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How Altruism can be good for your Health: Peer Pressure and Happiness

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### Abstract

Altruism, the act of giving, is common in non-human animals in the form of reciprocal altruism (tit-for-tat). Among humans, altruism can be both reciprocal and pure (the donor receives no physical benefit). Research indicates that altruistic acts, such as making a donation, activate the brain's pleasure centres. The bystander effect, the phenomena where people are either inhibited or encouraged to perform an action when in the presence of others, depending on the number of people around, also appears to have an effect on the frequency of altruistic acts. This thesis examines whether people are more likely to perform an altruistic act in the presence of others (bystanders) and if this in turn results in greater levels of happiness compared to levels of happiness following an altruistic act performed in the absence of others. The results are framed in the context of the evolutionary perspective of psychology.

## Introduction

Altruism is the act of providing a service or giving some item to another person, which results in a disadvantage to the individual (the self), decreasing one's own fitness to increase the fitness of another (Gaulin & McBurney, 2004). This is best explained in evolutionary terms: the giver is giving away their resources which are linked to survival in nature (Freeman & Herron, 2004). Altruism has four forms: if the giver is disadvantaged and the recipient is benefitted, it is "pure" altruism (Harbaugh, Mayr, & Burghart, 2007). If both giver and receiver benefit, this is reciprocal altruism, also known as "tit for tat" and cooperation (Gaulin & McBurney, 2004; Dawkins, 1976). "Warm Glow" altruism, as defined by Harbaugh et al. (2007) is when the giver receives social recognition for donating and feels good for this recognition. Finally, kin selection, also called inclusive fitness, is when individuals act altruistically towards their kin (usually offspring), but may include siblings, nieces, and/or nephews if the individual is incapable of breeding (Freeman & Herron, 2004). Unlike the other forms of altruism, kin selection is done for the spreading of an individual's genes and, along with reciprocal altruism, is the form found most often in nature (Dawkins, 1976). Reciprocal altruism is common in nature because (despite the cost of vital resources) the giver receives a benefit it cannot perform on its own.

Altruism is an oddity to evolutionary psychology. As it is the giving of one's resources without receiving any in return, it is usually rejected by nature and not often seen (Freeman & Herron, 2004). Dawkins (1976) stipulates that genes act in a 'selfish' nature, not that they increase selfishness in the organism, but that the animal does not sacrifice its own fitness without a legitimate cause, such as maximizing its genes or to have the action reciprocated. Altruism is not done for the "good of the species"; this notion is known as group selection (Gaulin & McBurney, 2004; Freeman & Herron, 2004).

The reason pure altruism is not seen in the animal kingdom is due to it not being ‘fit’ – giving without reward confers neither survival nor reproductive adaptations (Freeman & Herron, 2004). Since humans have no natural predators, acts of altruism do not confer the same disadvantages they do to non-human animals and are seen more often. In human society, doing something that does not confer a reward is often seen as odd if not irrational; however, there are many examples of altruism in human society, such as volunteering, donating, and giving blood (Harbaugh, Mayr, & Burghart, 2007; Hupfer, Taylor, & Letvin, 2005). Recent research indicates that various parts of the brain, mostly pleasure centres, are activated when one partakes in these forms of altruism. It has also been noted that the presence of others (bystander effect) affects the frequency of altruistic tendency (Garcia, Weaver, Moskowitz, & Darley, 2002; Endelmann, Childs, Harvey, Kellock, & Strain-Clark, 1984).

This report will investigate this phenomenon and ascertain what the relationship between altruism, happiness from neurological stimulation, and bystander effect is. I propose that people donate more under the bystander effect and feel better when compared prior to donating.

#### *Evolutionary Psychology as the Basis of Altruism*

In non-human animals, if an individual does not have sufficient resources, the odds of mating are decreased (Freeman & Herron, 2004). If that resource is, for example, protection or energy, then its life may be in danger as well. Humans, unlike most animals, do not have natural predators. Because we do not have to spend as much resources on survival and defence, we can afford to have a surplus of resources; also, we are not as negatively affected by giving up resources, so it can be done more often.

But why is helping behaviour so common in humans, especially in cases where there is no reward? According to Grinde (2005), this is largely because our anthropoid ancestors had

accrued a defensive, adaptive advantage: being a social species. As a social species, we could overcome problems that could not be done individually or in pairs by living in small social groups. This is not without problems, however. The first problem is that humans evolved in social groups, and today's society requires humans to interact with strangers more often. The second problem is that these social groups, once scattered and small, have now encompassed the planet with a population of over 6 billion.

### *Neurological Responses*

Research has revealed that altruism has a neurological basis. Different areas of the brain are stimulated when different aspects of altruism are triggered. Most of these procedures were performed using functional magnetic resonance imaging scans (fMRI) or positron emission tomography scans (PET scans).

