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Does showing poverty affect donations?

An experiment on redistribution and giving in Singapore

By Frank Hubers

Executive Summary

In their effort to raise awareness about poverty, create empathy for those living in marginal conditions, or simply for fundraising purposes, many charity and social purpose organisations show the lives of the poor in their campaigns. They hope that sharing these images will increase awareness of poverty and hence affect the attitude and behaviour of the viewer towards the poor. Despite the moral debate on the ethics of displaying people who live in marginal conditions, many still consider this a means to an end. However, is showing people in poverty even effective? Are people more willing to support policies for redistribution or donate money, when they see people living in poverty?

This study investigates the relationship between awareness of poverty and the willingness to redistribute income, using an incentivised lab experiment with a between-subjects design, conducted at the National University of Singapore (NUS). Participants watched one (randomly determined) film out of three possible films for a translation exercise. Those in the treatment condition watched a film about poverty in Singapore; the other two films served as a control condition.

I find that showing the lives of people in poverty affect preferences for redistribution, making the viewer more tolerant towards a government redistribution of income. This effect remains robust even when controlled for emotional or mood states. On the other hand, I find no conclusive evidence of the effects of showing poverty on the viewers' donations to charity. The film appears to have a positive impact on donations, but this effect reduces to close to zero when we control for emotional and mood states. The heterogeneity analysis indicates that the more the viewer likes the film, the more effect the images have on the donations of the participant. However, this effect works in both directions, which means that the result is negative when the viewer does not like the film. This indicates that the emotional effects play an essential role in the generosity of the viewer, probably more so than the actual content.

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Abstract

This study investigates the relationship between poverty awareness and the willingness to redistribute income, using an incentivised lab experiment with a between-subjects design. Participants watched one (randomly determined) film out of three possible films for a translation exercise. Those in the treatment condition watched a film about poverty in Singapore; the other two films served as a control condition. I find that the showing the lives of people in poverty affect preferences for redistribution, making the viewer more tolerant towards a government redistribution of income. This effect remains robust even when controlled for emotional or mood states. I find no conclusive evidence of the impact of showing poverty on the viewer's contributions to charity. Showing poverty appears to have a positive effect on donations, but this effect reduces to close to zero when controlling for emotional and mood states. The heterogeneity analysis indicates that the more the viewer likes the film, the more influence the images have on the donations of the participant.

JEL classification: C93, D63, D64, H41

Keywords: Redistribution, Charity, Poverty, Philanthropy, Altruism, Generosity

1. Introduction

In their effort to raise awareness about poverty, create empathy for those living in marginal conditions, or simply for fundraising purposes, many charity and social purpose organisations show the lives of the poor in their campaigns. They hope that sharing these images will increase awareness of poverty and hence affect the attitude and behaviour of the viewer towards the poor. Despite the moral debate on the ethics of displaying people who live in marginal conditions, many still consider this a means to an end. However, is showing people in poverty even effective? Are people more willing to support policies for redistribution or donate money, when they see people living in poverty?

This study investigates the relationship between awareness of poverty and the willingness to redistribute income. I use an incentivised lab experiment with a between-subjects design, conducted at the National University of Singapore (NUS). Participants were all NUS students with proficiency in both English and Mandarin, that were under the impression that this was a study about the use of language in film. Each participant watched a short film (in English) and was asked to provide the most suitable translation in Mandarin to use as subtitles. Participants watched one of three possible films, determined via a random procedure. One film portrays the life of an 85-year old ice cream seller in Singapore that, despite his hard work, still struggles to survive financially. The other two films served as a control condition. After the experiment, they could decide to donate (part of) their reimbursement to a charity organisation. I use two outcome variables for redistributive preferences, the participants' self-assessed scores on preferences for government redistribution, and their willingness to donate part of their reimbursement to charity (observed behaviour). According to the literature, both of these outcomes are driven by their social preferences – or the extent to which people value social equality. Social preferences have long been considered part of the intrinsic characteristics of an individual, but new insights and evidence have shown that they can be affected by an external factor. For example, empirical studies show how these preferences can be affected by collective values (Corneo and Grüner 2002, Alesina and Ferrara 2005, Alesina and Fuchs-Schündeln 2007) and by temporal emotional states (Capra 2004, Kirchsteiger, Rigotti et al. 2006, Capra, Lanier et al. 2010, Andreoni and Rao 2011). Despite some evidence that generosity and redistributive can be affected by external factors, so far there are no studies that investigate how showing inequality can affect these.

I find that showing the lives of people in poverty affect preferences for redistribution, making the viewer more tolerant towards a government redistribution of income. This effect remains robust even when controlled for emotional or mood states. On the other hand, I find no conclusive evidence of the effects of showing poverty on the viewers' donations to charity. The film appears to have a positive impact on donations, but this effect reduces to close to zero when we control for emotional and mood

states. The heterogeneity analysis indicates that the more the viewer likes the film, the more effect the images have on the donations of the participant. However, this effect works in both directions, which means that the result is negative when the viewer does not like the film. This indicates that the emotional effects play an essential role in the generosity of the viewer, probably more so than the actual content.

The remainder of this paper is organised as follows. The next section will provide an overview of the theoretical and empirical literature on redistributive preferences, donations, and its external influences. Section 3 describes the research approach and experimental procedures. Section 4 shows the primary results. Section 5 discusses these results and concludes.

2. Literature overview

2.1. Redistributive policies and private philanthropy

Most democratic societies have redistributive policies in place that allocate income from the rich to the poor. A conventional explanation for this is that individual income positions in society drive personal preferences for redistribution. When social inequality increases, the proportion of the population that earns less than average increases, which in turn increases the support for redistributive policies (Meltzer & Richard, 1981).

It is no surprise that the poor are generally more in favour of redistributive policies than the rich, but this is far from the only explanation for the support of redistributive preferences. Many democratic countries see their income inequality increasing, without experiencing an increase in redistributive policies, implying that the poor do not always support redistributive policies. Piketty (1995), Ravallion and Lokshin (2000) and Benabou and Ok (2001) showed that the perceived levels of social mobility within society affects the support for redistributive policies among the poor. In communities where people perceive the level of social mobility to be high, supporting redistributive industries might not be the most rational choice for the poor. Whether supporting redistributive policies is actually in their best interest, then largely depends on the extent to which the perceived social mobility reflects actual social mobility. Perceptions also play a role when it comes to assessing their current position. Cruces, Perez-Truglia, and Tetaz (2013) show that one's perceived place in society strongly influences the support for redistribution. Those who perceive their position to be more negative will be more likely to support redistributive policies.

An alternative reason for people to support redistributive policies is that they have characteristics of social insurance programmes, protecting people from the risk of falling into poverty, supporting redistributive policies. This makes it rational to support redistributive policies for a large part of the population – not just the poor (Golosov, Troshkin, & Tsyvinski, 2016; Moene & Wallerstein, 2001; Varian, 1980). Also, income inequality has negative externalities. For example, social inequality will lead to an increase in crime (Josten, 2003), and the lack of access to education will lead to a less educated voter population. In summary, those that live below or above the average income in society may have rational and selfish motivations to support redistributive policies. However, not all support for redistributive policies can be explained through selfish motives alone. One might also dislike the fact that people live in poverty. In these cases, one's utility is negatively affected by high levels of social inequality. In this approach social equality is considered a public good – its benefits being non-rivalrous and non-excludable – in which government intervention can improve upon the market outcomes. If a society is democratic and values social equality, it is predicted that redistributive

policies will be in place, even if there would be no negative externalities. Thus, a person's social preferences play a role in the level of support for social choices. This also explains why people contribute to international aid organisations which offer no apparent benefit to the donor, other than reducing social inequality (Fehr & Schmidt, 2006; Kolm, 2006)

Traditionally, economists view the government provision of public goods as a solution to the problem of their suboptimal provision by the private market. Since the government has the power to coerce through taxation, and social equality suffers from the free rider problems associated with public goods, redistribution through government policies is considered the most optimal solution. Philanthropy is the voluntary act of contributing to public goods, in this case donating income to the poor. One can assume that those who contribute voluntarily are also those that value social equality more than the average member of society. Studies demonstrate that people have different levels of inequality aversion. Those with higher inequality aversion derive more negative utility from social inequality. They will hence be more willing to redistribute part of their income to decrease social disparities (Fehr & Schmidt, 2006). Philanthropy can be viewed as a substitute for or supplement to public philanthropic activities: Changes in consumer preferences for social equality would, *ceteris paribus*, shift the demand for more government redistribution as more private philanthropy simultaneously (Feigenbaum, 1980).

