



**Universiteit Utrecht**

# **The Influence of Normative Differences among Group Members on Group Identification in a Social Dilemma**

*Bachelor Thesis Sociology*

**Abstract.** Research into the effect of normative differences about how much to contribute to the public good among group members on the feeling of group identification has been scarce in the field of sociology. This thesis is an attempt to shed light on the way normative differences influence group identification. The theoretical framework suggests that there is a negative influence between the differences on normative views of group members about how much one should contribute to the public good and group identification. This hypothesis is being tested using a computerised experiment with 192 students from Utrecht University, where students play repeated rounds of the public good game. Several analyses were performed to research the expected influence. The results show that there is indeed a negative influence between the differences on normative views of group members and the feeling of group identification. However, the results differ when different measurements of normative differences about contributions are being used. The results imply that group norms are both a cause and consequence of group identification as the self-categorisation theory states. This thesis has contributed to the sociological field by finding that there is such a negative effect in a laboratory experiment. The smaller the normative differences about contributing to the public good, the higher the feeling of group identification among group members.

**Keywords.** Norms, Normative Differences, Group Identification, Contributions, Game Theory

C. Açıkgöz (6570658)

Bachelor Sociology, Utrecht University

Supervisor: K. Otten

Second Examiner: L. Mandemakers

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## **Introduction**

When you put on the news, there is a big chance you will see a news report about a conflict. For example, a conflict between countries or between ethnic and religious groups. There are even television programs about conflicts between neighbours. Intergroup conflicts have been with us for a long time (Esteban, Mayoral, & Ray, 2012; Gat, 2015). Social psychology has even named intergroup conflict as the problem of the century (Fiske, 2002). Intergroup conflict often happens through social dilemmas which pit the interests of individuals and subgroups against those of a larger group (Smith, Jackson, & Sparts, 2003). A social dilemma is a situation in which an individual will benefit from making a noncooperative choice, no matter what others do. However, all individuals are worse off if they all make a noncooperative choice instead of choosing to cooperate (Dawes, 1980).

For a long time, the dominant assumption of choice behaviour has been that of an economic man (Smith et al., 2003). An economic man is a rational and selfish man who chooses his actions to maximise his utilities (Coleman, 1987). When there are only economic men in a social dilemma, they will not cooperate with each other since they choose actions that will maximise their own utilities. However, many theorists have re-examined the assumption that all behaviour is based on individualistic motivations (Smith et al., 2003). A powerful motive that can influence choice behaviour, and which has a significant impact on social dilemmas, is group identification (Kramer & Brewer, 1984; Smith et al., 2003). When a person identifies with a group, they do not only care about their own outcomes, but also about the group outcomes (Brewer & Kramer, 1986). Identity is connected to motivation and behaviour (Jenkins, 2014).

The effect of group identification on cooperation in social dilemmas works (among others) via group norms. Previous research suggests that group identification leads to stronger group norms (Livingstone, Haslam, Postmes, & Jetten, 2011; Packer, 2008). Stronger group norms lead to a better cooperation between group members. According to Livingstone et al. (2011) and Packer (2008), there is also a positive relationship between group identification and the level of accepting the group norms. Group members will acquire existing group norms and will do so to the extent that group identification will be formed. This means that group identification supports the acquisition of group norms. Jetten, Spears and Manstead (1997) found that group members who highly identify with the group will search for a positive identity within the group, and therefore take the group norms more into account than low identifiers. So, according to

previous research, there is a positive relationship between group identification and taking the group norms into account. However, there has not been much research about this relationship the other way around: the effect of group norms on group identification. Sharing the same norms could possibly be a requirement to develop a feeling of group identification. Group identification could be hindered when group members have dissimilar personal normative views and do not acquire to the group norms because of this. This thesis will therefore focus on the effect of normative differences on the feeling of group identification.

In a perfect world, all group members would cooperate and take the group norms into account. Nevertheless, we know that in the real world, this is not always the case. Group members have often different personal norms, which will influence the level of adherence to the group norms. Personal norms will be conceptualised as a personal view on how much someone should contribute to the common good. Normative differences will then be conceptualised as differences between group members on these personal norms. When the opinions are too different, the chance of a conflict between group members will be more likely. According to previous research, normative differences have a negative effect on cooperation (Nikiforakis, Noussair, & Wilkening, 2012; Winter, Rauhut, & Helbing, 2012). This can lead to a conflict between group members. It is likely that normative differences will also have a negative effect on the feeling of group identification, since group identification often is seen as a prerequisite of cooperation. However, there has not been much research done to this effect. How much of an influence do normative differences of opinion have on the feeling of group identification among group members? This thesis is an attempt to shed light on the way normative differences influence group identification by answering the following research question: *To what extent do normative differences about how much to contribute to the public good influence the group identification of group members?*

There have been several studies conducted when it comes to the relationship between group norms and group identification in social dilemmas (Fekadu & Kraft, 2002; Jetten et al., 1997; Livingstone et al., 2011; Masson, Jugert, & Fritsche, 2016; Norman, Clark, & Walker, 2005). Social dilemmas have been of great research interest because they seem to capture the motivational features of real-world social problems, like overpopulation, resource depletion (Dawes, 1980) and environmental problems (Stern, 1992). However, there has not been much research done about group identification and group norms in social dilemmas with the use of an experiment. This thesis will be based on a computerised experiment with students from

Utrecht University. The participants repeatedly played the public good game, which is a game-theoretic paradigm for studying cooperation in experiments. Game theory is concerned with situations in which decision-makers interact with each other, and in which the decision of each group member have consequences for the outcome of all group members (Easley & Kleinberg, 2010). In the public good game, group members have to decide individually whether to contribute to a public good that increases the payoff of each group member but will lead to a decrease of one's own endowment (Böhm, Rusch, & Baron, 2020). The role of normative views and group identification were part of this experiment. It will be of scientific value to study these variables using the public good game since lab experiments can manipulate the level of normative disagreement in a controlled decision environment, which helps to isolate its impact on cooperation from potential confounders that exist in real life (Falk & Heckman, 2009). Hence, by using an experiment, causal claims can be made (Morling et al., 2018). According to Druckman and Kam (2011), there have been claims that students are a narrow database, which will cause internal and external problems. However, they have found that you can generalise the results of experimental research with student samples to the general population.

