
Characteristic	Women	Men	Women	Men	Women	Men
Study 1						
Physical attractiveness	10.0_{bcd}	21.4_{a}	9.1_{ab}	7.2_{a}	−0.9	−14.2***
Creativity	2.8_{de}	5.7_{cde}	10.7_{ab}	14.1_{a}	8.0**	8.4**
Friendliness	7.1_{cd}	10.8_{bc}	13.2_{a}	10.7_{a}	6.2**	−0.1
Work ethic	11.5_{bc}	8.5_{bcde}	7.1_{b}	8.6_{a}	−4.37*	0.1
Intelligence	20.6_{a}	15.9_{ab}	5.9_{b}	7.1_{a}	−14.7***	−8.9***
Interesting personality	10.6_{bc}	8.2_{bcd}	15.2_{a}	12.9_{a}	4.6	4.7
Romance	6.9_{cde}	11.3_{bc}	13.0_{ab}	10.4_{a}	6.1*	−0.8
Sense of humor	12.1_{bc}	13.0_{b}	10.9_{ab}	10.9_{a}	−1.2	−2.2
Special nonwork talents	1.6_{e}	2.5_{e}	7.5_{ab}	10.2_{a}	5.9**	7.7***
Yearly income	16.9_{ab}	2.7_{de}	7.4_{ab}	7.8_{a}	−9.6***	5.1*
Study 2						
Physical attractiveness	20.6_{b}	31.3_{a}	18.9_{a}	24.3_{a}	−1.7	−7.0**
Social level	27.2_{a}	18.3_{b}	22.3_{a}	19.8_{ab}	−4.8*	1.4
Creativity	8.4_{c}	9.9_{c}	17.0_{a}	19.3_{ab}	8.6***	9.4***
Kindness	26.5_{a}	26.8_{a}	23.4_{a}	21.9_{ab}	−3.2	−4.8*
Liveliness	17.3_{b}	13.7_{bc}	18.3_{a}	14.7_{b}	1.1	1.0

Note. Subscripts denote comparisons within a column. Means with different subscripts are significantly different from one another ($p < .05$, Bonferroni adjusted).
* $p < .05$. ** $p < .01$. *** $p < .001$.

low budget level, we tested the simple effect of sex for each characteristic using a Bonferroni-corrected alpha ($\alpha = .05/10 = .005$). Women spent significantly more than men did on yearly income, $F(1, 139) = 28.24$, $p < .001$, and men spent significantly more than women did on physical attractiveness, $F(1, 139) = 18.63$, $p < .001$. No other sex differences reached significance. As shown in Figure 1a, the sex differences on physical attractiveness and resources decreased as the budget increased. Simple interactions of Budget × Sex revealed that this finding was significant for physical attractiveness, $F(2, 278) = 12.06$, $p < .001$, and for yearly income, $F(2, 278) = 9.77$, $p < .001$. Thus, women's and men's differential preferences primarily stemmed from women's emphasis on resources and men's emphasis on physical attractiveness, especially when budgets were most constrained.

Necessities versus luxuries. As additional income becomes available, people spend an increasingly smaller percentage of the extra income on necessities. In contrast, people spend an increasingly greater percentage of extra income on luxuries. To investigate which characteristics fit these two classifications, we compared (a) how participants allocated their first 20 mate dollars with (b) how they allocated their last 20 mate dollars. For Item a, we took the percentage allocated to each characteristic in the low budget (e.g., 6 mate dollars/20 mate dollar budget = 30%). To get Item b for each characteristic, we subtracted the amount purchased in the medium budget from that of the high budget (and then divided by 20). In principle, this is similar to asking participants how they would allocate an additional 20 mate dollars after they have already spent 40.