Many people are willing to make voluntary donations to help the poor. These can be small gifts of a few coins to the homeless on the streets, or large anonymous donations to charity organisations that fight poverty on an international scale. One model that explains these voluntary contributions is are preferences for a certain level of social equality. This model explains voluntary contributions to the poor by regarding the level of social equality as part of an individual's utility function. A second model explains these contributions as acts of altruism. A person is considered altruistic when his or her utility is directly and positively affected by the utility of another person. Pure altruistic gifts are rare, however, but can be seen in parent-child relationships (Fehr & Schmidt, 2006). The third model is based on the premise that donors derive utility not just from the public good or other person's utility, but from the act of giving itself. If an individual would merely be interested in the public good provided, he or she would be indifferent about the means through which it is provided. There is a variety of empirical studies that show that willingness to contribute to charitable institutions is strongly determined by the moral satisfaction the individual gains from contributing to it (Andreoni, 1988, 1989, 1990; Kahneman & Knetsch, 1992). Andreoni (1990) describe this motivation as the 'warm glow of giving' or 'impure altruism.' This third motivation of giving can be explained in a broader sense. If the giver gains utility from the act of giving alone, it can be (partially) explained by 'impure altruism,' including reasons like social pressure, social status, specific religious gifts, etc.

In summary, the level of social equality in a democratic society is determined by the willingness of the individuals to redistribute income. Those that prefer higher levels of equality are more likely to support redistributive policies and more willing to donate money to the poor. An agent's willingness to redistribute income is determined by the difference between its perceived and desired level of inequality in society. The larger this difference is, the more likely the agent will be to support redistributive policies or the more willing he will be to donate money to the poor. The desired level of equality is a function of the agent's social preferences. Although models predict a relation between donations to poverty-related causes and the willingness to support redistributive preferences, different reasons lead to advocate redistributive policies without the desire to donate to charity and the other way around.

2.2. Empirical evidence

A number of studies have demonstrated that cultural, religious, and ideological beliefs shape social preferences. For example, Alesina and Angeletos (2005), Alesina and La Ferrara (2005) and Bénabou and Tirole (2006) demonstrate that personal and collective beliefs about the causes for poverty influence the extent to which one supports redistribution. Those who believe that success is the result of hard work rather than chance – and hence poverty is the result of being lazy – are also less likely to support policies for redistribution. In other words, the more people that believe that poverty or wealth caused by factors outside one's control, the more likely they are to support redistributive policies. Furthermore, personal or public values influence what people might consider a fair distribution, as is demonstrated by Corneo and Grüner (2002) and Fong (2001). Alesina and Fuchs-Schündeln (2007) show that political ideology also shapes individual preferences for redistribution. Comparing political preferences for redistribution between those that were born in East-Germany with those born in West-Germany, they found that communist ideology still had a profound impact on redistributive preferences. Various studies have also shown relationships between religion and social preferences, although the mechanism through which religion might affect this – e.g., through identity or norms and values – is not clear (Benjamin, Choi, & Strickland, 2010; Lam, Jacob, & Seah, 2011). There is evidence that group identification plays a role in redistributive preferences. People are more willing to redistribute income to members of the same social group. An experiment by Chen and Li (2009) shows that this is even the case with induced identify groups.

Empathy with people living in poverty also plays a role in redistributive preferences and charitable behaviour. Zak et al. (2007) and Barraza & Zak (2009) show participants that were induced with the 'empathy' hormone Oxytocin allocated significantly more during dictator and ultimatum games. Andreoni and Rao (2011) draw similar conclusions about the relationship between empathy and social

preferences. Empathy explains the ‘identifiable victim’ effect on campaigns. People tend to give disproportionate sympathy and attention to identifiable rather than statistical victims. According to this theory, portraying a single victim --- describing the stories of individual people that live in poverty --- would stimulate a more powerful emotional response than explaining the problem of a large unknown group of victims. Identification intensifies emotion. Moreover, an identifiable victim presents a high proportion of people that can be saved (Jenni & Loewenstein, 1997; Small & Loewenstein, 2003; Small, Loewenstein, & Slovic, 2007). Since films are generally used for storytelling, they might be more effective in affecting social preferences than informing people about the level of poverty in their society.

Various studies demonstrate that emotions affect generosity (Capra, 2004; Capra, Lanier, & Meer, 2010; Kirchsteiger, Rigotti, & Rustichini, 2006). Most of the evidence comes from laboratory experiments on which social preferences are measured via the allocations in games. For example, in the dictator game, first used in the study of Kahneman, Knetsch, and Thaler (1986), a player has to decide how to allocate a fixed amount of money between himself and an unknown other player. Empirical studies show that the vast majority of the people allocate some money to the other anonymous player (Fehr & Schmidt, 2006; Kolm, 2006). Another game often used to measure what participants view as a ‘fair’ distribution, is the ultimatum game, which was first applied by Güth, Schmittberger, and Schwarze (1982). It is similar to the dictator game, but with the second player having the choice to reject or accept the offer of the first player. If the receiver accepts the offer the amount is allocated accordingly; if the offer is rejected neither player will receive anything. The validity of economic games to represent social behaviour is not uncontested. Critics have pointed out that the behaviour during the games may be an artefact of the experimental design. According to Frohlich, Oppenheimer, and Moore (2001), the mere fact that the game is considered as a game by participants will influence the decision-making of the participants. The study of Eckel and Grossman (1996) compares giving in the dictator game with giving to charity, and find that people are more willing to donate to a “deserving” charity than to an anonymous other player. In both games, the proposer has only the option to give. List (2007) and Bardsley (2008) show that when an additional opportunity to take from their opponent was given, many proposers chose to take money from their opponent instead of giving it. In addition, many scholars have questioned the interpretation of giving in these games as altruistic. Dana, Cain, and Dawes (2006) and Broberg, Ellingsen, and Johannesson (2007) show giving in the dictator game may be explained not by altruistic behaviour, but rather by social constraints. Participants are afraid of hurting the expectations of their opponents. Despite the

limitation of the artificial setting of these games, they provide insight into the factors that influence social preferences, especially those that are harder to detect during observational studies.

There is evidence that emotions and mood affect social preferences. For example, Kirchsteiger et al. (2006) find that good mood affects giving behaviour in gift-exchange games. In their experimental setup, they use short movie clips that put participants as mood inducers. Capra et al. (2010) find that good mood leads to more generous offers in a bidding game. Charness and Grosskopf (2001) show that a positive correlation exists between unhappiness and the willingness to lower another person's payoff. Capra (2004) further examines this relationship and finds that mood affects giving in one-shot dictator and ultimatum games. Good mood has a positive effect on the amount that the player donates. The relation between good mood and willingness to donate is also illustrated by Hubers and Webbink (2016) who show that supporters of a winning football club are more willing to give to charity than the supporters of a football club that lost.

