The influence of identifiability and singularity in moral decision making

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Abstract

There is an increased willingness to help identified individuals rather than non-identified, and the effect of identifiability is mainly present when a single individual rather than a group is presented. However, identifiability and singularity effects have thus far not been manipulated orthogonally. The present research uses a joint evaluation approach to examine the relative contribution of identifiability and singularity in moral decision-making reflecting conflicting values between deontology and consequentialism. As in trolley dilemmas subjects could either choose to stay with the default option, i.e., giving a potentially life-saving vaccine to a single child, or to actively choose to deny the single child the vaccine in favor of five other children. Identifiability of the single child and the group of children was varied between-subjects in a 2x2 factorial design. In total 1,232 subjects from Sweden and the United States participated in three separate experiments. Across all treatments, in all three experiments, 32.6% of the subjects chose to stay with the deontological default option instead of actively choosing to maximize benefits. Results show that identifiability does not always have a positive effect on decisions in allocation dilemmas. For single targets, identifiability had a negative or no effect in two out of three experiments, while for the group of targets identifiability had a more stable positive effect on subjects' willingness to allocate vaccines. When the effect of identifiability was negative, process data showed that this effect was mediated by emotional reactance. Hence, the results show that the influence of identifiability is more complex than it has been previously portrayed in the literature on charitable giving.

Keywords: identifiable victim effect, singularity effect, resource allocation, trolley dilemma, moral judgment, decision making, charitable giving.

1 Introduction

Individuals are more willing to help identified victims than to help non-identified victims (Schelling, 1968; Jenni & Loewenstein, 1997; Small & Loewenstein, 2003; Kogut & Ritov, 2005a, 2005b, 2011; Small, Loewenstein & Slovic, 2007). Further, the effect of *identifiability* on willingness to help seems to be greatest when a single victim is involved, the *singularity effect* (Kogut & Ritov, 2005a, 2005b; Slovic, 2007; Västfjäll, Slovic, Mayorga & Peters, 2014).

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Both the identifiability and singularity effects represent deviations from the rational choice theory, predominant in economics, where individuals seek to maximize the relevant outcome. In the present research, in order to gain new insights on the effects of identifiability and singularity, we combine previous research on charitable giving with classical moral dilemmas (i.e., trolley problems) where conflicting values between deontology (e.g., do no harm) and consequentialism (e.g., maximize lives saved) are reflected.

The topic of when and why identifiability and singularity influence moral decision making is a recurring one in disciplines such as economics, psychology, and moral philosophy. A problem of conceptual divergences commonly exists when exploring the effects of identifiability and singularity. The two concepts are sometimes, incorrectly, used interchangeably. In this study we examine identifiability and singularity with an experimental design that allows us to estimate the relative contribution of these two effects.

1.1 The bystander dilemma and moral decision making

As indicated this study has two points of departure. The first is research on moral judgments and more specifically moral decision making. Moral judgements are typically viewed as evaluations of the behaviour of an individual with re-

spect to a set of virtues held as a norm in a certain social context (Haidt, 2001). Moral decision making, thus, is the actual choice between two or more alternatives, where individuals are forced to make trade-offs between competing moral values. A methodological cornerstone to study moral judgements is hypothetical moral dilemmas known as trolley problems (see e.g., Foot, 1978/2002; Thomson, 1976; Greene, Sommerville, Nystrom, Darley & Cohen, 2001). This study employs a version commonly referred to as the *bystander* or *switch* dilemma. In this particular dilemma subjects are presented with a scenario where a runaway trolley is rapidly approaching five people who will be killed if no action is taken. They can be saved only by actively hitting a switch that will divert the trolley onto another set of tracks killing just one person.

The bystander dilemma reflects a conflict between the moral foundations of deontology and consequentialism. Moral judgments in line with consequentialism are based solely on maximizing outcomes, while a deontological moral judgment is based on other factors such as moral duties or rules (e.g., "do no harm").[1] The consequentialist alternative in the bystander dilemma is to hit the switch, killing one person while saving the other five, striving toward maximizing the overall benefits. The deontological alternative is to refrain from hitting the switch because this action is considered morally unacceptable. A no-harm principle is then applied disregarding overall consequences, i.e., in this case letting one person live at the expense of five. Most people think it is acceptable to hit the switch in the bystander dilemma, i.e., to choose the consequentialist alternative (Greene et al. 2001; Hauser, Cushman, Young, Jin & Mikhail, 2007; Mikhail, 2000).

Studies employing moral dilemmas like the bystander dilemma have been criticized because they employ artificial scenarios and therefore suffer from low external validity because of the lack of psychological realism (Bauman, McGraw, Bartels & Warren, 2014). These hypothetical scenarios most often concern situations where outcomes involve life or death while everyday moral decisions that individuals face are usually less dramatic. More realistic scenarios are commonly used in experiments on charitable giving, but there is a lack of studies using moral dilemmas where subjects make explicit trade-offs between conflicting values (e.g., between deontology and consequentialism). Consequently, it is important to explore to what extent findings from studies on trolley problems are transferable to similar but more realistic scenarios. Thus, in this study we employ a less abstract and non-hypothetical version of the bystander dilemma.