Table 1 shows the low budget (first 20 mate dollars) and high incremental budget (last 20 mate dollars) allocations (in percentages) made across the 10 characteristics. Comparing columns, we find that the most highly valued characteristics at the low budget level dropped in relative importance at the high incremental budget level. Table 1 also shows changes in allocations as budgets increased from low to high. Using ANOVA, we performed simple tests of the effect of budget on each of the 10 characteristics for each sex. Those with a significant negative (positive) change can be considered necessities (luxuries). Taking this approach and using a conservative Bonferroni-corrected alpha ($\alpha = .05/20 = .0025$), we find that the following characteristics would be classified as necessities: by women, intelligence, $F(1, 69) = 37.95$, $p < .001$, and yearly income, $F(1, 69) = 13.98$, $p < .001$; by men, physical attractiveness, $F(1, 69) = 42.91$, $p < .001$, and intelligence, $F(1, 69) = 15.05$, $p < .001$. Luxuries would be classified as follows: by women, creativity, $F(1, 69) = 10.17$, $p = .002$; by men, creativity, $F(1, 69) = 12.49$, $p = .001$, and special nonwork talents, $F(1, 69) = 18.41$, $p < .001$.

Discussion

As hypothesized, women spent relatively more on resource acquisition, and men spent more on physical attractiveness, when choices were most constrained. When budgets expanded and choices were less constrained, there was less spending on these characteristics and more on others, such as creativity. Women and men differed most when their choices were most constrained and, conversely, were more similar in their choices when constraints

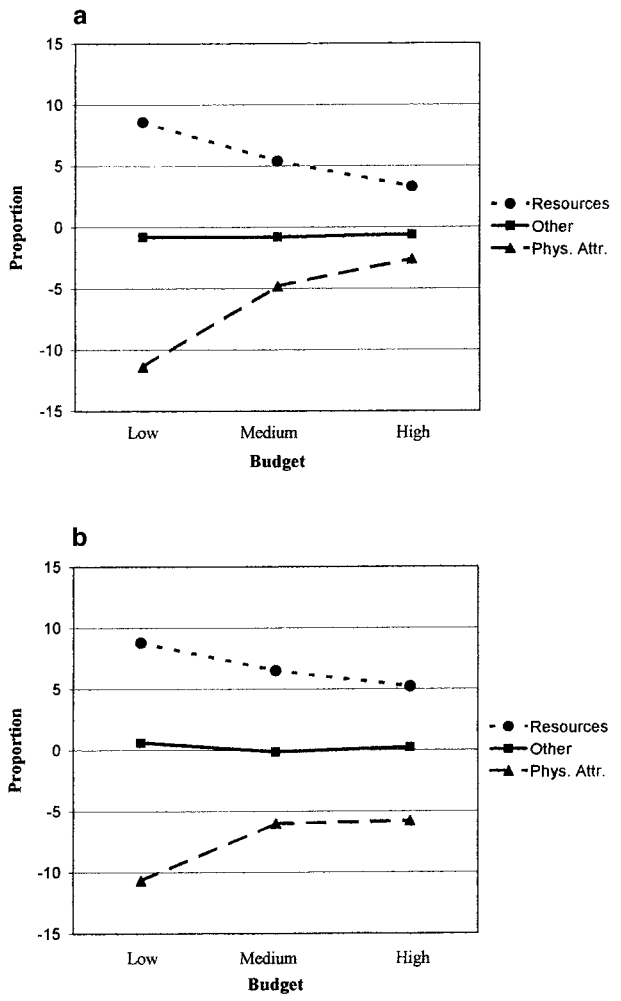

Figure 1. Sex differences in proportion spent on physical attractiveness, status/resources, and other characteristics as a function of budget in Study 1 (Panel a) and Study 2 (Panel b). Positive numbers denote greater female spending.

were relaxed. Though not predicted, intelligence also proved to be a necessity (see General Discussion).