Also, similar laboratory experiments demonstrate that age plays a role in social preferences. For example, Benenson, Pascoe, and Radmore (2007) show that allocations in a one-shot dictator game with children in the age from 4-9 years increase by age. Harbaugh, Krause, and Vesterlund (2007) and Murnighan and Saxon (1998) investigate allocations in the ultimatum and dictator games with children in the age of 8 to 18 years old and derive similar conclusions: Older children more often prefer a 'fair' distribution of income and make more generous offers. Andreoni, Harbaugh, and Vesterlund (2010) demonstrate that gender also plays a role in social preferences. In general, women tend to give higher offers than men do in dictator games.

Films or campaigns that show the lives of people in poverty may affect the agent's perception on the level of social inequality in society – increasing the gap between the perceived and desired level of inequality --- and thus increasing the desire to donate. Alternatively, the film may increase empathy for the individuals that are portrayed, affecting its mood and hence affecting its willingness to redistribute. However, despite the extensive literature on generosity and redistributive preferences, I am not aware of any studies that investigate this question. Although earlier studies have demonstrated that certain beliefs about poverty can affect the willingness to redistribute, there is no evidence redistributive preferences are influenced by the awareness of people living in poverty.

This study investigates the relationship between showing people living in poverty and the willingness to donate or redistribute income. For this, I will look at the effect of certain films. However, earlier studies teach us that films can affect viewers also via a different mechanism, which is through emotions and mood. In psychological experiments, film clips are accepted mood inducers (Bradley, Cuthbert, & Lang, 1996) and, as demonstrated above, previous studies show that mood and emotions

affect generosity. The setup of this study take this into account and allows for the differentiation between effects caused by changes in mood and those caused by the content of the film.

3. Research approach

3.1. Experimental setup

This study investigates the relationship between poverty awareness and redistributive preferences with a laboratory experiment using a between-subject design. The investigation was conducted in October 2017 in the laboratory rooms at the National University of Singapore. Participation was voluntary and incentivised: Participants would receive S\$10 for their participation. At the end of the experiment, students could decide to donate part of this reimbursement to a charity organisation. The amount that was donated serves as one of the primary outcome variables. During the experiment, the participants were randomly shown one of three films, one of which discussed the topic of poverty among the elderly in Singapore. The other films served as a control condition.

Participants were students from the National University of Singapore. They were recruited via an advertisement asking for volunteers for a study on the use of language in film. The advertisement can be found in Appendix 1. Participants were unaware of the objectives of the study but were briefed about its goal and purpose after they finished. Proficiency in English and Mandarin was required to participate. Participants were asked to arrive at a specific date and time in the laboratory rooms. At arrival, the participant would receive a short briefing about the procedures of the experiment, after which he or she was guided to a cubicle with a computer and a set of headphones. After putting on the headphones, the participant would start going through the programme. First, the candidate was tested on his or her proficiency in Mandarin. Candidates that failed this test were still able to participate in the experiment. Participants were not informed of the result. It would give us the opportunity to distinguish between those that failed or passed the test during the analysis.

The central part of the experiment consisted of watching a film and a series of translation tasks. Each participant viewed a short six minute-film, spoken in English, that was cut into six short fragments. After each fragment, the participant had to select the most appropriate subtitles in Mandarin. When the participant finished the session, he was asked to fill in an online questionnaire, which included questions about the participant's opinion about different statements. At the end of the experiment, candidates were thanked for their participation and given the option to donate (a proportion of) their reimbursement to charity. The charity organisation is Community Chest, a Singaporean fundraising organisation, representing a wide variety of causes including poverty and elderly care. After this, the participant was debriefed on the experiment and received the reimbursement. The debriefing text can be found in Appendix 3.

3.2. Procedures

The participant reported to the research assistant at the NUS laboratory facilities at an agreed date and time. There, a research assistant provided the participant with a short briefing about the procedures of the experiment, after which the participant was guided to a private cubicle with a computer and a set of headphones. After putting on the headphones, the participant would start the programme. Each participant then went through the following steps:

1. The participant is tested on his or her Mandarin proficiency
2. The participant answers questions about his or background (age, gender, etc.)
3. The first clip starts, which takes about one minute. After the clip, the participant is shown the text that was spoken during the clip (in English) and asked which subtitles (in Mandarin) would be most suitable given the context of the film.
4. This process repeats itself 4-5 times, until the end of the short film.
5. The participant is asked to reflect on his or her mood and asked to indicate how much he or she enjoyed the film
6. The participant is given a number of statements and asked to indicate on a 5-point Likert-scale to which extent he or she agrees with each statement.
7. The participant has now reached the end of the experiment and is thanked for his or her participation. The participant will be informed again that he or she will be reimbursed S\$10 and asked to determine whether he or she intends to keep the full amount or allocate part of the reimbursement to charity.
8. The research assistant guides the participant back from the lab. The participant is briefed about the specific objectives of this study. After that, the participant receives his or her payment.

The experiment took place from Monday 23rd to Wednesday 25th October 2017. A pilot test took place on Friday 20th October. The responses of the pilot test are not included in this sample.

3.3. Conditions

Participants in the treatment condition watched a film about poverty, whereas participants in the control condition watched one of two other films. The film used for the treatment condition is the six-minute documentary *Ice-cream Uncle*, a film produced by Channel News Asia in 2017 about the poor elderly in Singapore. The film portrays the life of the 85-year old ice cream seller Ng Teak Boon, who despite his hard work, still struggles to survive financially. Estranged from his wife and five children

for years, Mr Ng has been living alone in a one-room flat and living on roughly S\$950 a month from his ice-cream earnings and government support. The short film attracted much attention on social media in 2017, causing many Singaporeans to offer help to the protagonist.¹

The other two films serve as a condition. The first control film is a six-minute fragment of a short documentary on panda's in China; the other is a tourism promotional video for Singapore of approximately the same length used to promote tourism in Singapore, showing the major tourist destinations and highlights. All three films were spoken in English, and participants were asked to provide translations in Mandarin. The experiment uses two different control conditions to enable better controlling for potential mood effects. A random procedure determined the treatment condition. The film about poverty was viewed by 75 participants (approx. 46.3%), the film about the pandas was shown to 44 participants (approx. 27.2%), and the film about tourism was shown to 43 participants (approx. 26.5%).

3.4. Participants

Participants were recruited via an advisement on the online university portal, asking for volunteers to participate in an experiment on language and films. For this reason, most of the participants were students from the National University of Singapore.

¹ See: <https://www.channelnewsasia.com/news/cnainsider/offers-of-help-with-ice-cream-seller-uncle-ng-s-rental-utilities-8829736>

Table 1 provides an overview of the background characteristics of the participants. Column (1) shows the means, and standard deviations for the characteristics of the participants in the treated condition, Column (2) for the participants in the control condition, and Column (3) shows the estimated differences between the two.

