How good is bad news?

The influence of bad news on the giving in dictator games.

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Abstract

This thesis looks at the impact of bad news on the giving in dictator games. The research shows that in an online survey, with the Red Cross as recipient and a ten euro stack, the proposers who were faced with bad news tend to give more money to the responder, compared to the proposers which were faced with no news or with good news. This result only holds on a 10 percent significance level for the triple dictator games, not for the normal dictator game. Analysis is done using a Tobit model.

Foreword

In front of you is my master thesis “How good is bad news?”. This thesis is written as completion of the master Business & Economics, specialisation Behavioural Economics.

The idea for the topic came to me after I heard about the terroristic attacks in Paris. I really felt the need to compensate for the bad things that were going on in the world at that moment. I wished I could help, but did not know how. After a while I started wondering if I was the only one who felt that she needed to compensate for the terrible things happening around the world. This thesis tested if I was indeed the only one, and I am quite happy to report, that the results give an indication that I am not.

I really liked the topic and I enjoyed to learn more about dictator games and altruism. The research and findings regarding altruism and the negative-state relief model were very interesting for me to read. I liked the writing process most of the time, but the data analysis was quite hard in the beginning.

I would like to thank my supervisor Dr. J.P.M. Heufer for all the help and suggestion regarding the research and specifically for all the questions he answered about the Tobit model. It was really great that he would always answer questions on a short notice.
I also would like to thank my dear friend Maikel for the proofreading he did, for the help with STATA, and for all the times he had to listen to my ideas about this thesis (sometimes in the middle of the night).

I hope you will be as enthusiastic about the topic as I am and I hope you will enjoy reading this thesis.

Tineke Messelink

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1. Introduction

Altruism has fascinated researchers in economics, biology, psychology and philosophy for years and years. Why do people care for other people? Why do they even care for other people in the cases when there is no visible benefit for the giver? Why do they care for other people when sometimes it is (extremely) costly for the giver to care for another? Pure altruism is acting complete selfishness. This acting includes a cost (like money or time spend) for the altruist, while almost all the direct benefits go to the receiver.

This thesis builds on the blocks of research in altruism and dictator games. The research investigates whether the confrontation with different kinds of news (good, bad or no news at all) right before playing a dictator game and a triple dictator game will affect the amount of money that proposers are willing to give to a charity in the two dictator games. The results give an indication that compared to no news at all, the proposers which were confronted with bad news gave more money in the dictator games. The results also indicate that there is hardly any difference in the giving when the proposers were presented with good news or when they were presented with no news. There is a "bad news effect" in the giving in the dictator games in this research.

Nowadays a lot of the news people receive news not just from the television, the radio or from newspapers, like it has been in the years before, but from online news sources like websites and social media. These online sources are taken a bigger place in news collection especially among young people (Mitchell, Gottfried, Barthel, & Shearer, 2016). A Facebook experiment showed that the mood of Facebook users can be affected by affecting the way they see their "timeline" (the way Facebook presents their website). People who were shown more negative items, posted more negative items themselves. (Kramera, Guillory, & Hancock, 2014). Mood is easily manipulated. Research in how negative or bad news can affect the way people act in economics decisions is important to better understand why people make certain decisions and maybe to prevent that they make bad economic decisions based on a certain emotion. Negative news can have a big impact on our behaviour, without us even knowing about it. The bad-news effect that will be presented in this thesis can have an effect on giving to charity, but also on marketing decisions from companies, financial decisions for consumers and producers; Like the results in this thesis show it might be a better idea for charity to talk about the negative things that they need money for, than on the positive things they can do with the money.

This thesis is structured the following way. The next chapter looks into the background of altruism and the research that is done between altruism and someone's mood. The background of dictator games is also presented and right after that comes the research question and the hypotheses. The third chapter explains the method in which the setup of the experiment is told. The fourth chapter looks at the data and tests the hypotheses. The fifth and last chapter eventually contains the discussion, the recommendations, and the conclusion of this thesis.

2. Theoretical background

The standard economic model (hereafter: SEM) sees humans as rational beings: This is the so-called Homo Economicus (Wilkinson, 2012). (A pun to the scientific term for human beings: Homo Sapiens.) Human beings should according to this theory make decisions based on the following criteria. First, all his decisions are based on his current assets. Second, the decisions he makes are based on the possible consequence or outcomes of the choice. He considers all possible outcomes and picks the most favourable. Third, this picking of the best outcome is done while using the expected utility framework. Fourth, he is complete rational. Fifth, when faced with new information the decision maker updates

his beliefs about the decisions he has to make as described by Bayes Law. Last of all, and important for this thesis, the economic agent's utility is governed by purely selfish concerns. He does not take into account the utility of third parties when taking decisions (Wilkinson, 2012).
SEM is a simplified model used to predict human behaviour in economic situations. A lot of research in the past was done on this model and the assumptions on which it is based upon. Later research, from the 1970's on, focused more on different (behavioural) economic models, which seemed more in line with actual human behaviour than SEM. An example of a new model is prospect theory (Kahneman & Tversky, 1979).

Altruism, as the opposite of selfishness, is an interesting topic in economics. Altruism is in a lot of cases a violation of the last criteria of SEM, namely that human being should be pure selfish. This does not mean that altruism cannot take place under the criteria of SEM, but that outcome somehow should affect the altruist in a way that he will enjoy positive utility from being altruistic as well. Important to remember that a person following SEM can still be altruistic, as long as the cost of being an altruist do not exceed the benefits of being one.

For the rest of this chapter, the first part will look at altruism in the economic field. After that the dictator and the triple dictator game will be discussed. These two economic games will be used to measure altruism in the rest of this thesis.

2.1 Altruism

Altruism, also called selflessness, can be seen as the act or principle of concern for the welfare of others, beside someone's own. Altruism can be seen as the opposite of selfishness. In economics altruism is also seen as "the act or principle of benefiting others at a cost to the altruist" (Wilkinson, 2012, p. 328).
Adam Smith already recognised that humans are motivated by self-interest, but he also argued that people are not entirely narrowly self-interested. He recognised that people are also (partly) motivated by concern for others. According to him the concern people have for others contributes to a more efficient and more effective economy (Smith 1759, 2010). Nowadays this receiving joy from giving to another is known as "warm glow" altruism (Andreoni J., 1989).

People who are completely self-interested will not show altruistic behaviour. Discussion is possible if people are fully self-interested. If we assume for a moment that people might have an interest in others, then there is still the assumption of SEM. Like stated in the previous part, when following the SEM a person will consider all possible outcomes of his decision and then pick the decision which is most profitable for him. Altruism cannot be considered to satisfy this axiom of SEM, cause it involves a cost for the altruist. The violation of the self-interested axiom is found all around the globe. The rate of violations and the reasons vary worldwide, but evidence shows that human beings are not completely self-interested and have a sense of altruistic behaviour (Henrich, et al., 2001). Experiments done with children show that human beings already have altruistic feelings for one another from a very young age on (Benenson, Pascoe, & Radmore, 2007).

Assuming rational self-interest, it is hard to understand why someone would be altruistic in the first place. Everyday examples of altruist are: Giving money to homeless people, or to charity, giving your seat to someone else in public transport, helping master students with their research, and all kinds of voluntary work. Altruist is even harder to understand when this giving is done anonymous, so there is no applause or any other recognition, or social reward for the giver. Of course the giving person might feel so good about himself that the cost of being altruistic is lower than the joy of giving for him, but this seems very unlikely especially when bigger events of altruistic behaviour are involved. Given all this, it makes is quite hard to base an economic model on a selfishness or self-interest basis. Altruism

usually involves a bigger a cost than revenue for the altruist. When talking about altruistic behaviour in the remainder of this thesis, this behaviour implies a monetary cost for the altruist.

The reason for altruistic behaviour can be divers. People might find it normal to help another. Some will feel joy or pride in helping others, and have a benefit in that. This is called a model of “impure altruism” (Andreoni J., 1989). Other people might feel social pressure to be altruistic. They don’t want to be known as being selfish and being socially ”punished” for this. This complements with a religious reason, that people think a higher power will reward them for altruistic behaviour and will punish them for selfish behaviour. An economic reason might be that people (unknowingly) see their behaviour as a Marshall improvement. A change whose net value is positive, meaning that the value to those who benefit from the altruistic behaviour is larger than the total cost of those who show the altruistic behaviour. The value of the money is higher for the receiver than for the giver (Becker, 1974).

Whatever the reason is behind altruistic behaviour is not the question for this thesis. (It is more a question for a philosophy or psychology master thesis.) Altruistic behaviour is seen every day, even at a monetary cost for the altruist. The question remains whether this behaviour can be influenced and will what extent it goes. This thesis and the research in it will be focusing on the question if altruism, in the form of giving money to a charity in a dictator game, can be made bigger or smaller. In order to do so, the participants in the research will have to focus on positive or negative news to test whether this has an influence on altruism.

The negativity bias and the negative-state relief model are both phenomena who focus on the negative side of events and on the way humans try to deal with negativity. They both play a role in the method of this thesis and will be discussed next.

2.2 Negativity bias and negative-state relief model

2.2.1 Negativity bias

A thing with the human brain is that is attaches a lot of value to bad things. The bad things are more likely to be remembered, because from an evolutionary point of view it is better to remember when something tried to eat you, than it is to remember when you ate something (Cannon, 1929). Also negative memories are kept better in the memory part of the brain than positive memories are (Kensinger, 2007). The brain considers it important that negatives event are remembered better, cause the negative things could be life threatening and the brain will try to prevent to ever be in that some situation again. For the brain so it is better to focus more on the negative (side)effects of whatever we do, read, hear, or see, than on the positive ones (Vaish, Grossmann, & Woodward, 2008). The focus of the brain on negative things is also quite strong. It is easy to get another person from a good mood to a bad mood within seconds, but try it the other way around, and you will see this is a lot harder to do (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001).

The notion that things of negative nature drew a bigger effect on our psychological state than do neutral or positive things is referred to as the psychological phenomenon “negativity bias”. Even when the negative things have an equal intensity compared to neutral or positive things, they still have a bigger effect (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). These negative things can be anything from personal events to news events at the other side of the world. What someone considers negative, draws extra attention from that person compared to whatever is seen as neutral or positive. A sort of comparison might be drawn with the behaviour economic phenomenon loss aversion, which is well known in (behavioural) economics. The loss/negative part of any transaction has a bigger impact on a person’s utility than the positive part of the transaction (Kahneman & Tversky, 1979).

2.2.2 Negative-state relief model

To summarize: People tend to be, from a psychological point of view, more focused on the negative things in life than on the positive. This does however not say anything about the way they act after having to deal with something negative. The negative-state relief model indicates how human beings would deal with this negativity (Manucia, Baumann, & Cialdini, 1984). The negative-state relief model comes just like the negativity bias from the Psychological side of science. This model states that people have a drive from the inside to reduce negative moods. The negative moods can be reduced by engaging in any behaviour that elevates the mood. Mood-elevating behaviour can be anything, from watching a comedy, talking to others, eating something pleasurable, till helping other people. Thus indicating that a negative mood can increase helpfulness (Baumann, Cialdini, & Kendrick, 1981). The Empathy-Induced Altruistic Motivation is a variance for the negative-state relief model (Batson D. C., 2008). It claims that "empathic concern felt for a person in need produces altruistic motivation to relieve that need". According to the same paper there are egotistic reasons for this altruistic behaviour, but that empathic concern produces altruistic motivation.