1.2 The effect of identifiability and singularity on charitable giving

The second point of departure for this study is research on the impact of identifiability and singularity on charitable giving. Identifiability is commonly manipulated in experiments by presenting information about the recipients of help with their names, a picture, their age, and/or other personalizing information. The general result from previous studies is that individuals are more willing to help identified victims when compared to identical scenarios with non-identified victims (e.g., Jenni & Loewenstein, 1997; Kogut & Ritov 2005a, 2005b; Västfjäll et al., 2014). However, experimental evidence by Kogut and Ritov (2005b) suggests that *identifying a group* may in some experimental cases reduce willingness to help the group as well as sympathy for it. A more recent study by Ritov and Kogut (2011) also found that *identifying a single individual* does not always increase willingness to help. In this latter study identifiability was found to decrease generosity towards a single victim belonging to the same in-group, whereas identifiability increased generosity towards a single victim belonging to an out-group.[2]

When the effect of identifiability is positive it tends to be strongest when a single, identified victim is presented (Kogut & Ritov 2005a, 2005b; Västfjäll, et al., 2014). An explanation for this is suggested to be the singularity effect—that is, single victims elicit stronger emotional reactions than a group of victims. Kogut and Ritov (2005a, 2005b) hypothesized that the processing of information related to a single victim might be fundamentally different from the processing of information concerning a group of victims. In a series of studies they found that people tend to feel more distress and compassion when considering a single, identified victim than when considering a group of identified victims, resulting in a greater willingness to help the single, identified victim. Slovic (2007) and Västfjäll et al. (2014) describe the effects of a "compassion collapse", where feelings and meaning begin to diminish for as few as two victims. It seems that a larger number of victims (i.e., two or more) fails to engage the emotions that would motivate charitable actions.

When exploring moral decision making, as defined in the previous section, individuals are required to make trade-offs between competing moral values in a joint evaluation scenario. Studies exploring the effects of identifiability and singularity on helping behavior, however, almost exclusively use separate evaluations where options are presented in isolation and evaluated separately. For example, subjects' are presented with either one child OR a group of children, with the identifiability of the child/children varying between-

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[1]However, it can be argued that utilitarianism can accommodate duties when they are the result of legal or institutional rules or even social norms (Hardin, 1988).

[2]In-group/out-group was, for example, manipulated by describing the single child as living in a Jewish settlement in the West Bank. Given that there is a sharp division in the Israeli society regarding the attitude towards these settlements the political situation was used to determine in-group/out-group belonging.

subjects. After reading a basic story about a child/children in need, subjects indicate their "willingness to contribute" to the specified cause. The cause can, for example, be to raise money in order to pay for an expensive medical treatment to save the life of the child/children. Hence, subjects do not have to make an explicit trade-offs between targets, as they would have to make in joint evaluations, where subjects face multiple options simultaneously.

Preferences elicited in separate evaluations may be dramatically different from those elicited in joint evaluations (Hsee, Loewenstein, Blount & Bazerman, 1999). Hsee and Zhang (2004) argue that, when individuals are presented with a separate evaluation task, they are more likely to find it difficult to make sense of the task and to evaluate whether the outcome is positive or not. A joint evaluation design, however, frames the decision process with regards to the relevant attributes, thereby making the actual trade-off embedded in a decision task more explicit. To the best of our knowledge only one study has used a joint evaluation approach to study the effect of identifiability (Kogut & Ritov, 2005b). However, this study always presented the victims [single child/group] as identified; no other combinations of identifying information were investigated. Thus, the relation between identifiability and singularity effects could not be explored.

In the present study, subjects are asked to allocate potentially lifesaving vaccines to either one or five children, resulting in an actual donation according to subjects' choices. The identifiability of the single child and the group of children is varied across experimental groups in a 2x2 factorial design, in which the effects of identifiability and singularity on moral decision making can be investigated orthogonally. Thus, the main objective of this study is to explore the influence of identifiability and singularity in moral decision making where conflicting values between deontology and consequentialism are reflected.

Following previous findings on the effects of identifiability and singularity on charitable giving we hypothesize that:

Hypothesis 1: subjects will allocate relatively more vaccines to identified children (with name and picture) compared to children presented as non-identified.

Hypothesis 2: the effect of identifiability is larger for a single child compared to a group of children (singularity effect).

2   Method

Three separate data collections including in total 1,232 subjects were carried out. More specifically, the sample included 581 subjects from Linköping University in Sweden (Experiment SWE I and SWE II) and 651 subjects from the population-representative subjects pool at Decision Research in Eugene, Oregon (Experiment USA). In all exper-

iments identifiability and singularity were varied orthogonally across four experimental treatments to which subjects were randomly assigned. Complete instructions for all experiments are available in the supplement.