Table 1: Descriptive statistics

	(1)	(2)	(3)
	Treated	Control	Estim. dif
Gender = Female	0.68 (0.47)	0.68 (0.47)	0.00
Age	21.33 (0.17)	21.54 (2.03)	-0.21
Religious (y/n)	0.60 (0.50)	0.53 (0.50)	-0.07
Born in Singapore (y/n)	0.81 (0.36)	0.86 (0.39)	-0.05
Parents born in Singapore (y/n)	0.53 (0.50)	0.62 (0.49)	-0.09
Chinese language test score (max. 9)	8.39 (1.26)	8.24 (1.18)	0.15
Passed Chinese language test (y/n)	0.68 (0.47)	0.60 (0.49)	0.08
Life Satisfaction	7.19 (1.66)	7.01 (1.46)	0.18
Mood (0-10)	5.55 (1.63)	6.85 (1.26)	1.30***
Number of observations	75	87	162

Notes: Standard deviations in parentheses. Significance level of estimated differences: *** p<0.01; ** p<0.05

In total 162 people participated in the experiment. Almost all of them were students, with ages ranging between 18 and 31 years old (with a mean and median of 21). Approximately two-thirds of the participants were female. Although our advertisement explicitly asked for participants that were fluent in Mandarin, 36.4% of the participants would not have passed the proficiency test. Since proficiency in Mandarin was not required to understand the films, they were not informed about not passing the test, and are still included in the sample.

There are no significant differences between background characteristics between the treatment and control group, indicating that the randomisation was successful. As expected, there is a difference in the self-assessed mood score between the two groups. After watching the film, those who were in the treatment condition reported their mood to be on average 5.6 on the scale of 0-10, whereas those in the control condition reported their mood to be 6.9.

3.5. Outcomes and moderators

The outcome variables measure the participants' willingness to donate to charity and their political preferences for redistribution. At the end of the experiment, participants were informed that they had reached the end of the survey and would be reimbursed S\$10 for their participation.² After this, they were given the option to donate a proportion of their reimbursement to charity. The charity organisation is Community Chest, a fundraising organisation for a variety of social causes in Singapore, including poverty among the elderly. The participant could donate any amount to this cause (whole numbers only) or donate nothing at all. The main outcome variable is a binary measure indicating whether or not the participant donated some of its earnings to charity. Alternatively, I use the variable indicating how much the participant allocated to charity: an integer between (and including) 0 and 10. It is in many ways comparable to the outcome measure in the dictator game, except that in this setup there is no second anonymous player, but rather a charity organisation.

The second outcome is a measure for political preferences for redistribution. This measure is based on the participant's response to five statements, which can be found in Textbox 1. The statements are from the World Values Survey³ that includes them to assess political preferences. Participants had to indicate their agreement with each statement on a 5-point Likert scale. They were among the last questions asked during the survey – thus they were answered after the film assignments took place.

² Participants were aware of both the reimbursement and the option to donate to charity, before they decided to participate.

³ See <http://www.worldvaluessurvey.org/wvs.jsp> for an overview of the questions and longitudinal data collected for the World Values Survey from different countries. We used questions for political preferences from the survey for Singapore of 2012.

As an outcome, I use the standardised score for the total count of these questions, with each question having equal weight. Earlier studies have used stated preferences as outcome measures for redistribution, like Alesina and Fuchs-Schündeln (2007), although the questions that were used differ from the questions I use here.

Textbox 1

Statements (score on 5-point Likert scale):

1. The government should take more responsibility in ensuring that everyone is provided for. (+)
2. People should take more responsibility to provide for themselves, instead of relying on the government. (-)
3. Government ownership of business and industry should be increased.(+)
4. Income differences in society should be decreased; Income should be more equal (+)
5. Large income differences are good for society. They provide incentives for individual effort. (-)

Figure 1: Boxplots of mood score (0-10) by condition

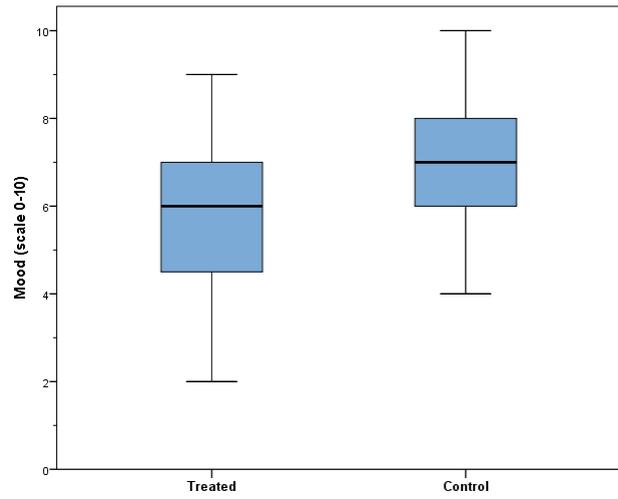
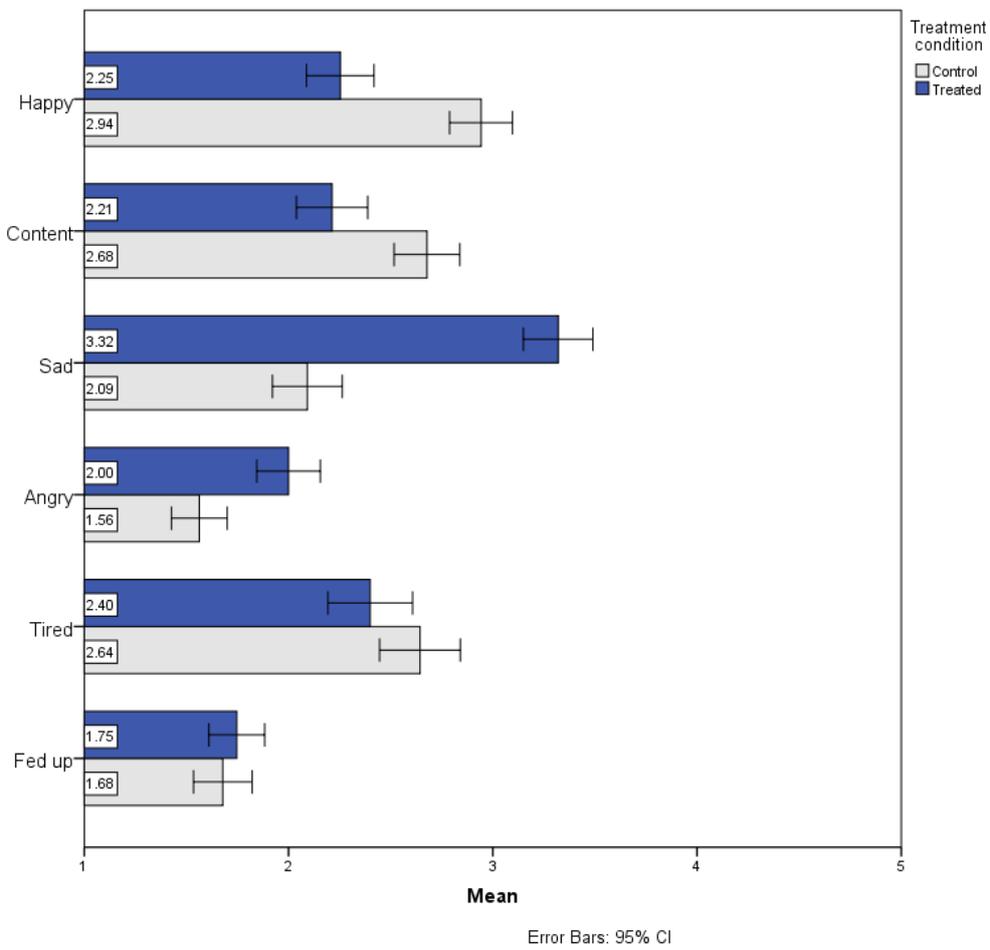


Figure 2: Self-assessment of mood using 5-point Likert scales



To differentiate between the effects of mood and the effects of the content of the films, I included questions on the mood of the participant. These questions were answered after the participants finished the film assignment. First, the participants were asked to indicate the extent to which they were happy, sad, content, angry, tired, and fed-up respectively, on a four-point Likert Scale.⁴ These questions are loosely based on questions from the Mood Introspection Scale (Mayer & Gaschke, 1988). After that, we asked them to assess their overall mood on a scale from 0 to 10, with 10 indicating the best possible mood. I will use this self-assessed overall mood score which serves as a control variable to differentiate between the mood effects and informative effects of the films. Alternatively, I will use the six different emotion scores as controls.

