

# Are Everyday Heroic or Altruistic Acts More Desirable in Human Mate Choice?

Daniel Farrelly<sup>1\*</sup>, Briar Curley<sup>1</sup>, and Manpal Singh Bhogal<sup>2</sup>

<sup>1</sup> School of Psychology, University of Worcester, Worcester, WR2 6AJ, UK

<sup>2</sup> School of Psychology, University of Wolverhampton, Wolverhampton, WV1 1LY, UK

\*Author for correspondence (d.farrelly@worc.ac.uk)

Previous research has shown that heroic acts are valued traits in human mate choice, due to their desirability particularly for long term partners. There is however inconsistency as to whether heroism is a more valued trait than more general forms of altruism, or if both signal the same underlying desired trait in partners. To assess this, the current study looked to directly compare the desirability of heroic and altruistic acts when both are options that individuals may choose. Here, both male and female participants were provided with descriptions of hypothetical individuals who chose to behave either heroically or altruistically in the same everyday scenario, and asked to rate their desirability for both short and long term relationships. It was found that although both heroic and altruistic individuals were considered more desirable for long term than short term relationships, there were no differences in the ratings of heroic and altruistic acts nor were there any sex differences. Accordingly it is concluded that heroism is not a distinct trait in mate choice than altruism when potential confounding factors are controlled for, and both signal the actor's underlying prosocial personality characteristic that is valued in long term relationship for both men and women.

## Keywords

heroism, altruism, mate choice, relationship length, desirability

## Introduction

Despite initially being a puzzle for Darwin (1859) to solve, altruistic behaviors have been shown to benefit the actor in a number of ways, including mate choice (see Bhogal et al., 2019 for a review). Here, displays of different forms of altruistic behavior have been shown to be valued, including heroism. For example Kelly & Dunbar (2001) found that heroic males were desired as romantic partners, more so than altruists, and furthermore women have a preference for heroic risk-takers over non-heroic risk-

takers, particularly when levels of risk involved were high (Farthing, 2005, 2007). Recently Margana et al. (2019) found that women desired heroic partners, particularly for long-term relationships, and Bhogal and Bartlett (2021) found the same desirability for heroic partners in both men and women.

This leads to the question as to how heroism may differ from more general altruistic behaviors as a signal in human mate choice. One view is that, as it also entails potential personal risk, heroism is a 'higher' form of altruism (Smirnov et al., 2007) or 'high-stakes' altruism (Rusch, 2022) which would suggest that heroic acts should be considered more desirable than merely altruistic ones. Kelly and Dunbar (2001) found this, however Margana et al. (2019) found that both heroic and altruistic individuals were similarly desired (although without directly comparing this). Adding further to the mixed findings, Norman and Fleming (2019) did compare heroism and general altruism, and found that women preferred general altruism, which they suggest is evidence of this being more important in mate choice than heroism.

A possible explanation for this inconsistency is that heroic and altruistic acts are not compared directly in a controlled manner. This means that confounding factors can affect results, such as heroic acts used in research that are often extreme may cue that the actor possesses other desired attributes. For example, Bhogal and Bartlett (2021) used the example of a heroic act performed by an individual while climbing Mount Everest, which will also cue desirable attributes such as physical strength and financial resources. As a result, if one is to consider heroism differs from more general altruism only in terms of increased risk to the actor (in terms of, for example, physical or psychological risk, discomfort, social exclusion) as previous studies have done (Kelly & Dunbar, 2001) then it is important to control for other potential confounds to make this the sole difference between heroic and altruistic acts. Therefore to precisely assess whether acts of heroism are more desirable in human mate choice or not, a direct and more controlled comparison with general altruism is necessary rather than focussing on more extreme forms of heroism which are less comparable.

Therefore the aim of the current study is to investigate how people perceive potential partners who choose to behave in either *altruistic and heroic* ways ('heroic') or in *altruistic but not heroic* ways ('altruistic'), within the same situation. To do so, participants will be presented with a series of scenarios, and details of individuals in these scenarios who chose to behave either altruistically or heroically, and then rate the desirability of each individual. More specifically, as mentioned above the distinction between heroism and altruism here will be the increased risk (of different forms) to actors in the former. This study will be unique in providing a more controlled comparison between heroic and altruistic acts, and will also use everyday scenarios to provide more realistic situations that

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better represent the proximate cases of heroism the sample population (undergraduate students) may experience. Furthermore, as both general altruistic acts (Farrelly, 2013; Farrelly & King, 2019) and heroic acts (Bhagal & Bartlett, 2021) have been shown to be valued by both men and women for long-term relationships (albeit higher in women), this study will look at the findings from both men and women.