2.1   Experiment SWE I

Data collection SWE I was conducted as a classroom experiment at Linköping University with undergraduate students in the faculty of arts and sciences. Subjects were randomly assigned to one of four treatments in a 2x2 between-subjects design. Each treatment presented the same moral dilemma but differed with respect to which choice option[s] was [were] presented as identified to the subject. The moral decision consisted of choosing to give measles vaccines to either one or five children presented as either identified or non-identified. The identification details included information on the child's [children's] age and name[s] and a photograph [photographs]. The photographs depicted children of similar age and appearance. Subjects were informed that they were participating in a decision-making experiment with real outcomes, i.e., that their choice would result in an actual donation of measles vaccines to UNICEF according to their decision.

Following the structure of the bystander dilemma, there was a default option. Subjects could either stay with the default, which meant that a potentially life-saving vaccine would be given to the single child (i.e., the deontological option), or make an active choice to re-allocate so that five other children received vaccine (i.e., the consequentialist option). The structure of the four treatments is described below.

Treatment 1 (1 id vs. 5 non-id): the single child was presented to the subjects with a picture, a name and an age, while the other five were presented without pictures, names and ages. The exact phrasing of the vaccine allocation dilemma in treatment 1 was as follows:

> Benge is five years old and lives in Kenya. He lives in a poor and inaccessible mountain village where outbreaks of measles frequently occur. The disease can cause serious injury and even death. We will donate enough money for one dose of measles vaccine that will protect Benge from the disease and its side effects. A vaccination offers him an opportunity for a better and more secure future. For the same amount of money we can vaccinate five children living in another more accessible, poor, area in Kenya. You can choose to deny Benge the vaccine in favor of the other children. Do you choose to give Benge the vaccine?

Treatments 2, 3 and 4 were identical except for the following differences:

Treatment 2 (1 non-id vs. 5 non-id): both the single child and the group of five children were presented as non-identified.

Treatment 3 (1 id vs. 5 id): both the single child and the group of five children were presented as identified.

Treatment 4 (1 non-id vs. 5 id): the single child was presented as non-identified and the five children as identified.

After making their choice, subjects were asked three follow-up questions related to their emotional response: (1) how difficult did you find the question was to answer? (2) how much sympathy did you feel for the single child? and (3) how much sympathy did you feel for the five children? A 1–6 scale was used, where 1 was defined as "not difficult at all" and 6 was defined as "very difficult" for the first question, and "no sympathy"/"much sympathy" for the second and third questions.

2.2 Experiment SWE II

The second experiment was also conducted as a classroom experiment at Linköping University with undergraduate students in the faculty of arts and sciences. The structure and instructions of this experiment was very similar to experiment SWE I, but three modifications were made in the design. First, the sentence "He lives in a poor and inaccessible mountain village" was excluded because this information potentially could make subjects believe that the "more accessible" place might have alternative ways of getting the vaccine influencing subjects to choose the single child. Second, the wording related to the default option was changed so that it was expressed more clearly. The exact wording of treatment 1 in experiment SWE II was as follows:

> Benge is five years old and lives in Kenya. He lives in an area where outbreaks of measles frequently occur. The disease can cause serious injury and even death. We will donate one dose of measles vaccine that protects Benge from the disease and its side effects. A vaccination offers him an opportunity for a better and more secure future. Instead of vaccinating Benge it is possible to vaccinate five other children, living in a similar situation as Benge. Right now the vaccine is designated to Benge. However, you can choose to deny Benge the vaccine in favor of the other children. Do you choose to give Benge the vaccine?

The third modification compared to experiment SWE I was the addition of a series of follow-up questions in order to explore *emotional reactance* and *emotional upscaling* as possible psychological processes influencing responses. For example, subjects were asked to state their agreement with the statement "I felt that the single child should not get a 'special treatment'" (emotional reactance) and "My feelings for the single child made me feel more intensely for the five

children" (emotional upscaling). A 1–6 response scale was used, where 1 = "completely disagree" and 6 = "completely agree".

2.3 Experiment USA

The third experiment was run in collaboration with Decision Research in Eugene, Oregon. Subjects were drawn from a diverse sample of the adult U.S. population included in the subject pool of Decision Research. The experiment was conducted as a web survey. Instructions were identical to experiment SWE II but translated into English. In addition experiment USA included four treatments to control for potential order effects related to the presentation of the single child and the group of children. In the additional experimental treatments with reversed order, the group of children was presented first and the single child second.

3 Results

Table 1 presents the descriptive results divided by treatment from the three experiments SWE I, SWE II and USA. The table also shows collapsed percentages for experiments SWE I and SWE II, as well as for USA and USA reversed order.

Figures 1a-d further illustrate the descriptive results from experiments SWE I, SWE II and USA. The percentage of subjects choosing to give the vaccine to the single child, irrespective of identifiability, is presented in Figure 1a. Overall, a dominant share of subjects chose the benefit maximizing option when rationing vaccines to children. That is, there was a general preference for the group of five children over the single child. It is nevertheless notable that a non-negligible share of subjects chose the non-benefit-maximizing option—on average, across all experiments, 32.6 % distributed the vaccine to the single child.[3] The percentage choosing to allocate the vaccine to the single child was highest in Experiment USA (42.5%) and lowest in Experiment SWE II (21.6%). Also, the percentage choosing the single child was significantly higher in Exp. SWE I (31.4%) than in Exp. SWE II (χ^2=6.85, p=.009), suggesting that the difference with regards to the circumstances of the single child, potentially affecting the perceived vulnerability of the single child, had an effect on choice.

