
Short Communication

A Norwegian Note on “Sperm Donor Selection and the Psychology of Female Mate Choice”

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KEY WORDS: Evolutionary psychology; Female mate choice; Norway; Sperm donor; Cross-cultural.

One way to investigate the evolved psychology of female mate choice is to compare women's criteria for a long-term mate to those for a sperm donor (Scheib 1994). Assisted reproduction via donor insemination is an evolutionarily novel but related context to that of mate choice, in that the function of both contexts is offspring production. Women's choice criteria for a donor might be similar to those for a mate because, throughout our evolutionary history, reproduction and mate choice were inseparable. That is, it is plausible that the attributes a woman would find attractive in someone whose offspring she would carry would be related to her mate-choice criteria. Choice of a long-term mate and choice of a sperm donor will also have similar impacts on offspring condition and a woman's future reproductive options. Given this, one might expect similar responses to those aspects of the sperm donor context that are shared with mate choice. These responses may reveal some of the cues that women pay attention to in mate selection while the actual choices are made in the more controlled setting of selection of sperm donor.

Received January 26, 1996; revised October 15, 1996.

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This approach to the characterization of the psychology for female mate choice was tested in two Canadian samples of women in an experimental setting (see Scheib 1994 for details). Here we report the results from a Norwegian sample that tests the generality of the Canadian results. In the original experiments, Scheib found that women were able to imagine assessing a sperm donor, as they reported that they valued attributes that they believed were likely to affect a resultant child significantly more than the women imagining a long-term mate. One would expect women to value the attributes affecting a child in long-term mates as well as in sperm donors. However, their importance in sperm donors might be expected to be even more pronounced, which it turns out they were. Interestingly, women also highly valued information about a man's character, whether he was a sperm donor or a mate, even though these women rated character as less likely to affect a resultant child. Good character was expected to be important in a mate, in that he could make a good cooperater in shared interests, such as offspring well-being, and he might also be less threatening or harmful to the woman—an important consideration as mateships are not always harmonious (see Lancaster 1991; Wilson and Daly 1996). But it was less clear why character would be so important in a sperm donor, from whom one would get gametes and nothing else. Scheib suggested that this great concern with character in not only a long-term mate but also a sperm donor might have been the result of women using some of the decision-making processes that are normally associated with long-term mate choice in the context of sperm donor selection.

In that study, Scheib (1994) examined the psychology associated with mate choice through women's expressed choice criteria, rather than by examining their mate choices directly. While analyses of actual choices are invaluable, analyses of the expressed criteria can provide additional information about the evolved psychology that is less likely to be subject to environmental constraints, such as other individuals' desires and behavior. One possible limitation to this approach, however, is that when criteria are derived through self-report methods, women may not have conscious access to all the factors that influence their decisions (Nisbett and Wilson 1977). Nonetheless, self-report data are often consistent with those obtained from behavioral measures (e.g., Buss et al. 1992; Hass 1996; Landolt, Lalumière, and Quinsey 1995), and with findings from other cultures, collected both through self-report and behavioral methods (e.g., Borgerhoff Mulder 1990; Buss 1989; Hill and Kaplan 1988). In addition to using self-report, Scheib compared women's mate-choice criteria to those for choice of sperm donors. In this way, information-derived from the context of donor selection, where the women's responses might not be subject to demand characteristics sometimes associated with the mate selection context, could be used to understand the processes underlying women's mate choices. And in the case of donor insemination, when women have a choice, self-report via questionnaires is how sperm donors are selected. That is, what women say they want is what they get.

In the present study, we addressed whether the Scheib (1994) results were generalizable to women in other countries. If women's criteria for sperm donors are influenced by their mate-choice criteria, and these criteria are thought to be part of psychological adaptations to decisions faced by women throughout evolutionary history, then women in other cultures should also show this overlap between their criteria for mates and for sperm donors. In order to test this, we examined Norwegian women's

expressed choice criteria for sperm donors and long-term mates, and we compared them to those of the Canadian subjects. Norway has a population of approximately 4 million and has state-assisted medical care and child care (Barne og Familiedepartementet 1994). Trondheim, where the study took place, is a major port city 500 km north of Oslo. Norway is similar to Canada in many respects, but the availability of childcare assistance may make it easier for women to have and successfully rear children alone. Therefore, it is also possible that attributes useful in a long-term mateship, such as a mate's good character, may be relatively less important to Norwegian women in selecting a sperm donor.

