Willingness to Provide Is More Important Than Ability to Provide: Women's Choice of a Long-Term Male Partner

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According to evolutionary theory, women select men who have the ability and willingness to provide for their offspring. However, a man with an excellent resource-holding potential might distribute his resources to another woman or pursue short-term sexual opportunities with a variety of women. Indeed, the ability of a woman to identify a man's ability to provide is useless if his resources are distributed to another woman or to his own mating efforts. Therefore, the ability to ascertain the willingness of men to provide for long-term partners is important to women. Although such willingness is not directly related to genetic quality, the ability to provide might be based on genetic factors and function as an indicator of "good genes." We asked women during either their high- or low-fertility period to rate the desirability of six fictitious men described in a vignette that addressed their ability and willingness to gather and share resources. Ability and willingness to provide were less important when women considered short-term relationships, but these two factors affected mate preference for long-term relationships. Women did not value the absolute value of their mates' long-term ability to provide, and they placed more importance on their willingness to share than on their ability to accumulate resources. Women's menstrual cycle did not affect this pattern of preference.

Keywords

sexual selection, female choice, mate preference, investment, fertility

Introduction

Evolutionary theory predicts that women engage in both short-term and long-term mating strategies (Buss & Schmitt, 1993) and that the traits they desire in partners vary according to the strategy they employ (Pillsworth & Haselton, 2006). As a short-term strategy, women would be expected to seek male genetic traits that maximize the adaptive ability of offspring. In contrast, as a long-term strategy, women would be predicted to seek men with the ability and willingness to provide for their offspring. Indeed, studies on the mate preferences of women have confirmed these predictions. For example, an analysis of personal advertisements in Japan revealed that more women who were seeking long-term rather than short-term relationships requested men with a family commitment (Oda, 2001). Japanese women preferred altruistic behaviors toward family members in long-term partners more than they did in short-term partners (Oda Okuda, Takeda, & Hiraishi, 2014).

It is not sufficient that women who employ a long-term mating strategy focus only on potential mates' resource-holding ability, because men with abundant resources can distribute their resources to another woman or can pursue short-term sexual opportunities with a variety of women. The choice of a man with resources is useless if the resources go to another woman or to man's own mating efforts. Therefore, it is also important for women to ascertain men's willingness to allocate resources to his family (e.g., spouse and children). It is noteworthy that resource-holding ability and willingness to provide are not necessarily correlated. A wealthy man may spend his resources on his adulterous lovers, and a poor man may conscientiously devote his resources to his wife and offspring. When these two factors are not compatible, which factor do women choose?

Women's preference for mates changes according to their menstrual cycle. On high-fertility days, women can maximize their reproductive benefits by mating with men who have "good genes," and this is expected to be reflected in their mate preferences. Indeed, a meta-analysis demonstrated that cycle shifts are specific to women's preferences for cues of genetic quality, such as somatic characteristics, masculinity, or facial symmetry (Gildersleeve, Haselton, & Fales, 2014). Although the willingness to provide is not directly related to genetic quality, resource-holding potential might be based on genetic quality and therefore function as an indicator of "good genes." If so, women would prefer the ability over the willingness to provide during high-fertility days.

The present study investigated women's preferences for men's ability and willingness to provide during high- and low-fertility periods. We combined two levels of ability (receiving a bonus of 10 million JPY and receiving one of 30 million JPY) with three levels of willingness to provide (giving 30%, 50%, and 70% of their bonus to family members), assigning each combination to six fictitious men. If women consider the absolute value of men's status as providers when selecting long-term partners, they will show the highest preference for a man who spent 70% of his 30 million on his family and the lowest preference for a man who used 30% of his 10 million in this way. We hypothesized that the effect of willingness to provide will be reduced in short-term relationships. Additionally,

if the ability to provide functions as an indicator of good genes, it will be more strongly preferred in short-term relationships, and this tendency will be more pronounced when women are experiencing high-fertility days.

