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A Research Note on the  
Influence of Relationship  
Length and Sex on  
Preferences for Altruistic and  
Cooperative Mates

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### Abstract

Previous literature suggests that altruism may have evolved as a sexually selectable trait. Recent research suggests that women seek altruistic traits for long-term, not short-term relationships, as altruism can serve as an honest signal of one's character. We tested this hypothesis by asking 102 participants to complete a modified version of Buss's Mate Preferences Questionnaire. We found that women placed higher importance on altruism in a mate compared to men, and this preference was greater when seeking a long-term mate, compared to a short-term mate. We also found that although women placed greater importance on cooperativeness in a mate compared to men, this preference was not influenced by whether they were seeking a short-term or a long-term mate. We successfully replicate previous literature exploring the role of altruism in mate choice.

### Keywords

Altruism, cooperation, sexual selection, mate choice, mate preferences, prosocial behaviour

### Introduction

Altruism is defined as an act that is beneficial to a receiver, but costly to the altruist, thus providing a "net loss to himself and a net benefit to his partner" (Noe, 2010, p. 346). Altruism is a costly behavior, where one can never be sure that an altruistic act will be reciprocated, thus (potentially) leading to personal loss. One can never be sure that altruism will lead to personal gains, which is why altruism has been a puzzling concept for evolutionary theorists (particularly altruism towards non-kin). However,

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this adaptive problem posed by altruistic behavior has led to several theories proposing to explain the role of altruism in human evolution.

Trivers (1971) proposed the idea of reciprocal altruism, suggesting altruistic behavior evolves due to reciprocal benefits, whereby altruistic acts are reciprocated between giver and receiver, thus leading to the evolution of altruism. Furthermore, Roberts (2008) proposed the notion of indirect reciprocity as an explanation for the evolution of altruism, suggesting altruistic, or cooperative behavior is reciprocated by others indirectly, through reputation building (see Nowak, Page, & Sigmund, 2000). According to Phillips (2015), indirect reciprocity is an adaptive process, allowing us to identify those we should cooperate with, and those to avoid. Further theories, such as competitive altruism (Roberts, 1998) suggest that people engage in altruistic acts to compete with others for opportunities of self-interest. Recently, sexual selection theory has been used as a theoretical framework to understand altruistic behavior, which is the focus of this paper.

Miller (2000, 2007) argued that several traits can serve as honest signals, or fitness indicators, leading researchers to focus on the role of altruism in mate choice, arguing altruism may serve as a sexually selectable trait (Bhagal, Galbraith, & Manktelow, 2016; Farrelly, Lazarus, & Roberts, 2007). In support, the handicap principle (Zahavi, 1995) suggests that because altruism is costly, it relays a signal of honesty, as those who possess the handicap can afford bearing the cost of possessing the trait, thus suggesting an altruist must be superior than non-altruists, as they can afford to bear the costs of being altruistic. The handicap principle suggests that if the costs of altruistic behavior are somewhat overcome, they provide the altruist with an array of fitness advantages over other individuals who do not possess the handicap (Zahavi & Zahavi, 1997).

Several studies have tested the hypothesis that altruism is a signal of long-term parental qualities, providing strong support that women value altruism in a partner, particularly when seeking long-term, not short-term relationships (Barclay, 2010; Farrelly, 2013; Farrelly, Clemson, & Guthrie, 2016). This effect may be present because traits such as altruism signal intention to be a good parent towards future offspring, and a good partner, leading to increased relationship longevity and satisfaction (Miller, 2007).

Most studies have explored the role of altruism in mate choice; however, little research has explored the role of cooperation in mate choice. Farrelly (2011) explored the role of cooperation in mate choice using descriptions of targets containing cooperative and noncooperative cues. Female participants then stated how desirable those targets were for a short-term and long-term relationship. Farrelly (2011) found that females valued cooperative partners when seeking long-term mates compared to short-term mates. Farrelly's findings provide a rationale for including cooperation as a separate trait to altruism when exploring the role of prosocial behavior in mate choice.