One of the older research done on the negative-state relief from Cialdini et all. (1973) showed something to separate the negative-state relief model from altruism. In their research they had participants which were in a bad mood. Half of them received something pleasurable, while the other half did not get anything. All of the participants were asked to help others. It seemed that the participants who did not receive anything pleasurable were more likely to help out others, compared to the ones who got their spirits lifted by receiving something nice. So altruism can be affected by the mood people are in. Compared to the control group, which did not were in a specific bad mood, the bad mood group which got something pleasurable, where not less altruistic. Batson et all. (1989) however found in their studies little that proved a negative state relief explanation, but supported the empathy-altruism hypothesis, meaning the giving out of pure altruism, not just to relief the negative state.
It remains unclear what the exact reason is for the more altruisitc behaviour when in a negative mood, but research shows overall that altruism grows when one feels negative.

2.3 Dictator game

"Games" are often used in (behavioural) economics to test for the social preferences of human beings (Charness & Rabin, 2002). These games are usually designed to question and test the standard economic assumption that persons are always acting out of self-interest, being selfish. There are several versions of these games, including trust games, dictator games and prisoner's dilemma games. Discussion still continues whether or not a dictator game is a good way to measure altruism in an economic setting (Bardsley, 2008) (Zizzo, 2011). See for an overview the 2007 study from Levitt & List, 2007.
The measuring of altruism in this thesis is done with a one shot dictator game. The assumption hereby is that giving money to a responder in a dictator game is an act of altruism. The dictator game is a version of the ultimatum game (Güth, Schmittberger, & Schwarz, 1982). In ultimatum games, a proposer has an amount of money (usually given to him by the researcher) and is asked to divide this amount of money between himself and a third person, the responder. (The proposer cannot choose to give more money to the responder than that was given to him in the first place. In most versions of the games, the proposer also cannot take any money away from the responder. His giving is limited to the amount of money given to him at the beginning of the experiment.) The responder can either accept or reject the amount of money given to him. If the responder accepts, the amount of money is divided as proposed by the proposer. If the responder rejects on the other hand, neither the responder nor the proposer gets any money (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003).

There are several versions of the ultimatum game out there. Like said, one of these versions is the dictator game. The dictator game is the ultimatum game where the responder's ability to reject the offer of the proposer is removed. The responder can only accept and no longer reject. Since there is no chance that the responder will reject the offer, it is said that the offer made by the proposer should be made by pure altruistic behaviour, not out of the fear that the responder will reject the offer. Also because of this setup the characteristics of the responder play a much bigger role. Some research still indicated strategic behaviour for optimizing the proposers own payoff (Roth et all. 1991), but later research showed more altruistic behaviour (Hoffman, McCabe, & Smith, 1996).

From the point of the Standard Economic Theory the giving of money is a somewhat remarkeble thing as explained in the previous chapter. The solution for any dictator or ultimatum game, according to the theory, is to give the smallest sum of money possible. In the case of the dictator game this is zero or 1 cent, since the responder cannot reject the money given to him. The responder would accept any positive offer anyway, since according to SEM any positive monetary amount is preferable to none (Rubinstein, 1982).

Research showed that it matters whether the money the proposer has to divide is either given to him by a researcher or that it is his own money that he earned, before playing the dictator game (Cherry, Frykblom, & Shogren, 2002). When the proposer has to offer self earned money, his offer drops dramatically compared to offers he makes when the money comes from the researcher.

Forsythe et all. (1994) found that with a $10,- endowment for student participants, only about 20 percent of the proposers gave nothing at all, while the rest gave relatively small sums. Around 20 percent of the proposers gave half or more of their money to the responder. The 2011 metastudy by Engel confirmed that most proposers give small sums of money in the dictator game (on average 28.3% of the money, with 36% of the proposers giving nothing and 5.44% giving everything), not even close to half of the money.

When the proposer is allowed to take away money from the responder, things are quite different. Some proposers will take away money from the responder, but overall it seems that the proposers are not complete selfish and on overall still give some money (List, 2007) (Bardsley, 2008).

Anonymity in dictator games can play a role in the amount of money the proposer is willing to give. This counts for anonymity for the proposer and for the responder. On average research showed that the more anonymous the responder, the less money is given to him (Eckel & Grossman, 1996). Participating proposers seem to care more about the responder, when they already know the responder. The amount given decreases even more, when responders are shut off from their surroundings (Haley & Fessler, 2005). An extra interesting outcome regarding anonymity in dictator games, is that according to Dana et all. (2006) proposers are willing to take a small loss, aka receive less money than they could have taken in the dictator game, to prevent that the responder would know that the game was played in the first place. The proposer received full anonymity this way and the responder never knew about the dictator game and about the money he might have gotten.

2.4 Triple dictator game

The offer made by the proposer in the dictator game can be considered "fair" when the money is split equally. The previous paragraph already showed with earlier research that most proposers do not send a fair amount to the responder, but rather small sums of money.

Some research used the triple dictator game net to or instead of the dictator game. This thesis will use both the dictator game and the triple dictator game. An explanation for this is given in the method, chapter 3.3. In the triple dictator game, the amount of money given to the responder is tripled by the

researcher (Ashraf, Bohnet, & Piankov, 2006). The triple dictator game gives the proposer the chance to reconsider the amount of money he is willing to give. For a "fair" deal in the triple dictator game the proposer only has to send 25 percent of his money to the responder instead of 50 percent. This way the proposer can be quite generous for the responder, without the cost of being so generous. Do not forget that it still involves a cost for the proposer, but this is relatively small compared to the gains for the responder.

The general finding from the Ashraf et all. (2006) research is that some proposers still give nothing, but there is a general tendency to give around 25 percent of the money to the responder, making it in total outcome quite a fair deal.

The purpose of the triple dictator game is that the proposer can reconsider the amount of money that he is willing to give to the responder. The proposer can be quite generous at a relative small cost for himself, so he might become more willing to share part of his money. The reconsideration of the proposer can have two consequences, especially when the triple dictator game is played after a normal dictator game, like in the experiment performed in this thesis. First, the reconsideration can be in the positive direction for the responder. The proposer who did not gave much or even nothing at all, might reconsider and give a bit more. The proposer only bears a third of the cost of the money given, but might feel good about himself because he started the giving. Second, the reconsideration can be in the negative direction for the responder. The proposer might think it is unfair that if he already gave away a bigger part of his money in the dictator game, to do this again in the triple dictator game. If the proposer would do that again he would have to see that the responder gets way much more than he gets to keep. The proposer might lower the amount of money he gives away, to make the distribution between them more even. It is even possible, but highly unlikely than the responder might end up with a lower amount of money in the triple dictator game than in the dictator game. But it does not seem logical that a social, altruistic proposer who already gave a lot of his money in the dictator game, will give so much less in the triple dictator game that the responder will end up worse than in the dictator game.

If only a triple dictator game is played, so without the dictator game before, the story in the previous paragraph would not hold, because there is no reconsideration. The proposer would most likely, like in the dictator game, decide based on his own altruism and the responder characteristics. He can for example chose to maximise the total wealth of both players combined or to maxims the total income of both players. In a dictator game the total wealth will always be the amount that the proposer has when the game started. In a triple dictator game the total wealth can be made at max three times as much. For this the proposer should give everything to the responder. To find the optimal outcome for the total income of both players, the best tactic for the proposer is to give only a quarter of the money. This way both of the participants will end up with three-quarter of the amount which the proposer started with. As is shown in the Ashraf et all. (2006) research most proposer tended to give a quarter of their money to the responder in the triple dictator games, but these triple dictator game are played once again after a dictator game.

2.5 Research question

Looking at both the negative-state relief model and altruism, the theory behind this thesis therefor indicates that there might be a combination possible between the two. That people will be more altruistic when faced with negative events. The research done by Cialdini et all. (1973) provided already an indication for this, but there was no economic motivation in that research. With the combination of the economics (the dictator game) and the psychology (the altruism, the negativity bias and the negative-state relief model) the research question can be created.

The research question is: Will people give more money in a dictator game when they are faced, before the decision taking, with negative/bad news compared to people who are faced with positive/good news or no news?

The next paragraph will contain the hypotheses following from this research question.

2.6 Hypotheses

This thesis will test if people are indeed more altruistic compared to what to expect based on SEM and if altruistic feelings towards one another can be triggered with different kind of news. The research is twofold. On the one hand there is a test to test the assumption that people are indeed altruistic and are willing to spend money on a third person. If so, this will be a violation of the purely selfish concerns (the self-interested axiom) of SEM. On the other hand, if the participants do violate the standard economic model, this research will test if the participants can be made more altruistic by confronting them with bad news.

To summarize the design of the experiment and to fully understand the following hypotheses:

- There are three news groups: the no-news groups, the good-news group and the bad-news group.
- In each of these news groups, a dictator game and a triple dictator game will be played.

When any of the hypotheses state that the hypothesis counts for both dictator games, it is saying that for every news groups the dictator game will be compared to the dictator game and the triple dictator game to the triple dictator game. Only hypothesis 3 compares the dictator game to the triple dictator game.

Hypothesis 1: The amount of money given by the proposer will differ significantly from zero in any of the three news groups for both dictator games.

The first hypothesis will test whether or not the participants in the survey are indeed altruistic as expected, which means that they are giving money to the responder. This counts for the dictator game and the triple dictator game.

If the first hypothesis is confirmed, things will get interesting. The next step is to test if the giving of the participants is affected by no news, by positive news and/or by negative news.

Hypothesis 2: The amount of money given by the proposer will differ significantly in the three news groups for both dictator games.

The outcome of hypothesis 2 will indicate if the proposers in the dictator game and the triple dictator game are affected by any news at all. The null hypothesis indicates that the proposers in the dictator game are not affected by news at all, and that the proposer will give statistically spoken the same amount of money in the three scenarios.

Hypothesis 3: The amount of money given by the proposer in the triple dictator game will be significantly higher, for any of the three news groups, compared to the amount given in the dictator game.

Hypothesis 3 test the assumptions that the proposers will reconsider the amount they gave in the dictator game and will change this amount. Based on past research the amount given in the triple dictator game should be significantly higher (Chao & Kohler, 2007) (Ashraf, Bohnet, & Piankov, 2006).

Hypothesis 4: The amount of money given by the proposer in the no-news group will be significantly lower than the amount given in the good-news group and in the bad-news group, for both dictator games.

Hypothesis 4 predicts that the proposer will give less money in the scenario with no news, compared to the scenarios with news; no matter positive or negative. Even though the negativity bias entails a stronger reaction towards the negative news, this does not mean that the positive news will not give any reaction at all. By presenting news headlines, people are more or less forced to think about what they read, form an opinion and hopefully an emotion. It will take their mind of the money for an instance, before bringing it back to memory in the first question of the dictator game.

Hypothesis 5: The amount of money given by the proposer in the bad-news groups will be significantly higher than the amount given in the good-news group and in the no-news group, for both dictator games.