Figure 1b illustrates the general effect of identification in each experiment. Subjects' proneness to give vaccines to children presented as identified was tested by pooling responses where subjects chose the identified option and pooling responses where subjects chose the non-identified option across treatments 1 (1 id vs. 5 non-id) and 4 (1 non-id

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[3]In total, the subjects' choices in Exp. SWE I, exp. SWE II and Exp. USA resulted in 5,781 measles vaccines being distributed through UNICEF: 411 subjects chose the single child (=1 vaccine) and 1074 subjects chose the group (=5 vaccines).

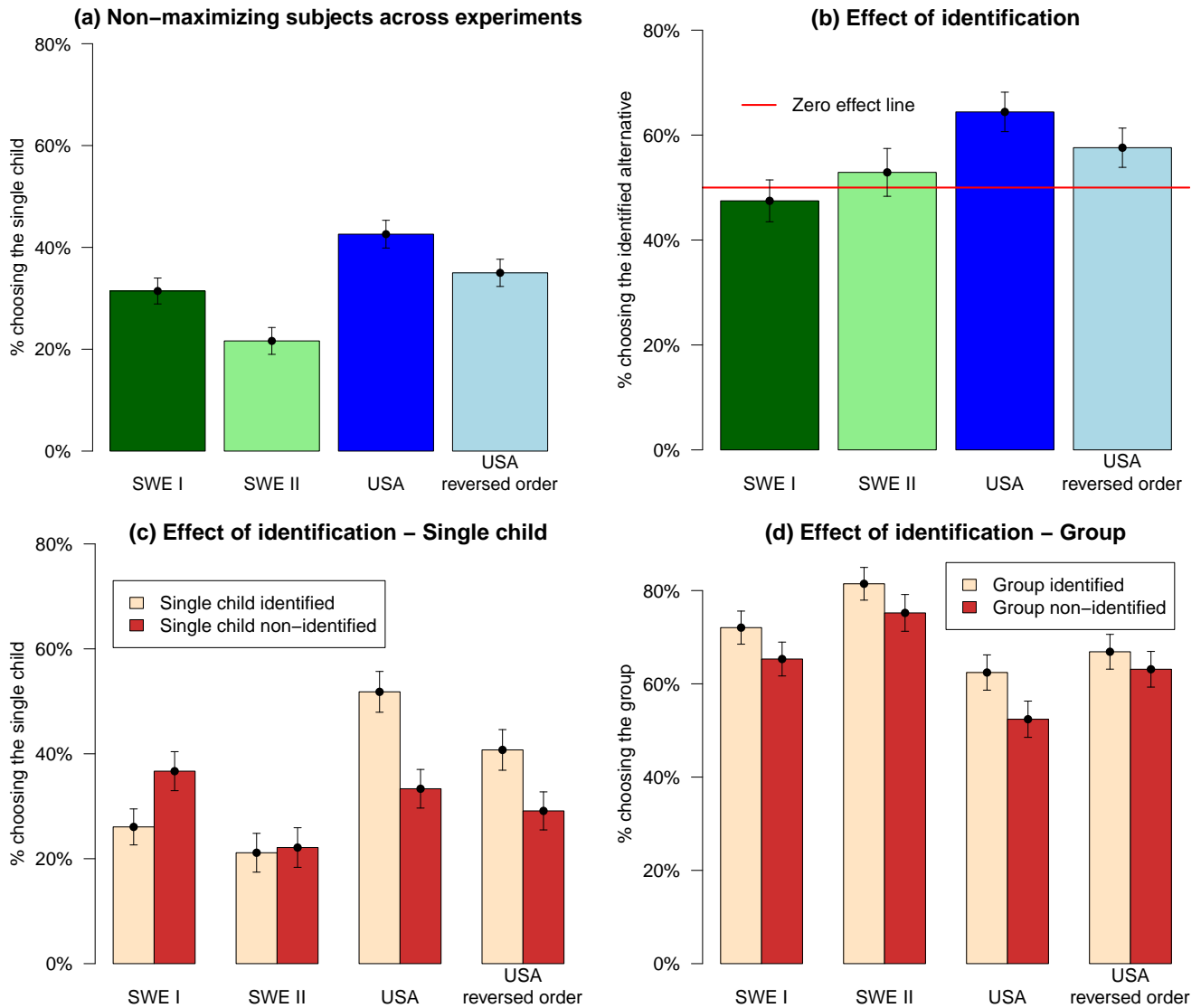Table 1: Descriptive results for Exp. SWE I, Exp. SWE II and Exp. USA.