Besides the scientific relevance of this thesis, it will also contribute to society. As stated before, social dilemmas and conflicts happen daily and are a big problem in society. When the COVID-19 pandemic started, people in several countries started stockpiling toilet paper, hand wash and food. Meanwhile, others asked themselves the question of whether they also should do that. 'What if we buy it all? Then others will not have a chance of buying it'. Another example is the use of a face mask to protect yourself and others from the virus. However, there are a lot of people who are hesitant when it comes to the protection of the face mask. The social dilemma here is whether you are wearing the face mask, for the others around you, or whether you are not going to wear the face mask, which might mean that you will be more comfortable, but you will possibly endanger the collective. Within these examples, norms and group identification play an important role. Many people believe that you should care for one another in a time of a pandemic, that you share food, and that you wear a mask to protect others around you. However, there are still people who do not agree with this norm and do not cooperate. To what extent do these norm differences influence the group identification of people within a society?

This thesis will first study the theories which will be used to give an answer to the research question, namely the social identity theory and the self-categorisation theory. Then the method will be discussed, where the sample, the game, the variables and the statistical methods that

will be used will be introduced. Next the results will be presented. Lastly, the conclusion and discussion will follow.

## **Theories**

The social identity approach is a highly influential theory of group processes and intergroup relations (Hornsey, 2008). The approach consists of two theories: the social identity theory and the self-categorisation theory. Much of the social identity theory deals with the relations between the in-group and the out-group (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). However, in this thesis, the focus will be on the relationship between in-group members, which makes the self-categorisation theory a well fitted theory to study the relationship between in-group members. The self-categorisation theory moves beyond the intergroup focus of the social identity theory and focuses on intragroup processes as well (Hornsey, 2008). Nevertheless, the two theories share most of the same assumptions and methods when it comes to identity processes (Hornsey, 2008; Trepte & Loy, 2017), which is the reason why the social identity theory will also be discussed.

### **Social identity theory**

The social identity theory is a general theory of group processes and intergroup relations that distinguishes group phenomena from interpersonal phenomena (Terry & Hogg, 1996). Almost everyone, if not everyone, wants to belong to a group. A social identity makes you part of a social group or it makes you belong to a social category (Hogg & Abrams, 2006). A social group is a set of individuals who share a common social identity or who view themselves as members of the same social category. The social categories in which individuals place themselves are part of a structured society and exist only in relation to other contrasting categories (Hogg & Abrams, 2006). For example, black versus white and educated versus non-educated. Every social category has more or less power, prestige, status, and so on. With this, a world of 'us versus them' is being created (Tajfel & Wilkes, 1963). This polarisation can lead to intergroup conflicts.

When people define themselves as part of a social identity or social category, two processes come into play (Hogg & Abrams, 2006; Terry & Hogg, 1996). The first is categorisation, which accentuates differences between the in-group and out-group and similarities between members of the in-group. Through the process of self-categorisation, an identity is formed (Stets & Burke, 2000). This process will be discussed later in greater detail using the self-categorisation

theory. The second process is self-enhancement, which involves ethnocentrism. The group member seeks to favour things in-group over things out-group. Individuals strive to maintain or enhance their self-esteem (Tajfel & Turner, 1978). They want to be viewed positively. An example is that they view their group members more positively, and the group members of the out-group less positively. Because of the process of self-enhancement, intergroup discrimination arises.

In short, having a particular social identity means belonging to a certain group, being like others of that group and seeing things from the group's perspective (Stets & Burke, 2000). When someone identifies with a group, someone has a feeling of group identification. There are several factors that lead to group identification. First, Fisher and Wakefield (1998) found that wanting a positive self-image leads to group identification. Group members identify themselves on the basis of group characteristics that promote a positive self-image. Second, behavioural interdependence is a source of group identification (Adams, Berkowitz, & Hatfield, 1976; Henry, Arrow, & Carini, 1999; Lott & Lott, 1965). Behavioural interdependence is the need to coordinate actions among members in pursuit of group objectives (Henry et al., 1999). It causes in-group formation, attraction to other group members, and the categorisation of oneself as a member. In other words, behavioural interdependence causes group identification.

### **Self-categorisation theory**

The social identity theory has been extended by Turner and colleagues to focus more on intragroup processes and the role of the categorisation process (Henry et al., 1999; Hornsey, 2008; Terry & Hogg, 1996). The self-categorisation theory makes a distinction between the social and personal identity (Turner, 1999). The social identity depends on the group membership, while the personal identity is less dependent on the group membership. Individual behaviour is driven either by social or personal identity processes. It depends on the situation in which identity comes at play. However, a dynamic interplay of both identities is possible. Also, the personal and social identities can stay the same, but they can also vary over time.

