

**Examining the interaction between altruism and resource potential in
heterosexual women's mate preferences**

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Abstract

Previous research has shown that altruism is an important trait in romantic relationships, particularly longer relationships where it can signal underlying characteristics (e.g. kindness) that are valued in good partners/parents. Further evidence of this has been observed when comparing the interaction between altruism and other traits (e.g. physical attractiveness) that may signal other qualities (e.g. good genes), where altruism was preferred by heterosexual women in long-term partners. To further explore the role of altruism in relationships and its interaction with other mate choice traits, the current study examined heterosexual women's preferences for altruism and a trait signalling good investment, that of resource potential. Here we found that, as predicted, women preferred altruistic male partners for long-term relationships, and that altruism was a more desired trait than resource potential in potential long-term partners. These findings support the view that altruism is a high valued trait in relationship formation due to it signalling good partner/parent indicators, and is more important than resource potential when women choose long-term partners.

Keywords: altruism, relationship types, mate preferences, resources

Public significance statement

Altruistic acts have been shown to be valued in mate choice, and as indicators of an individual's quality as a good partner and parent they are more valued in long-term relationships than indicators of other qualities such as physical attractiveness (which indicates good genetic quality). This study found that heterosexual women also view altruistic traits as more desirable in long-term partners than resource potential is, which can be an indicator of good investment. These findings therefore show once more how preferences for altruism have evolved in long-

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term mate choice, and also the importance of exploring how different mate choice traits interact with each other when such decisions are made.

Examining the interaction between altruism and perceived resource potential in heterosexual women's mate preferences

Recent research into valued traits in heterosexual mate choice has explored the role of altruistic and prosocial behaviour (see Bhogal, Farrelly & Galbraith, 2019 for a recent review). Here it has been shown that heterosexual men and women show strong preferences for altruistic partners, particularly for longer relationships (Farrelly, 2013). This has led to the suggestion that altruistic behaviours are important signals of an individual's valued personality traits (e.g. kindness) that make them good long-term partners and potential parents of any shared offspring (Bhogal, Galbraith & Manktelow, 2019; Bhogal et al., 2020; Farrelly, 2011; Farrelly & King, 2019).

To further examine this, Farrelly et al., (2016) investigated how heterosexual women's preferences for altruistic partners was further influenced by the latter's physical attractiveness. The authors selected physical attractiveness as a comparison as there is ample evidence that this signals genetic quality rather than good parent/partner qualities (e.g. Rhodes, 2006). As a result it has been found that, contrary to altruism, physical attractiveness is preferred for short-term relationships (e.g. (Buunk et al., 2002; Li & Kenrick, 2006; Mehmetoglu & Määttänen, 2020) where these genetic benefits are more keenly sought. Returning to Farrelly et al., (2016), it was found that women preferred altruistic partners for long-term relationships, and also preferred altruistic men over physically attractive ones for such relationships too (Farrelly et al., 2016). This therefore provided further support for altruism being an important signal of the long-term qualities desired for romantic partners.

Research such as Farrelly et al., (2016) shows the value of examining the interaction between different mate preference traits, rather than just examining each trait in isolation (Brown, 2021; Ehlebracht et al., 2018; Li et al., 2002; Li & Kenrick, 2006; Regan, 1998).

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Therefore future research would benefit by exploring the interplay between altruism and other traits to further reveal the idiosyncrasies of human relationships. One such relevant trait here is that of perceived resource potential. Indicators of high resource potential have been shown to be valued characteristics sought by heterosexual women (Jonason & Thomas, 2022; Li et al., 2013; Walter et al., 2020) and to be important for both short-term (when it can signal immediate resources) and long-term (when it can signal potential to acquire future resources) relationships (Buss & Schmitt, 1993). As a result, Buss & Shackelford (2008) propose that resource levels act as good investment indicators in mate choice, as opposed to good genes indicators (e.g. physical attractiveness) or good parent/partner qualities (e.g. altruism).

Therefore the aim of the current study was to explore the role of altruism in heterosexual women's mate preferences when directly compared with an indicator of good investment qualities (resource potential). In doing so, this study conceptually replicates Farrelly et al., (2016) by exploring the interaction between altruism and an alternative desired mating trait. Therefore this study examined how varying levels of two traits (altruism, resource potential) in partners affects their desirability for both short and long-term relationships. As a result, this novel research further tests the theory that altruism is a reliable indicator of good parenting/partner qualities. Based on the details above and from Farrelly et al., (2016), the following hypotheses were tested:

1. Women will find altruistic men more desirable than non-altruistic men, and this preference will be greater for long-term relationships.
2. Women will find altruistic men more desirable than men with high levels of resource potential, for long-term relationships only.