Hypothesis 5 is the main interest behind this research. The main question is if people feel the need to compensate for the bad news that they read. If this is true, the money given by the proposer should be higher in the bad news scenario then in the good news scenario, and subsequently than in the no-news group. According to the theory presented before, like the negative-state relief and the research by Cialdini, et all. (1973) if there is any reaction about the news, the negative news should give a stronger reaction than the positive news; meaning more altruism and that more money will be given in the dictator games.

Hypothesis 6:
A - The amount of money given by the proposer is significantly higher in the dictator game, when the proposer is female
B - The amount of money given by the proposer is significantly higher in the triple dictator game, when the proposer is male.

Hypothesis 6 test the extra assumption in the literature that women are on average more altruistic than men (Andreoni & Vesterlund, 2001) (Eckel and Grossman (2001). Women choose significantly more equal allocations between the proposer and the responder, but men tend to make allocations that yield the highest total income; they tend to give more in triple dictator game to make the total income of both players higher (Becker, Häger, & Heufer, 2015).

2.7 Graphic overview

If the first five hypotheses are correct, making a graph out of the amount given by the proposer plotted against the different news groups and being in the dictator game or the triple dictator game should look something like Graph 1. This graph is an exaggeration of the possible outcomes of the giving. It shows first of all that (H1) all three news groups will give more than €0,00, that (H2) the amount given in the three news groups will differ from each other, that (H3) the amount given in the triple dictator game will be higher than in the dictator game for all news groups, that (H4) the amount given in the no-news group will be lower than in the other two news groups, and finally that (H5) the amount given in the bad-news group is higher than in the good-news group. For the hypotheses to hold the differences should be significant.

3. Method

To test the hypotheses a survey was conducted among 177 respondents. This survey was taken by the participants online with the help of Qualtrics without any supervisory. Print screens of the survey can be found in Appendix 1.

There are three versions of the survey, which are related to the news scenarios.

- The first version is the control group. The participants in the control group will not receive any news at all. They will only play the dictator game and the triple dictator game. This way it is easier to draw conclusions if any (good or bad) news has any influence on the giving of the participants. This group will be called the no-news group.
- The second group is the bad-news group. They will read several negative news headlines containing bad news. After reading the headlines, these participants will play the same dictator game and triple dictator game as the control group.
- The third and last group is the good-news group. This group will have the same set-up as the second group, but this time with positive news headlines instead of negative news ones.

Participants are randomly assigned by Qualtrics to any of the three groups when they start the survey. The introduction and the dictator game questions are the same for all three groups; only the news part will differ (see pages 3 of the survey in Appendix 1: Survey). The amount of money that the participants in the three groups gave away will be used to answer the research question and to test the six hypothesises.

The rest of the chapter will look at the set-up to the experiment and will explain why this set-up is chosen that way. After that the statistical model will be explained.

3.1 Pay-out

The survey is a pure hypothetical one, with one exception. Out of all the participants three participants (who left their email address at the end of the survey) will be randomly picked, who will actually receive the money they kept in the games. The money they gave away to the responder will be transferred to the responder; see chapter 3.4 for information about the responder.
These three participants are selected, so that hopefully every participant in the survey will act according to their incentive-compatibility, meaning that the participant will act according to their true preferences. If there was no chance that the dictator game will be played and so no chance that the participant would get any money, the participants might anticipate on this and might not act according to their true preference. This will give invalid results in the data.

3.2 News headlines

To trigger the negativity bias, one of the groups is presented with ten news headlines which can be seen as negative, the so-called bad-news group. One of the other groups is presented with news that can be seen as positive, and one is presnted with no news. This last group will serve as a control group, to test whether or not the participants gave away more money when faced with negative news.

News headlines are being used because these are usually quite short and contain all the information needed. With using headlines it is possible to touch upon multiple topics, in the hope that at least one of them, but hopefully more, will trigger an emotion. With a normal news (positive or negative) article it is harder to find one topic that the majority of participants can understand and can trigger the desired emotion. An article about delays in the public transport for example, will most likely not trigger any emotion in car drivers other than relief that they do not have to deal with these problems.

The good-news and the bad-news group both have ten headlines. Ten headlines should be enough to trigger the positive or the negative feeling that is needed for the experiment. Using more headlines requires more reading, and this might trigger fast and/or not careful reading or even skipping some of the news headlines. Using less headlines might not be enough to trigger the negative or positive feelings that are needed to test the hypotheses. Another advantage of the ten different headlines is that the number of participants who care about the various topics should be roughly the same in the two news groups with headlines.

There is not a strict objective manner to tell whether or not a news headline is negative of positive, because this is mostly personal. The distinction between the good and the bad news in this research is based on common sense and personal opinion. No controversial headlines are used: for instance soccer results, because a victory of any team can be seen as positive for one person, but negative for another. If some participants disagree on the proposed ambiance of one or two headlines, there will be other headlines on which they will agree. As long as the participants who disagree will be evenly distributed among the newsgroups, this disagreement will not influence the results.

The headlines are all based on real events, mostly copied from an actual headline in either a newspaper or an online news article. When the participants think that the headlines are fake/false, it might trigger the wrong sentiment and this might lead to invalid results when the dictator games are played.

The headlines for the good-news and the bad-news group are created in a way that they try to be each other counterparts. This means that the headlines are about the same subject, but the news about this subject will differ, making it either positive or negative news. This way the bad headlines are hopefully not seen as much worse than the good news headlines are seen as good, or the other way around.

The survey is taken online, meaning the headlines are showed on screen, not on paper. The social network research (Kramera, Guillory, & Hancock, 2014) shows that emotional contagion does not need to be done in person, but that this can be done by social media as well. This indicates that an emotion can be triggered from text alone, without verbal and nonverbal cues. This research indicates that emotions therefor also can be transferred by the headlines in the survey. To create a more realistic feeling of the headlines in the survey, a newspaper layout was added to them. This way the headlines seem more real and will hopefully trigger a stronger emotion than when the headlines where just lined up headline by headline.

3.3 (Triple) dictator game

A dictator game is used to test the hypotheses and to answer the research question. The advantage of using a dictator game is that you only measure the altruism of the proposer, which is only influenced by the characteristics of the responder. As can be seen in chapter 3.4, a charity is used as a responder. The characteristics of the responder should be as neutral as possible for this research, otherwise the dictator game will mostly test how much the proposer likes or dislikes the responder, not how much he is affected by the news.

The dictator game is preferred over the ultimatum game. With an ultimatum game the fear of not getting any money at all will always play a (big) role in the decision making of the proposer, next to the fairness / altruism of the proposer. This fear can be misguided and measuring of altruism will be hard in this situation. Next a problem with the ultimatum game is that the responder might have other incentives than purely monetary for accepting and especially declining an offer, like personal punishment (Thaler, 1988).

The survey consist of two dictator game questions. These questions are identical for every news group. After the news headlines, the normal dictator game question is given. This one askes how much of the

10 euros that is given to the participants at the beginning of the experiment, they are willing to give to the Red Cross. Next the triple dictator game question is asked. As explained before in chapter 2.4; in the triple dictator question, the amount of money given by the proposer is tripled by the researcher, and this tripled amount is given to the responder.

The dictator game question is asking the participant how much of the 10 euro he got at the beginning, he is willing to give to the responder. One can only give money away, if it is his in the first place. If the question indicated that the 10 euro should be divided between the proposer and the responder, it might give the participant the impression that the 10 euro is not really given to him in the first place, but that he only receives a share of the 10 euro. The question is specifically stated this way to prevent this impression. The participant needs as much as possible have the feeling that the money is his.

The triple dictator game is played after the dictator game. The triple dictator game is explained in chapter 2.4. The triple dictator game is played to see whether the proposers are willing to change their offer to the responder, when the responder gets triple the money the proposer offered. The proposer might want to offer more to the responder, when the combined wealth of the two will be higher, than the maximum combined wealth in the dictator game.
The triple dictator game is also played because the amount given and the variance in this giving is usually higher In the triple dictator game than it is in the dictator game (Ashraf, Bohnet, & Piankov, 2006). When variance is higher, this means that it is more likely that there might be a difference between the giving in multiple triple dictator game than between the giving in multiple dictator game. This makes the testing of the hypotheses easier.

The standard stakes in a lot of dictator games are $10 (Engel, 2011). Even though the exchange rate make the amount of money a bit different, ten euro will be used as a stake, to make the numbers comparable to other research.

To prevent any problem in measuring the altruism, the proposers in the experiment cannot take away any money from the responder (Bardsley, 2008). They also cannot give more than the 10 euro provided to them at the beginning of the survey. Their actions are limited to the amount of money given to them at the beginning of the experiment;, nothing more, and nothing less.

In Table 1 the possible distribution between the proposer and the responder are given in the dictator game and the triple dictator game in whole euros. In the experiment itself the proposer can split the 10 euro to the cent.

3.3.1 Anchoring bias

To prevent anchoring, no examples of possible distributions are given in the survey (Tversky & Kahneman, 1974). Any possible suggestion on how much money the proposer might give to the responder, can lead to a biased decision (Kahneman, Thinking, fast and slow, 2011). Only the phrase that the proposer can keep the complete amount of money, can give everything away or can give away any amount between zero and ten euros they please to, is given to the participants as a clarification of the questions. Any example of a distribution can trigger anchoring. The dictator game of question 1 seems quite clear without an example, but the triple dictator game of question 2 can be harder to understand for the participants without an example. However, at this point anchoring is seen as a bigger problem for the reliability of the results than the possibility that some participants might not understand the questions. The possibility of giving every dictator game the same example of a distribution has been considered, but since the influence of anchoring can vary among the participants the choice has been made not to give any examples at all (Epley & Gilovich , 2006). As long as the participants who do not understand the triple dictator games are evenly divided among the three news groups is should not affect the results.

3.3.2 Lack of control

One of the main problems with creating this experiment and with the survey is the lack of control. It is impossible to see what was on the participants mind while performing the survey, so only estimated guesses can be made with the final results. However, since the lack of control is constant in the entire survey, for all three versions, the assumption is that there will be no problems in interpreting the results between the versions. Drawing conclusions from the overall results however can be harder, without a controlled environment.

3.3.3 Deception

Deception need to be avoided in economic experiments as much as possible (Friedman & Sunder, 1994) (Hertwig & Ortmann, 2008). The participants are fairly told at the beginning of the survey that they will play a dictator game and that they will act like the proposer. They are told that this means that they are in charge of giving away money. They are not told that there are several versions of the experiment, to avoid that the participants will anticipate on this.

3.4 Responder

The responder is presented in the survey as a charity. Eckel and Grossman (1996) show that the participants in their research seem to give more money to the charity than to an anonymous responder. It might be that the participants consider the charity to be more "deserving" the money than an anonymous person. This might give implication for the real altruism, but since the responder is the same for all research groups it should have the same impact on all research groups, so it should not make a difference in the results.