During the discussion of the social identity theory, a couple of factors were mentioned that have an influence on group identification. According to the self-categorisation theory, the process of depersonalisation also has an influence on group identification (Hogg, Terry, & White, 1995). When a certain social identity becomes salient and someone sees themselves as a group member, the self-perception becomes depersonalised (Trepte & Loy, 2017). This means that the personal

identity is dominated by the social identity (Trepte & Loy, 2017; Turner et al., 1987). This is where the group norms come into play. In the process of depersonalisation, the group member acts in accordance with the group norms. Group norms can be seen as a group prototype that describes and prescribes beliefs, attitudes, feelings and behaviours that maximise similarities between group members (Terry & Hogg, 1996). Group members think, behave, feel and define themselves in terms of group norms rather than in terms of their personal norms when they identify with a group. They act to match their behaviour to the standards of the social identity (Abrams, 1994). By doing this, they confirm and enhance their group identification. Group norms are thus both a cause and consequence of group identification.

Under what conditions does a person's group membership become salient? According to Bruner (1957), this depends on the interaction between the relative accessibility of the social category and the normative fit with the social category. Accessibility refers to the degree a potential group member can enter the social category. For instance, the more characteristics that will be accepted in this social category, the sooner this social category will provide a good fit for a potential group member, which makes this social category more accessible for potential group members. Normative fit means that the attitude and behaviour of a group member fits the social categorisation. It is the degree to which a potential group member complies with the group norms (Oakes, Turner, & Haslam, 1991). This does not only mean that a group member should adhere to the group norms, but also that the group member has the same type of personal norms. The agreement on normative views is thus an important factor for group identification. When people differ in their normative views, there is less normative fit, which will lead to less sense of group identification. The normative views in this thesis are about how much one should contribute to the public good. Based on these findings, it is expected that there is a negative influence of normative differences between group members about how much one should contribute to the public good on group identification.

## **Methods**

### **Sample**

A computerised experiment was conducted in the Experimental Laboratory for Sociology and Economics (ELSE) at Utrecht University from October till November of 2019. Students from Utrecht University were recruited using the internet recruitment system ORSEE (Greiner, 2015). The sample consists of 192 participants of which 66.1% are female, 32.3% male and 1.6% other. Participants are on average 24 years old. Almost all participants were following a

course at Utrecht University at the time (84.4%), and 87 participants are of Dutch nationality and 105 are from other countries. The 192 participants are sorted into 64 groups and each of these groups consists of three members. Payment depends on the behaviour in the game. Participants earned on average 15 euros (min = 5 euros, max = 22 euros). They are placed in a group based on their normative views as will be further explained. Before the experiment, they were informed about the experiment through written instructions (see Appendix A).

### **The game**

The participants played repeated rounds of a version of the public good game with peer punishment (Fehr & Gächter, 2000). The game consists of various rounds and each round has two stages. In the first stage, each individual  $i$  in a group of 3  $N$  receives an endowment  $E$  of 20 monetary units (MU). They must decide how much of this endowment they want to contribute to the public good,  $c_i$ , where  $c_i \in \{0, 1, \dots, 20\}$ . The part of the endowment that is not contributed to the public good keeps  $i$  for themselves. All the contributions that the group members make will result in the public good. Each group member then receives a return  $m_i$  per contributed point to the public good, with  $m_i < 1$ . All these returns together make up the total multiplication factor of the public good  $M$ , with  $N > M > 1$ . Here is when a social dilemma is formed. The individual return of a contribution is always smaller than one ( $m_i < 1$ ), which makes it most profitable for  $i$  to contribute nothing. However, the total group return (multiplication factor) is always bigger than one ( $M > 1$ ), which makes it most profitable for the group if every group member fully contributes to the public good. When each group member decides how much to contribute to the public good, the contributions and payoffs of all group members are communicated to the whole group. This is the end of the first stage.

In the second stage, each group member gets the opportunity to punish their group members. They can do this by assigning punishment points  $p_{ij} \in \{0, 1, \dots, 10\}$  to each group member  $j \neq i$ . When a group member decides to punish another group member, each punishment point costs one point to the punisher and reduces the payoff of the punished group member by three points  $\delta$ . However, the group members do not know who punished them. This completes the second stage and thereby one round of the public good game. Each group member's payoff  $\pi_i$  after one round is given by the following formula:

$$\pi_i = E - c_i + m_i \sum_j c_j - \sum_{j \neq i} p_{ij} - \delta \sum_{j \neq i} p_{ji}$$



The groups played these rounds multiple times. For comparability to previous research, the parameter values are set to follow the typical form of the public good game with peer punishment: the endowment = 20, the impact of receiving punishment = 3, and the maximum punishment per group member = 10 (Fehr & Gächter, 2000). The returns of the public good are heterogeneous. It is important for this study that the returns are heterogeneous, because this way there are at least two common and conflicting views about how people ought to behave, which means that there is a disagreement in normative views between group members (Fischbacher, Schudy, & Teyssier, 2014; Nikiforakis et al., 2012; Reuben & Riedl, 2013). There is a higher possibility to observe normative disagreement when the returns are heterogeneous. When the returns are homogeneous, most group members will agree to equally contribute to the public good, which makes normative disagreements less likely. However, when the returns are heterogeneous, group members will differ more in their normative views. Some think everyone should contribute the same to the public good, while others think some should contribute more than others. So, by making the returns heterogeneous, there will be a higher chance to observe normative disagreements among group members. In each group one member has a high return ( $m_i = .75$  points), and the other two members have a low return ( $m_i = .50$  points), giving an  $M$  of 1.75 (.75+.5+.5).