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Methods

Participants

A power analysis was conducted (Faul et al., 2009), and to achieve 95% power and detect a small effect size (.2) in line with Farrelly et al., (2016), a minimum of 84 participants were required. There were 198 heterosexual female participants aged between 16 and 45 ($M_{age} = 28.68$, $SD = 7.99$) who were recruited via either opportunity sampling or completed the study for course credits, using JISC online surveys (www.onlinesurveys.ac.uk). This study was approved by the university ethics committee.

Materials and Procedure

Participants were presented with several different hypothetical scenarios that described a specific situation with details about how two men had responded. In each scenario, one of the men (e.g., “Person A”) chose an ‘altruistic’ option whereas the other man (e.g., “Person B”) chose a ‘non-altruistic’ option. Furthermore, details about the two men in each scenario were constructed so that their resource potential was similar. All scenarios are publicly available on the study OSF page, and an example of a scenario is “Person E and Person F were walking past the private school they both used to attend when they saw a taller boy following and taunting a smaller boy and had started to make him cry. Person E intervened and told the bully to leave him alone and checked he was ok. Person F decided not to get involved and carried on walking.”.

As with Farrelly et al., (2016), after reading each scenario fully, participants were asked to rate the desirability of each man for both a short-term and a long-term relationship on a 5-point Likert-type scale from *Very Undesirable* to *Very Desirable*. Definitions of each relationship were taken from Farrelly et al., (2016), and were provided to participants at the start of the study and as a reminder with each scenario.

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There were six of these experimental scenarios, half of which described both men as being high in resource potential (e.g. both attended private school) and the other half described them as being low (e.g. both left school at sixteen years of age). Furthermore, there were four ‘distractor’ scenarios which contained no details about resource potential or altruism levels. There were therefore a total of ten scenarios that participants read and responded to, and the order in which these were presented was randomised.

Results

All analyses were conducted using JAMOVI Version 2.2, and all data and analysis are publicly available on the OSF project page:

https://osf.io/r3ycx/?view_only=6064bbfc1ead4eaaa102d7b25ef4f836.

Hypothesis 1: Women will find altruistic men more desirable than non-altruistic men, and this preference will be greater for long-term relationships.

A repeated measures ANOVA with resource potential of target (high vs. low), altruism level of target (high vs. low) and length of relationship (short vs. long) as within-subjects variables revealed a main effect of altruism level, $F_{(1,197)} = 842.46$, $p < .001$, $\eta^2 = .61$, with altruistic men ($M = 3.89$, 95% CI [3.82, 3.97]) being rated more desirable than non-altruistic men ($M = 2.26$, 95% CI [2.20, 2.33]). Furthermore there was a significant interaction between altruism levels and relationship length, $F_{(1,197)} = 112.91$, $p < .001$, $\eta^2 = .02$, and subsequent pairwise comparisons revealed greater desirability ratings for high altruists for long ($M = 4.04$, 95% CI [3.96, 4.11]) than short-term ($M = 3.75$, 95% CI [3.66, 3.83]) relationships ($p < .001$) but greater desirability ratings for low altruists for short ($M = 2.38$, 95% CI [2.30, 2.45]) than long-term ($M = 2.15$, 95% CI [2.08, 2.22]) relationships ($p < .001$), see figure 1.

Hypothesis 2: Women will find altruistic men more desirable than men with high levels of resource potential, for long-term relationships only.

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To begin with, a repeated measure ANOVA was conducted looking at mean desirability ratings for all high altruistic men and all high resource potential men with relationship length as a further independent variable. This revealed a main effect of trait, $F_{(1,197)} = 614.72, p < .001, \eta^2 = .36$, with high altruistic men ($M = 3.89, 95\% \text{ CI } [3.83, 3.95]$) rated as more desirable than high resource potential men ($M = 3.14, 95\% \text{ CI } [3.08, 3.20]$). Furthermore there was a significant interaction between trait and relationship length, $F_{(1,197)} = 92.70, p < .001, \eta^2 = .01$, and subsequent pairwise comparisons revealed that high altruistic men were desired more for long-term ($M = 4.04, 95\% \text{ CI } [3.97, 4.10]$) than short-term ($M = 3.75, 95\% \text{ CI } [3.68, 3.81]$) relationships ($p < .001$), however there was no such effect of relationship length on the desirability of high resource potential men ($p = .77$), see figure 2.

To further analyse the interplay between altruism and resource potential, a significant interaction was found between altruism levels and perceived resources potential, $F_{(1,197)} = 15.25, p < .001, \eta^2 = .001$, and subsequent pairwise comparisons revealed that desirability ratings for high altruists were greater when they also were high ($M = 4.03, 95\% \text{ CI } [3.94, 4.11]$) than low ($M = 3.76, 95\% \text{ CI } [3.68, 3.84]$) in resource potential ($p < .001$), however low altruists were not rated significantly differently if they were also high ($M = 2.26, 95\% \text{ CI } [2.18, 2.34]$) or low ($M = 2.26, 95\% \text{ CI } [2.19, 2.34]$) in resource potential ($p < .001$).