The striatum contains the nucleus accumbens, which is the reward centre (Harbaugh, Mayr, & Burghart, 2007). The ventral striatum is the part of the brain that rewards the person in terms of his/her own actions. Harbaugh et al. (2007) examined participants' ventral **striata** while inside an fMRI scanner. They were given \$100; some had the money deposited to their bank account and then diverted to a charitable organization (taxation), while others could choose whether to give the money or keep it. The altruists in the mandatory (pure altruism) category gave nearly twice as much as those who volunteered, but those who volunteered and gave felt better. This is a kind of "neural currency" of reward. A related system, the mesolimbic pathway, is in the limbic system, the emotion centre (Tortora & Grabowski, 2003). This pathway deals with the pleasure/reward system by releasing dopamine to produce levels of euphoria that are linked to anything that feels good, including sex, food, drugs, money, success, smoking, and good grades (Micklethwaite, 2006).

*Bystander Effect on Altruism*

The bystander effect, also known as the bystander apathy effect, is when a person facing a situation where another person is in distress, responds slower in the presence of others, and is less likely to respond than when he/she knows he/she is the only person who can help (Garcia, Weaver, Moskowitz, & Darley, 2002). Bystander effect is of importance to altruism because it involves helping with little material cost to the giver. Another important concept is that the fewer bystanders there are, the more likely such people would donate— provided that there was at least one other person around.

*Pure VS Reciprocal Altruism - Is Pure Altruism Really Pure?*

So is pure altruism really pure? Or do we associate the concept of giving without receiving to be only of material value, physical actions, or human interactions such as admiration? Despite the neurological reward, the actor is still harmed in a way, and the individual has the ulterior motive of being benefitted neurologically. I reject the notion that acting for the neurological benefit is not pure. The giver receives no benefit from another person, act, object, or praise, so it is not reciprocity or warm-glow altruism. Your genes are not benefitted, so it is not kin selection. The literature is very scant on this matter, probably because this is a new concept. As such, I would advise future studies to provide new, consistent definitions of the various forms of altruism in regards to this notion:

**Pure Altruism:** The act of surrendering one's material resources or physical acts for the benefit of another individual(s) with no intention or expectation of receiving any material resources or physical acts in return.

**Reciprocal Altruism:** The act of surrendering one's material resources for the benefit of another individual(s) with the understanding of receiving similar treatment in the near future as compensation from said individual(s).

**“Warm-Glow Altruism”:** In regards to Harbaugh, Mayr, and Burghart (2007), the results of their study and what I have read in other works: “The act of surrendering one's material resources for the benefit of another individual(s) with the understanding or expectation of receiving praise and/or admiration from both oneself and other, third parties.”

**Kin Selection:** The act of assisting one's own kin (biologically related immediate or secondary family members) for the material benefit of one's kin, but also for the evolutionary aspect of assisting in the non-linear spreading of one's genes.

### *General Methods*

#### *Participants*

Undergraduate psychology students, mostly first-year students but also some third year students, were recruited by e-mail, topic distribution among classes, and sign-up times provided during class time. Students were compensated with bonus marks for participating. A small subset of adults from outside the university was also used. A total of 73 students and 14 adults participated in my study, of which 45 were selected to continue participation as the highest or lowest scoring on the altruism scale (low altruism,  $N = 22$ ; high altruism,  $N = 23$ ). Of these, 26 participants (low altruism,  $N = 13$ ; high altruism,  $N = 12$ ) agreed to complete the study, though one person's results had to be discharged since their altruism scores were in the middle.

#### *Materials*

Only a few materials were used. \$45 CAD was obtained to compensate my participants, though only \$26 was used. Unofficial pamphlets for Amnesty International were created. They

contained pictures of disturbing, but not gruesome, scenes (al Qaeda torture methods and former POW camps in Hanoi, Vietnam), pictures of Venezuelan President Hugo Chavez and Iranian President Mahmoud Ahmadinajad, and pictures of noted humanitarians (Pope John Paul II, Bono, Mother Teresa, and the Dalai Lama). Contact and other information was taken from the Amnesty International website to look authentic.

A donation jar was constructed from an empty nut jar with a slit in the top to fit coins. Former labels were removed and replaced with the Amnesty International logo and their name on a banner. A total of \$25 CAD in coins was prepared to make the donations look authentic, but this number was reduced to \$9 CAD when it was determined counting \$25 took too long.

### *Measures*

Participants had their level of altruism determined by a questionnaire prepared by the author. This questionnaire was composed of six questions with five possible responses for each question. The possible answers were randomly arranged to avoid participant anticipation. A total score of 30 was possible with scores ranging from 11 to 27.