Same as in the Eckel and Grossman (1996) paper the charity in this thesis is the Red Cross. The Red Cross is known to almost everyone and does not need much introduction. The Red Cross is also not involved in any recent scandals, or does not have major critics on their method of providing aid, and their methods of helping out others in needs are not very controversial. Scandals and criticism can affect the trust that people have in that charity and so can influence the amount of money the participants might want to give. In order to use a charity as a responder in the experiment it is important to pick a charity which people do not have any negative feelings or emotions about. Otherwise the experiment will not test altruism, but only the feelings toward the charity. Furthermore, in using a charity as the responder it is possible to actually transfer the money that is given to the charity in the experiment (for the three selected participants). With an anonymous person the proposer might get the idea that the money will not be transferred anyway, and might anticipate on this information in his giving in the dictator games.

3.5 Proposer

To check for demographic variables, the participant's gender, age, and residence are asked at the end of the survey. According to earlier research gender can play a role in how altruistic people are (Andreoni & Vesterlund, 2001). Eckel & Grossman (2001) reported that women send more money to the receiver, and that they accept more easily than men. This was however tested using ultimatum games, and not purely dictator games.
There are no expectations that age or residence will show any significant effect in this research. The survey will be spread using an URL, so there will be not much influence on who will participate in the survey. There is no restriction made in age class, or residence, but these results will most likely be skewed to people between 20-40 living in Rotterdam and surroundings.

For the rest of this thesis the participant of the experiment will be recalled as the proposer of the dictator game. All participants in the survey are proposer, as there is no actual responder included in the survey. The responder is in this thesis involved in the experiment, without even knowing it.

3.6 Model

Like said before, the experiment will consist of three groups (bad-news group, good-news group and no-news/control group), with two games (dictator game and triple dictator game) within every new groups.
To summarize the hypotheses the statistical part should test whether the mean of the three groups is significant different from each other and whether the mean of the games differs significant from each other. To compare these groups there is a need for a between group comparison method for hypotheses 1, 2, 4, 5, 6a, and 6b. To compare the results from hypothesis 3 there needs to be a within group comparison. The next part will look at the Tobit model and compare it with linear regression model.

3.6.1 Tobit model

For the statistical analysis a normal t-test is insufficient to test most of the hypotheses in this research. The t-test will only test if the mean from two sets of data are significant different from each other. The t-test also holds the assumption that the data has a normal distribution. An ANOVA (analysis of variance) test is the first test that comes to mind when wanting to test difference between the means of a categorical variable with more than two groups. Next to ANOVA a linear regression with dummies for the categorical variables can be used. There is however a restriction in the data than might give reason to use a different test.

The main restriction with the data is that the dependent variable is limited by the experimental setting. Proposers can only play the dictator game with the 10 euro that is given to them at the beginning of the experiment. An implication of this is that the proposer can never give more than 10 euro and never less than 0, that means taking money from the responder. The censoring from the dependent variable below 0 euro is called left censoring and the censoring above 10 euro is called right censoring. The model mostly used in statistics when censored data is involved is the Tobit model, also called a censored regression model (Tobin, 1958). This model takes into account that there is a censoring in the dependent variable, meaning that the dependent variable is limited between either two numbers or only by one number on one side.

The Tobit model was proposed by James Tobin in 1958. It describes the relationship between a positive dependent variable y_i and an independent variable x_i. The model supposes that there is a latent variable y_i^*. This variable linearly depends on x_i, via a parameter β which determines the relationship between the independent variable (or vector) x_i and the latent variable y_i^*.

For this research this means that:

$y_i^* = \beta_x x_i + \varepsilon$ (1)

with:
$y_i = y_i^*$ if $0 < y_i^* < 10$
$y_i = 0$ if $y_i^* \leq 0$
$y_i = 10$ if $y_i^* \geq 10$

y_i Amount given by the proposer in the dictator game or the triple dictator game
β_x Parameter
x_i Independent variable
ε Error term

The amount given in the experiments is the dependent variable. This is limited to any two decimal number between zero and ten. This restriction need to be taken into account when doing any statistical assumption. People might want to give more than the restricted amount euro or less than 0 euro, but due to the restrictions in the experiment are unable to do so and the Tobit model takes these restrictions into account.

Amemiya (1984) wrote about the five different Tobit model variation, called Tobit type I to Tobit type V. Type I only has one latent variable. The other types have more latent variables or more observed dependent variables. The data that will be analysed in this thesis only has one latent variable, namely the amount given, so the Tobit Type I model will do.

The choice for normal regression or Tobit regression depends largely on the numbers of extreme numbers (the zeros and the tens) in the data from the survey. If these two numbers are relatively small or even not being used at all, it makes more sense to make use of the linear regression model, since there is little to no censored data. If the numbers are greater than zero and smaller than ten, it is very unlikely that the proposer wanted to give less than 0 or more than 10, otherwise it would have stated any of the two limits.

4. Data

The statistical analysis of the data is done with STATA. A total of 177 respondents completed the survey and provided verifiable information to test the hypotheses. These 177 participants were divided over the several news groups by Qualtrics. The number of participants for every news group can be found in Table 2. The difference in number of participants for every version is due to participants not finishing the survey. Qualtrics only randomises when participants enter the survey, but does not check for finishing. This means that more participants started the survey, than actually finished it. A bit more than half of the participants were male (55.37%), see Table 3. The youngest participants in the survey was 14, and the oldest 65, and the average age being 30.4 years, see Table 4. Overall the participants came from Rotterdam and the surrounding area.

4.1 All or nothing

To know whether to use the Tobit regression or not, a check needs to be done whether proposers were searching the limits of giving in the dictator game and the triple dictator game. About 44.6% of the proposers gave all or nothing in the dictator game. To specify: 61 proposers in the dictator game gave everything and 18 gave nothing. Including these all-or-nothing givers, proposers gave on average 6.04

euro. For the triple dictator game 45.8% of the proposers gave all of nothing. 10 proposers gave nothing and 71 gave everything. Proposers gave on average 6.48 euro in the triple dictator game. For the calculated average of the giving for both dictator games for the different news groups see Table 5. The big number of all or nothing givers in both dictator games justifies the use of the Tobit regression model over linear regression.

4.2 Testing hypotheses

Graph 2 shows the average of the amount of money given by the proposer for the two dictator games for every news group. At first sight it looks quite a lot as the hypothetical overview of Graph 1. This means that there is an indication that the hypotheses might be true, even though it does not say anything yet about the statistical significance of it. The results of the hypotheses testing is shown below.

H1: The amount of money given by the proposer will differ significantly from zero in any of the three news groups for both dictator games.

To test hypothesis 1 the mean from the dictator game and triple dictator game for all news groups should be compared to zero. On average the responders gave 6.04 euro in the dictator game and 6.48 euro in the triple dictator game. Using a t-test, see Table 6, Table 7, Table 8, and Table 9, it shows that the average given in the dictator game and triple dictator game overall and for all the news groups is significant different from zero (P=0.000). The null hypothesis is rejected at the 1 percent significance level. The amount given differs significant from zero for all news groups for both dictator games.

Hypothesis 2: The amount of money given by the proposer will differ significantly in the three news groups for both dictator games.

To test for hypothesis 2 the average amount given in the three news groups should be compared. The means from the different news groups for the two different dictator games give an indication that there is a difference, especially between the bad-news group and the other two news groups, but this does not show yet whether this difference is significant or not.

A Tobit regression is run in Stata, with the news groups being categorical variables as dummies and using the no-news group as reference or baseline category.
The Tobit regression looks as follows.

For the dictator game:

$$Y_{DG} = \alpha_{no} + \beta_1\delta_{bad} + \beta_2\delta_{good} + \varepsilon \qquad (2)$$
$$0 \leq Y_{DG} \leq 10$$

For triple dictator game:

$$Y_{TDG} = \alpha_{no} + \beta_1\delta_{bad} + \beta_2\delta_{good} + \varepsilon \qquad (3)$$
$$0 \leq Y_{TDG} \leq 10$$

Y_{DG} Amount given by the proposer in the dictator game
Y_{TDG} Amount given by the proposer in the triple dictator game
α_x Intercept
β_x Slope
δ_x Dummy variable for the news group
ε Error term

The test, as can be seen in the hypothesis, is the difference between the no-news group and the other two news groups. According to Table 10, for the dictator game there is no statistical significant difference between the no-news group and the bad-news group (P=0.159) and between the no-news group and the good-news group (P=0.560). The difference between the good-news group and the bad-news group is also not significant (P=0.419, see Table 11).
There is however a significant difference for the triple dictator game at the 10 percent significance level for the difference between the no-news and the bad-news group (P=0.073, see Table 10) and the difference between the good-news group and the bad-news group (P=0.065, see Table 11). The difference between the good-news group and the no-news group are not significant (P=0.933, see Table 10). For the dictator game the null hypothesis cannot be rejected, meaning that the amount given in the three news scenarios is not significant different. For the triple dictator game the null hypothesis is rejected at a 10 percent significance level for the difference between the bad-news group and the good-news group and for the difference between the bad-news group and the no-news group.

Hypothesis 3: The amount of money given by the proposer in the triple dictator game will be significantly higher, for any of the three news groups, compared to the amount given in the dictator game.

Hypothesis 3 tests whether or not the assumption that proposers will give more in the triple dictator game compared to the dictator game is true. When looking at the overall giving for all proposers in all news groups, see Table 12, the null hypothesis can be rejected at the 1% significance level (P=0.0028). Proposers gave on average more in the triple dictator game than in the dictator game.

When looking at the different news groups, the difference between the dictator game and triple dictator game is significant higher for the triple dictator game at the 5% significance level for the no-news group (P=0.0089) and for the bad-news group (P=0.0328). The difference between the dictator game and the triple dictator game is not statistically significant in the good-news group (P=0.3399). See Table 13, Table 14, and Table 15 for the analysis. The null hypothesis cannot be rejected for the difference between the dictator game and the triple dictator game in the good-news group. The amount given is statistically the same. However, the null hypothesis is rejected at the 5 percent significance level for the difference between the dictator game and the triple dictator game in the no-news groups, the bad-news group and for the overall giving. On average the proposers in these three groups gave statistically significant more money in the triple dictator game than in the dictator game.

Hypothesis 4: The amount of money given by the proposer in the no-news group will be significantly lower than the amount given in the good-news group and the bad-news group, for both dictator games.

Hypothesis 4 can be tested almost the same way as hypothesis 2, using the Tobit regression with the no-news group as baseline category, which can be seen in equation 2 and 3. For the dictator game, the giving in the no-news group is not significant lower compared to the bad-news group (P=0.159) and to the good-news group (P=0.560). For the triple dictator game, the giving in the no-news group is significant lower compared to the bad-news group at the 10% significance level (P=0.073). The giving in the no-news groups is not significant lower than in the good-news group (P=0.933), which was already suggested by the means of both news groups. See Table 10 once more. The null hypothesis cannot be rejected, since the difference is not statistically significant. However, for the triple dictator game, specifically the difference between the no-news group and the bad-news group the null hypothesis can be rejected at the 10 percent significance level. The giving is statically lower in the no-news group compared to the bad-news group, but not to the good-news group for the triple dictator game.

Hypothesis 5: The amount of money given by the proposer in the bad-news groups will be significantly higher than the amount given in the good-news group and in the no-news group, for both dictator games.

As a follow up hypothesis to hypotheses 2 and 4, hypothesis 5 was the underlying idea behind this thesis. Testing whether people will give more money to charity when being faced with negative news.