Figure 1 and Figure 2 show the mean scores and standard deviations by treatment condition for mood questions, by treatment group. Both figures illustrate that there are significant effects of the films on the mood status of the participants. The participants that watched the poverty film assess their overall mood on average 1.3 points lower (on a 0-10 scale) than the participants in the control condition. Figure 2 illustrates that participants in the treatment condition report to be less happy, less content, and angrier. Participants also report being less tired and less fed-up in the treatment group, although these differences are not statistically significant at the 5% level. The most substantial impact of the film can be observed on sadness, with a mean difference of 1.23 ($t=10.08$) between the treated and control group.

3.6. Econometric model

With the treatment being randomised, the effect of the poverty on redistributive preferences can be estimated by comparing the mean difference in outcomes between the treatment and control group and test them for statistical significance. Taking into account the moderating effects of mood, we can estimate the impact of the film with following model:

$$(1) \quad Y_i = \alpha_0 + \alpha_1 Film_i + \alpha_2 Mood_i + \alpha_3 X_i + \varepsilon_i$$

In which Y_i is the primary outcome variable of interest. The variable $Film_i$ is a dummy equal to 1 if individual i watched the film on poverty or 0 otherwise. The variable $Mood_i$ moderates for mood effects. Additionally, we can add controls for specific background variables of individual i , represented by the vector X_i . Parameter α_1 is the effect of the impact of the content of the film.

⁴ This scale had values ranging from (1) Definitely do not feel; (2) Do not feel; (3) Slightly feel; (4) Definitely feel.

4. Results

This section shows the principal results of the experiment and is divided into three subsections. The first subsection analyses the effects of the film on redistributive outcomes, by comparing the means of the control and treatment; the second subsection shows the estimates of our model when including mood and demographic controls; the third subsection explores moderating effects.

4.1. Effect on donations and preferences for redistribution

Figure 3 and Figure 4 illustrate the difference in donations between participants that watched the poverty film and those in the control condition. Figure 3 shows the proportions of the participants that donated (part of their) reimbursement to charity, with the left bar indicating the mean score of those in the treatment and the right bar indicates the mean score of those in the control condition. Figure 4 displays the distribution of donated amounts in two histograms: The left graph shows the distribution of donations of participants in the treated condition, the graph on the right shows the distribution of donations from the control group. Figure 5 shows the average scores for the five questions on preferences for government redistribution. The mean scores for the treatment group are represented by the blue bars, whereas the grey bars represent the mean scores for participants in the control condition. Table 2 shows the summary statistics (means and standard deviations) of the three prevailing outcome variables, with the score for redistribution based on the five questions on government redistribution (as described in Paragraph 3.5).

We observe that the participants in the treated condition – those who watched the film about poverty – appear to be more willing to donate part of their reimbursement to charity than those in the control group. In the treated group 43% of the participants, donate a portion of their reimbursement to charity against 31% of the participants in the control group. The average donation is S\$2.23 in the treated group and S\$1.87 for those in the control condition. However, as illustrated in Table 2, neither of these differences are statistically significant. The variation in donations is, partially caused by the fact that two different films were used in the control condition. Also, the proportion of participants that donated to charity is low compared to earlier studies. Participants in dictator and ultimatum game experiments give on average between 40% to 50% of the money they receive (Kolm, 2006), whereas the participants in this study donated on average 20% of the reimbursement. The specific conditions of this experiment may cause this difference, e.g., we use charity instead of an anonymous player; and the player receives a reimbursement that is ‘earned’ instead of being simply received.

Figure 3: Proportion of participations that donated part of their reimbursement to charity, by condition

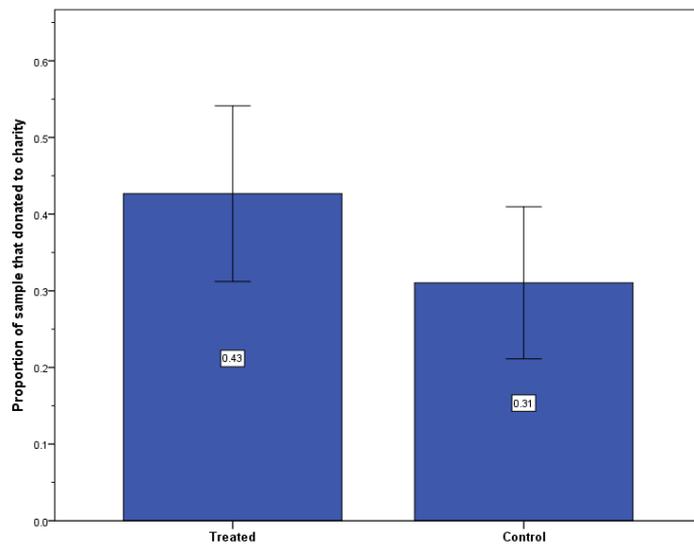


Figure 4: Distribution of donations (in S\$), by condition

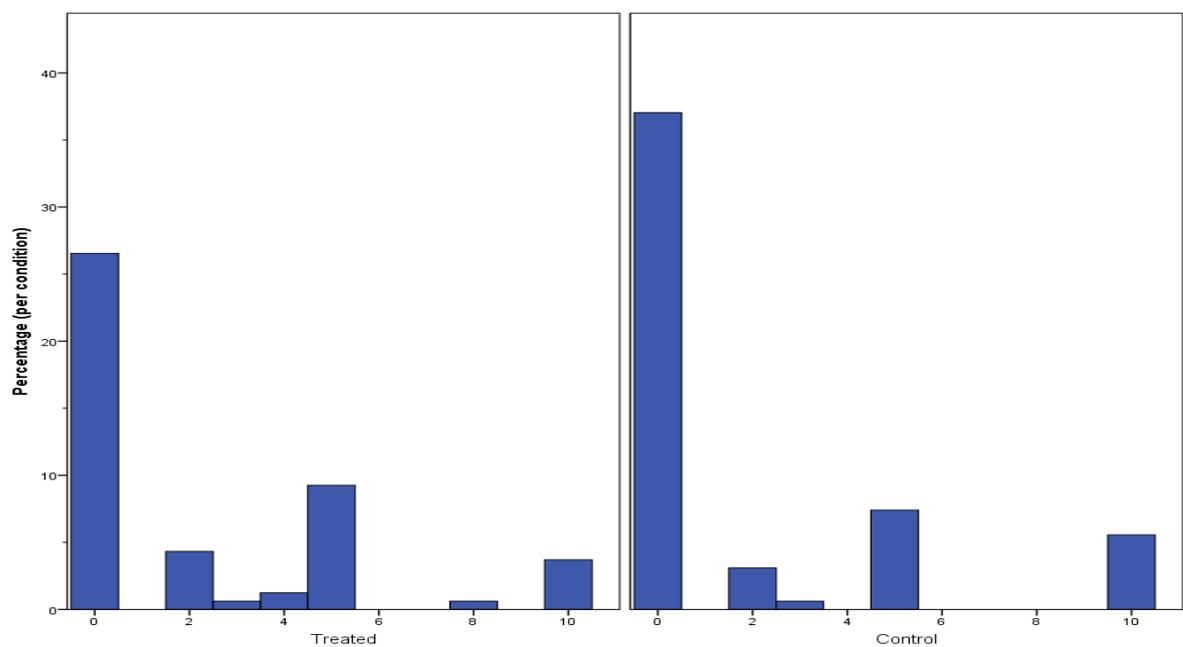


Figure 5: Questions regarding preferences for government redistribution, by condition