Before the game started, the participants were presented with the choice situations and this resulted in the measurement of their personal normative views on what they think an appropriate contribution is for each group member, which will be explained later. The experiment consists of two parts. The first ten rounds of the game are played in part 1, and the second ten rounds are played in part 2. This means that participants play in total 20 rounds of the public good game. Based on the personal normative views, there are two conditions. In the first condition, the group consists of group members with similar normative views in part 1 and with dissimilar normative views in part 2. The second condition consists of groups with group members with dissimilar normative views in part 1 and with similar normative views in part 2. In the first ten rounds, the participants play the game with their first group. After this part of the experiment, one group member is exchanged for a group member of another group. This means that the second group consists of both incumbents and newcomers. The resorting is done in such a way that when the group is initially conditioned as a group with similar personal normative views, it now becomes a group with dissimilar views with the incumbents and newcomers and vice versa. Participants were not told about the method of sorting. At three moments during the game, the personal normative views of the group members were measured.

As already mentioned, the first time is before the game starts. The second time is after the first ten rounds (i.e., after part 1), and the third time is after the second ten rounds (i.e., after part 2).

## **Conceptualisations**

### *Normative differences about contributions*

The independent variable is ‘normative differences about contributions’. The independent variable will be measured by several questions on ratio level. Participants were asked what they think is the appropriate contribution to the public good for a hypothetical group member with a high return (i.e., group member 1). The same question was also asked but than for hypothetical group members with a low return (i.e., the mean of group member 2 and 3). The question for members with a low return was asked separately for group member 2 and 3. However, since more than 90% of the answers were the same about the appropriate contribution for group member 2 and 3, the mean of both these answers were taken. The participants were able to try out different combinations of contributions and see how these combinations would affect the earnings of each group member. They could give an answer from 0-20 per group member, since these are the minimum and maximum each participant can contribute to the public good. These three questions were asked three times during the experiment: before the first ten rounds, after the first rounds and after the second ten rounds. Before the second and third measurement, participants were reminded that they did not need to be consistent between the different measurement moments. The way normative differences about contributions are being measured match the study by Reuben and Riedl (2013).

The answers that participants gave on the three questions led to one score that indicate their personal normative view about how much more a participant thinks high return members should contribute compared to low return members. Participants’ normative views are used to position them on a spectrum from equal-contributions to equal-earnings. Some participants are in favour of equal contributions of the group members, others are in favour of equal earnings, and others are in between. Participants who give the same answer for the hypothetical high return and low return members are supporters of equal-contributions. Meanwhile, participants who assign a higher contribution to the hypothetical member with a high return than the hypothetical member with a low return are supporters of equal-earnings. Participants who answer that high return members should contribute more than low return members, but not twice as much, are supporters of a balance between both rules. Participants are assigned to a group based on how much they support the equal-contributions rule versus the equal-earnings rule.

So, the score of normative differences about contributions is the difference between the appropriate contribution for a hypothetical high return member and the appropriate contribution for a hypothetical low return member. The higher the score, the more a hypothetical high return member should contribute to the public good compared to a hypothetical low return member. For instance, group member 1 thinks that the hypothetical high return member should contribute 15 to the public good and the hypothetical low return member should contribute 5. This means that the score on normative differences about contributions of group member 1 is 10. The hypothetical high return member should contribute 10 more than the hypothetical low return member according to group member 1. A negative score of normative differences hardly occurs (2.3%), which means that participants almost never think that the hypothetical high return member should contribute less than the hypothetical low return member. Based on the score of personal normative views, participants are assigned to groups with members with similar or dissimilar normative views, depending on the condition. In the first condition (condition 0), there is normative agreement among the group members in the first ten rounds and normative disagreement in the second ten rounds. In the second condition (condition 1), there is normative disagreement among the group members in the first ten rounds and normative agreement in the second ten rounds. By taking the conditions into account, it is possible to see when group members did or did not have normative differences about how much one should contribute to the public good. The condition is measured as a nominal variable.

Thus, normative differences about contributions are measured by the condition for the main analysis. However, normative differences about contributions can also be measured by the normative disagreement within each group of three. Group-level disagreement will be used as the independent variable for an additional robustness analysis. As said before, each participant within a group has a score of normative differences about contributions which is the difference between the appropriate contribution for a hypothetical high return member and the appropriate contribution for a hypothetical low return member. Each group consists of three participants, which means that for each group there are three scores. For this variable, the highest score within the group is subtracted from the lowest score within the group. The score that results from this represents the level of disagreement within the group. The higher the score within a group, the higher the level of disagreement within a group. Group-level disagreement is measured as a ratio variable.

### *Group identification*

The dependent variable is ‘group identification’. In order to study the effect of normative differences about how much one should contribute to the public good on the group identification of group members, six statements about group identification were asked. This was done two times during the experiment, namely after the first ten rounds and after the second ten rounds. The participants had to choose from 1 (strongly disagree) to 7 (strongly agree) for each statement, which makes the variable an interval variable:

1. I identify with other members of this group
2. I feel strong ties to this group
3. I am like other members of this group
4. This group is an important reflection of who I am
5. I feel proud to be a member of this group
6. I would like to continue working with this group

These items are commonly used to measure group identification in experiments (Ellemers, Kortekaas, & Ouwerkerk, 1999; Leach et al., 2008). The reliability test also shows that the six items have a very high Cronbach’s Alpha ( $\alpha=.927$ ). Since Cronbach’s Alpha is so high, the mean was taken from these six items, which can range from 1-7. The higher the score, the higher the feeling of group identification. For every participant, there are two means. The first mean is the feeling of group identification after the first ten rounds, and the second mean is the feeling of group identification after the second ten rounds.