In the dictator game the giving in the bad-news group is not significant higher than the good-news group (P=0.419) and neither significant higher than the no-news group (P=0.159). See Table 16. For the triple dictator game the differences are statistical significant at the 10% significance level. The giving in the bad-news group is statistical significant higher than the good-news group (P=0.065) and the no-news group (P=0.073). For the dictator game the null hypothesis cannot be rejected, while for the triple dictator game the null hypothesis is rejected at a 10 percent significance level. The giving is statically higher in the bad-news group compared to the other two news groups for the triple dictator game.

Hypothesis 6:
A - The amount of money given by the proposer is significantly higher in the dictator game when the proposer is female
B - The amount of money given by the proposer is significantly higher in the triple dictator game when the proposer is male.

Hypothesis 6 tests the assumptions that gender matters in playing the dictator games. The assumption is that women on average give more than men in the dictator game, but that men give more than women in the triple dictator game. 98 of the 177 participants in the survey were male (55%) and 79 were female (45%), see Table 3. The female participants gave on average more money than the male participants, in the dictator game and in the triple dictator game, see Table 17. This already gives an indication that hypothesis 6b might be false.

The simplest Tobit regressions that can be run with gender as a variable are given in equation 4 and 5 below.

$$Y_{DG} = \alpha_{female} + \beta_3\gamma_{male} + \varepsilon \qquad (4)$$
$$0 \leq Y_{DG} \leq 10$$

$$Y_{TDG} = \alpha_{female} + \beta_3\gamma_{male} + \varepsilon \qquad (5)$$
$$0 \leq Y_{TDG} \leq 10$$

Y_{DG} Amount given by the proposer in the dictator game
Y_{TDG} Amount given by the proposer in the triple dictator game
α_x Intercept
β_x Slope
γ_x Dummy variable for gender
ε Error term

When only looking at the influence of the gender on the giving of the proposers in the dictator game and the triple dictator game, there is no significant influence (P=0.178 for dictator game and P=0.494 for triple dictator game, see Table 18). There is not enough evidence to reject both the null hypotheses, so even though women gave on average more, this result is not statistically significant.

4.2.1 Extra analysis

To see which of the variables from the proposer have a statistically significance influence on the giving in the dictator game and the triple dictator game, a linear regression is run with the following regression with female and the no-news group being the reference category. The available variables are age, gender, and news group. Since it is a normal linear regression and not a Tobit regression, there are no assumptions about the limits of Y_{DG} and Y_{TDG}.

For the dictator game:

$$Y_{DG} = \alpha + \beta_1*(Age-14) + \beta_2\delta_{bno} + \beta_3\delta_{good} + \beta_4\gamma_{male} + \varepsilon \quad (6)$$

For the triple dictator game:

$$Y_{TDG} = \alpha + \beta_1*(Age-14) + \beta_2\delta_{bno} + \beta_3\delta_{good} + \beta_4\gamma_{male} + \varepsilon \quad (7)$$

Y_{DG} Amount given by the proposer in the dictator game
Y_{TDG} Amount given by the proposer in the triple dictator game
α_x Intercept
β_x Slope
δ_x Dummy variable for the news group
γ_x Dummy variable for gender
Age Age variable
ε Error term

Looking at linear regression, see Table 19, at all the variables available in the research, age is statistically significant at the 5% significance level in the dictator game (P=0.048), while none of the other variables are statistically significant. For the triple dictator game with linear regression only the bad-news group dummy is statistically significant at the 10% significance level (P=0.087).
All together the bad-news group still has a statistically significant influence (at the 10% significance level) on the giving in the triple dictator game compared to the giving in the no-news group, even while adding all other available variables in a linear regression model. These results, combined with the results of the hypotheses testing, give a reason for follow-up research.

4.2.2 Comparison Tobit and linear regression

A table with the linear regression with the no-news groups as baseline, and the good- and bad-news groups as dummies is added in Table 20. Comparing this to the Tobit regression in Table 10, with the same variables, it seems that the Tobit regression made the constant term of the regression go up compared to linear regression. This is due to the high numbers of upper limit numbers (ten euro given) and the low number of lower limit numbers (zero euro given) in the dependent variable. When using the Tobit regression, the model “assumes” that the limit-numbers might be higher or lower than the boundaries given in the experiment. With so many proposers giving everything (61 in the dictator game and 71 in the triple dictator game, out of 177 proposers) and assuming they might wanted to give more than that, the average (the intercept) will go up. If there were more zeros than tens it would be the other way around and the constant variable in the Tobit regression would have been lower compared to the normal linear regression. Due to that the Tobit regression made the influence of the dummy variables smaller and less significant compared to linear regression.

5. Discussion and conclusion

5.1 Discussion method

Not everyone agrees that dictator games are the right way to measure altruism (Zizzo, 2011) (Bardsley, 2008). The main problem with measuring altruism is that altruism can have many forms, not just the monetary form which is measured in the dictator game (Piliavin & Charng, 1990). To measure altruism in an economic study however, economist are limited in the ways they can measure it. The trust game and the dictator game are the ones which are used the most and the dictator game is considered the best way to measure the altruism for the purpose of this research.

A main problem for the research is that the experiment is done online, without supervision, with hypothetical money. Even though this research still shows a difference between the bad-news group and the other two news groups, the method would be more trustworthy if done in a controlled environment with real money. It might have been a good idea to add some control questions at the end of the research to check for the implied state of mind (negative, positive or neutral) of the participants to have backup for the results of the experiment.

What can affect the results of the survey is that the participants are told beforehand that they are participating in a dictator game; this is before they see the news headlines. It is possible that (some) participants already made up their mind before reading the news headlines. If there are participants who already made up their mind before reading the news headlines, this should not affect the results as long as these participants are divided among the three different news treatments in the experiment. The danger with presenting the news headlines first, and giving the introduction after is that the supposed emotion from the news headlines already might be vanished, because concentration is needed to read the explanation of the survey and the triggered emotion might “die” in the meantime.

5.2 Discussion results

The results indicate that there is a statistical significant difference at the 10% significance level between the bad-news group and the other two news groups. However this result only holds in the triple dictator game, not in the dictator game. The result is also not significant at the 5% significance level. So the results give an indication towards the effects of negative news on the altruistic behaviour, but extra research is needed to test if the results hold in other circumstances. Overall the proposers gave about 60% of their money away to charity. This is quite a lot compared to other research like Engel (2011) and Forsythe et all. (1994). This might have to do with the hypothetical money, and that the money was not given to them in real life first (Cherry, Frykblom, & Shogren, 2002). Also the fact that a charity was used as a responder, instead of an anonymous responder, might explain part of the high amount given (Eckel & Grossman, 1996). That there is little to no difference between the no-news group and the good-news group can be due to the brain not making a big emotion of the positive news. Another possibility is that the positive news, was not positive enough to trigger heavy emotions.

The research question can partly be answered with “yes”; people tend to give more money in a triple dictator game, when they are confronted with bad news, compared with the people that were not presented with any news or presented with good news before the decision taking. The difference in giving between the good-news groups and the no-news group is small and insignificant for both the dictator games.

5.3 Recommendations

To test whether or not the participants were in the mental state, which they are implied to be in after reading the headlines, some control questions can be asked at the end of the survey about how they

felt before the experiment, and how they felt after reading the headlines. These questions should be asked by the end of the research to prevent that participants will anticipate to the topic of the research while answering the dictator games questions.
The main difference in giving in the dictator game is between the bad-news group on the one side, and the good-news and no-news group on the other side. Further research can further look into this difference.

Since for the triple dictator game the bad-news had a statistically significant influence on the amount of money that was given, follow-up research is recommended to see if this will still hold in other scenarios: One recommendation for follow-up research will be to test the hypotheses with real money, earned or already owned by the proposers and to have a bigger research group.
A suggested follow-up research is whether the bad-news effect fades away after some time. Will people give more money every time they will be confronted with bad news compared to good news, or will there be some point in time where it stops? The question is, if people might need positive feedback after a while. A guess is they would, otherwise they feel that the giving does not make any sense, but at what point, and whether they would remain to give after some good news is work for a follow-up research.

An idea derived from the difference between the good-news group and the no-news group, is to trigger positive emotions even more than just by reading headlines. When participants are feeling (self-indicated) happy and/or positive, let them play the dictator game, and compare these results with people who have neutral feelings while playing the dictator games.

5.4 Implementations

Once confirmed that people tend to be more altruistic after reading bad news this has impact on several levels, for example for marketing purposes. Charity's might want to know whether it is still a good idea to tell people about the amazing work they do with the money they receive, or mainly focus on the bad news which led to the fact that they need the money in the first place.
Organizations who depend on governmental help can attract more money by maybe focus less on the benefits of the money, but more on how much negative things are going on right now. Same applies for parts of companies that want extra money for the next accounting year. The focus might be to show what is going wrong, instead of focusing on what or how things can be improved. Marketing from companies can focus not on how great, good-looking, successful you would be with their project, but on how minor, bad-looking, and unsuccessful you will be without it.
For personal finance it might be better to only make financial decisions when you are in a good mood, or at least not in a bad one. A bad mood might lead to that you will spend more money than you planned, in the hope it will relieve your bad mood, which you might regret later.

5.5 Conclusion

The proposers in the study violated the self-interested axiom of the Standard Economic Theory. They gave on average around 60% of their money to the responder.

It further seems that presenting bad news has a positive impact on the giving of the proposers in the dictator games compared to the giving in the no-news and the good-news group. This effect was statistically significant at the 10% significance level in the triple dictator game, but not statistical significant in the dictator game. An explanation might be found in the negative-state relief model: This model implies that people have a drive to reduce negative moods. Reading bad news can cause a negative mood, and giving money to a charity might give proposers the feeling that they helped to take away the negative things a bit. This giving "reliefs" the negative state. The research question can be

answered positively overall: the proposers gave more on average when faced with bad news. However from a statistical point of view only for the triple dictator game the difference between the bad-news group and the other two groups was statistical significant and only at a 10 percent significance level.

There was only a small non-significant difference between the giving in the no-news group and the giving in the good-news group. An explanation for this small differences can be that the good news does not stick around in the memory quite as long as bad news does. Good news might already be forgotten by the time the dictator games were played, indicating that there might be no difference between presenting good news or no news at all.