	Treatment 1:	Treatment 2:	Treatment 3:	Treatment 4:
Exp. SWE I	1 id vs. 5 non-id	1 non-id vs. 5 non-id	1 id vs. 5 id	1 non-id vs. 5 id
n	81	92	84	77
Subjects choosing the single child - n, (%)	23, (28.4%)	37, (40.2%)	20, (23.8%)	25, (32.5%)
Women - n, (%)	42, (52.5%)	51, (55.4%)	44, (52.4%)	39, (50.7%)
Mean age	20.9	21.2	20.8	21.3
Exp. SWE II				
n	60	61	63	61
Subjects choosing the single child - n, (%)	15, (25.0%)	15, (24.6%)	11, (17.2%)	12, (19.7%)
Women - n, (%)	39, (65.0%)	29, (47.5%)	45, (70.3%)	37, (59.7%)
Mean age	22.8	22.3	22.1	21.9
Pooled Exp. SWE I + Exp. SWE II				
n	141	153	147	138
Subjects choosing the single child - n, (%)	38, (27.0%)	52, (34.0%)	31, (21.1%)	37, (26.8%)
Women - n, (%)	81, (57.9%)	80, (52.3%)	89, (60.1%)	76, (54.7%)
Mean age	21.7	21.6	21.3	21.6
Exp. USA				
n	82	84	84	81
Subjects choosing the single child - n, (%)	44, (53.7%)	35, (41.7%)	42, (50.0%)	20, (24.7%)
Women - n, (%)	42, (51.2%)	42, (50.0%)	50, (59.5%)	52, (64.2%)
Mean age	46.8	45.5	45.9	43.6
Exp. USA reversed order	5 non-id vs. 1 id	5 non-id vs. 1 non-id	5 id vs. 1 id	5 id vs. 1 non-id
n	80	80	82	78
Subjects choosing the single child - n, (%)	35, (43.8%)	24, (30.0%)	31, (37.8%)	22, (28.2%)
Women - n, (%)	43, (53.8%)	39, (48.8%)	46, (56.1%)	45, (57.7%)
Mean age	45.4	43.2	46.5	44.0
Pooled Exp. USA + exp.USA reversed order				
n	162	164	166	159
Subjects choosing the single child - n, (%)	79, (48.8%)	59, (36.0%)	73, (44.0%)	42, (26.4%)
Women - n, (%)	85, (52.5%)	81, (49.4%)	96, (57.8%)	97, (61.0%)
Mean age	46.1	44.4	46.2	43.8

vs. 5 id).[4] A binominal test was conducted with the null hypothesis h0=0.5—meaning that, on average, 50% of subjects would choose the identified option if identification had no impact on choice. The "zero-effect line" depicted in Figure 1b represents h0. The null hypothesis cannot be rejected based on responses in Exp. SWE I and Exp. SWE II, im-

plying that there was no impact from identifiability alone on moral decisions in these experiments. The overall effect of identification in Exp. SWE I was slightly negative—only 47.5% gave vaccines to the identified option. In Exp. SWE II the general effect of identification was slightly positive since 52.9% chose the identified option. In Exp. USA, however, the overall effect of identifiability on choice was strongly positive (p<.001). In total, 61.1% of subjects in Exp. USA chose the identified option. Thus, our first hy-

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[4]Treatment 2 and 3 were excluded from the analysis because both the single child and the group of children were presented as either non-identified (treatment 2) or identified (treatment 3).

Figure 1: Proportion (±s.e.) of subjects allocating vaccine to the single child in Exp. SWE I, Exp. SWE II and Exp. USA.

(a) Non–maximizing subjects across experiments

(b) Effect of identification

(c) Effect of identification – Single child

(d) Effect of identification – Group

pothesis that subjects will allocate relatively more vaccines to identified children (with name and picture) compared to children presented as non-identified is confirmed by the results in Exp. USA while this is not the case in Exp. SWE I and SWE II.

Figure 1c and 1d show the share of subjects choosing to distribute the vaccine to the single child (Figure 1c) and the group of children (Figure 1d) when presented as either identified or non-identified. In Exp. SWE I 26% of the subjects chose the single child when presented as identified, as opposed to 37% when presented as non-identified (χ^2=4.37, p=.037). Thus, a statistically significant negative effect of identifiability was found for the single child in Exp. SWE I. When the group of children was presented as identified, 72% of subjects' chose to allocate vaccines to the group.

This share decreased to 65% when the group was presented as non-identified (χ^2=1.75, p=.186). Although this positive effect of identification related to the group is not statistically significant, Exp. SWE I suggests an inverse effect of identification for a group and a single child.

In Exp. SWE II, where information about the inaccessible mountain village was excluded from the instructions, less variation between treatments is seen. As shown in Figure 1c there was practically no difference in subjects' willingness to choose the single child when identified (21%) compared to when non-identified (22%) (χ^2=0.04, p=.850). The effect of identification for the group of children (Figure 1d) was weakly positive with the share of subjects choosing to give vaccines to the group increasing from 75% to 81% when identified (χ^2=1.41 p=.235).

Table 2: Logistic regressions on giving vaccine to the single child, effects presented as Odds Ratios (OR).