### *Control variables*

After the experiment, participants were asked to provide information on background characteristics. Based on these questions, four control variables will be included in the analyses. The first is age, which was an open question. Since the youngest participant is 18 years old and the oldest is 68 years old, it is interesting to see whether age will change the effect of normative differences about contribution on group identification. The second is gender. The answers that were given are male, female and other. A dummy variable was created, where ‘male/other’ has the value of 0 and ‘female’ the value of 1. The third is political orientation, which indicates how much someone is politically left or right. Participants were asked to rank their political orientation on a scale from 1 (left) to 10 (right). The last control variable is game theory. A question was asked whether the participant followed a course on game theory in the past. This indicates their previous experience with game theory. This variable is a dummy variable, where ‘no’ has the value of 0 and ‘yes’ the value of 1. The reason why these control variables are

included in the analyses is because variables like gender and age are common confounders (Wunsch, 2007). They can have an influence on both the normative differences about contributions and group identification, which can influence the effect of normative differences about contributions on group identification. By including these control variables in the analyses, confounding can be prevented. The descriptive statistics are shown in Table 1.

### **Statistical methods**

In order to test the hypothesis, numerous linear regression analyses will be performed since the independent variable ‘group identification’ is a continuous variable. First, it is important to split the analyses into the two parts of the experiment (i.e., part 1, where the groups consist of only newcomers, and part 2, where the groups consist of both newcomers and incumbents). Every regression analysis will be filtered on part 1 or part 2 in order to see whether normative differences about contribution have an influence on the group identification in newly formed groups (part 1) and in existing groups with newcomers and incumbents (part 2). The data analysis starts with a simple linear regression for part 1 of the experiment with condition as the independent variable and group identification as the dependent variable. Then, in a second model, the control variables age, gender, political orientation and previous experience with game theory are added. The same process will be repeated for part 2 of the experiment. Finally, additional multiple linear regression analyses will be performed with a different independent variable in order to see whether a different measurement of normative differences will have an influence on the data analysis. The independent variable will now be group-level disagreement and the dependent variable will still be group identification. These multiple linear regressions will be performed for both part 1 and part 2 of the experiment. After analysing the results, it will be clear whether the hypothesis will or will not be supported.

Table 1. Descriptive statistics

	<b>Total</b>			<b>Part 1</b>			<b>Part 2</b>		
		<i>(N = 384)</i>			<i>(N = 192)</i>			<i>(N = 192)</i>	
	<b>Range</b>	<b>Mean</b>	<b>Sd.</b>	<b>Range</b>	<b>Mean</b>	<b>Sd.</b>	<b>Range</b>	<b>Mean</b>	<b>Sd.</b>
Group identification	1/7	3.736	1.674	1/7	3.769	1.554	1/7	3.683	1.789
Condition	0/1	.500	-	0/1	.500	-	0/1	.500	-
Group-level disagreement	0/23	6.178	4.147	0/23	6.563	4.536	0/13	5.773	3.688
<i>Control variables</i>									
Age	18/68	24.083	6.454	18/68	24.083	6.462	18/68	24.083	6.462
Gender	0/1	.662	-	0/1	.662	-	0/1	.662	-
Political orientation	1/9	4.109	2.068	1/9	4.109	2.070	1/9	4.109	2.070
Game theory	0/1	.307	-	0/1	.307	-	0/1	.307	-

## Results

### Regression analyses with condition and group identification for part 1

In order to see whether there is a negative influence of normative differences between group members about how much one should contribute to the public good on group identification, simple linear regression analyses and multiple linear regression analyses will be performed. The condition will be the independent variable (i.e., the normative differences) and group identification will be the dependent variable. First, a simple linear regression analysis will be performed for part 1 of the experiment. This means that the group members in the first condition have normative agreement and the group members in the second condition have normative disagreement. It appears that normative differences between group members do not have an effect on the feelings of group identification in part 1 of the experiment ( $b=.080$ ,  $t(191)=.355$ ,  $p=.723$ ), as shown in Table 2 Model 1 Part 1.

Second, a multiple linear regression analysis will be performed for part 1 of the experiment with several control variables, namely age, gender, political orientation and previous experience with game theory. This analysis will be done to see whether the control variables will result in another effect of normative differences about contribution on group identification. It appears that after controlling for age, gender, political orientation and previous experience with game theory, normative differences between group member still do not have a significant effect on the feelings of group identification in part 1 of the experiment ( $b=.071$ ,  $t(191)=.317$ ,  $p=.752$ ), as shown in Table 2 Model 2 Part 1. This means that for part 1 of the experiment (where the

participants are in the first group and therefore are all newcomers) the hypothesis that there is a negative influence of normative differences about contribution between group members on group identification is not supported. There is no significant effect of normative differences on group identification in part 1 of the experiment.

### **Regression analyses with condition and group identification for part 2**

There will also be regression analyses performed for part 2 of the experiment. Again, the condition will be the independent variable and group identification will be the dependent variable. In part 2 the groups change, which means that the groups now consist of newcomers and incumbents. The group members in the first condition have normative disagreement and the group members in the second condition have normative agreement. First, a simple linear regression analysis will be performed. It appears that there is a positive significant relationship between normative differences and the feeling of group identification ( $b=.946$ ,  $t(191)=3.790$ ,  $p<.001$ ), as shown in Table 2 Model 1 Part 2. The mean group identification score in the condition with normative disagreement is 3.21 and the mean group identification score in the condition without normative disagreement is 4.16. The pooled standard deviation is 1.79 and this gives a Cohen's  $d$  of .531  $((4.16-3.21)/1.79)$ , which indicates a medium-large effect size. This shows that there is higher group identification in the second condition where there is normative agreement among group members in comparison to the first condition where there is normative disagreement among group members. This means that the hypothesis that there is a negative influence of normative differences about contribution between group members on group identification is supported in part 2 (where the groups consist of newcomers and incumbents).