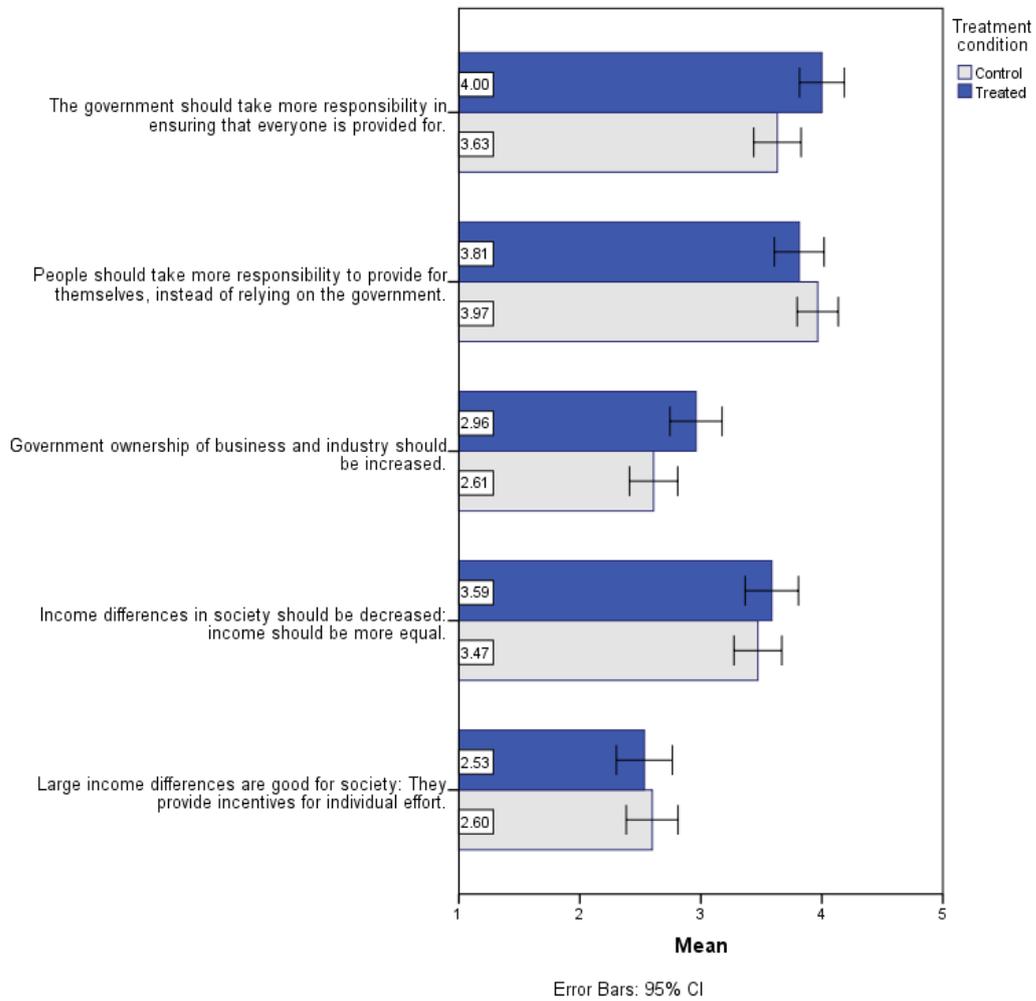


Table 2: Means and standard deviations of main outcome variables, by condition

	(1) Treated	(2) Control	(3) Estim. dif
Donated to charity (y/n)	0.43 (0.50)	0.31 (0.47)	0.12
Amount donated to charity (in S\$)	2.23 (3.13)	1.87 (3.27)	0.36
Standardised score on redistribution	0.21 (0.93)	-0.18 (1.03)	0.39**
Number of observations	75	87	

Notes: Standard deviations in parentheses. Significance level of estimated differences: ** p<0.05

Figure 5 shows the differences between treated and control conditions when observing the attitudes of participants towards government redistribution. For all five statements, the participants in the treated condition are more willing to support government intervention for income redistribution. The differences between scores regarding the statement “the government should take more responsibility in ensuring that everyone is provided for” are statistically significant at a 1% level with an estimated difference of 0.37 and a t-value of 2.69 (F-value: 7.25). Also, the differences in scores between the two conditions regarding the statement “Government ownership of businesses should be increased” are statistically significant at a 5% level for with an estimated difference of 0.35 and a t-value of 2.38 (F-value: 5.68). The differences between the scores for the other three statements are not statistically significant. Nevertheless, the trend is consistent. This is also shown in the overall score on redistributive preferences. The treated group has a higher average score than the control group, indicating that they are more in favour of government redistribution. The participants in the two conditions show a difference of 0.39 standard deviations between their scores on redistributive preferences with a t-value of 2.46 (F-value: 6.06), which is significant at the 5% level. This is also shown in Table 2.

4.2. Mediating effect of mood

The analysis above shows that the film about poverty has a positive impact on redistributive preferences but that there is no significant statistical effect on donations. However, since the potential emotional effects of the film may also affect the behaviour of the participants, it is crucial also to estimate the effects when controlling for mood. The OLS estimates of these analyses, using Equation (1) are shown in Table 3 and in Table 4, with Table 3 showing the estimates for the outcome of willingness to donate and Table 4 for the standardised variable for redistributive preferences. Column (1) shows the estimates of the OLS model with no control variables, Columns (2) and (3) show the estimates controlling for the mood variable and the different emotion variables, respectively. Column (4) and (5) show the results when also controlling for individual specific background variables.

Table 3: Estimates on the effect of film on poverty on willingness to donate to charity

	Willingness to donate				
	(1)	(2)	(3)	(4)	(5)
Poverty film	0.12 (0.08)	0.07 (0.08)	0.02 (0.10)	0.05 (0.08)	0.01 (0.10)
Mood (0-10)		-0.03 (0.03)		-0.03 (0.03)	
Happy			-0.07 (0.06)		-0.07 (0.06)
Sad			0.09 (0.05)		0.09 (0.06)
Tired			0.06 (0.04)		0.06 (0.04)
Angry			-0.01 (0.07)		-0.01 (0.07)
Content			0.09 (0.06)		0.10* (0.06)
Fed-up			-0.11 (0.07)		-0.10 (0.07)
Life satisfaction (0-10)		0.04 (0.02)	0.03 (0.02)	0.05* (0.03)	0.04* (0.03)
Controls	No	No	No	Yes	Yes
Observations	162	162	162	162	162
R-squared	0.02	0.04	0.09	0.08	0.14

Notes: Standard errors in parentheses. Significance level of estimated differences: * p<0.10

Table 4: Estimates on the effect of film on poverty on preferences for redistribution