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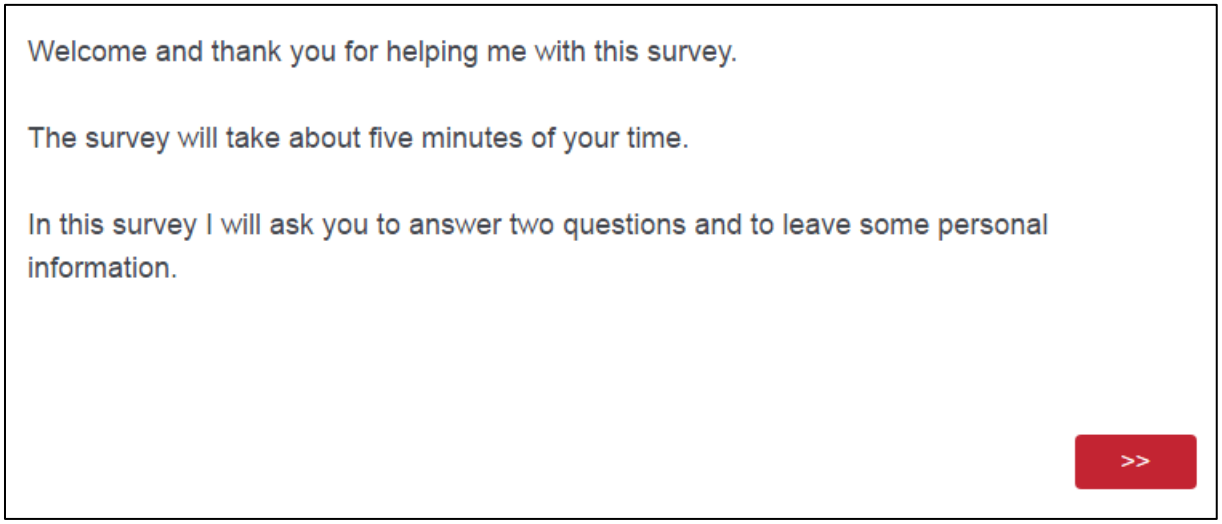
Appendix 1: Survey

These are print screens from the online survey as how it was presented by Qualtrics to the participants. Only page 3, the news headlines, differed among the three versions. Every version represents one new-group. Versions were randomly assigned by Qualtrics to the participant who opened the URL to the survey. The survey was only distributed using an anonymous URL.

Page 1: Introduction



Page 2: Explanation dictator game and responder

Imagine that you are given 10 euro by me.
This 10 euro is completely yours now and you can do whatever you want with it.

In the two questions that follow I will ask you to divide the 10 euro I gave you between yourself and the Red Cross.
The Red Cross is a well-known charity which helps those affected by armed conflict, with mostly medical help, but also with shelter, food and water. (https://www.icrc.org/)

You can divide the money any way you want (to the cent), but you cannot give less than zero or more than ten.

Out of all the participants of this survey, who will leave their email address in the end, I will randomly draw three email addresses who will actually get paid according to their dividing stated in the first question. This means that the part of the money that they give away, will be transferred to the Red Cross, and that they will receive the rest of the 10 euro. Leaving your emailadress is completely voluntary.

The money will be donated to the Dutch section of the Red Cross.

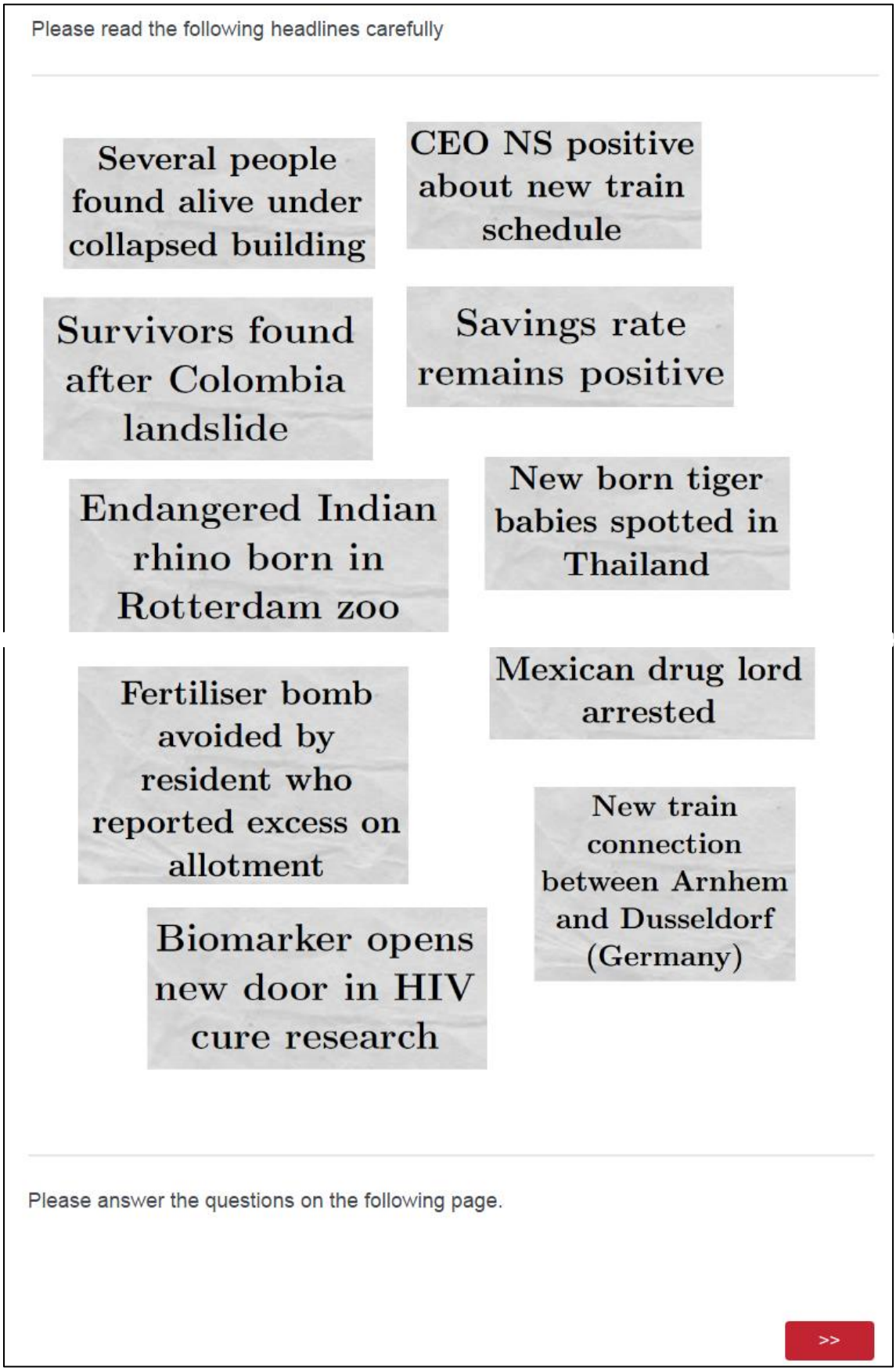
>>

Page 3: News headlines: No-news group

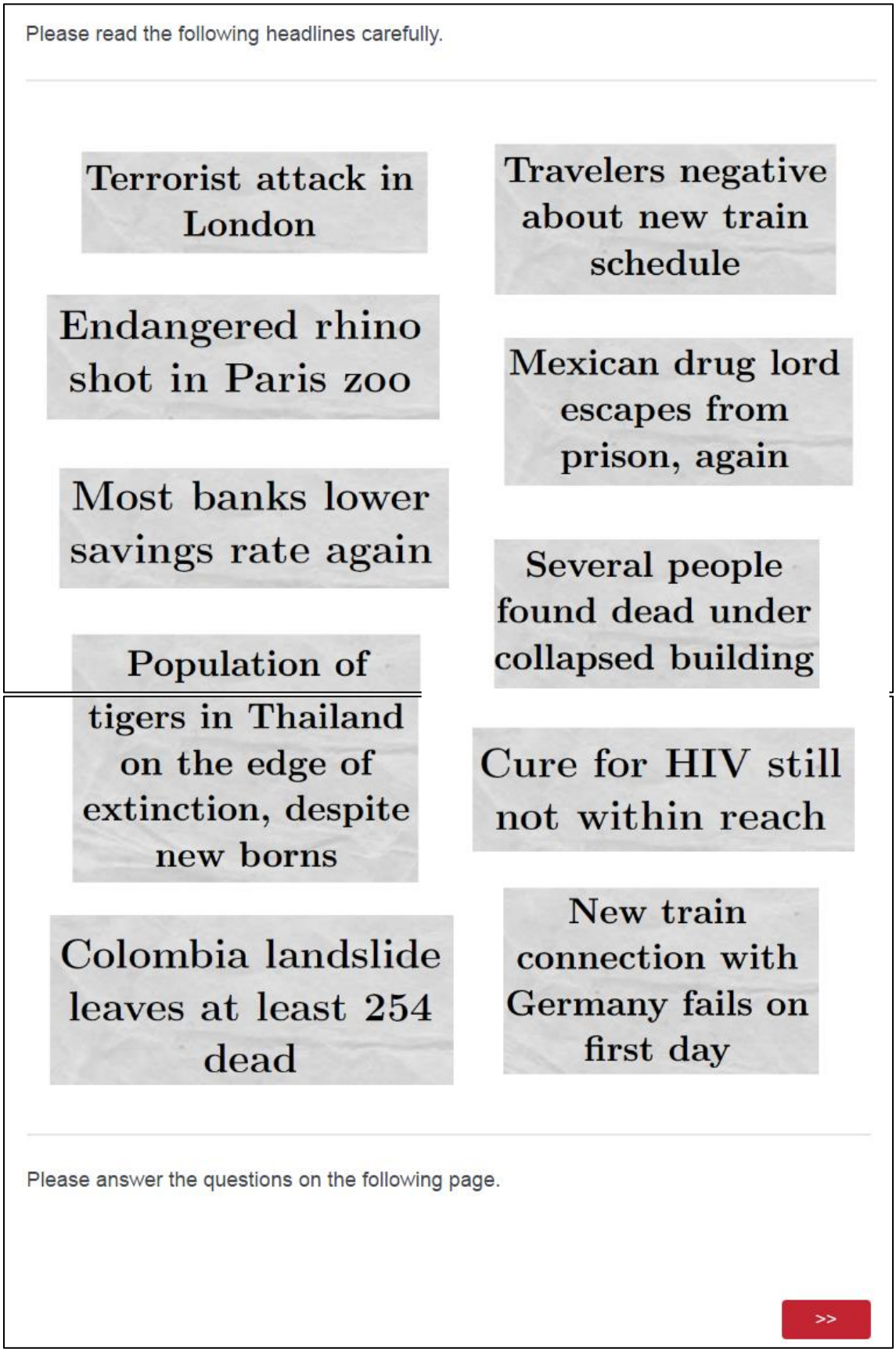
Please answer the questions on the following page.

