

Are we capable of being altruistic?

First Prize – 3rd Year Undergraduate Category

ALEX HAINES*

“It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own self-interest.” (Smith. A, 1878)

Since the dawn of modern economics we have always assumed individuals to be self-interested, as Adam Smith points out, self-interest is what motivates individuals to participate and contribute to society. However, we observe behaviour in every day life that contradicts this view, so we ask ourselves is self-interest really the only driving force that allows us to contribute to society? Here is where the concept of altruism fits in, the unconditional act of kindness that an individual implements to better those other than themselves. This essay takes a deep look at the concept of altruism and strives to find out whether it exists by looking at how altruism is typically measured by economists, and by looking at a case study of blood donations: an act perceived by many to be altruistic. By doing so, we will discover the most complete answer as to whether we are capable of being altruistic. In section 2 we will look at the definition of altruism, how it fits in with economics and why it is an important concept to consider. Section 3 will consider altruism in the realm of experimental economics. Section 4 will look at a specific case study of altruism, finally section 5 will conclude.

2. Defining altruism

The broad concept of altruism is generally known as an unselfish act to benefit others, however this definition can be explored further. Some economists (Jacobsson, 2007) identify a definition of ‘pure altruism,’ whereby an individual derives no gain or even perhaps a decrease in utility to

* BSc Economics

further the utility of others. Impure altruism is where an individual receives some form of utility (*'warm, glow feeling'*) from implementing charitable acts. Other theories of altruism that are worth considering are those from the field of sociobiology. The two main theories are kinsman and reciprocity (Becker, 1976), both of which can be defined using economics. Kinsman theory stipulates that people will only be altruistic to those who are very close to them as the utility of these people are closely integrated to their own. Reciprocity theory stipulates that individuals are only altruistic to those who they expect will reciprocate back, therefore an individual's expected utility of being altruistic is minus the cost of committing an altruistic act, plus the probability of the act being reciprocated. Here we have defined altruism and have given brief notions as to why people are altruistic, but why is altruism an important concept to study?

Altruism is crucial for the development of markets whereby the market fails to allocate resources efficiently assuming self-interest as a predominant motivator. A good example of this is how a deformed irrigation system in Gal, Oyra in Sri Lanka was transformed into "*one of the most efficiently and cooperatively managed systems in Sri Lanka*" (Francois, 2003, page 2). The project that brought about this change had farmers co-operatively work together to fix and mend canals. This behaviour counteracts what we should expect from the study of economics, as the situation can be easily modeled as a prisoner's dilemma game and we all know the Nash equilibrium is to not contribute. The project worked because it exploited the farmer's intrinsic values of being altruistic. This is just one example of how altruism can help further the development of a community.

Taking this into account, when asked the question: are we capable of being altruistic? The answer must surely be an unequivocal yes. However, with the exception of pure altruism in an economic framework, all the other definitions are counter intuitive. For, if the individual derives utility from an 'altruistic' act, then the act is not selfless and therefore not altruistic. This is a formality that economists have been trying to overcome for decades: if we are utility maximisers then why would an individual sacrifice their own utility to further others? Does

altruism even exist? In the next section of this essay we try to answer this by looking at how economists try to measure altruism.

3. Altruism in experimental economics

Experimental economics has become a cornerstone in economic theory and is used to explain the behaviour of individuals. It places individuals in different situations and presents them with a series of choices; the choices made are analysed and quantified using game theory and econometrics. A frequently used game within this field used to measure altruism is the 'gift exchange' (dictator) game. The game plays out as follows:

There are two subjects A and B. A monetary lump sum (x) is given to player A. Player A is told that he is to split the surplus (x) between himself and player B. Player A can give any sum ($0 < a < x$) to player B. Player B has no move and must simply accept the offer a . If player B rejects the offer then the whole surplus will simply remain with player A.

This game is interesting with regards to altruism for two reasons. Firstly, as it is a one shot game and the move by player B has no impact on player 1's utility, there are no strategic elements that can come into play, no guessing what the other player might do. Therefore, we can infer from the results what player A's true preference is in what they believe the allocation of money should be. Secondly, this game is incredibly simple making its results easy to interpret.

In this game we assume for the rational individual that money equates to utility and that individuals are utility maximisers. With these assumptions held, the game is very simple to solve: one can see that the individual maximizes their utility by offering a donation of zero. Therefore if

we observe any donations at all then that donation must be attributed to altruistic behaviour. So how does the game play out in reality?

The dictator game in practice

The literature on dictator games is vast and one will see that in any dictator game there will always be a significant fraction of people giving zero or close to zero, and an insignificant fraction giving a share greater than 50%. As this game is one shot and the players will never meet we can eliminate the giving of any surplus due to reciprocity. From this, we can infer that the sender either receives some form of utility from the amount he gives (impure altruism) or the act is purely selfless (pure altruism).