Conversely, for individuals high and low in resource potential, also being high in altruism always led to higher desirability ratings than if they were also low in altruism (all $ps < .001$).

Discussion

As hypothesised, women rated highly altruistic men as more desirable than low altruistic men for long-term relationships only, which supports the findings of previous research (Farrelly, 2013; Farrelly et al., 2016; Farrelly & Bhogal, 2021; Farrelly & King, 2019). Furthermore, there was clear evidence to support Hypothesis 2 as altruism was rated

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more desirable than resource potential and this was greater for long-term relationships. Also the interaction between altruism and resource potential revealed that although being high in both altruism and resource potential made men the most desirable, the presence of only one trait varied greatly in how it affected desirability. Specifically, if a man was low in resource potential then being high in altruism could significantly increase his desirability, however if a man was low in altruism then also possessing high resource potential had no significant further impact on desirability. In other words, if a potential mate fails to meet a minimum threshold concerning an important trait (altruism), the presence of a less important trait (e.g., resource potential) was no compensation in the eyes of the beholder (Miller & Todd, 1998).

This is a similar pattern of results to Farrelly et al., (2016), by showing that when altruism is compared to a trait indicating another quality, it is clear that altruism is more valued, particularly for long-term relationships. Overall, these findings offer further evidence that altruistic behaviours are important in relationships as they can signal an individual as possessing desired psychological traits (e.g. warmth, agreeableness) that will make them good long-term partners and potential parents (Bhagal et al., 2020; Farrelly, 2011; Farrelly & King, 2019, Iredale et al., 2020). On a related note, the finding that relationship length had no significant effect on how desirable resource potential was for women supports the view of Buss & Schmitt (1993) that resource potential can be important for both short-term (signalling immediate resources) and long-term (signalling potential to acquire future resources) relationships.

It is important to consider the possible limitations with the methodology used here. Unlike physical attractiveness in Farrelly et al., (2016), presenting individuals who varied in a broad measure such as resource potential within a vignette design is complex. Here every attempt was made to prevent other traits being inadvertently signalled (e.g. intelligent), but

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we accept that this will always be difficult to control. However including different examples of resource potential in the vignettes mitigated this, and the pattern of results suggests participants were able to differentiate the different levels being portrayed. Furthermore future research can examine specific aspects (e.g. actual resource levels) as well as comparative traits such as intelligence and socio-economic status to see how these may interact with altruism in mate choice decision-making.

In conclusion, these findings further our understanding of the decisions made when selecting potential romantic partners, and in particular how different traits we value can interact so that we can this process more holistically. As with previous research this study has shown that altruism is a highly desired trait, particularly for longer relationship, however there remain more mate choice traits and subsequent interactions to explore, to further unravel the complexities of human mate choice. Finally, despite the clear findings of this study it will only be relevant to our understanding of human relationships when similar findings arise from actual mate choice decisions in the real world (Arnocky et al., 2016; Stavrova & Ehlebracht, 2015), and this is an important avenue for further research to explore.

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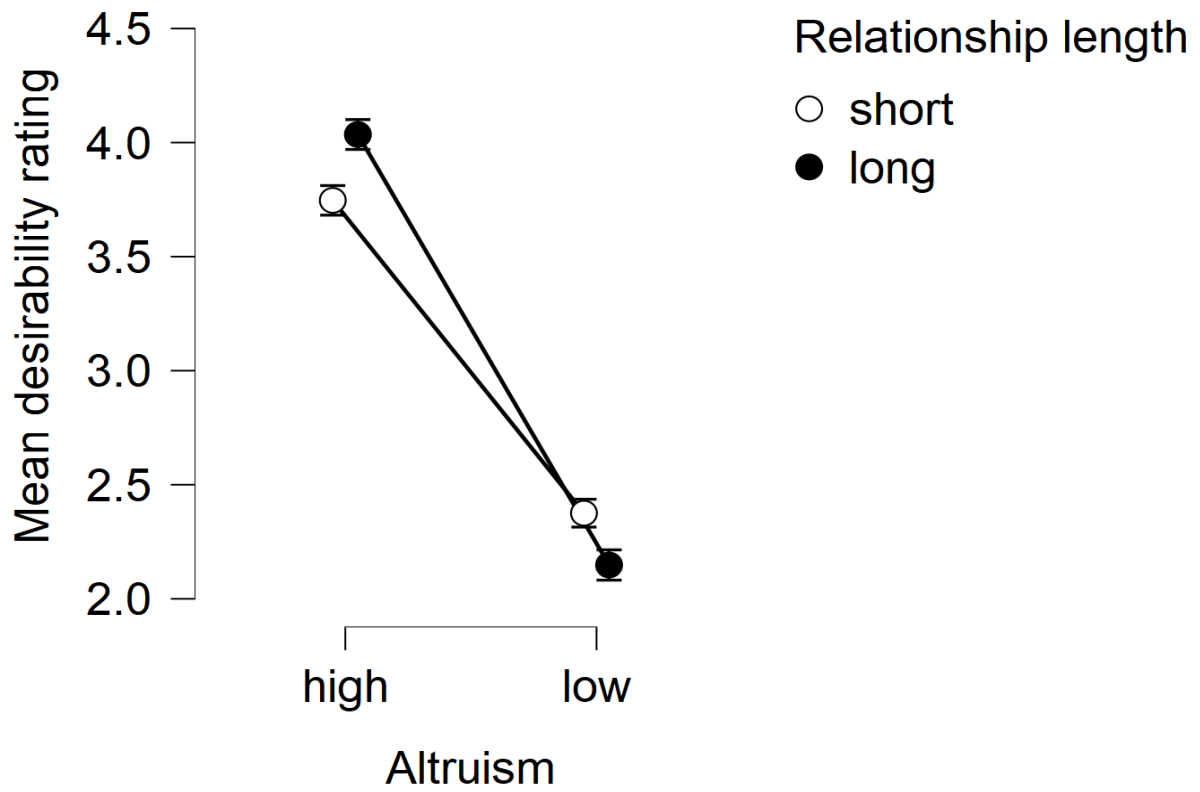