Methods

(a) Participants

We recruited 820 Japanese women through Macromill, Inc. (Tokyo, Japan), a research agency that maintains a panel of more than 1,000,000 individuals who have agreed to participate in web-based online survey research and have provided informed consent to do so. Participants were recruited based on age so that experimental groups contained an equal number of participants in each of the four age groups (from teens to 40s). The candidates were asked whether they would reply to personal questions, such as those regarding menstrual cycles, and those who consented were included in the analyses. Each participant answered questions regarding her preferences and completed the menstrual cycle questionnaire using an online survey.

(b) Preference survey

First, participants read a vignette about potential male mates. The vignette described six male bachelors in their 30s who were successful entrepreneurs. All fictional bachelors had participated in a fictional interview with a magazine about the use of their bonuses, responding that they had given fixed percentages of their bonuses to a charity and to their family members. We combined two factors in each vignette: one was the amount of the bonus (10 million JPY or 30 million JPY), and the other was the percentage of the bonus given to family members (30%, 50%, or 70%). Each combination was assigned to a bachelor, and participants rated the desirability of each man from "1" (least desirable) to "7" (most desirable) as both a short-term mate ("a partner with whom you have casual sex;" i.e., a partner with whom you have a short-term relationship) and a long-term mate ("a partner whom

you would marry;" i.e., a partner with whom you have a long-term relationship). Descriptions of the six men were presented randomly (see the supplemental file for details of the questionnaire).

(c) Menstrual cycle survey

Following completion of the preference questionnaires, each participant reported on their menstrual cycle. High- and low-fertility days were estimated using the modified backward counting method, which assumes that ovulation occurs 14 days prior to the onset of the next menses (Gildersleeve et al., 2014). The high-fertility days were defined as the 5 days prior to ovulation and the day of ovulation, because these are the days that conception is most likely to occur (Wilcox, Dunson, Weinberg, Trussell, & Baird, 2001), and the low-fertility days included the remainder of the cycle. Furthermore, a comparison of the actual conception probabilities measured by Wilcox et al. (2001) between the high- and low-fertility groups was performed to determine the accuracy of this grouping.

Results

Following exclusion of participants who provided inaccurate information (see the supplemental file for details of the exclusion) and/or did not complete the questionnaire, data from 512 women (median age: 31 years; range: 16–49 years) were analyzed for each factor. Of these participants, 85 were in their high-fertility period and 427 were in their low-fertility period. As determined by the Welch two-sample t-test, the conception probability was significantly higher in the high-fertility group (mean probability = 0.061 ± 0.013) than in the low-fertility group (mean probability = 0.021 ± 0.025), $t(219.93) = 21.15$, $p < .001$, Cohen's $d = 1.99$.

The desirability score was analyzed using an analysis of variance (ANOVA): the men's bonus amount, which was treated as proxy for their ability to provide, the percentage of the bonus given to their family members which was treated as a proxy of their willingness to provide, and

Table 1. Result of four-way ANOVA on the preference score.

	Factor	F	df	p	η^2_G
Main effects	Fertility	1.06	1, 510	.304	0.0010
	Partner type	16.51	1, 510	< .001	0.0058
	Amount of bonus	19.11	1, 510	< .001	0.0013
	Willingness	100.80	2, 1020	< .001	0.0244
Interactions	Fertility × Type	0.18	1, 510	.671	0.0001
	Fertility × Bonus	0.99	1, 510	.319	0.0001
	Fertility × Willingness	1.93	2, 1020	.146	0.0005
	Type × Bonus	0.98	1, 510	.321	0.0000
	Type × Willingness	68.02	2, 1020	< .001	0.0128
	Bonus × Willingness	4.39	1, 510	.012	0.0003
	Fertility × Type × Bonus	0.31	1, 510	.578	0.0000
	Fertility × Type × Willingness	0.22	2, 1020	.802	0.0000
	Fertility × Bonus × Willingness	1.81	2, 1020	.164	0.0001
	Type × Bonus × Willingness	3.64	2, 1020	.026	0.0002
	Fertility × Type × Bonus × Willingness	0.49	2, 1020	.613	0.0000

