



ARTICLE

## **Elicitations of Altruism: The Effect of Genetic Relatedness and Need on Altruistic Behavior**

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This study examined the relationship between relatedness and need on altruism. Based on previous findings (Holmes, et al, 2005) we asserted that altruism would more likely occur when the victim need was high than when low and when the victim is a relative than a classmate. We also hypothesized an interaction to occur such that when victim need is low, the effect on altruism will be smaller for a classmate than for a relative, conversely, when need is high, it would be much greater when for a relative than for a classmate. To test this, we presented questionnaires depicting relatives and classmates in high and low need situations and asked participants to rate the likelihood of committing altruism. The results indicated that in general altruism was more likely to occur for a relative, and when the need level was high.

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### **Introduction**

The study of human behavior has often come across the phenomenon of altruistic behavior. The variations of this behavior vary widely across cultures and function; from religious observations to evolutionary survival mechanisms. These characteristics have inspired many efforts and contributions to explain the reasons for its occurrence, solicitation, and elicitation among different groups of people. In addition, many attempts have also been made to determine if altruism occurs more frequently in different situations. This has resulted in a variety of findings regarding influences of the behavior. Such studies have discovered two primary factors involved in this influence, and they are the relatedness between the victim in need and the level of need they are in. Although past attempts have been made to study the relationship between altruism and relatedness, and altruism and need, additional efforts are required to understand how these variables interact with each other to elicit altruism when combined.

Regarding altruism, Holmes, Miller, and Lerner (2001) predicted that people will be hesitant in acting on even strong feelings of compassion if doing so runs contrary to their self-interest, and that they will find ways of convincing themselves and others that their altruism is justified by self-interest. To test this, they examined the effects of need and type of solicitation in eliciting altruistic behavior. Experimenters, acting as fundraisers, approached participants soliciting donations for a charity. Participants were asked for a donation for an exchange (e.g. candles) or simply for a donation. Results showed that people were more likely to help when offered an exchange and if the level of victim need was high than when it was low. The second study was identical to the first, except instead of simply offering an exchange for a donation, it varied products according to how much of a bargain they were claimed to be. The results indicated that people's willingness to help increased if their compassion could take the form of an exchange.

This makes an important assertion that altruistic behavior is influenced by the need of the charity such

that when need is high, so is the tendency to act altruistically. In addition, the results indicate that although it served primarily as a justification, self-interest was still a determining factor to the extent the participant appeared to be acting in favor of it. However, the question of how need might elicit altruism when combined with another variable remains unanswered.

The effect of self-interest as an influence on altruism has been echoed in another study in which O'Gorman, Wilson, and Miller (2005) tested the effects of information regarding genetic relatedness and probability of future interaction on altruistic punishment and help. In one of two studies, participants rated how likely they would punish a cheater and how much they would pay to punish a cheater as a member of a pool of investors. The other members were varied as friends, cousins, and strangers. The results indicated that although most participants were angry and wanted to see the cheater punished, only some were willing to punish altruistically at their own expense. Further, the degree of relatedness and probability of future interaction had little effect on participants' ratings. Finally, the results of this study showed that participants were more likely to help a relative than a stranger and were more likely to give more money to help.

The results can be interpreted as a lack of willingness to help punish the perpetrator was dependent upon how much personal expense was involved, which is a reflection of a person's self-interest. In addition, the effect of relatedness was shown to be an influence on altruism.

In another study to test how genetic relatedness may elicit altruism, Burgess, Gordon, and Shevlin (2004) tested to find whether or not a relative would be favored over a non-relative when a participant was asked how likely they would save the victim in a life-threatening circumstance when previous degrees of care towards the participant from the victim was considered. Participants were asked to rate their likelihood of saving a victim if they had to choose between saving a relative and a non-relative in a burning building. The participant was only allowed to save one, given the knowledge of how much previous care the victim had invested in the participant. The previous care was described as a high, moderate, or low level. The study showed that the likelihood of a participant helping the victim was high if the victim had previously displayed a high level of care, regardless of degree of relatedness. Further, the study confirmed previous studies (Burgess, et al, 2004) in that altruism is influenced by genetic relatedness.

The purpose of this study is to examine the effect of need and degree of relatedness on altruistic behavior, and more precisely, how their combined

influence may affect its likelihood. Drawing upon previous findings as a basis to our approach, (Holmes, et. al, 2001), we predict that need has an effect on altruistic behavior such that the likelihood of altruistic behavior will vary according to the need of the victim. From this we hypothesize that people will be more likely to respond altruistically when the level of victim need is high than when it is low. Following from previous studies (O'Gorman, et. al, 2005) we use degree of relatedness as another variable in eliciting altruism and hypothesize that a person will be more likely to respond altruistically towards a relative in need than a classmate. We use these previous findings as a basis for our approach in order to examine the relationship between these variables. From this fact, we predict an interaction to occur such that when victim need is low, the effect on the likelihood of altruism will be small when the victim is a classmate than when a relative, conversely, when the level of need is high, the effect on the likelihood of altruism is much greater when the victim is a relative than when a classmate.