THE SAMPLE

Forty-four undergraduate women volunteered to be subjects at the University of Trondheim. All women were born in Norway (43) or Sweden (1) and spoke Norwegian as their first language. Ages ranged from 20 to 29 years, with a median of 24. Twenty-three women (mean age \pm *SD*: 23.6 ± 2.1 years) assessed attributes in choice of a hypothetical sperm donor, while 21 (23.9 ± 2.2 years) assessed attributes in a hypothetical husband/mate. All women professed to be heterosexual. Sixty-four percent of the women were single. Seven percent had children. The two groups did not differ significantly with respect to age, marital status, or parity. The Norwegian women were similar to the Canadian women in education, mean age, sexual orientation, and parity, although there were fewer single Norwegians (64% vs. 91%).

PROCEDURE

The experiment was described as an "international study of women's preferences for men in different contexts." Each subject received an English-language questionnaire identical to that used in the Scheib (1994) Experiment 2 and a Norwegian-English translation sheet for reference. (Most textbooks used by Norwegian university students are English-language). Both versions included non-identifying demographic questions, instructions to think about choosing either a sperm donor or a long-term mate and then to rate the importance of attributes in the target man, and a final section in which subjects rated the "heritability" of each attribute, where heritability was defined as "biologically inherited, transmitted from parent to child via one's genes." All subjects answered demographic questions first and rated the "heritability" of the attributes last. Anonymity was emphasized. A significance level of .01 was used for all statistical comparisons between the two groups to minimize problems associated with multiple comparisons.

COMPARISON OF NORWEGIAN WOMEN'S PREFERENCES FOR A SPERM DONOR AND A LONG-TERM MATE

Figure 1a presents a comparison of the mean importance ratings for the five factors in a hypothetical sperm donor and long-term mate. Health and character were the most