	SWEDEN		USA	
	OR	sig.	OR	sig.
Single child identified	0.72 (0.50 – 1.06)	0.093	2.20 (1.40 – 3.46)	0.001
Group identified	0.66 (0.45 – 0.97)	0.032	0.66 (0.42 – 1.03)	0.068
Age	0.93 (0.86 – 1.01)	0.088	1.00 (0.98 – 1.01)	0.586
Female	1.67 (1.34 – 2.46)	0.009	0.79 (0.50 – 1.26)	0.317

The results of Exp. USA differ considerably from those of Exp. SWE I and Exp. SWE II. Notably, the share of subjects who chose to allocate vaccine to the single child increased from 33% to 52% when presenting the single child as identified (χ^2=11.55, p<.001). The effect of identification was also positive for the group of children, although not as striking as for the single child. The share of subjects who chose to allocate vaccines to the group of children increased from 52% to 62% when presented as identified (χ^2=3.39, p=.065). Running the experiment with reversed order of presentation (i.e., the group of children was presented first and the single child second) the effect of identifiability on allocation choice remained similar. Interaction analyses showed no significant interaction between identifiability and order of presentation and thus confirmed a stable effect of identifiability.[5] However, there was a significant order effect related to allocation choice. Independent of identifiability, subjects were more likely to choose the alternative presented first in the scenario. The share of subjects who chose to allocate vaccines to the single child decreased from 43% to 35% when the group of children was presented first in the scenario (χ^2=3.95, p=.047). Thus, our second hypothesis that the effect of identifiability is larger for a single child compared to a group of children (singularity effect) was supported by the results in Exp. USA but not by Exp. SWE I and SWE II.

To further explore the descriptive results, we conducted logistic regression analyses on giving the vaccine to the single child (controlling for age and gender). Table 2 shows the results from these analyses, where the effects are presented as odds ratios. Analyses of interactions (using logistic regression) showed that the pattern of results regarding the effect of identifiability did not significantly differ between SWE I and SWE II (single child: p =.417; group: p=.844). Thus, we merged data from these experiments in the logistic regression analyses presented in Table 2, using the label SWEDEN.

In line with what is shown in Figure 1c, the identifiability of the single child reduced the likelihood of subjects choosing the single child in the Swedish sample. However, identification of the group decreased the odds-ratios of choosing the single child with 0.34 (i.e. a positive effect of identification for the group). The logistic analysis for the American sample showed a highly significant positive effect of identifiability of the single child, also when controlling for age and gender. An additional finding was that females in the Swedish sample were significantly more likely to give the vaccine to the single child compared to males. Thus, females adhere to a higher extent to a deontological no-harm principle, while men were more likely to adhere to a consequential benefit-maximizing principle. In the American sample no such gender differences were detected.

To test for differences in effect between Sweden and USA an interaction analysis was conducted. This interaction analysis[6] showed that the effect of identifying the single child differed significantly between USA and Sweden (p<.001). This admittedly post-hoc result suggests that the difference between Sweden and USA in the effect of identification of the single child cannot be explained (solely) as a chance finding. The positive effect of identifying the group, however, was similar for USA and Sweden (p=0.749 for the difference).

3.1 Follow-up questions

Responses from the follow-up questions related to subjects' emotional responses to the dilemma showed that elicited sympathy was higher for the identified child/children compared to the non-identified child/children in all three experiments. The positive effect of identification on elicited sympathy was, however, more pronounced in the Swedish experiments. No differences were found regarding experienced difficulty to respond to dilemmas between the experiments. Thus, subjects did not find it increasingly hard to make moral decisions due to identifiability. In Exp. SWE II and Exp. USA subjects were asked if they believed that their

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[5]In a logistic regression the choice to allocate the vaccine to either the single child or the group of children was the dependent variable. Independent variables: ID single child, ID group, Age, Gender, Reversed order, Reversed order*ID single child, Reversed order*ID group.

[6]The full model for the interaction analysis, dependent variable: the choice to allocate the vaccine to either the single child or the group of children; independent variables: ID single child, ID group, Age, Gender, Country, Country*ID single child, Country*ID group.

choice would result in a real donation. The average response was 3.51 in Exp. USA and 3.18 in Exp. SWE II using a six point scale ranging from 1 = "not convinced at all" to 6 = "very convinced".

4   Discussion

4.1   Main findings

Contrary to what is commonly believed and most often argued in the literature (e.g., Schelling, 1968; Jenni & Loewenstein, 1997; Small & Loewenstein, 2003; Kogut & Ritov, 2005a, 2005b, 2011; Small, et al., 2007) this study shows that identifiability of a target does not always increase willingness to help. Notably, we find that the effect of identifying information on willingness to donate potentially lifesaving vaccines to single targets is negative (albeit at the 10% significance level only) in the two Swedish experiments conducted with student samples. For the experiment conducted in the USA with a diverse sample of the adult population, the effect of identifiability on willingness to donate was, however, positive both for the single child and the group of children. Consequently, our results indicate that the influence of identifiability on moral decisions is more complex than it has been previously portrayed in the literature on helping behavior.