A limitation of Study 1 is that there may be a ceiling effect on the amount that can be spent on any characteristic. If the ceiling for a characteristic is reached at the low budget, it is not possible to purchase more with a larger budget. Though this did not occur often (0.3% of expenditures hit the ceiling at the low budget, 0.8% at the medium, and 5.6% at the high), it is possible that ceiling effects could have contributed, at least for some minority of participants, to some of the shifts in spending as budgets increased. Also, the airport presented a manageable venue for soliciting participation from adults who are more familiar with income concepts that have been tested in previous mate preference studies on less experienced college students. However, it is possible that our sample was atypical in other ways that may have affected our results. We conducted a second budget allocation study, in which we eliminated ceiling effect possibilities and looked at the generalizability of our findings to a different sample.

Study 2

Method

In Study 2, the budget allocation method was used on a college sample, with a few modifications. First, we simplified the task by using 5 characteristics instead of 10 and by running the study on a user-friendly computer program that performed arithmetic and graphing operations and allowed participants to make purchases and returns with mouse clicks. Besides our hypothesized necessities, we included kindness ("kind and understanding" was ranked 1st out of 13 by both sexes in the Buss & Barnes, 1986, study) and exciting personality, which ranked 2nd in the same study. Finally, we included creativity, which ranked below physical attractiveness and above socioeconomic variables for both sexes in the Buss and Barnes (1986) study.

To ensure against ceiling effects, we set the schedule to increase at an exponentially decreasing rate: Every two purchase increments on a characteristic would bring its percentile level up half the distance from its current level to 100. Compared with Study 1, this schedule may be closer to reality, in which it is increasingly difficult to locate and obtain further increments on any dimension. We also took precautions to help ensure that labels for our characteristics were appropriate for a college sample. In a pretest survey, 164 women and men in a social psychology class were asked to define five variables and to suggest relatively neutral labels if the variable names sounded too positive or negative. Results suggested that someone with an exciting personality was commonly thought of as lively, and that *liveliness* was a somewhat more neutral label for that variable. Also, it was suggested that *social level* would be an appropriate label for social status, in that it would reduce any negative connotations associated with admitting a desire for status. We provided a list of the labels, along with their most common definitions from pretesting, so that all participants would be referring to the same concept when they encountered a label. Otherwise, the design, method, and predictions were conceptually similar to those for Study 1.

Participants were 178 Arizona State University undergraduates enrolled in introductory psychology. There were 95 women, aged 17 to 45 (M = 19.5) and 83 men, aged 17 to 47 (M = 20.2).

Results and Discussion

The dependent measure was the percentage of the budget spent on a characteristic. We used planned comparisons on the mixed model ANOVA to test each of our predictions.

Spending on a Tight Budget

Mean expenditures across all five characteristics under the low budget appear at the bottom of Table 1. Women spent the highest proportion of their low budget on social level (M = 27.16, SD = 13.02) and kindness (M = 26.53, SD = 10.70). The planned contrast of women's low budget spending on social level versus all other characteristics was significant, $F(1, 176) = 26.04$, $p < .001$. Men spent the highest proportion of their low budget on physical attractiveness (M = 31.33, SD = 14.04). The planned contrast of men's low budget spending on physical attractiveness versus all other characteristics was significant, $F(1, 176) = 65.70$, $p < .001$.

Spending Patterns Across Budgets

Sex differences. Figure 1b shows sex differences in mean percentages allocated as a function of budget. A three-way interaction of Budget × Characteristic × Sex, $F(8, 1408) = 3.13$, $p = .002$, showed that women and men had different spending patterns

and that this phenomenon differed across budget levels. At the low budget, women spent significantly more than men on social level, $F(1, 176) = 18.54$, $p < .001$, and men spent significantly more on physical attractiveness, $F(1, 176) = 31.27$, $p < .001$. As Figure 1b indicates, these differences decreased as budget increased. Simple Budget × Sex interactions revealed effects for physical attractiveness, $F(2, 352) = 8.03$, $p < .001$, social level, $F(2, 352) = 3.07$, $p = .048$, and liveliness, $F(2, 352) = 3.80$, $p = .023$, though only the first effect was significant with a Bonferroni-corrected alpha ($\alpha = .05/5 = .01$). Again, differing preferences stemmed primarily from women's emphasis on social level and men's emphasis on physical attractiveness, especially when choices were most constrained.