Second, a multiple linear regression analysis will be performed for part 2 of the experiment. This analysis will be done to see whether there will still be an effect after controlling for other variables. After controlling for age, gender, political orientation and previous experience with game theory, there is still a positive significant relationship between normative differences and the feeling of group identification ( $b=.939$ ,  $t=3.748$ ,  $p<.001$ ), as shown in Table 2 Model 2 Part 2. There is still a higher group identification in the group with normative agreement between group members in comparison to the group with normative disagreement between group members after adding the control variables. This means that the control variables do not have an effect on the strong positive relationship. The control variables are not significant on themselves. This means that the hypothesis that there is a negative influence of normative

differences about contribution between group members on group identification is supported for part 2 of the experiment, also after adding the control variables.

In sum, the hypothesis is supported for part 2 of the experiment, but not for part 1. This means that there is only a negative influence of normative differences about contribution between group members on group identification when the difference occurs between newcomers and incumbents, and not when it occurs between members that are all new in the group. There is no influence found when the groups are formed for the first time.

Table 2. Simple linear regression and multiple linear regression analyses for group identification

	<b>Model 1</b>		<b>Model 2</b>	
	<i>(N = 192)</i>		<i>(N = 192)</i>	
	Part 1	Part 2	Part 1	Part 2
Condition	.080	.946***	.071	.939***
<i>Control variables</i>				
Age	-	-	.029	-.024
Gender	-	-	.130	-.315
Political orientation	-	-	.048	.022
Game theory	-	-	-.224	-.335
Constant	3.729***	.3210***	2.817***	4.017***
R2	.001	.070	.028	.087
F-change	-	-	1.079	3.567

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed

### **Regression analyses with group-level disagreement and group identification**

In the previous analyses, normative disagreement is based on which condition each participant is in. Additional analyses will be done with another variable for normative disagreement, which is the level of disagreement within a group. This will be the independent variable and group identification will be the dependent variable. First, a multiple linear regression analysis will be performed for part 1 of the experiment with the control variables age, gender, political orientation and previous experience with game theory. It appears that there is a negative significant relationship between the level of disagreement between group members and the feeling of group identification ( $b = -.117$ ,  $t(191) = -5.019$ ,  $p < .001$ ), as shown in Table 3 Part 1.



There is a small-medium effect size ( $R^2=.144$ ). This shows that group members have a higher feeling of group identification when there is less disagreement within the group. However, the control variables are not significant. This means that for part 1 of the experiment (where participants are in the first group), the hypothesis that there is a negative influence of normative differences about contribution between group members on group identification is supported when taking a group-level instead of condition-level measurement of normative differences.

The same analysis was done for part 2 of the experiment. There is still a negative significant relationship between the level of disagreement between group members and the feeling of group identification ( $b=-.128$ ,  $t(191)=-3.743$ ,  $p<.001$ ), as shown in Table 3 Part 2. However, in part 2 of the experiment, the effect size is weaker compared to part 1 of the experiment ( $R^2=.087$ ). Again, the control variables are not significant. This means that also for part 2 of the experiment (where the groups consist of newcomers and incumbents) the hypothesis of a negative influence of normative differences about contribution between group members on group identification is supported. In sum, this means that the more normative differences there are, the less feeling of group identification there is among group members. This effect applies for both parts. It seems that when a different kind of measurement is taken for normative differences, the hypothesis can also be supported for the first part when the variables of condition and the level of disagreement are being compared to each other.

Table 3. Multiple linear regression analyses for group identification

	<b>Part 1</b> ( <i>N</i> = 192)	<b>Part 2</b> ( <i>N</i> = 192)
Group-level disagreement	-.117***	-.128***
<i>Control variables</i>		
Age	.029	-.022
Gender	.140	-.244
Political orientation	.074	.009
Game theory	-.256	-.270
Constant	3.535***	5.164***
R2	.144	.087

Note: \*  $p<.05$ , \*\*  $p<.01$ , \*\*\*  $p<.001$ , two-tailed.

## Conclusion and discussion

A powerful motive that influences choice behaviour, and which has an impact on social dilemmas, is group identification. Previous research found that there is a positive effect of group identification on developing and accepting group norms. However, there was hardly any research done whether there is an effect of group norms on the feeling of group identification. This thesis has focused on this effect using the following research question: *To what extent do normative differences about how much to contribute to the public good influence the group identification of group members?* The social identity theory and self-categorisation theory are influential theories which focus on the relationship between normative views of group members and the feeling of group identification. According to these theories, the agreement between group members on normative views is an important factor for group identification. When there is disagreement on normative views among group members, there is less sense of group identification and there is a higher chance of conflict within the group. Based on these two theories, it was expected that there is a negative influence of normative differences about contribution between group members on group identification.

Several regression analyses were performed to study whether there is an effect of normative differences about contribution on group identification. According to this study, there is only a negative influence found in part 2 of the experiment when normative differences about contributions are measured by the condition. This means that there is a negative effect of normative differences about contribution between group members on the feeling of group identification when the groups consist of newcomers and incumbents. The less normative differences within a group, the higher the feeling of group identification. In the first groups where the participants played the public good game with only newcomers, there was no effect. However, there is a negative influence in both parts of the experiment when the normative differences about contributions are measured by the level of group disagreement. This means that the normative differences about contribution have different results for different measurements. The results for part 2 of the experiment (i.e., when the groups consist of newcomers and incumbents) are robust since both measurements of normative differences about contribution are significant. The results for part 1 of the experiment (i.e., when the groups consist of only newcomers) are less robust since both measurements of normative differences about contribution lead to different results. So, for most part of the data analysis, the agreement between group members on normative views is indeed an important factor for the feeling of group identification as both theories predicted.