	Preferences for redistribution				
	(1)	(2)	(3)	(4)	(5)
Poverty film	0.38** (0.16)	0.45*** (0.17)	0.52** (0.21)	0.41** (0.17)	0.53** (0.21)
Mood (0-10)		0.06 (0.05)		0.05 (0.05)	
Happy			-0.04 (0.12)		-0.05 (0.12)
Sad			-0.07 (0.11)		-0.14 (0.11)
Tired			0.13 (0.09)		0.09 (0.09)
Angry			0.06 (0.16)		0.08 (0.15)
Content			0.12 (0.12)		0.13 (0.11)
Fed-up			-0.03 (0.15)		0.00 (0.15)
Life satisfaction (0-10)		-0.06 (0.05)	-0.04 (0.05)	-0.06 (0.05)	-0.04 (0.05)
Controls	No	No	No	Yes	Yes
Observations	162	162	162	162	162
R-squared	0.04	0.05	0.07	0.13	0.15

Notes: Standard errors in parentheses. Significance level of estimated differences: *** p<0.01, ** p<0.05

The estimates show two major trends. First, it appears that the differences between the control and treated groups on the willingness to donation are largely the result of emotions caused by the film. When including control variables, the estimated effect of the film decreases to almost zero. This is particularly visible when incorporating the controls for emotions, as the estimates in Columns (3) and (5) show. The second observation is that an opposing trend occurs when analysing the effects on preferences for redistribution. Here, the effect size of the film increases when mood or emotion controls are added. Moreover, the impact remains statistically significant. This implies that it is the content of the film, not the emotions, that cause this effect in preferences.

4.3. Moderating effect of film rating

As a third analysis, we investigate how the reception of the film influences the effect on donations. This analysis provides insight into whether the extent to which people are entertained by the film matters in changing their preferences.

The survey included a question about the reception of the film, asking the participants to what extent that they would be interested in watching the entire film (indicated on a scale of 0-10). We use the standardised score of this question to analyse how the interest in the film influences the effects. Figure 6 and Figure 7 demonstrate the results when we split the sample in two groups, with one expressing below average interest and the other above average interest in the film. Figure 6 shows the proportion of participants that donated to charity, with the two bars on the left showing the average donations of the participants that are in the low rating group (the group that indicated that the film was not interesting) and the two bars on the right showing the average donations of the high rating group. The blue bars show the mean scores for the treated condition, the grey bars for those in the control condition. Figure 7 is similar, but analyses the effect on the score for political preferences for redistribution. Note that this score is standardised.

Figure 6 shows that the likelihood of donating to charity remains constant for the participants in the control condition regardless of whether they liked the film or not, with a small difference of 0.04 between the participants that enjoyed the film and those that did not. On the other hand, we observe a substantial difference in donations between those who did and did not like the film in the treatment group. Of those that watched the poverty film and did not enjoy it, only 17% donated to charity versus 54% of the group that watched the same film but did enjoy it. This is in contrast with the effect on preferences for redistribution, where the effect is relatively stable between the groups that enjoyed or did not enjoy the film. As Figure 7 illustrates, those who watched the film on poverty are significantly more likely to support government redistribution, regardless whether they enjoyed the film.

Figure 6: Donations, by treatment condition, by film appreciation

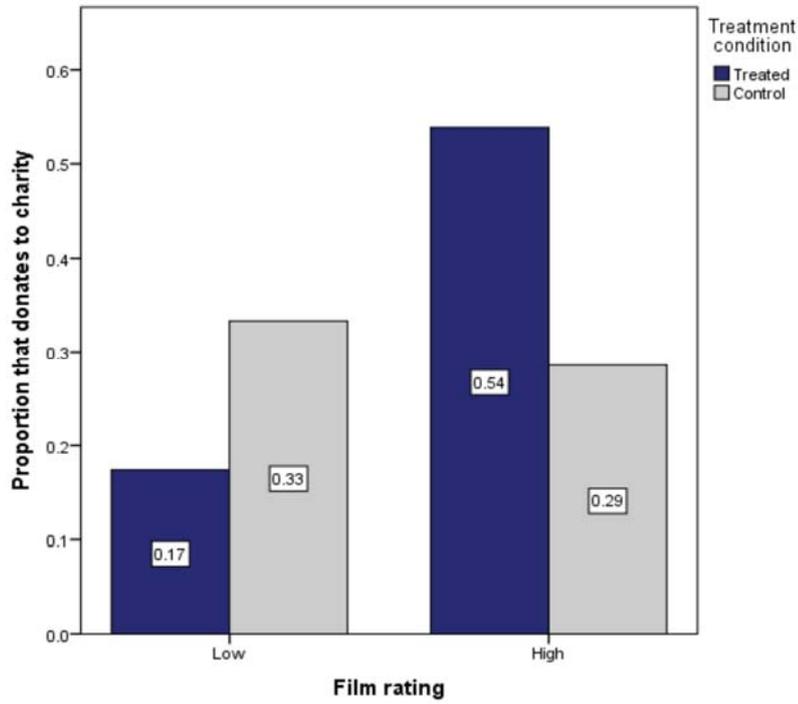


Figure 7: Standardised redistribution score, by treatment condition, by film appreciation

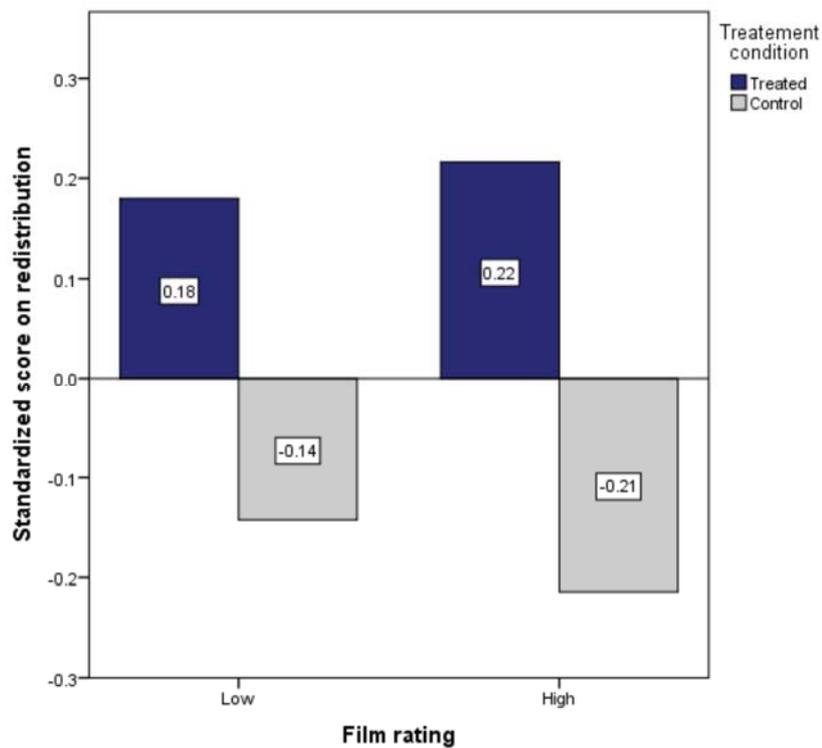


Table 5: Estimates of film reception and interaction effects

	Willingness to donate			Preferences for redistribution		
	(1)	(2)	(3)	(4)	(5)	(6)
Poverty film	0.08 (0.08)	0.08 (0.08)	0.03 (0.08)	0.38** (0.16)	0.38** (0.16)	0.41** (0.17)
Film rating	0.05** (0.02)	0.01 (0.05)	0.01 (0.05)	-0.00 (0.05)	-0.06 (0.11)	-0.03 (0.11)
Interaction		0.16** (0.08)	0.14* (0.08)		0.11 (0.16)	0.12 (0.16)
Mood (0-10)			-0.03 (0.03)			0.06 (0.06)
Controls	No	No	Yes	No	No	Yes
Observations	162	162	162	162	162	162
R-squared	0.05	0.07	0.12	0.04	0.04	0.13

Notes: Standard errors in parentheses. Significance level of estimated differences: ** p<0.05 * p<0.10

Table 5 shows the OLS estimates for a model including these interaction terms. Columns 1 to 3 show the results regarding the willingness to donate, whereas Columns 4 to 6 show the results when using the score for preferences for redistributive preferences as the dependent variable. Columns 1 and 4 show the OLS estimates of the simple model in which we only control for the rating score of the film; Columns 2 and 5 also include the interaction term; and the estimates in Columns 2 and 5 are based on the full model, including all control variables. The results confirm the observations from the graphs. It shows that there is no mean effect of the film on the willingness to donate, but there is a significant interaction effect. Those who watched and enjoyed the poverty film show an increased willingness to donate, whereas those who watched but did not enjoy the film show a decreased willingness to donate --- compared to those who watched a regular film. This effect does not occur for redistributive preferences. Columns (5) to (6) show that the poverty film increases the average score by 0.4 SD --- which is statistically significant --- and there is no significant interaction effect. Moreover, as Column (4) shows, the mean effect of the rating is close to 0.