Necessities versus luxuries. As in Study 1, we compared the allocations of the first 20 mate dollars with those of the third 20 (see Table 1) and used simple tests of budget on each characteristic for each sex. Table 1 also shows the changes in percentage of funds allocated to each characteristic as budget increased. Using a Bonferroni alpha correction for these 10 tests ($\alpha = .05/10 = .005$), we found that men's spending on physical attractiveness was as for a necessity, $F(1, 176) = 11.87$, $p = .001$. Creativity was clearly a luxury for both women, $F(1, 176) = 24.72$, $p < .001$, and men, $F(1, 176) = 25.60$, $p < .001$. Women's spending on social level declined as budget increased, $F(1, 176) = 5.94$, $p = .016$, but the significance level did not reach the corrected alpha.

Study 3

To be sure that results of the first two studies were not an artifact of a particular methodology, we designed Study 3 to reflect more closely how people actually screen potential mates. If necessities are characteristics with relatively fixed minimum thresholds that must be met in a potential mate, then, when given the opportunity to inquire about potential mates, people should seek information on these characteristics first. If a potential mate meets or exceeds the threshold on a necessary characteristic, then he or she may receive scrutiny on other characteristics. If not, the person can be removed from further consideration.

Study 3 has a two-factor mixed model design. The between-subjects variable was participant sex (male or female), and the within-subject variable was characteristic (as in Study 2: physical attractiveness, creativity, kindness, liveliness, or social level). We traded the precision of percentiles for ease of comprehension by using three broad classifications of quality. Participants sought out information regarding these characteristics about alleged potential long-term marriage partners, with the goal of reaching a decision about the acceptability of each potential mate.

Method

Participants

Participants were 58 Arizona State University undergraduates enrolled in introductory psychology. There were 32 women, aged 17 to 24 ($M = 19.5$), and 26 men, aged 18 to 28 ($M = 19.9$).

Materials and Procedure

The experiment was run on a Visual BASIC computer program. For each of 30 consecutive screens, an opposite-sex name appeared at the top. Five buttons appeared on the left side of the screen, each containing the name of a characteristic. As in Study 2, a sheet of paper showed the definitions of each characteristic.

We designed a cover story to remove any implicit mate preference screening our participants might normally perform on their own (especially on social level). Participants were told that 100 randomly chosen people in their early 20s were interviewed in a local area well known for diversity, ranging from working professionals and college students to slackers. They were also told that, on the basis of the interviews and observations, targets were ranked within their sex and placed into one of three levels for physical attractiveness, creativity, kindness, liveliness, and social level. Targets in the bottom third for their sex were considered to belong to Level 1, those in the middle third to Level 2, and those in the top third to Level 3. Participants were told they would be presented with a randomly chosen subset of 30 opposite sex interviewees and asked to determine whether each would be desirable to them as a long-term marriage partner. They could click on any characteristic to find out which level (1, 2, or 3) a target person belonged to on that characteristic. Participants were told to click on as many characteristics as they wished, but to click on as few as possible to arrive at a reasonable decision one way or the other. Thus, we effectively asked, "What is most essential to you when looking for a mate?"

Results

The dependent measure for the first part of the analyses was the number of times out of 30 trials a characteristic was chosen first. We performed appropriate planned comparisons on the mixed model ANOVA to specifically test each of our predictions.