partner type were within-subject variables; the fertility of the participants (high or low) was used as a between-subjects variable. The main effects of the amount of the bonus, the percentage used for family members, and partner type were significant, as were the interactions between them. The effect size of willingness to provide was larger than that of ability to provide. Neither the main effects of fertility nor the interactions with other factors were significant (Table 1).

The simple effects of the interaction indicated that men who gave 30% and 50% of their bonuses to their families were less preferred for long-term than for short-term relationships (30%: $F(1, 510) = 68.76$, $p < .001$, $\eta^2_G = 0.0434$; 50%: $F(1, 510) = 13.09$, $p < .001$, $\eta^2_G = 0.0066$), whereas men who gave 70% to their families were more preferred for long-term relationships ($F(1, 510) = 8.84$, $p = .0031$, $\eta^2_G = 0.0041$; Figure 1). The men who used 50% and 70% of their bonuses for their families were more preferred when their bonuses were 30 million JPY than when their bonuses were 10 million JPY (50%: $F(1, 510) = 25.51$, $p < .001$, $\eta^2_G = 0.0033$; 70%: $F(1, 510) = 7.10$, $p = .0079$, $\eta^2_G = 0.0012$), whereas there was no effect of ability to provide on the preference for men who used 30% of their bonuses for their families ($F(1, 510) = 2.44$, $p = .1190$; Figure 1).

Discussion

The results support previous conclusions that women have short-term and long-term mating strategies. The difference in mate preference according to willingness to provide was larger for long-term relationships than for short-term relationships. On the one hand, the averages of desirability scores for short-term mates were about four that was the midpoint of the seven-graded Likert-like scale. On the other hand, men who spent 70% of their bonuses on their families were more highly preferred for a long-term relationship, and those who spent 30% and 50% of their bonuses were less preferred for a long-term relationship. Moreover, the ability to provide was especially influential in the selection of a long-term mate from among those who were more willing to provide. These results suggest that the ability and willingness to provide were not as influential in decisions about short-term relationship; however, these two factors affected mate preference for a long-term relationship, and their effect was not independent.