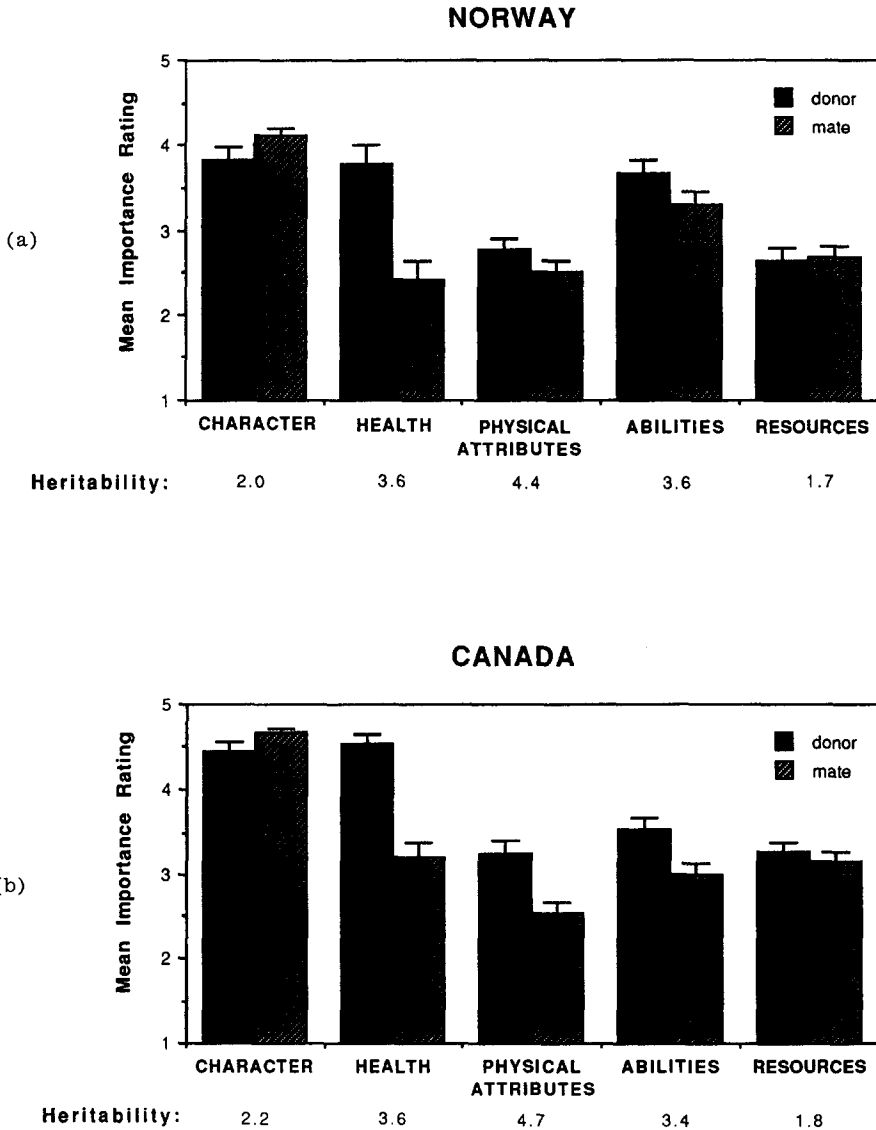


FIGURE 1. Comparison of the mean importance ratings for factors* in a sperm donor and a long-term mate in Norway (a) and Canada (b), where 1 = not important at all; 3 = moderately important; 5 = very important. Error bars indicate SE. Mean “heritability” ratings listed below each factor were 1 = not heritable at all; 3 = moderately heritable; 5 = highly heritable.

*Factors produced in Scheib (1994): character (comprised of the attributes kind, understanding, dependable, considerate, affectionate, honest, and self-confident); health (i.e., family health history, family longevity record, and health background); physical attributes (i.e., hair color, handsome, eye color, and height); abilities (i.e., creative, musical talent, and intelligent); and resource potential (i.e., ambitious, industrious, professional degree, sophisticated, spends money freely, and financially well-off).

Note: Figure 1(b) is adapted from “Sperm Donor Selection and the Psychology of Female Mate Choice” by J.E. Scheib, 1994, *Ethology and Sociobiology* 15:124. Copyright 1994 by Elsevier Science Inc.

important factors to have in a sperm donor, followed by abilities, physical attributes, and resource potential. Character was the most important factor to have in a long-term mate, followed by abilities, resource potential, physical attributes, and health.

Women rated health as significantly more important in a sperm donor than in a long-term mate: ($\bar{X}_{\text{donor}} = 3.78$; $\bar{X}_{\text{mate}} = 2.41$), $t(42) = 4.51$, $p = .0001$. Abilities and physical attributes also tended to be more important in a sperm donor than in a long-term mate, although not significantly so: abilities ($\bar{X}_{\text{donor}} = 3.67$; $\bar{X}_{\text{mate}} = 3.30$), $t(42) = 1.74$; physical attributes ($\bar{X}_{\text{donor}} = 2.76$; $\bar{X}_{\text{mate}} = 2.49$), $t(42) = 1.36$. A mate's character tended to be more important to women than a sperm donor's character, although the difference was not significant: ($\bar{X}_{\text{donor}} = 3.83$; $\bar{X}_{\text{mate}} = 4.11$), $t(42) = -1.51$. No difference was found in women's preferences for resource potential in a sperm donor or long-term mate: ($\bar{X}_{\text{donor}} = 2.63$; $\bar{X}_{\text{mate}} = 2.69$), $t(42) = -0.29$.