The First Thing People Want to Know

The mean number of times (out of 30 trials) each characteristic was chosen first is shown in Table 2. There was a significant interaction of Characteristic × Sex, $F(4, 224) = 3.94$, $p = .004$. Women most often checked social level first ($M = 10.38$, $SD = 2.15$), though kindness ($M = 9.19$, $SD = 1.87$) was a close second. The planned contrast of social level versus the other four traits for women was significant, $F(1, 57) = 6.98$, $p = .011$. Men most often checked physical attractiveness ($M = 12.77$, $SD = 2.13$), though kindness was not significantly lower in priority ($M = 6.85$, $SD = 2.07$). A planned contrast of physical attractiveness versus the other four traits for men was significant, $F(1, 57) = 9.81$, $p = .003$. As shown in Table 2, the only

Table 2
Mean Number of Times out of 30 a Characteristic Was Chosen First When People Screened Potential Mates

Characteristic	Women	Men	Sex diff
Physical attractiveness	4.8_{abc}	12.8_{a}	−8.0*
Social level	10.4_{a}	4.8_{ab}	5.6**
Creativity	2.3_{c}	1.2_{b}	1.1
Kindness	9.2_{ab}	6.8_{ab}	2.3
Liveliness	3.3_{bc}	5.1_{ab}	−1.7

Note. Subscripts denote comparisons within a column. Means with different subscripts are significantly different from one another ($p < .05$, Bonferroni adjusted). To obtain sex differences (Sex diff), we subtracted men's numbers from women's numbers (positive numbers indicate greater female spending).
* $p < .05$. ** $p < .01$.

significant sex differences were in social level (women checked more) and physical attractiveness (men checked more).

Which Characteristics Influence the Decision to Accept or Reject Potential Mates?

We used hierarchical regression to analyze the decision to accept or reject potential mates. For each participant's 30 trials, we first performed a quadratic regression using the accept/reject decision as the dependent variable. The independent variables consisted of the level on each of the five characteristics and the square of each level. Using ANOVA, we examined regression weights for each participant. We predicted that people should require acceptable mates to be at least average (Level 2) on necessities but should not require them to be clearly above average (Level 3) on these traits. That is, being at Level 2 versus Level 1 on a necessity should greatly improve a target's acceptability, but being at Level 3 versus Level 2 should not have as much impact. Thus, we expected necessity characteristics to have both a significantly positive linear coefficient (i.e., higher levels lead to higher likelihood of acceptance) and a significantly negative quadratic coefficient (i.e., going from Level 1 to 2 increases the likelihood of acceptance more than going from Level 2 to 3 does). For both sexes, almost every trait had a positive linear regression coefficient that was significant at the .05 level. Using a Bonferroni alpha correction for the 20 tests, we found that the following characteristics had linear coefficients significant at the $\alpha = .05/20 = .0025$ level: for men, physical attractiveness, social level, kindness, and liveliness; for women, physical attractiveness, social level, and kindness. Thus, higher levels on nearly every characteristic made a target more likely to be accepted. Of these characteristics, only two also had significantly negative quadratic coefficients: social level for women, and physical attractiveness for men.

Discussion

Though most characteristics influenced targets' acceptability as mates, only the predicted ones were treated as necessities. First, women evaluating mates most often inquired first about social level, and men most often inquired first about physical attractiveness. Second, the impact of these traits on the acceptability of mates displayed a curvilinear pattern. Thus, going from Level 1 to Level 2 on our hypothesized necessities increased a potential mate's acceptability more than going from Level 2 to 3 did, as predicted. We also found evidence that kindness is essential to both sexes and that increased kindness does not yield diminishing marginal utility (see below).