Figure 1: Mean desirability ratings ($\pm 95\%$ CI) by altruism level and relationship length.

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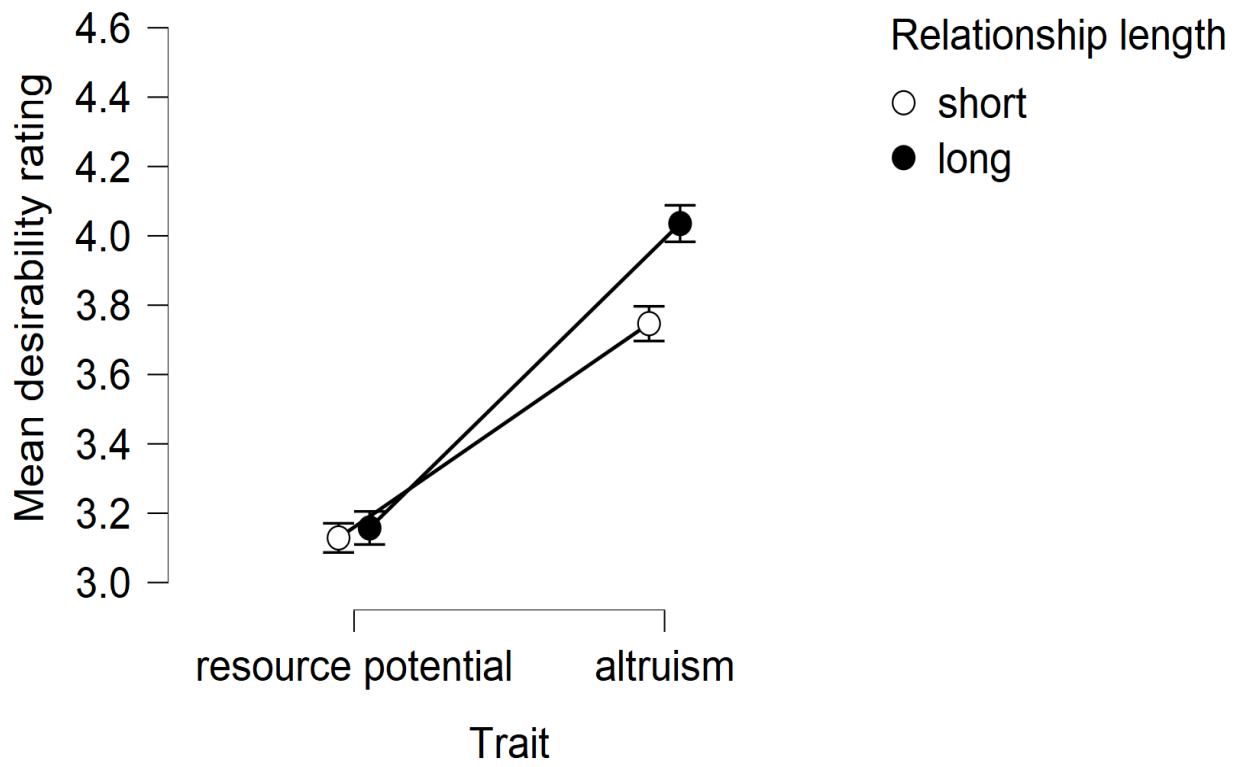


Figure 2: Mean desirability ratings ($\pm 95\%$ CI) by trait displayed and relationship length.