Previous literature exploring preferences for altruistic mates have largely involved vignettes and descriptions of targets (Barclay, 2010; Farrelly et al., 2016), or the Mate Preferences Towards Altruistic Traits Scale (Farrelly, 2013; Phillips, Barnard, Ferguson, & Reader, 2008). Furthermore, although previous literature has found that women desire altruistic mates over non-altruistic mates (a finding which has been replicated), few studies (see Farrelly, 2011, 2013; Farrelly et al., 2016) have explored the role of relationship length in preferences for altruistic traits. As previous literature strongly finds that the preference for altruistic traits is stronger when seeking long-term compared to short-term mates, we aimed to replicate this finding using an alternate measure, thus adding to the literature.

We aimed to replicate this finding using Buss's (1989) Mate Preferences Questionnaire. The aim of this study was to explore whether people placed importance on altruism and cooperation when seeking a long-term and short-term romantic partner. The questionnaire includes other traits of importance; however, for the purposes of this paper, we only empirically report the results on preferences for altruism and cooperation.<sup>1</sup> We hypothesized the following:

Hypothesis 1 (H1): Women would have a greater preference than men for altruistic partners when seeking a long-term, compared to a short-term mate.

Hypothesis 2 (H2): Women would have a greater preference than men for cooperative partners when seeking a long-term, compared to a short-term mate.

## Method Participants and design

One hundred and two heterosexual people took part (46 men and 56 women) recruited via opportunity sampling with a mean age of 22.25 years ( $SD=5.83$ ). The sample was recruited from a university in the West Midlands (United Kingdom), consisting of largely undergraduate and postgraduate students.

A 2 (between groups factor, sex: man/woman) 2 (within group factor, relationship length: short-term/long-term) mixed design was adopted. The dependent variables (DVs) were preferences for altruism and cooperation. These preferences were listed, and participants were required to state how much they valued each trait.

## Materials and procedure

After stating demographic information, participants completed a modified version of Buss's (1989) Mate Preferences Scale, where participants were required to give each preference points out of 3, with 3 being high and 0 being low. To make it easier to follow for our participants, two columns were added, with one titled short-term, and

the other titled long-term. The scale was altered to a 1 (not at all essential) to 4 (essential) Likert-type Scale.<sup>2</sup> As we were primarily interested in altruism and cooperation, these traits were added to the original scale and were the focus of the analysis. Due to the limited literature exploring altruism and cooperation, respectively, we included them as separate traits. The words “generosity” and “cooperative” were used in the questionnaire. Participants rated how much they sought each trait in a romantic partner when seeking a short-term and long-term mate. Data were collected via paper and pen. Once participants completed the questionnaire, they were debriefed. Example instructions are included below:

On a scale from 1 (not essential) to 4 (essential) please indicate how essential (or not) each trait is to you (in each column), depending on whether you are seeking a short-term or long-term partner. For example, if maturity in a short-term mate is very important to you, write 4 (essential) in the short-term column next to the trait ‘maturity’ and so on.

## Results - Altruism

A 22 mixed analysis of variance (ANOVA) was conducted to explore the influence of relationship length and sex on preferences for altruism. Descriptive statistics are presented in Table 1. ANOVA revealed a significant interaction between relationship length and sex,  $F(1, 100), 9.45, p < .01, n^2 = .07$ , suggesting preferences for altruism were collectively influenced by relationship length and the participants’ sex. Women placed a greater importance on preferences for altruism when seeking a long-term mate compared to a short-term mate. This pattern was not present for men.

There was a significant main effect of sex,  $F(1, 100), 27.59, p < .001, n^2 = .22$ , with women placing greater importance on altruism when seeking a mate compared to men. There was a main effect of relationship length,  $F(1, 100), 23.25, p < .001, n^2 = .18$ , with preferences for altruism higher when seeking long-term mates compared to short-term mates, consistent with previous literature.