The findings of these thesis indicate that there is not only an effect of group identification on normative views between group members, as previous research has found (Livingstone et al., 2011; Packer, 2008), but also the other way around as the self-categorisation theory states. Group norms are both a cause and consequence of group identification. This makes it more likely that normative differences in real life will also have an influence on the feeling of group identification. One of the examples used in the introduction, was whether someone does or does not support the COVID-19 regulations, like wearing a face mask to protect not only yourself but also others. Support for these regulations can indeed be mixed, for example within countries, but also within smaller-scale groups like neighbourhoods and friend groups. The results suggest that such normative differences harm feelings of group identification in this case, which other studies has shown impedes cooperation and can lead to conflict (Nikiforakis et al., 2012; Winter et al., 2012).

It is possible to apply these results, which are based on an experiment with students, to real life. Previous research has found that the results of experimental research with student samples can be generalised to some extent to the general population (Druckman & Kam, 2011). Experiments can be useful within the field of sociology. However, most sociologists do not use experiments and stick to methods like surveys. One of the benefits of using a survey is that there is a higher external validity compared to experimental research (Morling et al., 2018). Besides that, it is possible to reach more participants by spreading a survey compared to carrying out an experiment. Also, all participants need to be at the same place at the same time when an experiment takes place, while participants can choose whenever and wherever they fill in a survey. Nevertheless, experimental research has its strengths too (Falk & Heckman, 2009). The researcher has complete control over the situation, which is not the case when participants have to self-report their behaviour. Besides that, it is possible to determine causal relationships. This is why lab experiments and other methods, like surveys, can complement each other. Lab experiments should be part of sociological methods that are being used for research.

This thesis focused on the normative differences between group members about how much one should contribute to the public good. Will the effect of normative differences on group identification stay the same when normative differences are about something else than contributing to the public good? Future research could study this effect with other subjects about normative differences, like being politically left or right. Besides that, the participants played the public good game anonymously in this experiment. It could be possible that the

effect of normative differences about contributions on group identification will even be stronger when the participants already know each other. Future research could study whether this is the case by including groups where group identification is already more salient. For instance, groups of friends or neighbourhoods can be used as the sample. Additionally, the participants were not able to verbally communicate with each other during the public good game. Normative differences could be solved more soon when participants are able to communicate with each other. It is recommended that future research studies whether this is indeed the case. Lastly, punishment for the group members is part of the public good game and was also used in this experiment. However, discussing the role of punishment went beyond the scope of this thesis. It might have had nevertheless an impact on the effect of normative differences between group members on the feeling of group identification since punishment is a way group members can show disapproval to each other. Future research could study the role of punishment on the effect of normative differences about contribution among group members on the feeling of group identification.

There has not been much research done when it comes to the effect of normative differences about contributions to the public good on the feeling of group identification. This thesis has contributed to the sociological field by finding that there is such a negative effect in a laboratory experiment. The smaller the normative differences about contributions to the public good, the higher the feeling of group identification among group members.

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## - Instructions -

### Welcome

Welcome to this experiment and thank you for coming. Please read the following instructions carefully. These instructions are the same for all participants. The instructions state everything you need to know in order to participate in the experiment. If you have any questions, please raise your hand. One of the experimenters will approach you and answer your question.

The experiment is about group decision making. You can earn money by means of earning points during the experiment. The number of points that you earn depends on your own choices, the choices of other participants in your group, and chance. At the end of the experiment, the total number of points that you earned will be exchanged at a rate of:

**70 points = 1 Euro**

The money you earn will be rounded up to whole euros and paid out in cash at the end of the experiment. There is a minimum payment of 5 euros, and a maximum payment of 23 euros. Other participants will not see how much you have earned. During the experiment you are not allowed to communicate with other participants. Please turn off your mobile phone. You may only use functions on the computer screen that are necessary to carry out the experiment.

First, we introduce the decision situation in which you will interact. You will learn about the procedure of the experiment later. **A decision situation consists of 2 stages: a contribution stage followed by a review stage.** In the contribution stage, you decide how many points you contribute to a group account. In the review stage, you learn how much the other members of your group contributed to the group account. We will first explain the contribution stage.

### Contribution stage

You are a member of a group of **3 participants**. You and the two other members of your group are **each given 20 points**. Each of you can **choose how many points to keep for yourself in a private account and how many points to contribute to a group account**.

#### Your points from the private account

**You will earn 1 point for each point you keep in your private account.**

For example, if you keep all 20 points into your private account (and therefore do not contribute to the group account), your income will amount to exactly 20 points out of your private account. If you keep 6 points into your private account, your income from this account will be 6 points.

**No one except you earns something from your private account.**

#### Your income from the group account

**Each group member will profit from points you contribute to the group account.** You will also profit from the other group members' contributions. Just like in real life, some persons profit more from contributions to the group account than others.

**For each point** contributed to the group account (by you and the other members): **1 member earns 0.75 points and 2 members earn 0.50 points each.**

**Whether you are a member with a return of 0.50 or 0.75 from the group account will be randomly determined at the start of the experiment, and will stay the same for the entire duration of the experiment.**

For example, if the 3 members combined contribute in **total 40 points to the group account,**

1 member receives: **0.75 times 40 = 30 points** from the group account,  
 2 members each receive: **0.50 times 40 = 20 points** from the group account.