General Discussion

Findings obtained from two methodologies and two types of samples offer convergent support for our predictions that women would value status and resources and men would value physical attractiveness much like they would value economic necessities. In Studies 1 and 2, we used a budget allocation framework that allowed us to vary the constraints participants faced in acquiring levels of various characteristics in a mate. When overall choice was most constrained, people tended to allocate the largest proportion of their budgets to hypothesized necessities. At a high budget level, after minimums for these characteristics were met, people allocated less of their budget to necessities and more of their marginal income to other characteristics. In Study 3, we used a method that allowed participants to screen hypothetical long-term mates. When making initial inquiries about a candidate, women typically wanted to ensure that a partner was at least average on social status. Men wanted to know first that a woman was at least average on physical attractiveness. Results show that being below average on these necessities hurt much more than being above average helped. Also, results confirm that sex differences in mate preferences were most pronounced when choices were most constrained. In these studies, the differences between women's and men's preference patterns primarily stemmed from a differential initial emphasis on physical attractiveness and status/resources. As budgets increased, women's and men's preferences were more similar, as the sex differences in attractiveness and status diminished (Figure 1). Other traits, such as personality and kindness, tended to be equally valued and prioritized by the two sexes.

Though not predicted, results from Study 1 suggest that intelligence may be a necessity to both sexes. Intelligence may represent a broad measure of various capabilities, including parenting, resource gathering, adaptability to change, and ability to deal with competitors (e.g., Barkow, 1989). Without some minimal level of intelligence, a person may have difficulties navigating the demands of social life, let alone helping to raise offspring. Because intelligence is substantially heritable, such a handicap also is likely to be passed on. However, beyond what is needed to perform the above functions, further increments in intelligence would likely not offer the same functional gains. Thus, people may search for some level of sufficiency in intelligence before giving serious consideration to accepting a potential mate.

Our results also imply that kindness is essential: When choices were most constrained, kindness was valued a close second by both sexes in Studies 2 and 3. Results also suggest that people may desire as kind a mate as possible, so much so that they continue to invest in increasing kindness as their mate budget increases. Why such a high and unwavering emphasis? If, for evolutionary or other reasons, women prefer to mate with men who are able and willing to provide resources, then status is a measure of ability and kindness is a measure of willingness (Jensen-Campbell, Graziano, & West, 1995). Thus, a man's actual resource flow is the product of his standing on both characteristics. Similarly, to a man, a fertile woman may be desirable to the extent that she is willing to share her reproductive resources with him. In pretest studies, students defined people who are average in kindness as those who are willing to be of service to others but who expect a fair and equal amount of benefits in return. People who are above average in kindness were defined as those who perform beneficial acts to others without expecting as much in return. Whereas a person of average kindness can cooperate when exchange is reciprocal, a very kind person is altruistic and will do so even if he or she is underbenefitted. As conflicts of interest occur between the sexes in many areas, including ones of reproductive consequence (see Buss, 1994), it may be worth obtaining someone who holds one's interests higher than his or her own.

Creativity appeared to be a relative luxury in all three studies, and nonwork talents were clearly a luxury in Study 1. Though both were passed over at the low budget level, proportionate spending

on these traits rose significantly as budgets increased. The majority of other traits proved to be neither necessities nor luxuries: They were not heavily weighted in low budget purchases, and the proportion spent on them did not significantly change as budgets increased. These included sense of humor, romance, exciting personality, and liveliness. Together, these characteristics may make for more unique experiences and interesting interactions, but the extent to which they increase reproductive value or fulfill sociocultural values is less clear (Feingold, 1992).

Our new methodologies incorporate three features that were not simultaneously present in previous research. First, in each study, several characteristics were considered together rather than separately. Second, overall choice was constrained, so participants could not simply obtain mates who were well above average on everything. Together, these two features effectively divided the mate selection process into gradations of necessity, thereby allowing people to reveal the relative priorities they place on different characteristics. Third, the levels of each trait were clearly specified to reflect the lower as well as the upper range inherent in the general population. By doing this, we reduced participants' default tendencies to make assumptions about the levels of the characteristics on the basis of their usual associates (who may be narrower in range on certain characteristics, including social status).