5. Discussion and conclusion

This paper aims to understand if people's attitude towards income redistribution changes when showing them the lives of people living in poverty. Films are a common strategy to raise awareness, and various examples imply that showing people in poverty can raise donations. This study investigates the relationship and the potential mechanism through which these work via a lab experiment. During the experiment, participants were randomly assigned to watch a film about either poverty or a non-poverty topic. I investigated the effect the content of the film had on their preferences for government redistribution and their willingness to donate. The latter dependent variable was based on observed behaviour – the willingness to donate part of their reimbursement to charity – whereas the former was based on five questions that were to be answered on a five-point Likert scale.

Earlier studies indicate that films affect emotions, and emotions can affect generosity. To control this, the participants were asked about their mood and emotions after they watched the films. We observe significant effects of our treatment film on four of the six emotions and the self-assessed mood score. After the film, participants that watched the film on poverty indicated to be angrier, sadder, less content, less happy, and generally in a less positive mood than the participants in the control condition.

The first observation of this study is that although there is a positive difference between the donations between participants that watched the poverty film and those that watched a different film, this difference is not statistically significant. One potential explanation is that there is an effect of the film, but our sample size is too small to observe this effect. Since overall donations were somewhat limited (compared to other experiments) this might have been plausible. An alternative explanation is that showing poverty will not affect the viewer's generosity.

I conducted different analyses that all indicate that the latter explanation is the most likely. When controlling for emotions or mood, the difference in donations between the treatment and control group reduces to close to zero. This indicates that any effect the film had on donations was caused by the emotional impact rather than the film itself. This is confirmed by the analysis of the interaction between how participants rated their film and how likely they were to donate. This analysis demonstrates the poverty film only has a positive effect on the willingness to donate *if* the participants enjoy the film. For the participants who did not enjoy the film, this effect is reversed: They donate significantly less than those in the control condition --- those watching a non-poverty film that they did not enjoy. The rating does not affect the redistributive preferences. Mood and emotions thus affect the willingness to donate. The more the viewers enjoy the film -- independent of the content -- the more likely they are to donate to charity. This positive effect on donations is higher if the film contains content about people living in poverty. The practical implication of this finding is that when it comes to fundraising, entertaining the recipient (giving him or her an enjoyable experience) is at least as important as the message.

Although showing poverty does directly affect generosity, it affects redistributive preferences. Participants that watched the film about the person living in poverty were significantly more willing to support redistributive government policies. Their score for preferences for government redistribution increased significantly. These effects are constant and statistically significant when controlling for mood, emotions or whether the participant enjoyed the film. In fact, none of these variables had a significant impact on redistributive preferences. The effect on redistributive preferences is also not influenced by any mood or emotional factors (of the film). The content of the film causes the change in preferences. This implies that informing people about poverty could change their perception of government redistribution. There is no significant correlation between the variables for mood and emotions and redistributive preferences. In addition, I find no correlation between preferences for redistribution and actual donations of participants. One important note here is that the redistributive preferences are stated whereas the donations are observed preferences. This might have played a role in the robustness of the effect of the film on redistributive preferences.

In summary, this experiment demonstrates that preferences regarding government policies for redistribution are affected by showing the lives of people living in poverty. Those who see the lives of people living in poverty are more willing to support redistributive policies. Simultaneously, it does not provide sufficient evidence that films on poverty affect people's desire to donate. The willingness to donate is strongly related to the emotional and mood states of the viewer – and differences I observed between the treated and control conditions could largely be explained by the effects of the film on emotion and mood.

Acknowledgements

I thank Tania Samantha D'Cruz, Saratha JayaKumar and Maureen Yong for their assistance and support during the implementation of the experiment. This study was financed by the Asia Centre for Social Entrepreneurship & Philanthropy (ACSEP).

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Appendix 1: Advertisement

We are looking for participants for the study: *“Lost in Translation: A study on language and Culture”*

During this study - which should take approximately 45 minutes - you will be asked to conduct translation tasks from Chinese to English or vice versa. You will be reimbursed **S\$ 10.00** for your participation.

A good Chinese proficiency is a requirement to participate in this study, at least of PSLE level. There will be a few short questions to test your Chinese (Mandarin) proficiency before the task.

Please note that you will not be reimbursed if you fail the proficiency test!

Appendix 2: Email to participants

Dear ####,

Thank you for your willingness to participate in our study 'Lost in Translation.' Based on your preferences, we invite you for this study at the following date and time:

####

The study will take place on the first floor of the Biz2 building, **Room number 01-11B**. Please try to arrive 10 minutes earlier, so the study can start on time. If have any trouble finding the location, please contact Dr. Frank Hubers (####) or Tania D'cruz (####). For less urgent matters, please contact us per email, via ####

Since this study requires you to conduct translation tasks, an adequate comprehension of Chinese (Mandarin) is required. Your Chinese proficiency will be tested before the experiment starts. If you fail this test, you will not be allowed to participate.

Do you want to test yourself? You should be able to conduct the following translation task:
http://nusbschool.az1.qualtrics.com/jfe/form/SV_9HOGit81hNVZ5tP

With kind regards,

Frank Hubers

Appendix 3: Debriefing text

Protocol title: Experimental Evidence on the Cultural and Social Determinants of Charitable Giving in Asia

Simplified Protocol title: Lost in translation

Principal Investigator with the contact number and organization: Dr. Frank Hubers, NUS-ACSEP.
Contact number: #####

Introduction text:

Thank you for participating in this study. In order to get the information we were looking for, we withheld some information for you about some aspects of this study. Now that the experiment is over, we will describe the deception to you, answer any of your questions, and provide you with the opportunity to make a decision on whether you would like to have your data included in this study.

What the study really is about:

This study will contribute towards the research on the factors influencing charitable giving behaviour. We will compare participants that watched a film/read a text about social equality with participants that did not. The objective is to investigate how awareness about poverty affects contributions to charity and people's willingness to redistribute income. We also look at the role culture plays in these attitudes.

Privacy and confidentiality

Although you have already completed the survey, your involvement is still voluntary, and you may choose to withdraw the data you provided prior to debriefing, without penalty or loss of compensation offered to you. Withdrawing your submission will not adversely affect your relationship with NUS, the researchers, or any of our affiliates.

Please indicate below if you do give permission to have your data included in the study:

I have been debriefed by the Research team, and I understand the true intent of and the purpose of my participation in the study title "Experimental Evidence on the Cultural and Social Determinants of Charitable Giving in Asia". I agree that the data collected during the study may be included for the purpose of the study.