**Your total income from the private account and group account**

Each member can choose any number of points to contribute to the group account, from 0 to 20 points. Every point a member does not contribute to the group account will automatically remain in his/her private account. **Each member’s total income from the contribution stage is the combined income from his/her private account and the group account.**

Table 1 gives an arbitrary example of how each member’s income from the private account, group account, and the total income are calculated when the total contributions to the group account are 40 (15+15+10).

*Table 1 – example*

Member	Return	Contribution	Private account income	Group account income	Total income
A	0.75	15	5	30	35
B	0.50	15	5	20	25
C	0.50	10	10	20	30

**Review stage**

Each contribution stage is followed by a review stage. In the review stage, everyone in the group will see how much each of the other group members contributed to the group account as well as their income from the contribution stage. Then, all group members have a chance to **decrease** the income of each other group member. You can decide if you want to spend points to decrease the income of the other two group members, for example because you disagree with how much they contributed or earned.

If you want to decrease another member’s income you do that by assigning deduction points. **Every deduction point assigned to another group member reduces his/her income by 3 points, and your own income by 1 point.** Similarly, every deduction point that one of your group members assigns to you decreases your income by 3 points and costs the group member 1 point. Note that this might imply that you or other participants lose income in a particular

round. If you do not want to decrease the income of a group member, you must assign him/her 0 deduction points. Every participant can assign up to a maximum of 10 deduction points to each group member, regardless of the income from the contribution stage. For example, if you assign 2 deduction points to a group member this costs you 2 points and reduces the group member's income by 6 points (2 times 3). Another example: if one of your group members assigns 3 deduction points to you, this reduces the group member's income by 3 points and your income by 9 points (3 times 3).

After everyone has made a decision, you will see how many deduction points were assigned to you by the other group members and also what your total income for the round is. You will not see which individual participant assigned deduction points to you, you can only see the total number of deduction points assigned to you and how that affected your income. Similarly, if you assigned deduction points to one or more of your group members, they will not see that you are the one who assigned the points.

## **Overview of the Session**

The experiment consists of **2 parts**, and in total lasts about **1 hour and 45 minutes**.

**In the 1st part you will play 10 rounds of the decision situation (10 contribution and 10 review stages).**

**Before you play these 10 rounds, we will first ask you to answer some questions about the decision situation.** These questions concern:

- your understanding of the decision situation,
- your view on the appropriate amount that each group member should contribute to the group account,
- your guess of what the other participants think are appropriate contributions.

Some questions appear multiple times throughout the experiment. You do not have to be consistent with your answers to these questions. Your answers may or may not have changed during the experiment. Similarly, what you view as appropriate contributions may or may not be the same as what the other participants think are appropriate contributions.

After this 1st part in which you answer questions about the decision situation and play 10 rounds of it, **you will receive new instructions on your computer screen for the 2nd part of the experiment.** The 2nd part of the experiment is of similar length to the 1st part.

Because you play together with other persons, you will sometimes have to wait until the other persons have made their decision. These waiting times are incorporated in the total expected duration of 1 hour and 45 minutes for the experiment.

## **Next part of the experiment**

You will now play **10** rounds of the decision situation yourself.

Each round consists of a contribution stage followed by a review stage. In the contribution stage you decide how much you contribute to the group account. In the review stage you learn the contributions of your group members and can assign them deduction points.

Every group receives a colour.

4 groups received colour **blue** and 4 groups received colour **orange**. You and your two group members are in a **blue group**.

In your group, the returns from the group account are randomly assigned as follows:

**You: 0.50**

**Member 1: 0.50**

**Member 2: 0.75**

**Your return will remain the same for the entire experiment.**

**You will play with the same two group members all 10 rounds.**

Once you are ready, please click 'Continue'.

### **2nd part of the experiment (incumbent instructions)**

The 2nd part of the experiment starts now. You will play another set of **10** rounds of the decision situation.

Remember that there are **4** groups in the room with colour **blue** and **4** groups in the room with colour **orange**.

So far you have been playing in a group with colour **blue**.

**One group member will now leave your group, and be replaced by a new member from a group with colour orange.**

Group member 1 remains the same. **The new group member receives number 2.** The returns from the group account are as follows:

**You: 0.50**

**Member 1: 0.75**

**Member 2: 0.50**

**You will play with this group all next 10 rounds.**

Before we continue to the 10 rounds of the decision situation, we will ask you:

One question about the new member's view on the appropriate amount that each member in a group should contribute to the group account.

After the 10 rounds of the decision situation, we ask you to complete 4 final tasks and to fill in a questionnaire. Once you are ready, please click 'Continue'.

### **2nd part of the experiment**

The 2nd part of the experiment starts now. You will play another set of **10** rounds of the

decision situation.

Remember that there are **4** groups in the room with colour **blue** and **4** groups in the room with colour **orange**.

So far you have been playing in a group with colour **blue**.

**You will now enter a group with colour orange, and therefore play with two new group members.**

These two group members have played the past 10 rounds together, but you have not interacted with them yet.

The returns from the group account are as follows:

**You: 0.50**

**Member 1: 0.50**

**Member 2: 0.75**

**You will play with this group all next 10 rounds.**

Before we continue to the 10 rounds of the decision situation, we will ask you:

One question about the view of your two new members on the appropriate amount that each member in a group should contribute to the group account.

After the 10 rounds of the decision situation, we ask you to complete 4 final tasks and to fill in a questionnaire. Once you are ready, please click 'Continue'.