Table 1. Descriptive statistics for altruism and cooperation, by sex.

Relationship length	Sex	Altruism	Cooperation
Short-term	Men	M=2.48, SD=0.86	M=2.74, SD=0.83
	Women	M=3.07, SD=0.63	M=3.30, SD=0.63
Long-term	Men	M=2.57, SD=0.89	M=2.76, SD=0.79
	Women	M=3.46, SD=0.66	M=3.36, SD=0.65

To further explore the significant interaction between relationship length and sex, we calculated the proportional difference in stated preferences for altruism between short-term and long-term mates (men: mean=.09, SD=.35; women: mean=.39, SD=.59). An independent samples t-test was conducted with proportional difference as the DV and sex as the independent variable,  $t(100)=3.07$ ,  $p<.01$ ,  $n^2=0.63$ . This finding shows that there was a larger proportional difference in preferences for altruism for women, compared to men.

## Cooperation

A 22 mixed ANOVA was conducted to explore the influence of relationship length and sex on preferences for cooperation. ANOVA revealed a significant main effect of sex,  $F(1, 100)=16.67$ ,  $p<.001$ ,  $n^2=.14$ , with women placing greater importance on cooperation when seeking a mate compared to men. There was a nonsignificant main effect of relationship length,  $F(1, 100)=3.75$ ,  $p=.056$ ,  $n^2=.04$ , suggesting preferences for cooperative mates were not influenced by whether participants were seeking a short-term or long-term mate. There was a nonsignificant interaction between relationship length and sex,  $F(1, 100)=.67$ ,  $p=.415$ ,  $n^2=.01$ , suggesting preferences for cooperativeness were not collectively influenced by relationship length and the participants' sex.

## Discussion

The primary aim of our study was to replicate previous literature that has found a strong female preference for altruistic mates, especially when seeking long term mates. We successfully replicated these findings using Buss's mate preferences questionnaire, as women placed higher importance on altruism for long term relationships compared to short-term relationships. As a result, our results support H1.

We also aimed to explore whether preferences for cooperativeness in a mate were dependant on whether participants were seeking a long-term or short-term mate. We found that although women had a higher preference for cooperativeness in a mate compared to men, this was not influenced by whether they were seeking a short-term or long-term mate, thus providing partial support for H2. As much of the literature has focused on altruism, as opposed to cooperation, future research is needed to explore the direct relationships amongst preferences for cooperativeness, sex, and relationship length. It was surprising that participants did not express higher importance on cooperativeness when seeking a long-term partner, considering long-term relationships are considered a cooperative venture (DeMaris, 2010).

A potential reason why women do not value altruistic traits when seeking a short-term partner may be because women engage in short-term mating to produce high-quality offspring (Cashdan, 1993). This argument suggests that women value attributes which relate to genetic quality, such as height, health, and masculinity, rather than

traits such as altruism and cooperativeness. Our findings could therefore be explained by Fisher's (1930) Sexy Son Hypothesis, which suggests females choose males who possess high-quality traits in order to produce high-quality offspring, which in turn leads to the offspring's increased reproductive success (see Prokop, Michalczyk, Drobniak, Herdegen, & Radwan, 2012 for a recent meta-analysis).

Replication studies have been particularly important due to lack of replicable findings in the social sciences (see Earp & Trafimow, 2015). A strength of our study is that we add to the literature on the role of altruism in mate choice, using an alternate measure, which has not been used in previous literature exploring altruism and mate choice.

#### Declaration of Conflicting Interests

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#### Supplemental Material

Supplementary material is available for this article online.

#### Notes

1. We have included descriptive statistics in Table S1 of Supplementary Material detailing means and SD values for each trait on Buss's questionnaire, by relationship length and sex.
2. We did not include the second section of Buss's original questionnaire where participants rank traits according to their desirability, instead we modified part 1 of Buss's questionnaire.

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