"Heritability" ratings were also compared between groups, to test whether women in the two experimental conditions had different beliefs about the "heritability" of attributes. This did not appear to be so. No significant differences were found between the groups with respect to (1) character ($\bar{X}_{\text{donor}} = 1.96$; $\bar{X}_{\text{mate}} = 2.07$, $t[42] = -0.47$); (2) health ($\bar{X}_{\text{donor}} = 3.48$; $\bar{X}_{\text{mate}} = 3.67$, $t[42] = -0.94$); (3) physical attributes ($\bar{X}_{\text{donor}} = 4.47$; $\bar{X}_{\text{mate}} = 4.41$, $t[42] = 0.35$); (4) abilities ($\bar{X}_{\text{donor}} = 3.54$; $\bar{X}_{\text{mate}} = 3.73$, $t[42] = -1.23$); or (5) resource potential ($\bar{X}_{\text{donor}} = 1.60$; $\bar{X}_{\text{mate}} = 1.78$; $t[42] = -1.01$). Subjects' "heritability" ratings were then averaged, and a mean "heritability" rating was calculated for each factor (see Figure 1a).

CONCLUSIONS FROM THE NORWEGIAN COMPARISONS

Factors women believed were moderately to highly "heritable," such as health and physical attributes, tended to be more important in a hypothetical sperm donor than in a long-term mate. The direction of these differences suggests that women who assessed attributes in a sperm donor understood the experimental task, since they valued attributes that they believed were likely to affect a resultant child more than did the women in the long-term mate condition. Women who assessed attributes in a hypothetical long-term mate valued his character above all other factors, which is consistent with findings from other countries (e.g., the Buss [1989] study of 37 societies). The importance of a long-term mate's character is not surprising given that one would have to interact with this man, unlike in the context of donor insemination. However, Norwegian women who assessed attributes in a sperm donor also valued character, and it was as important as the donor's health. This was so despite subjects' beliefs that character had a lower probability of being "inherited" by a resultant child. This suggests that women used some of the same criteria in their assessment of a sperm donor as the women who assessed a long-term mate. Images of reproduction through a sperm donor seem to elicit some of the same decision rules as those for mate choice, perhaps because mate choice and reproduction were inseparable until the development of modern medical technologies. These results also suggest that a man's character is a fundamental aspect of the female mate-choice psychology since the importance of character persisted into the functionally similar context of sperm donor.

NORWEGIAN-CANADIAN COMPARISONS AND CONCLUSIONS

The Norwegian pattern of choice criteria replicated that of the Canadian women (see Figure 1b). In both countries, women reported remarkably similar beliefs about attributes likely to affect a resultant child, including health and physical attributes, and valued them more in a hypothetical sperm donor than in a long-term mate. Norwegian and Canadian women also reported similar preferences for a long-term mate and valued his character above all other factors. The replication in Norway of the finding that Canadian women placed great value on a sperm donor's character suggests some cross-cultural generality in the role of decision-making processes associated with long-term mate choice in the context of choosing a sperm donor.

Women's mate preferences are also expected to vary contingent on an individual's circumstances and life experiences (for examples on the relationship between mate selection criteria and local pathogen loads, see Gangestad and Buss 1993; Low 1988). Given that Norwegian women have ready access to medical and child care, it was possible that the women might have attributed less importance to cues of reliability and commitment in potential mates and subsequently in sperm donors. The Norwegian women did, in fact, give lower importance ratings to a long-term mate's character and resources than did the Canadian women. However, in general, they rated all the factors slightly lower, and it is more likely that these rating differences were a product of using the scales differently in the two countries. As the overall pattern of results from Canada was replicated in Norway, it is likely that the most informative comparisons are between the groups within each country, rather than comparisons of absolute ratings between the countries.

Between-group comparisons within the Norwegian sample revealed that women were able to imagine choosing a sperm donor as were the Canadian women. Moreover, the result that character retained considerable importance in a sperm donor regardless of the belief that this factor was unlikely to affect the child was found in both Canada and Norway. In agreement with the Canadian results, character was considered important in both long-term mate and donor selection, lending further support to the proposition that a specialized psychology for mate choice persisted in the context of sperm donor selection.

We wish to thank M. Wilson, M. Daly, and an anonymous reviewer for critical comments on earlier versions of this paper, and I. Mysterud for his translation assistance. Support was derived from research grants to Martin Daly from the Natural Sciences and Engineering Research Council (NSERC) of Canada and from an NSERC scholarship to JES.

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