An interesting experiment relative to altruism is that of Eckel and Grossman (1996). They employ the same dictator game as we have discussed but with a few enhancements. In one treatment the sender (dictator) is given no information regarding the receiver and the receiver is given no information regarding the sender, this is known as double anonymity. In the second game the sender is informed that the receiver is a well-established charity. In both games the sender's identity is never revealed. Their results are given below:

TABLE I

Amount kept	Number of subjects keeping various amounts			
	Treatment 1: Anonymous recipient			Treatment 2: Charity recipient
	Hoffman et al.	Replication	Pooled	
10	23	7	30	13
9	7	0	7	5
8	2	1	3	11
7	1	1	2	0
6	0	2	2	4
5	2	1	3	8
4	0	0	0	0
3	0	0	0	0
2	0	0	0	2
1	1	0	1	0
0	0	0	0	5
Total amount kept	\$327	\$102	\$429	\$331
Total amount donated	\$33	\$18	\$51	\$149
Amount donated as a percentage of the maximum	9.2	15.0	10.6	30.1

Source (Eckel and Grossman, 1996, page 5)

As you can see with anonymity (*pooled*) the average amount donated is 10.6% however when the subject is made aware that the receiver is a charity then the sender's amount given approximately triples to 30.1%. This is evidence to support the notion that we are capable of being altruistic. When the sender is made aware that their donation is going to a worthwhile cause they donate more money. As the sender's identity remains anonymous then we can rule out the possibility of the sender giving money as they felt socially obliged to. From this we can infer that altruism is induced when the individual is aware their actions are contributing to a worthwhile cause. However it is hard to say whether the increase in donations to charity was a purely selfless act, did the participants donate money because it was the right thing to do or was it because they derived utility from what they felt was a selfless act?

Another interesting and relevant experiment comes from (Burnham 2003). In Burnham's experiment he plays out the simple dictator game under three conditions. In the first condition double anonymity is imposed just like Grossman (1996). In the second condition the sender is given a photograph of the receiver and finally in the third condition the receiver is given a photograph of the sender. The subjects know which treatment they are participating in. The results are given below:

Table 1
Distribution of amounts given by dictators with US\$ 10 to distribute across three treatments

	N	US\$ 0	US\$ 1	US\$ 2	US\$ 3	US\$ 4	US\$ 5+	Average (US\$)
No photo	26	14	3	4	1	3	1	1.19
Recipient photo	24	14	0	1	2	1	6	1.96
Dictator photo	24	13	3	0	0	2	6	1.71

Source (Burnham 2003, page 7)

As you can see the amount given is correlated to whether or not there is anonymity in the experiment. When there are no photos the sender donates on average 65% less meaning that anonymity induces selfish behaviour. When there is anonymity we can assume any donations are purely altruistic however when anonymity is taken away subsequent donations made are not purely altruistic. Perhaps when the dictator receives a photo of the recipient then he will feel more obliged to give because with anonymity it was easy for the dictator to assume there was no *real* person to give to, the photo makes the act of giving money all that more real. When the dictator is aware the recipient has a photo of them then again they feel socially obliged to give. From this we can deduce that we are capable of being altruistic if our deeds don't go unchecked, therefore we are not motivated by the increased utility of others but by our own selfish needs, is this really altruism?

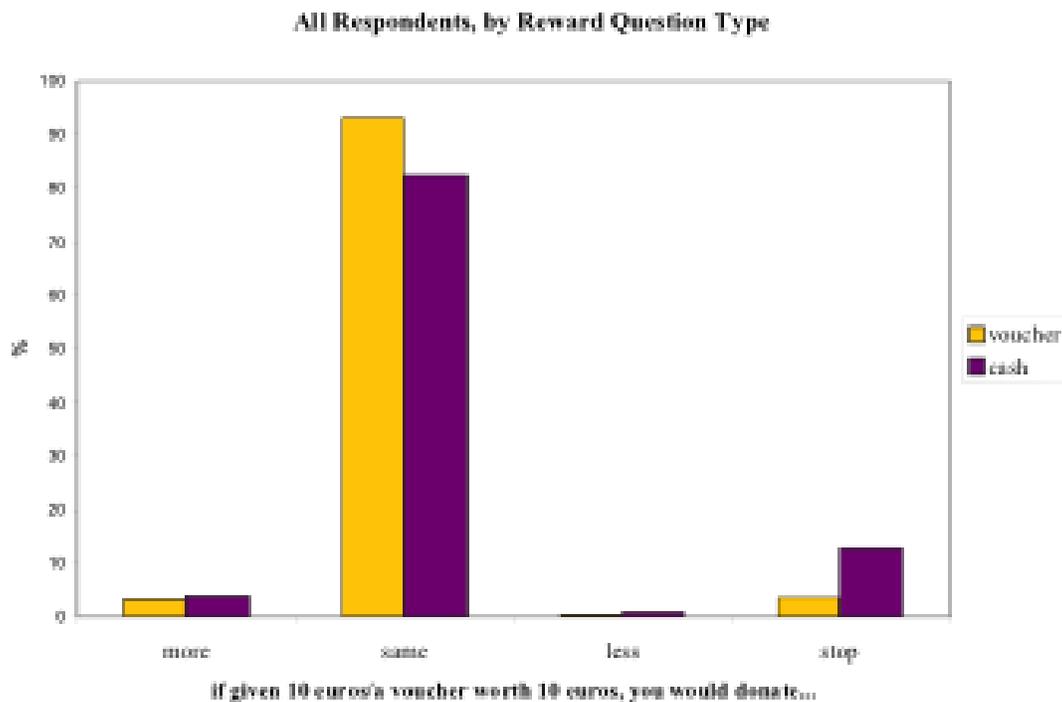
How reliable is the dictator game?