For the second phase of the experiment, returning participants completed the *Authentic Happiness Index (AHI)* by Peterson, Park, Steen, and Seligman (2006). This questionnaire assesses happiness in terms of the pleasant life, the engaged life, and the meaningful life. It is a 16-question multiple choice self-report measure. It was designed to measure the upward change in happiness levels. The test's purpose was to assess the participants' feelings of happiness at the time. This questionnaire is administered once as a pre-test and again as a post-test. Permission was obtained from Dr. Peterson with the stipulation that the title would be removed from the pre- and post-tests to avoid contamination.



*Procedure*

Participants were organized into time slots and asked to come in groups. They signed consent forms and then completed the altruism questionnaire. Upon completion, altruism scores were assessed and the top and bottom scorers were selected for phase 2.

A few participants (N = 11) were unable to attend, so they were asked to participate by e-mail. The altruism questionnaire was e-mailed to the participants with instructions that it is to be returned by e-mail and the selected responses be highlighted. Their scores were calculated along with the others.

The second phase of the experiment was the manipulation phase. Participants were asked to return in single, one-on-one participation. They would receive one dollar (discussed below) and fill out another consent form and the AHI pre-test. Upon completion of the pre-test, I left the room under a false pretence. For consistency, I used “I have to go down to the main office and make some photocopies, could you please wait here for a few minutes?” I would take a binder to make the illusion look genuine. A confederate was placed across the hall from me and I would indicate the condition that was to be used. Participants were assigned to either the “Bystander” or “No Bystander” condition based on their attendance (e.g. The first participant in high altruism that showed up was given the “Bystander” condition, the second would be given “No Bystander” regardless of a low altruism attendant coming between these two or not). The confederate would bring the donation jar and pamphlets in the experimental room.

If the participant was in the “Bystander” condition, the confederate would directly ask for donations, pretending to be collecting donations for Amnesty International. Whether or not the participant donated would be noted, as well as how much. Participants in the “No Bystander” condition were approached by the confederate, who asked if the jar and pamphlets could be left

with the participant while the confederate went to the bathroom. The confederate mentioned before exiting the room that they were free to donate. Upon return, the confederate collected the jar and pamphlets and left. I would then ascertain how much (if any) the participant donated and collect it to be returned.

Upon return, I presented the participant with the AHI post-test. When finished, I debriefed the participants, telling them the true purpose of my study, revealing the confederate and apologizing for the ploy, returning the money, and telling the participant that the results that will be announced at the Thesis Conference on March 28, 2008.

Participants were compensated with \$1 CAD for going through with the study. This had two purposes: 1) it provided an incentive for participants to return to my study, and 2) it gave participants money to donate if they do not have money on them. To this date, a small number of participants have donated their own money either instead of or with the dollar. All funds, including the given dollar, were returned to the participants (with the exception of 6 participants who refused the money to be returned). These donations, along with the rest of the money intended for the participants, and some extra funds of my own were compiled into a \$50 CAD donation to Amnesty International upon completion of the experiment.

### *Expected Results*

I expected to find that higher altruistic participants would donate more often, that participants would donate more under the bystander condition than under the no bystander condition, and that participants would be happier after donating than before. I predicted that participants who are high in altruism would have no change in the probability of donation between those under the bystander condition and those not under the bystander condition. For

those low in altruism, I expected that they would be more likely to donate if they were under the bystander condition than the no bystander condition.

### *Results*

I found no significant differences in happiness ratings between the pre-test and the post-test. To determine whether there was a difference in happiness before donation and after donation, of both those high in altruism and those low in altruism and in regards to the bystander effect (bystander present and no bystander present), I conducted an Altruism x Bystander Effect ANOVA on the participants. Of those who did and did not donate, there was no significant main effect of Altruism,  $F(1, 3) = 0.148, p > 0.05$ , of Bystander Effect,  $F(1, 3) = 0.487, p > 0.05$ , and no significance in an Altruism X Bystander Effect interaction,  $F(1, 3) = 0.575, p > 0.05$ . To determine if Altruism and Bystander Effect had an effect on donation, I conducted an Altruism X Bystander Effect ANOVA on the participants. There was no significant main effect of Altruism,  $F(1, 3) = 0.392, p > 0.05$ , Bystander Effect,  $F(1, 3) = 0.250, p > 0.05$ , or of an Altruism X Bystander Effect interaction,  $F(1, 3) = 0.115, p > 0.05$ .

While the results showed no significance among differences, a few minor occurrences were found among the data. One trend was noticed: participants were less likely to donate if they were lower in altruism and were under the no bystander condition. Another occurrence was that higher altruistic participants donated more than lower altruistic participants. A  $\chi^2$  value of 2.345 was obtained, with  $p > 0.05$ , meaning non-significant results of my participants in their conditions.