If a person were to refuse help to a classmate, they would be less likely to receive the same social pressures as they would if they refused a relative. In general people are socialized towards filial obligation and responsibility and thus would experience greater difficulty refusing help to a relative in need because there would be far more internal conflicts. In another regard, there are more benefits to helping a relative and more risks when refusing. By responding altruistically toward a relative, the altruism would more likely be reciprocal than for a classmate; a classmate would not likely return the favor and there would be no benefit for altruism. In addition, there would be more time spent with the relative and more affiliation with them than a classmate. Thus, there would be a greater emotional bond with a relative that would facilitate a greater willingness to help a relative. All of these considerations would be more apparent to a person particularly when the relative is in high need. This would produce a maximized willingness to help a relative in high need. So although the person would be willing to help out a relative in low need, the effect would be substantially greater when the relative is in high need.

We test our hypotheses using fictional scenarios which depict varying levels of need and relatedness in different situations. We reason that the scenarios would closely parallel real situations that may be encountered in day to day life will elicit typical responses in real life from participants.

## Method

### *Participants*

The participants were 15 undergraduate students (11 women, 4 men) in a research methods course in psychology at the University of California, Los Angeles and participated in the study as a requirement.

### *Design*

The study used a 2 x 2 within-subjects factorial design. The first independent variable was the degree of relatedness, and was manipulated on two levels: relative and classmate. These are operationally defined by the type of relationship depicted in a series of written fictional scenarios. We chose a classmate as a second level primarily because of our sample (undergraduate students), and thought that this variable would be pertinent to them. The second independent variable was recipient level of need and was also manipulated on two levels: the high condition and the low condition. The high need condition represents a very urgent situation and the low condition represents a situation with little or no urgency. The dependent variable was the likelihood of performing an altruistic act and was measured on a 10-point scale.

### *Materials/Apparatus*

A questionnaire consisting of 16 written fictional scenarios was presented and was originally composed for the purposes of the study. Each scenario depicted a situation in which either a relative or a classmate was in need of help. Eight of these scenarios measured the effects of the independent variables. Therefore, each scenario represented one level of the relatedness condition and one level of the need condition. The other eight scenarios were used to counterbalance for demand characteristics and did not measure the independent variables. Each treatment condition represented by two scenarios, for example, the relative in the high need condition was depicted in two scenarios. The two data points that were taken from responses to the treatment conditions were averaged and analyzed accordingly. Practice and sequence effects were controlled for by counterbalancing so that each scenario appeared in each ordinal position and did not precede or follow another scenario more than once. Specific item effects were controlled for by describing relatives (e.g., "someone in your family") and classmates (e.g., "someone in your class") generically, instead of using pronouns such as mom or dad. Each scenario asked the participant how likely they would respond, but the way in which it was asked was specific to the

situation being presented (e.g., "How likely would you give a ride, etc."). The scale of measurement ranged from 0 to 10 beginning with zero with every other number labeled as a descriptor in the following order: "I definitely would not", "I probably would not", "I might not", "I might", "I probably would", and "I definitely would". This process yields 16 different questionnaires each containing the same scenarios but in separate, counterbalanced order.

## Procedure

The questionnaires were randomly assigned to the participants. Each participant filled out the questionnaire separately. The participants were then instructed to respond to each scenario as they would in real life, rating their likelihood of altruistic behavior on the scale provided.

### Results

Figure 1 presents the average rating of the likelihood of altruistic behavior when the victim was presented as a relative versus when presented as a classmate and as a function of the level of need they were in. Observing the pattern of results shown here, it appears that there was a higher rating of the likelihood of altruistic behavior for relatives than classmates and when the level of need was high than when it was low.

To test these apparent effects, the data were analyzed using a two-way analysis of variance (ANOVA). The ANOVA revealed a significant main effect for victim need, such that average likelihood of altruism was significantly higher when the level of need was high ( $M=7.55$   $SD=1.01$ ) than when it was low ( $M=6.48$   $SD=1.21$ ), regardless of the relatedness to the victim,  $F(1, 14) = 16$   $MSE=1.07$ ,  $p = .001$ . Consistent with the prediction that relatedness would have an effect on altruism, the ANOVA also revealed a significant main effect for relatedness, such that likelihood of altruism was significantly higher when the victim was a relative ( $M=8.57$   $SD=.89$ ), than when it was a classmate ( $M=5.47$   $SD=1.56$ ), regardless of the level of need they were in,  $F(1, 14) = 57.089$   $MSE=2.53$ ,  $p = .000$ . Counter to our hypothesis, the ANOVA did not reveal a significant interaction between the level of need and relatedness,  $F(1, 14) = .989$   $MSE=1.69$   $p=.337$ .