When measuring altruism many academics turn to the dictator game, but just how reliable are the results we see from the dictator game? Papers by Zizzo (2010, 2011) question the use of dictator games as a means of measuring altruism due to what he describes as '*Experimenter demand effects*'. These are where the subject's decision as to what amount to give is not based on his or hers true preference but what they feel the objective of the experiment is or what they feel the experimenter wants them to do. These are especially apparent in the dictator game as it places the participant in a situation they would have never come across before; the sender's decision is not one found in day-to-day life. So when we observe a sender donating a fraction of the surplus it is hard to tell whether we can attribute this to altruistic behaviour or irrational behaviour induced by experimenter demand effects. Next we move outside the field of experimental economics and take a close look at an act that many perceive to be altruistic, donating blood.

4. Are blood donations really altruistic?

So far we have only looked at the concept of altruism through pecuniary measures. The concept of altruism goes far deeper than just money donations therefore when analysing altruism it is necessary to take into account acts that result in no monetary outcome. An act of altruism that is commonly cited is the process of donating blood. In the UK when an individual donates blood they receive no monetary payment for doing so, the donation does not give the donor priorities when it comes to receiving a blood transfusion. In fact the process is rather painful and discomforting, which would lead us to believe that there is negative utility involved in giving blood yet in the UK in 2011 1.6 million people gave blood (Source:

<http://www.blood.co.uk/about-blood/>). However was the act of giving blood purely selfless? One reason as to why an individual gives blood is because they receive intrinsic utility from doing so, yet as we have discussed in section 2, this act of impure altruism is not selfless and should not be considered as altruistic. To prove this point we turn to an interesting study by *Lacetera & Marcis (2009)*. In their study they surveyed 467 blood donors in a small Italian town and asked them whether they would give blood if paid a small monetary sum. The results are given below:



Source: (*Lacetera & Marcis (2009)*, page 8)

As you can see around 15% of the donors would actually donate less or stop donating if paid a monetary sum. The altruistic 'feel good feeling' is valued higher than the monetary payment to some, this is known as intrinsic crowding out. This goes to show that the act of giving blood was not selfless to some, they were not donating to benefit the utility of others but were doing so

because they derived utility from committing what seemed a selfless act. The donors that chose to give the same amount of blood may value the intrinsic feeling at the same rate of €10 so we can no longer infer whether their donation is through selfless means. What this study goes to show is that what is apparently an altruistic act can be motivated by selfish means.

5. Conclusion:

“How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortunes of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.” Smith, A. (1969) page 47

In this essay we have looked at the ways in which altruism is measured and have analysed a common example of what many people perceive to be an altruistic act. In both areas we have shown that what is considered by many to be a simple concept to understand, is an incredibly difficult concept to explain within the realms of economics. One may think of this as a sad finding as it is depressing to think that every action requires an incentive. However, one could argue that economists are being too logical when it comes to the meaning of altruism. In the blood donation example why should it matter whether the act of giving blood was selfless? The end result is just as fruitful. Therefore when answering the question are we capable of being altruistic? We should infer two things:

- 1) Are we capable of acting selflessly?
- 2) Are we capable of committing acts to benefit others?

The evidence to support notion 2 is clear, however, the answer to notion 1 is still a mystery within the boundaries of economics. Yet this is not a negative finding, indeed it is quite the

opposite. The fact that individuals are motivated by incentives is good news for policymakers as they can harness this to achieve better results, perhaps this is why the NHS award you with a certificate of gratitude rather than a monetary lump sum for donating forty pints of blood. To conclude, although we may not be able to act selflessly, we are capable of committing acts of kindness and that should be good enough for society.

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