This study will test the following hypotheses:

- 1) Both heroic and altruistic acts will be more desired for long-term than short-term relationships.
- 2) This preference for heroism/altruism in long-term partners will be greater in women than men.
- 3) Due to the inconsistent findings from previous research, there will be an exploratory hypothesis to investigate any differences between the ratings of desirability between the heroic and altruistic acts.

**Methods**

**Participants**

An a priori power analysis was conducted using G\*Power (Faul et al., 2009). To achieve 80% power and detect a small effect size (.2) at least 112 participants were recommended. One hundred seventy-nine participants took part (72% female) mostly via the host universities’ research participation scheme ( $M_{age} = 23.08, SD = 7.59$ ). The sample consisted of students and members of the public in the UK. This research was approved by the University Research Ethics Panel at the University of Worcester.

**Design**

A 2 (heroism/altruism) x 2 (long/short term relationship) x 2 (male/female) within-subjects design was used. The dependant variable was desirability, measured on a 1 (very undesirable) to 5 (very desirable) Likert scale, consistent with Margana et al. (2019).

**Materials & Procedure**

(a) Scenarios

Six scenarios were developed based on previous literature (see Bhagal & Bartlett, 2021; Margana et al., 2019) that presented an everyday event, and included descriptions of how two hypothetical target individuals behaved in response. Of these two targets, one behaved in a heroic manner and the other in an altruistic manner. For example, one scenario involves two students going on a hike that turns out to be too much as one of the students has a fear of heights and is terrified to walk on a path so close to a steep drop. The other friend offers to take a safer route with them that avoids the drop (altruistic) or the other friend offers to walk closest to the drop whilst their friend keeps on the other side of them (heroic). After reading each scenario, participants rated the desirability of each target individual separately for both a long-term and a short-term relationship. Six distracter scenarios with a similar format were used to conceal the aims of the study. All targets were gender/sex neutral (e.g., no gender pronouns were used). All materials and data are openly available via the following Open Science Framework link (<https://osf.io/jcm8k/>). Relationship length was also defined before the survey using these statements:

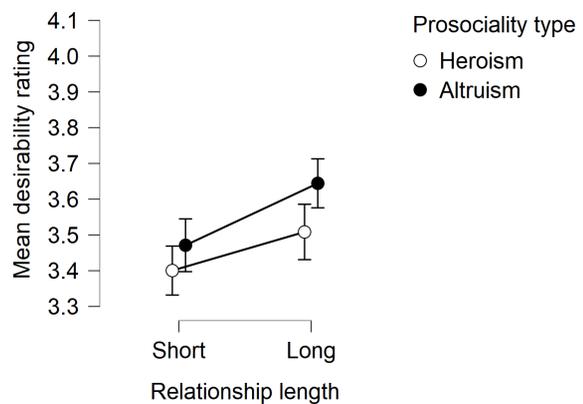
- Short-term relationship – a person with whom you

would desire a brief affair or a one-night stand.

- Long-term relationship – a person with whom you desire a committed long-term romantic relationship.

**Results**

All analysis was conducted using JASP software version 0.16.1 (JASP Team, 2022). For hypothesis 1, there was a significant effect of relationship length ( $F_{[1,177]} = 7.43, p = .007, \omega^2 = .009$ ) as both forms of behavior were more desirable in long-term relationships than short-term relationships. However, for hypothesis 2 there was no significant interaction between relationship length and participant sex ( $F_{[1,177]} = 0.69, p = .41, \omega^2 < .001$ ). Furthermore for hypothesis 3, there was no significant main effect of type of behavior ( $F_{[1,177]} = 3.08, p = .08, \omega^2 = .003$ ), see Figure 1, nor any significant interactions between type of behavior with participant sex ( $F_{[1,177]} = 0.72, p = .4, \omega^2 < .001$ ), or with relationship length ( $F_{[1,177]} = 2.34, p = .13, \omega^2 = .001$ ), or with both participant sex and relationship length ( $F_{[1,177]} = 0.003, p = .96, \omega^2 < .001$ ). Finally there was also no significant main effect of the participants’ sex ( $F_{[1,177]} = 3.05, p = .08, \omega^2 = .006$ ).



**Figure 1.** Mean desirability ratings (± 95% C.I.) for individuals in both heroic and altruistic scenarios for short and long term relationships.