>>

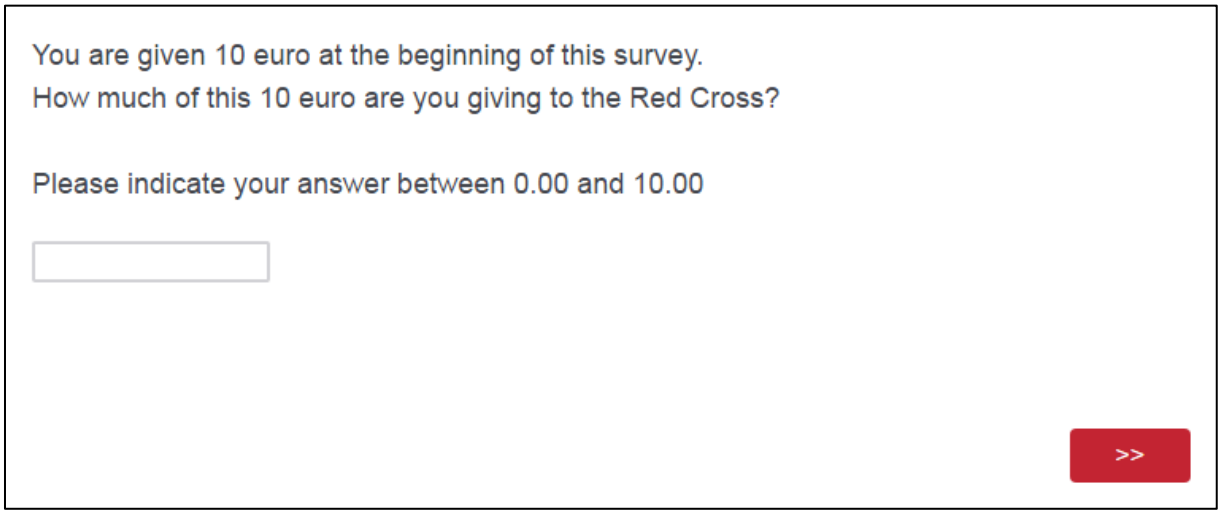
Page 3: News headlines: Good-news group



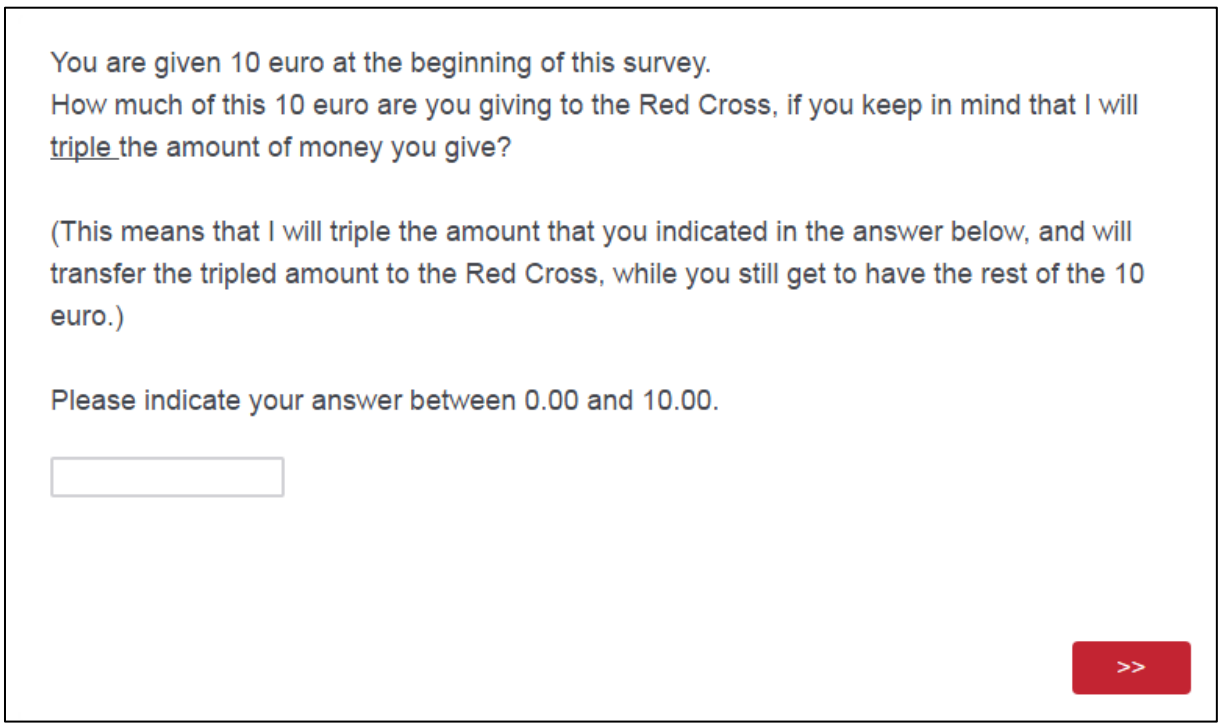
Page 3: News headlines: Bad-news group



Page 4: Dictator Game question



Page 5: Triple Dictator Game question



Page 6: Personal information

Please answer the questions below regarding some personal information.

Age:

Gender:

Male

Female

City of residence:

As explained at the beginning: Out of all participants I will draw three email adresses to carry out their answers of this survey. This means that three participants get 10 euro minus the amount of money that they were willing to give to the Red Cross according to question 1.

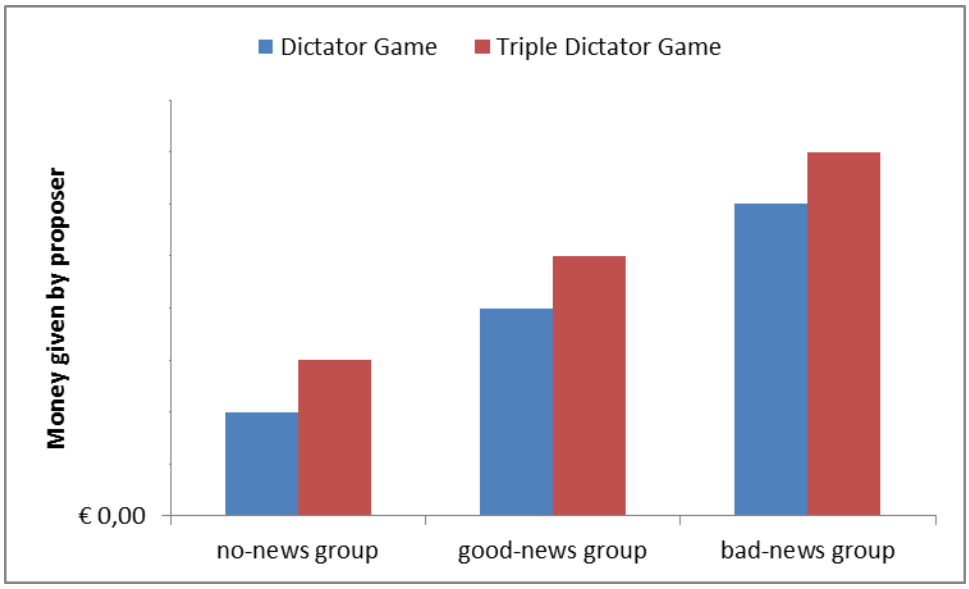
The money for the Red Cross will be transferred to the Red Cross by me.

If you state your email address below, I will contact you if you are one of the three selected participants.

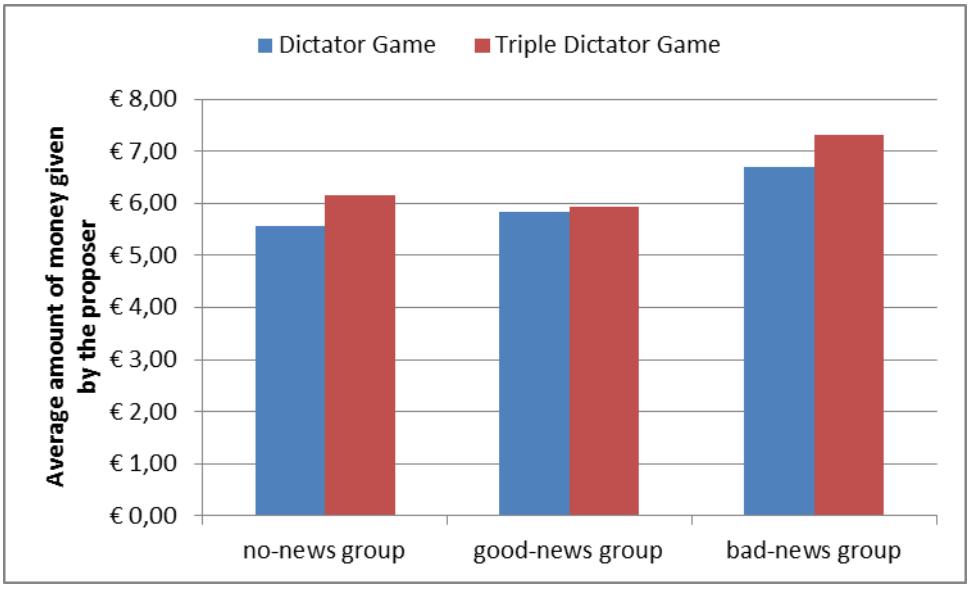
>>

Appendix 2: Graphs and tables

Graphs



Graph 1: Hypothetical example of how the giving should look like according to the stated hypotheses



Graph 2: Graphical overview of the means of the amount of money given by the proposer in the two dictator games for the different news groups.

Tables

Dictator game		Triple dictator game	
Proposer keeps	Responder gets	Proposer keeps	Responder gets
€ 10,-	€ 0,-	€ 10,-	€ 0,-
€ 9,-	€ 1,-	€ 9,-	€ 3,-
€ 8,-	€ 2,-	€ 8,-	€ 6,-
€ 7,-	€ 3,-	€ 7,-	€ 9,-
€ 6,-	€ 4,-	€ 6,-	€ 12,-
€ 5,-	€ 5,-	€ 5,-	€ 15,-
€ 4,-	€ 6,-	€ 4,-	€ 18,-
€ 3,-	€ 7,-	€ 3,-	€ 21,-
€ 2,-	€ 8,-	€ 2,-	€ 24,-
€ 1,-	€ 9,-	€ 1,-	€ 27,-
€ 0,-	€ 10,-	€ 0,-	€ 30,-

Table 1: Different possible (whole euro) distributions between the proposer and the responder in the dictator game and the triple dictator game

News-group	Freq.	Percent	Cum.
bad-news	61	34.46	34.46
good-news	56	31.64	66.10
no-news	60	33.90	100.00
Total	177	100.00	

Table 2: Summary of the numbers of participants by news group

Gender	Freq.	Percent	Cum.
Female	79	44.63	44.63
Male	98	55.37	100.00
Total	177	100.00	

Table 3: Summary of the gender of the participants

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	177	30.42938	9.296067	14	65

Table 4: Summary of the age of the participants

News-group	Summary of DG Mean
bad-news	6.6931148
good-news	5.8391071
no-news	5.5583333
Total	6.0382486

News-group	Summary of TDG Mean
bad-news	7.3063934
good-news	5.9342857
no-news	6.1526667
Total	6.4811864

Table 5: Means of the amount given in the dictator game (top panel) and the triple dictator game (lower panel) for every news group and in total.