## Discussion

This study has explored the relationship between relatedness and level of need on altruistic behavior and how they might elicit altruism. Our results indicated that a person generally responded more altruistically when the level of need was high (see figure 1) than when it was low, irregardless of the

relationship to the victim. Our results did show, however, that the likelihood of altruistic behavior is generally higher when the victim is a relative. This is consistent with our predictions regarding this relationship, that is, that a person would respond more altruistically when the victim is a relative. Although the reasons for this are many, we offer a practical one: that by being in a closer social network with their relatives as opposed with their classmate, a person would have more to lose as this relationship serves his/her self-interest far greater than what would be in the case of a classmate. The benefits of a smoothly functioning filial network have many practical and useful aspects that would contribute ultimately to survival. According to previous studies (Holmes, et. al, 2001), this is a factor that comes into the equation when people are evaluating when to respond altruistically. Although there are indeed benefits to altruism with classmates, they do not outweigh the former. So the underlying motive in this instance is one that fulfills a person's self interest.

Our second prediction was also confirmed by the results. The likelihood of altruism was higher when the level of need was depicted as high than when depicted as low. There was, however, unexpected responses in low need situations as well, such that participants rated their likelihood high even when the situation was a low need situation. Holmes et. al (2001) assert that although people commit altruism to partly serve their own self-interest, they are also concerned with helping with no return benefit as well. Following from this, we thought that the higher the need, the greater the likelihood of responding to it altruistically.

Although our first two hypotheses were confirmed by our results, our third hypothesis predicting an interaction to occur when the level of need was high and the victim was a relative was not. We reasoned that if a person generally responded more altruistically in a high need situation than a low one, and when the victim was a relative versus a classmate, that it should logically follow that interaction would occur between the two. The absence of this fact may be attributed to a potential flaw in the study, particularly in how the conditions in the questions were labeled. For example, by using a generic term such as "relative" to describe the independent variable, the participant may have been open to perceive the relative as someone in their nuclear or extended family and there would be less control over their interpretation of the term. Despite this, however, a stronger potential item may have been the generic label of classmate, to which altruism was still apparently high. It is likely that participants interpreted this generic term to mean a close friend from their school, or someone they were very

familiar with as opposed to an association that is often made temporarily within a classroom setting. This may have yielded a general higher altruistic rate, which could have affected a potential interaction.

Another potential problem may have been a flaw in control for specific item effects. Although these were partly controlled for by the non-measured control scenarios, greater control could have been obtained by varying the same scenarios as relative and classmate between participants. For example, if a relative needed a ride to the hospital, then another participant would get the same situation only with the classmate needing the ride. The specific item effect of association of a particular high or low need situation with either relative or classmate could have affected other responses in favor of altruism.

There may have been another limitation in using the survey method to measure in general as opposed to other methods. People may have responded ideally to the scenarios and not reacted how they really would in a real situation.

We suggest that the method of counterbalancing for specific item effects be improved by perhaps varying the same scenario in the relative and classmate conditions. In addition, it might be more effective if another method was used to capture responses, particularly ones that would be more applicable in real life and cause the respondent to react more naturally instead of the survey method. Further, it may be useful to explore different variables that may elicit altruism to. For example, one might explore how gender may influence altruistic behavior and how it might potentially interact with the level of need of the recipient.

In conclusion, our study initially set out to examine the relationship between relatedness and need in altruism, and has confirmed previous studies on this relationship. Our study differed from previous studies (Homes, et. al, 2001) in that we manipulated level of need with the intent to find an interaction between it and relatedness. It was similar in that it confirmed previous findings. From this we have confirmed our hypothesis and other's regarding the relationship between relatedness and altruism. We have also confirmed that the level of need of the victim has an effect on the elicitation of altruism as well. Although our study did not find interaction between relatedness and level of need, this fact has shown us something new. Because of this, we have learned that the effect degree of relatedness does not depend on the level need. Further, we have found that there is a general trend among people to help out when the level of need is high. Thus, we have confirmed previous ideas on altruism and have found evidence to perhaps assert something new; we hope

that this information may guide future studies on this topic and inspire science to pursue this subject further.

### References

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