Previous related studies using separate evaluations have shown that the identifiability effect is particularly strong in combination with the singularity effect. However, in this joint evaluation study the question is raised as to whether singularity can have an effect even when not presented in combination with identifiability. The analysis of Exp. USA yielded findings in line with our hypotheses—identification increased people's willingness to choose a target in joint evaluations when making a choice between helping a single individual or a group of individuals. Also, the effect of identifiability in Exp. USA was, as expected, larger for the single child than for the group of children. The analysis of Exp. SWE I and Exp. SWE II, however, yielded unexpected findings—identification of the single target decreased subjects' willingness to choose the single child. Although the negative effect from identifying the single target was surprising, the finding is in line with the results from another Swedish study, which also found a negative effect of identifiability in a diverse adult sample (n=1270), when exploring priority setting decisions within a health care context (Wiss, Levin, & Tinghög, 2015). Wiss et al. used dilemmas similar in structure to the dilemma used in the present study[7] indicating that a negative effect of identifiability can be found also in decision making contexts other than charitable giving.

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[7]Subjects were asked to choose between treating a single patient or a group of eight patients. Identifiability of the single patient was varied between treatments.

The negative effect of identification was most pronounced in Exp. SWE I where the single child was presented as living in an inaccessible mountain village while the five children were living in a more accessible village. When both the single child and the group of children were presented as non-identified in Exp. SWE I as many as 40% of subjects chose to allocate the vaccine to the single child compared to 24% when both were identified. This result shows that, in certain contexts, singularity alone can have an important effect on allocation decisions in a joint evaluation setting. The reason for having a different description for the single child compared to the group of children was to give a reasonable explanation why it was possible to treat five children with the same resources used for one child. This might, however, have made subjects perceive the single child as more vulnerable in Exp. SWE I compared to the other experiments. Such considerations would reflect the ethical imperative *rule of rescue,* described by Jonsen (1986) as "our moral response to the imminence of death demands that we rescue the doomed" (p. 174). However, the remote/accessible factor was not varied orthogonally and consequently our findings related to this effect should be interpreted with some caution. Why the single child would appear more vulnerable to subjects when non-identified is a matter for speculation. But it seems reasonable to assume that subjects pay more attention to the written information when the scenario does not include content that makes the single child identifiable, enhancing the perception of the vulnerability of the single child. When the presented scenarios include photographs and names of the child/children, however, subjects may increasingly rely on this identifying information as the main input in the decision-making process. The written information in the scenario may accordingly affect the decision-making process less when it is accompanied by information that makes targets identifiable.

Overall, the findings from this study indicate that the effect of identification related to the group is more stable, while the effect of identification of a single target is more sensitive to contextual differences. These results are in line with previous research showing that the information processing related to a single target is different (deeper and more coherent) compared to information processing related to a group of children in need (e.g., Kogut & Ritov, 2005a, 2005b; Västfjäll et al., 2014).

Turning more explicitly to aspects related to moral decision-making, almost one-third (32.6%) of the subjects in our pooled sample chose the non-benefit-maximizing option when allocating vaccines. Although this share of respondents choosing the deontological default option is not an atypical share for the standard bystander dilemmas, we were still surprised to see that judgments from hypothetical dilemmas are transferable to more realistic scenarios where choices carry real consequences.

4.2 Emotional reactance and emotional upscaling

The negative effect of identifying the single child in the Swedish sample was initially surprising. After considering potential causes for this effect we propose two non-mutually exclusive explanations why identifiability for single targets may sometimes have a negative effect in joint evaluation settings—*emotional reactance* and *emotional upscaling*.

The *emotional reactance* effect has been described by Berkowitz (1973) as "a demand, explicit or implicit, to help someone, and even a felt obligation to do this, is often resented because the demand or obligation is a bothersome threat to the individual's freedom of action" (p. 310). In the context of this study, the implication would be that individuals experience an increased pressure to aid the identified child when presented alongside a non-identified group and this could negatively affect their willingness to choose the identified child. To explore emotional reactance, we asked subjects in Exp. SWE II and Exp. USA to state their agreement with the statement "I felt that Benge [the single child] should not get a 'special treatment' " on a scale from 1 to 6. In the American sample no significant difference in mean values for when the single child was identified versus non-identified was observed (t-test $\text{Mean}_{\text{CHILDID}}$ =3.4 vs. $\text{Mean}_{\text{CHILDNONID}}$ = 3.33, p=.770). However, in accordance with the emotional reactance effect, subjects in the Swedish sample agreed with this statement to a greater extent when the child was identified rather than when not identified (t-test $\text{Mean}_{\text{CHILDID}}$=4.15, vs. $\text{Mean}_{\text{CHILDNONID}}$=3.10, p<.001). The fact that a larger share of the Swedish subjects considered that the child should not get special treatment when identified could explain why the Swedish samples in general were less willing than the USA sample to donate the vaccine to the single identified child. This possibility was also supported by a mediation analysis which showed that the mediator ("I felt that Benge [the single child] should not get a special treatment") was significant in the Swedish sample (Sobel test, p=.029) but not in the US sample (Sobel test, p=.772).