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	177	6.038249	.2735705	3.639619	5.498348	6.578149

mean = mean(DG) t = 22.0720
Ho: mean = 0 degrees of freedom = 176

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
TDG	177	6.481186	.2668322	3.549971	5.954584	7.007789

mean = mean(TDG) t = 24.2894
Ho: mean = 0 degrees of freedom = 176

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 6: One sample t-test for the overall means from all news groups combined for the dictator game (upper panel) and the triple dictator game (lower panel)

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	61	6.693115	.4689033	3.662252	5.755169	7.631061

mean = mean(DG) t = 14.2740
Ho: mean = 0 degrees of freedom = 60

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
TDG	61	7.306393	.4532227	3.539782	6.399813	8.212974

mean = mean(TDG) t = 16.1210
Ho: mean = 0 degrees of freedom = 60

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 7: One sample t-test for the bad-news group for the dictator game (upper panel) and the triple dictator game (lower panel)

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	56	5.839107	.4797762	3.590316	4.877614	6.8006

mean = mean(DG) t = 12.1705
Ho: mean = 0 degrees of freedom = 55

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
TDG	56	5.934286	.4696321	3.514405	4.993122	6.875449

mean = mean(TDG) t = 12.6360
Ho: mean = 0 degrees of freedom = 55

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 8: One sample t-test for the good-news group for the dictator game (upper panel) and the triple dictator game (lower panel)

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	60	5.558333	.4680606	3.625582	4.621746	6.49492

mean = mean(DG) t = 11.8752
Ho: mean = 0 degrees of freedom = 59

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
TDG	60	6.152667	.451654	3.498497	5.248909	7.056424

mean = mean(TDG) t = 13.6225
Ho: mean = 0 degrees of freedom = 59

Ha: mean < 0 Ha: mean != 0 Ha: mean > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 9: One sample t-test for the no-news group for the dictator game (upper panel) and the triple dictator game (lower panel)

```
Tobit regression                                  Number of obs     =        177
                                                  LR chi2(2)        =       2.01
                                                  Prob > chi2       =     0.3658
Log likelihood = -389.04964                       Pseudo R2         =     0.0026
```

DG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δbadnews	1.64804	1.163953	1.42	0.159	-.6491533	3.945233
δgoodnews	.6877408	1.176825	0.58	0.560	-1.634856	3.010338
_cons	6.297937	.820211	7.68	0.000	4.679159	7.916716
/sigma	6.007071	.4893361			5.041311	6.97283

```
          18  left-censored observations at DG <= 0
          98     uncensored observations
          61 right-censored observations at DG >= 10
```

```
Tobit regression                                  Number of obs     =        177
                                                  LR chi2(2)        =       4.42
                                                  Prob > chi2       =     0.1095
Log likelihood =  -376.3005                       Pseudo R2         =     0.0058
```

TDG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δbadnews	2.082915	1.156453	1.80	0.073	-.1994752	4.365306
δgoodnews	-.0972492	1.150383	-0.08	0.933	-2.367659	2.17316
_cons	7.285394	.8074905	9.02	0.000	5.691721	8.879068
/sigma	5.867262	.4812808			4.9174	6.817124

```
          10  left-censored observations at TDG <= 0
          96     uncensored observations
          71 right-censored observations at TDG >= 10
```

Table 10: Tobit regression with the no-news group as baseline category for dictator game (upper panel) and triple dictator game (lower panel)

```
 ( 1)  [model]δbadnews - [model]δgoodnews = 0
```

DG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
(1)	.9602989	1.184367	0.81	0.419	-1.377183	3.297781

```
 ( 1)  [model]δbadnews - [model]δgoodnews = 0
```

TDG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
(1)	2.180165	1.175954	1.85	0.065	-.1407139	4.501043

Table 11: Lincom table for differences between the bad-news group and the good-news group for dictator game (upper panel) and triple dictator game (lower panel)

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	177	6.038249	.2735705	3.639619	5.498348	6.578149
TDG	177	6.481186	.2668322	3.549971	5.954584	7.007789
diff	177	-.4429379	.1576219	2.097022	-.75401	-.1318657

mean(diff) = mean(DG - TDG) t = -2.8101
Ho: mean(diff) = 0 degrees of freedom = 176

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0028 Pr(|T| > |t|) = 0.0055 Pr(T > t) = 0.9972

Table 12: Paired t-test for the overall means of the dictator game and the triple dictator game

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	61	6.693115	.4689033	3.662252	5.755169	7.631061
TDG	61	7.306393	.4532227	3.539782	6.399813	8.212974
diff	61	-.6132787	.3270239	2.554138	-1.267424	.0408665

mean(diff) = mean(DG - TDG) t = -1.8753
Ho: mean(diff) = 0 degrees of freedom = 60

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0328 Pr(|T| > |t|) = 0.0656 Pr(T > t) = 0.9672

Table 13: Paired t-test for the means of the dictator game and the triple dictator game in the bad-news group

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	56	5.839107	.4797762	3.590316	4.877614	6.8006
TDG	56	5.934286	.4696321	3.514405	4.993122	6.875449
diff	56	-.0951786	.2294131	1.716771	-.5549328	.3645756

mean(diff) = mean(DG - TDG) t = -0.4149
Ho: mean(diff) = 0 degrees of freedom = 55

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.3399 Pr(|T| > |t|) = 0.6798 Pr(T > t) = 0.6601

Table 14: Paired t-test for the means of the dictator game and the triple dictator game in the good-news group

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
DG	60	5.558333	.4680606	3.625582	4.621746	6.49492
TDG	60	6.152667	.451654	3.498497	5.248909	7.056424
diff	60	-.5943333	.2438648	1.888968	-1.082306	-.1063611

mean(diff) = mean(DG - TDG) t = -2.4371
Ho: mean(diff) = 0 degrees of freedom = 59

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0089 Pr(|T| > |t|) = 0.0178 Pr(T > t) = 0.9911

Table 15: Paired t-test for the means of the dictator game and the triple dictator game in the no-news group

Tobit regression Number of obs = 177
LR chi2(2) = 2.01
Prob > chi2 = 0.3658
Log likelihood = -389.04964 Pseudo R2 = 0.0026

DG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δnonews	-1.64804	1.163953	-1.42	0.159	-3.945233	.6491533
δgoodnews	-.9602989	1.184367	-0.81	0.419	-3.297781	1.377183
_cons	7.945977	.8377035	9.49	0.000	6.292675	9.599279
/sigma	6.007071	.4893361			5.041311	6.97283

18 left-censored observations at DG <= 0
98 uncensored observations
61 right-censored observations at DG >= 10

Tobit regression Number of obs = 177
LR chi2(2) = 4.42
Prob > chi2 = 0.1095
Log likelihood = -376.3005 Pseudo R2 = 0.0058

TDG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δnonews	-2.082915	1.156453	-1.80	0.073	-4.365306	.1994752
δgoodnews	-2.180165	1.175954	-1.85	0.065	-4.501043	.1407139
_cons	9.36831	.8574456	10.93	0.000	7.676045	11.06058
/sigma	5.867262	.4812808			4.9174	6.817124

10 left-censored observations at TDG <= 0
96 uncensored observations
71 right-censored observations at TDG >= 10

Table 16: Tobit regression with the bad-news group as baseline category for the dictator game (upper panel) and the triple dictator game (lower panel)

	DG	TDG
female	€ 6,51	€ 6,75
male	€ 5,66	€ 6,26

Table 17: Average amount given by gender for the dictator game and the triple dictator game.

```
Tobit regression                                  Number of obs     =        177
                                                  LR chi2(1)        =       1.83
                                                  Prob > chi2       =     0.1763
Log likelihood = -389.14078                       Pseudo R2         =     0.0023

------------------------------------------------------------------------------
          DG |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       γmale |  -1.310884   .9685469    -1.35   0.178    -3.222344    .6005769
       _cons |   7.807177   .7362674    10.60   0.000     6.354128    9.260226
-------------+----------------------------------------------------------------
      /sigma |     6.01892   .4900701                      5.05175     6.98609
------------------------------------------------------------------------------
        18  left-censored observations at DG <= 0
        98     uncensored observations
        61 right-censored observations at DG >= 10

Tobit regression                                  Number of obs     =        177
                                                  LR chi2(1)        =       0.47
                                                  Prob > chi2       =     0.4936
Log likelihood = -378.27769                       Pseudo R2         =     0.0006

------------------------------------------------------------------------------
         TDG |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       γmale |  -.6614079   .9654181    -0.69   0.494    -2.566694    1.243878
       _cons |   8.331508   .7398378    11.26   0.000     6.871413    9.791604
-------------+----------------------------------------------------------------
      /sigma |   5.954798   .4889901                      4.98976    6.919837
------------------------------------------------------------------------------
        10  left-censored observations at TDG <= 0
        96     uncensored observations
        71 right-censored observations at TDG >= 10
```

Table 18: Tobit regression for gender, with the female as baseline category, for the dictator game (upper panel) and the triple dictator game (lower panel)

Source	SS	df	MS	Number of obs	=	177
				F(4, 172)	=	2.34
Model	120.416779	4	30.1041947	Prob > F	=	0.0569
Residual	2211.02458	172	12.8547941	R-squared	=	0.0516
				Adj R-squared	=	0.0296
Total	2331.44136	176	13.2468259	Root MSE	=	3.5854

DG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Age	.0591001	.0296524	1.99	0.048	.0005706	.1176295
δbadnews	1.042276	.6530932	1.60	0.112	-.246833	2.331386
δgoodnews	.0664097	.6764049	0.10	0.922	-1.268713	1.401533
γmale	-.8684763	.5448391	-1.59	0.113	-1.943908	.2069556
_cons	4.340508	1.00361	4.32	0.000	2.359531	6.321484

Source	SS	df	MS	Number of obs	=	177
				F(4, 172)	=	1.75
Model	86.9506412	4	21.7376603	Prob > F	=	0.1403
Residual	2131.05361	172	12.3898466	R-squared	=	0.0392
				Adj R-squared	=	0.0169
Total	2218.00425	176	12.6022969	Root MSE	=	3.5199

TDG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Age	.0320375	.0291112	1.10	0.273	-.0254237	.0894987
δbadnews	1.104866	.6411735	1.72	0.087	-.1607156	2.370448
δgoodnews	-.3350826	.6640597	-0.50	0.614	-1.645838	.9756731
γmale	-.448809	.5348952	-0.84	0.403	-1.504613	.6069951
_cons	5.48004	.9852925	5.56	0.000	3.535218	7.424862

Table 19: Linear regression on age, news group and gender for the dictator game (upper panel) and the triple dictator game (lower panel).

Source	SS	df	MS	Number of obs	=	177
				F(2, 174)	=	1.60
Model	42.1997602	2	21.0998801	Prob > F	=	0.2041
Residual	2289.2416	174	13.1565609	R-squared	=	0.0181
				Adj R-squared	=	0.0068
Total	2331.44136	176	13.2468259	Root MSE	=	3.6272

DG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δbadnews	1.134781	.659513	1.72	0.087	-.1668937	2.436456
δgoodnews	.2807738	.6739545	0.42	0.677	-1.049404	1.610952
_cons	5.558333	.4682692	11.87	0.000	4.634114	6.482552

Source	SS	df	MS	Number of obs	=	177
				F(2, 174)	=	2.62
Model	64.7640995	2	32.3820498	Prob > F	=	0.0759
Residual	2153.24015	174	12.3749434	R-squared	=	0.0292
				Adj R-squared	=	0.0180
Total	2218.00425	176	12.6022969	Root MSE	=	3.5178

TDG	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
δbadnews	1.153727	.6396225	1.80	0.073	-.1086907	2.416144
δgoodnews	-.218381	.6536285	-0.33	0.739	-1.508442	1.07168
_cons	6.152667	.4541465	13.55	0.000	5.256322	7.049012

Table 20: Linear regression on news groups with no-news as baseline category for the dictator game (upper panel) and the triple dictator game (lower panel)