### *Discussion*

This study rates altruistic tendencies and looks at this effect, along with the bystander effect and happiness. My hypothesis was not supported: happiness between the pre-test and the

post-test did not change significantly, nor was there a significant difference between participants in the high-altruism condition or the low altruism condition. What was found was that participants who were higher in altruism donated more than participants who were lower in altruism, and that participants were less likely to donate if they were low in altruism and under the no bystander condition.

My original intent was to see if happiness would change between time 1 and time 2; I used altruism because people who are more altruistic would more likely donate and should have, theoretically, been more likely to be benefitted by the reward; donating was a way to increase participants' happiness, and the bystander effect would increase the chance that people would donate with the use of peer pressure. Were my research to be proven correct, the participants should have received an increase in happiness for donating (in the form of increased scores). This study would have filled in the gap between these three areas, as no studies so far have assessed neurological reward, bystander effect, and altruism at the same time. Studies such as Harbaugh, Mayr, and Burghart (2007) have assessed altruism and happiness together, and Garcia, Weaver, Moskowitz, & Darley (2002) have assessed altruism and bystander effect, but none so far have looked at all three.

There are several possible reasons why my hypothesis was not supported. 1) There might have been a problem in the manipulation of my groups. It could be that the way they were assigned had an effect on the outcome. 2) Perhaps the altruism questionnaire was not valid or reliable, since I created it and it was never properly assessed for either reliability or validity. A test that is not valid is not measuring what it is supposed to be measuring; a test that is not reliable lacks consistency of measurement. It may be that my test lacks both of these things. 3) Perhaps the happiness questionnaire was not appropriate because it lacked the ability to assess

situation-specific happiness. The *AHI* measures *authentic* happiness and may not have been inappropriate. Dr. Seligman's website advertises the use of other questionnaires, including the General Happiness Scale, which measures enduring happiness. It is unlikely this would have been the more appropriate test, as that would measure how happiness in terms of how long the happiness lasts. Perhaps another type of happiness questionnaire would have ascertained results more concurrent with my hypothesis as it may be that the happiness that was supposed to have been generated by donating was either weak or temporary. 4) As I have stated earlier, perhaps the fact that this topic is rather broad may have been a potential problem, as no studies thus far have assessed altruism, bystander effect, and happiness together.

Despite the outcome, the new definitions I proposed involving purity of altruism should still be put forward. These suggestions were ideas on how to revise the literature in light of Harbaugh, Mayr, and Burghart's (2007) study and my own research. They are still logical to consider, as they do not suffer from my findings. They are merely updates to the current definitions that lack the notion of neurological benefit on altruism. Outside of the definitions, other suggestions on research possibilities (aside from what are covered in this study) should be looked into. These aspects include gender differences of the donors and of the donation collectors, type of donation used (well-known charities, such as Amnesty International, as opposed to lesser-known charities, such as Aspies For Freedom, an Asperger's Syndrome support organization). In the original plans of my study, if I had enough participants, this organization type would also have been investigated, as I chose Amnesty International for its popularity and to "tug on people's heart strings" to increase the chances people would donate; I chose Aspies For Freedom because it is a lesser-known organization and because I doubt many people would know what the word "Aspie" means, much less what Asperger's Syndrome is.

Even if individuals look at the new definitions and still maintain that pure altruism is not pure because being altruistic for the happiness reward is still selfish, I would still counter this statement. Even if this selfishness issue is never resolved and becomes mere opinion, the end result is that a better understanding on how and why altruism and donation work would benefit humanity greatly. If more people do unselfish material acts in return for their brain producing pleasure, it would lead to a great change in the human social system that might benefit all its members. If more people would donate, more charitable organizations would be able to conduct work into curing diseases like cancer and AIDS, poverty would become less of a problem, and other worthwhile, helpful causes would have more influence and ability. In the end, we could end up with a veritable *Star Trek*-like system where most diseases on Earth are cured, there is no poverty or war among humans, and people would live longer, happier lives. This could apply to all peoples, not just those in democratic, Western nations. People that become happier for whatever reason, be it giving or receiving, are healthier people – the more we give, the happier we get, the healthier we get; the more the needy get, the greater potential benefits to our system.

### *Conclusions*

Sufficient evidence has been presented for the evolutionary purpose of altruism. Altruism evolved as a method of survival among a social species, and would usually either result in kin selection or reciprocal altruism as the tribes were small and composed of related members.

There is a relationship between altruism, happiness, and the bystander effect. It appears that familiarity between the subject and the bystanders also has an effect. Whereas the frequency of helping decreased in public situations, it was found to increase in public situations if the person was among friends. The fewer there were, the more likely and quicker people were to donate.

Pure altruism is infrequent and an oddity to evolutionary psychology. The traditional definition of pure altruism is that the actor must be harmed so that the recipient may benefit. Harm implies damage – there are numerous examples throughout this report that pure altruistic tendencies and acts, while they do involve the loss of resources, do anything but harm the givers. The givers felt better because they were being generous.

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