By incorporating the above design features, we confirm our conjectures about the paradoxical results of earlier mate surveys. As the present results suggest, the sex differences in attractiveness and status characteristics, emphasized by both evolutionary and sociocultural researchers, are indeed critically important to the mate selection process, as people tend to treat these traits as necessities. Our research also shows that status/resources (for women) and attractiveness (for men) are at least equal in importance (in terms of being a necessity) to kindness and intelligence, which, along with other traits, have been previously rated or ranked higher.

Lessons From Market Research: Practical Implications for People Searching for Mates

Having seen what buyers want, sellers in the mating economy should be in a better place to offer the right mix of products. Because women and men seem to search for sufficiency in status and physical attractiveness, respectively, it follows that beautification or career achievement can be excessive in terms of optimally allocating effort to increase one's desirability as a long-term mate. For example, in line with previous reasoning (Hatfield & Sprecher, 1986), it may be worth a woman's effort to improve her attractiveness up to a point, but further effort might be better directed elsewhere. For men, being a workaholic may not be as appealing to women as being gainfully employed and using extra time to develop other traits. Conversely, it should also be true that many actions will have little impact on improving one's desirability unless one meets the minimum standards of potential mates in terms of kindness, intelligence, and, depending on sex, status or attractiveness. Thus, effort spent on developing musical or artistic talent will not help much if one is unkind or if one's appearance is poor (for women) or career outlook is dim (for men).

Limitations

A trade-off existed in our efforts to select the right number of characteristics to include in the actual surveys. Using a long, exhaustive list would have made the allocation task tedious and difficult. As a compromise between representation and ease of task, we chose 10 characteristics for Study 1 and 5 for Studies 2 and 3. We tried to include a meaningful variety of characteristics based on results of our pretests and previous research in this area but did not include all traits that might be key to mate selection. For example, previous studies that tapped into trade-offs (e.g., Cunningham et al., 1997; Regan, 1998) found that interpersonal characteristics were most important. Though we did not find this to be true, we did not use the exact same mix of characteristics that these other studies used. Future research might use different mixes to see whether similar patterns emerge.

In Studies 1 and 2, people designed mates using consciously articulated, rational processes. Certainly, we are not suggesting that in real life, most people choose mates this way; however, we do believe that people select mates as if they implicitly have budgets and that this is apparent between and within individuals. Between persons, those with more to offer have more choices and bargaining power than do those with less to offer. Within persons, married men in our studies candidly told us that in their early single years, when they were able to get the interest of extremely attractive women, usually these women did not have a college degree or something else was lacking. Later, as if reallocating their budgets, the men reduced their high requirements on attractiveness and ended up marrying well-rounded mates. More important, we used the budget design so that we could systematically eliminate confounding conditions and assumptions to uncover what people consider most necessary in mates. Also, the fact that two very different methods yielded very consistent results allays some concerns in this regard. Further, our results are consistent with those of naturalistic studies such as studies of singles ads and actual marriages (e.g., Baize & Schroeder, 1995; Elder, 1969; Harrison & Saeed, 1977; Wiederman, 1993).

Anecdotally, cases of attraction toward extremely high-status rock stars or beautiful actresses seem to be more prevalent than cases of attraction toward those with extreme levels of kindness or liveliness. Such attractions may involve processes other than those described here (analogous to animals' reactions to supernormal stimuli, e.g., oversized eggs).

Conclusion

Psychologists from diverse theoretical perspectives have discussed relationship formation in terms of economic markets in which traits are exchanged between partners (Kenrick et al., 1993). In our research, we used a consumption framework that allowed people to purchase mate characteristics, and we used a mate screening paradigm. In other contexts, the answer to the question "Which consumption item is most important to you?" typically depends on one's budget. This also seems to be the case with mate preferences, in that what one considers to be most important depends on the degree to which choices are constrained. Our findings provide some evidence that, for researchers concerned with the exchange processes involved in mate selection, the distinction between luxuries and necessities is a useful and important

one. Finally, this distinction could be fruitfully applied to any domain with tough choices where necessity is prioritized over luxury.

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