**Discussion**

The aim of this study was to build on previous work exploring the roles of heroism and altruism in human mate choice, by directly comparing the desirability of each. The hypotheses are partially supported; it was found that both forms of behavior were preferred for long-term over short-term relationships, consistent with the plethora of existing research (Bhagal et al., 2019). For hypothesis 2 however it was not found that this preference was greater in women than men. Finally, for the exploratory hypothesis 3 it was found that desirability ratings did not differ depending on the type of behavior being displayed (altruism vs heroism).

A key strength of this study is that it expands on existing literature concerning heroism in mate choice by directly comparing heroic and altruistic acts within the same context. This allowed a level of control absent in previous studies comparing the two (Kelly & Dunbar, 2001; Margana et al., 2019; Norman & Fleming, 2019). That no difference between these acts were found suggests that there is nothing ‘special’ or ‘higher’ about the

increased risks attributed to heroism as a signal in mate choice, and that these are perceived the same as other altruistic acts. Furthermore this suggests that previous research that has found higher desirability for heroism (e.g., Bhogal & Bartlett, 2021) over altruism may be due to other confounding traits that were signalled by using more extreme and heightened forms of heroism. In other words, when heroism is seen as being desirable, it may not be due to the prosocial or altruistic nature of such acts *per se*, but because of other desirable traits it also signals, such as physical strength or status. Such a possibility should be considered in future research that examines the role of heroism in mate choice.

That everyday heroism is merely another means by which individuals signal their overall prosocial nature to potential partners is consistent with other research that has examined different forms of prosociality, such as trustworthiness (Ehlebracht et al., 2018), altruism towards kin (Oda et al., 2014) and pro-environmentalism (Borau et al., 2021; Farrelly & Bhogal, 2021; Palomo-Vélez et al., 2021). This therefore provides further evidence that prosocial acts are important in mate choice as they display an over-arching personality characteristic that is valued in long-term relationships, due to it signalling the actor is a good partner, and potential parent to any shared offspring (Farrelly, 2011). Furthermore the finding here of no sex difference in preferences supports the view that, due to the benefits of bi-parental care in humans, the value of a prosocial nature in partners is due to mutual mate choice (Farrelly & King, 2019).

It is important to consider that by directly comparing heroic and altruistic behaviors, these results specifically reveal that individuals do not discriminate between them when either is a possible option at any given time. Indeed, it may be that participants here perceived those individuals who chose the heroic option as ‘showing off’ which may have negated any increased desirability they could garner from heroism. Support for this may come from recent research showing that excessive acts of cooperation are often viewed negatively by others (Raihani & Power, 2021) and that more moderate acts of altruism are most desirable (Bhogal et al., 2020).

Relatedly, the use here of everyday examples of heroism as opposed to more extreme forms also offers further insight into how altruistic acts are realistically presented in society. However this may lead to a possible limitation of the study, in that the examples of heroic acts used here were too subtle or weak to be inferred by participants as truly heroic. This is not unique to this study, as previous research too is limited in how a multifaceted trait such as heroism can be presented authentically (e.g., Farthing, 2007; Margana et al., 2019) and reflects the challenges of how to properly conceptualise heroism (Kinsella et al., 2015; Rusch, 2022). In response, as mentioned above each of the heroic options used here included an increased risk (e.g., physical, discomfort, social exclusion, psychological) to the actor over the altruistic option, fitting definitions of heroism used previously (Kelly & Dunbar, 2001). Therefore, as this alone was not enough to make them more desirable than altruistic-only acts suggests maybe it is indeed other extraneous desirable traits, such as physical strength and resources, that make more extreme heroic acts more desirable.

In conclusion, this study offers further insight into how altruistic acts, in particular heroic ones, play a role in human mate choice. Furthermore by using everyday acts it offers a realistic understanding of how humans respond and perceive such acts at a proximate level. Further research could investigate whether this notion of everyday behaviors extends cross-culturally; the current study was conducted using a WEIRD sample (Henrich et al., 2010) with culturally-specific examples, thus future research with different populations may reveal if these findings extend universally. Finally, as this research often relies on self-report data, it will be of importance to observe how actual mating decisions may relate to these findings.

### Author contribution

BC and DF contributed to the study conception, design and material preparation. Data collection was performed by BC, and analysis were performed by BC, DF and MSB. The first draft of the manuscript was written by DF and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

### Ethical statement

This study, “The role of heroism in mutual mate choice”, was approved by the University Research Ethics Panel at the University of Worcester on 07/01/2020.

### Data accessibility & program code

All data and materials are available on the Open Science Framework (<https://osf.io/jcm8k/>).

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