Interestingly, women did not consider the absolute value of what men provided; instead, they place more importance on men's willingness than on their ability to provide. For example, men who used 7 of their 10 million JPY bonus for their families (70%) were more highly
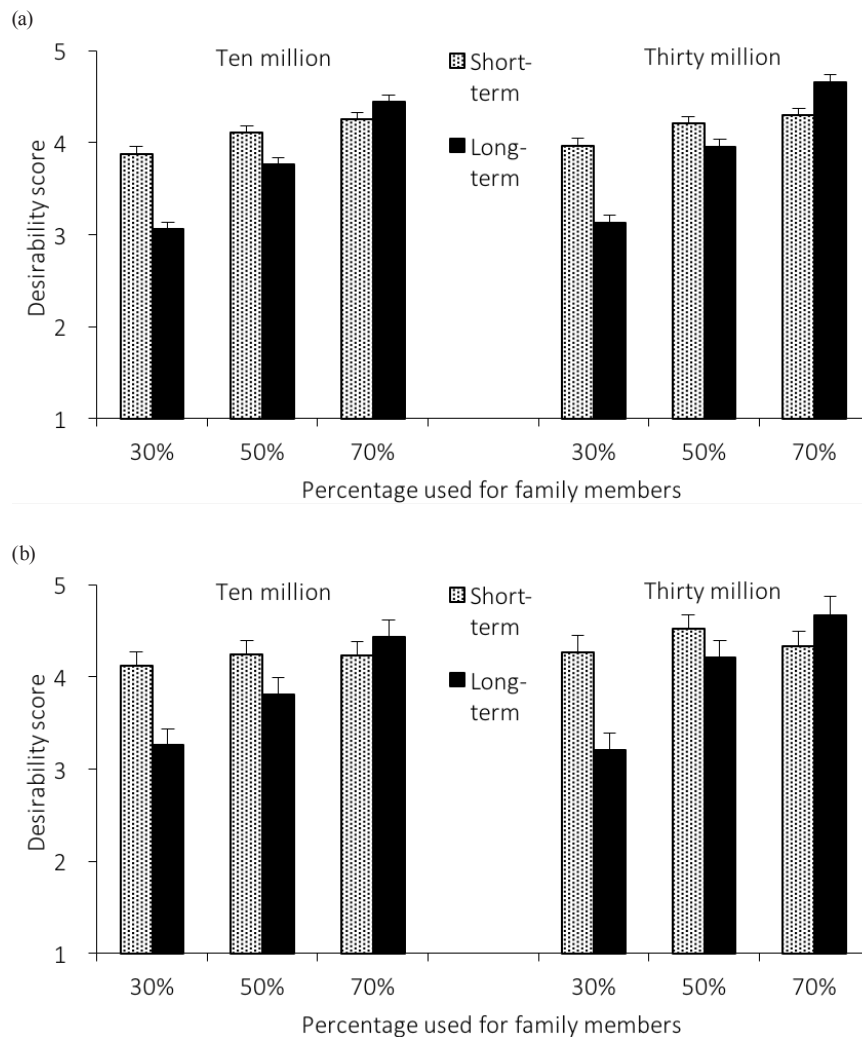

Figure 1. Mean and SE of desirability score by questionnaire divided by the amount of bonus and percentage used for family members for (a) low-fertility women and (b) high-fertility women.

preferred than those who spent 15 million of their 30 million JPY bonus in this way (50%). Oda, Machii, et al. (2014) reported that the extroversion and conscientiousness traits of the Big Five Personality Test affected altruistic behavior toward family members. Although they measured kindness in daily life rather than monetary investment, it is plausible that the same kind of personality traits affect monetary investment in family members. Resources are sometimes acquired through luck or happenstance, whereas personality is a relatively stable trait. Our results suggest that women consider men's willingness to provide rather than their ability to acquire resources as a reliable indicator of who would make a "good dad."

Women did not differ in their preferences according to their place in their menstrual cycle. Moreover, the interaction between the ability to provide and the partner type was not significant, which means that the ability of men to provide was preferred irrespective of the relation type. These results suggest that such ability does not function as an indicator of good genes. However, this study compared only 10 million JPY with 30 million JPY. Although 30 million is three times as high as 10 million, even a bonus of 10 million JPY is quite high for common Japanese people. Thus, this difference might not have been seriously considered because the amount of the bonus was fairly high. Further comparisons among men with varying incomes could reveal additional effects of ability to provide. Moreover, the results also support the findings of previous studies showing that altruism toward strangers does not function as an indicator of good genes (e.g., Oda, Okuda, et al., 2014). Indeed, men who spent only 30% of their bonuses on family members (i.e., those who donated 70% to strangers) are more altruistic than those who used 70% for family members (i.e., who donated 30% to strangers). However, neither high- nor low-fertility women preferred the former to the latter as short-term partners.

Negative results may raise the question of whether the methods employed in this study were appropriate. Because between-subjects comparisons were utilized in the present study, individual differences in preference may have weakened the possible effects of fertility. However, numerous previous studies employed the same ovulation estimation methods used here. In fact, shifts in women's preferences for other cues of genetic quality based on ovulation were revealed using the same estimation method (Gildersleeve et al., 2014). Nevertheless, to confirm the present results, further studies on preference shifts using within-subject methods are needed. Hormonal measures of fertility would also advance our understanding.

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