A second possible explanation why identifiability may have a negative effect on individuals' willingness to help single victims is *emotional upscaling*. Due to the joint evaluation design used in the experiments, where two options are presented side-by-side, the emotional response to help the one identified child could potentially be transferred and "scaled up" to the group of children. Such an explanation would be in line with recent work by Hsee, Zhang, Wang and Zhang (2013) who found that asking subjects to consider a single cause before expressing their willingness to pay for a larger cause increased the donations to the larger cause relative to a condition where the single cause did not precede the larger (a unit asking effect where the values for the single unit is scaled). Emotional upscaling is also con-sistent with research by Markowitz, Slovic, Västfjäll and Hodges (2013) who found that environmentalists who care about the cause of saving an entire species do not show a decrease in affect and donations when the numbers of endangered animals increase. However, a number of questions designed to measure emotional upscaling (in Exp. SWE II and Exp. USA) did not provide support for this explanation. For example, subjects were asked "My feelings for the single child made me feel more intensely for the five children." Responses to this, and similar questions, did not show any differences between treatments. However, it is possible that subjects in general have limited capacity to self-reflect on these types of questions given that it is likely to be an unconscious emotional process.

4.3 Comparing Sweden and the United States

A finding that appears very conspicuous in this study is the difference in behavior between the Swedish and American study samples. In the US sample the effect of identifiability was significantly positive both for the single child and the group. In the Swedish samples there was no positive effect of identification. Instead the effect of identifying the single child was overall negative in the Swedish samples. Although these cross-cultural differences are potentially interesting it should be acknowledged that this study was not explicitly designed to study such differences. There are slight variations in sample characteristics and experimental designs which potentially could account for why the positive effect of identifiability on willingness to help was more pronounced in the American sample. Still, our result is an indication of the existence of cross-cultural differences with regards to how individuals are affected by identifiability. We speculate below about two potential explanations for such cross-cultural differences between Sweden and the United States.

First, in the United States values associated with the individual have traditionally been emphasized whereas values associated with the collective have traditionally been emphasized in Sweden. In the United States, individual rights are outlined within the Bill of Rights as part of the Constitution and freedom of choice and individualism has been the core focus of the political landscape. Sweden has a long-standing tradition of a strong welfare state with a focus on equality and collectivism. Moreover, Sweden has traditionally emphasized uniform and collective solutions through the public sector—from daycare to education and health care. As a consequence of the strong focus on collective values the "Law of Jante" is often used to describe the Swedish mentality towards individual success. The idea of the law of Jante is that there is a pattern of group behavior towards individuals within Scandinavian communities that negatively portrays individual success as unworthy. Swedish subjects would, in line with this type of reasoning, be less willing to

choose the identified single child since he represents someone outside of the collective (i.e., the group). Identifiability in a joint evaluation setting is likely to trigger the law of Jante mentality leading to a negative or no effect of identifiability for the single child.

A second explanation relates to whether the victims are perceived as belonging to an in- or outgroup. Two complementary findings may be related to the difference between US and Swedish samples. First, Kogut and Ritov (2007) found that generosity increased towards identified in-group recipients when belonging to the same social categorization. It is possible that the U.S. respondents to a higher extent perceive the African children as a form of in-group. The population in the United States consists of approximately 14 % African-American citizens compared to a relatively small share of the population being of African origin in Sweden. This difference could potentially have an effect on the perceived in-group/out-group belonging of the US and the Swedish respondents, partially explaining why the positive effect of identification in general is less pronounced in Sweden compared to United States. On the other hand, the fact that Sweden has had a long tradition of very little need for in-group giving (because of the social welfare system), and aid campaigns focusing on helping other groups in need especially from African countries, could also affect perceived in-group/out-group belonging of respondents. In fact, it is possible (though not directly tested here) that African children are a form of in-group—at least in the context of aid decisions. Such an interpretation would be in line with Ritov & Kogut (2011) who found that the identifiability of a victim decreased the generosity to in-group recipients, but increased generosity to out-group recipients. Future research should explicitly test the perception of in-group/out-group belonging in joint evaluation moral dilemmas and in different cultural contexts.

4.4 Conclusion

In sum, our results show that identifying the recipient of aid does not always increase the willingness to help. The hypothesis that subjects will allocate relatively more vaccines to identified children compared to children presented as non-identified was supported only by the results from one of the three experiments. The present research provides further evidence that the singularity of targets, independently of their identifiability, can have an important effect on allocation decisions. However, contrary to our expectation that the effect of identifiability is larger for a single child compared to a group of children, results from the two Swedish samples indicated a negative effect, which was mediated by emotional reactance. A further noteworthy finding from this study is the large fraction of subjects who chose the non-benefit-maximizing option. On average 32.6 % of all subjects chose to allocate the vaccine to the single child instead

of the group of five children. This suggests that there is a strong deontological "do no harm" rule operating even in realistic bystander dilemmas.

In a broader perspective, this study highlights the importance for decision makers in all sectors and all societies to be aware of potential biases that might affect judgment and decision making and that could create sub-optimal situations where social benefits are not maximized. For example, the health-care sector is one area where the identifiability and singularity effects could have an effect. In order to have an informed debate on to what extent certain groups should or should not be given special considerations when setting health-care priorities, it is important to have a firm understanding of the psychological mechanisms, such as identifiability and singularity, at play when making these judgments.

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