THE VOLUNTEER'S DILEMMA: The influence of observability and dependence on cooperative behaviour

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The influence of observability and dependence on cooperative behaviour

Master thesis Social Organisational Psychology
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Abstract

Objectives. In this study, the impact of observability and dependence on one's willingness to cooperate has been investigated. Therefore, a volunteer's dilemma was set up: a dilemma in which only one person from a group needs to make a sacrifice in order to create a benefit for the collective.

Method. In total, 147 participants (aged 19-66) were divided over four different conditions. Each participant was asked to volunteer or not, in order to complete the group task. All participants belonged to a subgroup within a larger group. Subsequently, the decisions that were made by participants belonging to the dependence condition, also had consequences for the larger group. Participants in the observability condition, were being observed while making this volunteering decision. Participants in the Obs & Dep condition were both being observed and their decisions also had consequences for the larger group. Finally, a control condition was set up in which participants were neither being observed, nor dependent.

Results. Participants belonging to the dependence condition did not volunteer significantly more compared to the non-dependence conditions. This was not in line with the hypothesis. Participants belonging to the observability condition, were also expected to volunteer significantly more. Against expectations, participants belonging to the observability condition, did not volunteer significantly more than was found in the non-observability conditions. Finally, a hypothesis was set up stating that most volunteering was expected to be found in the Obs & Dep condition. Results showed two unexpected significant results: participants in the control condition and the observability condition, volunteered significantly more compared to the Obs & Dep condition.

Conclusions. None of the hypotheses that were set up beforehand, were confirmed. The conditions participants belonged to, did not cause the expected effects. It is possible that the sample that was used, already consisted of cooperative participants themselves. This is why the conditions people belonged to, could not make a significant difference. Further research is necessary to investigate whether our variables would make a difference when another sample is used and to investigate what the influence of an online setting exactly is.

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Introduction

Everyone can relate to a situation in which one is in a group setting and a decision needs to be made, or a task needs to be accomplished, in the interest of the collective good. In these situations, often only one individual needs to volunteer in order to create a benefit for the whole group. This is called a volunteer's dilemma (Diekmann, 1985). A volunteer's dilemma is a specific type of a social dilemma. In social dilemma's, decisions based on one's own interest (doing nothing), will for the short term yield in the best results. Yet, if everybody would follow this train of thought the final result would be detrimental. A volunteer's dilemma will always be associated with costs in the form of effort or occasionally in the form of money. For example, a group of people is in the waiting room in the hospital and one individual is talking to someone on the phone very loudly. Everyone would benefit from it if one individual, one volunteer, would tell this person to turn the volume down. But telling this person to turn his volume down, will also bring costs in the form of effort and feeling a sense of discomfort along with it. An individual who volunteers in the interest of the collective good is so called 'cooperating' or showing prosocial behaviour (Krueger, 2018). As mentioned before: in a volunteer's dilemma, only one individual needs to volunteer, or cooperate, in order to succeed in such a scenario. All the other group members can thus do nothing and the task will be fulfilled, or the problem will be solved. So in this example: only one volunteer needs to tell this person to not speak so loudly and everyone would benefit from it.

As soon as multiple individuals volunteer or if no one volunteers, the result will be inefficient for the collective good (Krueger, 2018). In an ideal situation, all group members would know what decisions the others are going to make in order to make the most efficient decisions themselves. But the thing is, people do not know what strategy the other person is going to choose. People will be disappointed as soon as all individuals have chosen not to cooperate, because the problem would still be there. When all people choose to do nothing, their choice will be inefficient, because the problem is still there and it will be considered as a mutual cost (suffering from the noise). In addition to that, a situation in which more than one individual volunteers will be also inefficient, because only one individual would have been necessary to solve the problem. Now more than one individual made costs in the form of effort. Cooperative behaviour can thus also be costly if someone else also chooses to cooperates. But doing nothing can also be costly if everyone would choose to do so. That's what makes this a true dilemma. In our study, we want to investigate situational factors that influence individuals to cooperate and make decisions in the interest of the collective good, instead of in the interest

of themselves only.

Little is known about one's motives in choosing to cooperate in a volunteer's dilemma nor about influential situational factors. For social organisational psychology it is relevant to investigate several situational factors and motives that might influence one's social decisions. Organisations and companies consist of groups of people from all different departments and teams. These are often subgroups that are part of a larger group (the whole organisation). In our study, we will also be experimenting with subgroups within a larger group. In addition to that, we will be experimenting with participants being observed by people from the other subgroup in some conditions. Results from our study would therefore be interesting for organisations and companies in order to get more insights in factors that influence people's volunteering behaviours. One can for instance adjust certain protocols in the workplace, or change the way teams are composed (for example by observing them or not). Previous research on the volunteer's dilemma (Kopányi-Peuker, 2019) was mainly focused on personality traits, group sizes and on the magnitude of the volunteering costs in social dilemma's. In our study we want to investigate whether cooperative behaviour is dependent on, or perhaps influenced by, observability, dependence between subgroups, or a combination of these two.

Dependence

Making decisions in volunteer's dilemmas can have consequences for different kinds of people, or groups. Imagine being an employee in a company, working in a team that consists of multiple people at the financial department. This financial department would be one's subgroup. This subgroup is part of a larger overarching group, namely the whole company. The whole company thus consists of several different subgroups. Decisions that need to be made, or tasks that need to be accomplished, can have consequences for one's subgroup exclusively, or for the group as a whole. The larger group may or may not be dependent on behaviour and choices that are being made by the subgroup. In the aforementioned example, our fictional company has a lot of different departments. These other departments are all subgroups that are part of the larger group. The decisions that are for instance made by the financial subgroup, can have consequences for the group as a whole, but can also exclusively have consequences for another specific subgroup. One subgroup can thus also be dependent on another subgroup.

Studies have shown that people will take into account whether their decision is consequential for the collective or not (Bradley et al., 2018). As mentioned before, decisions do not always have consequences for the larger group. But if a decision is consequential for the larger group (the collective good), previous research has shown that people will then be more

likely to show prosocial behaviour. This prosocial behaviour can be explained by a sense of responsibility that is created because of the larger consequences. People will feel more responsible because their decisions will not only impact themselves, but also others. This will enhance prosocial behaviour. Therefore, participants are likely to act in a more prosocial way. In our study we created a design in which three participants form a subgroup that is part of a larger group consisting of a total of six persons (including the three participants of the subgroup). In two of four conditions, the decisions that are being made by the 'three-person group', will have consequences for the larger group (Table 1). The larger group is thus dependent on the three-person group and their overarching superordinate identity is by that emphasized.

Research from Wit and Kerr (2002) has shown that individuals are tend to behave based on their social identity. Meaning that people identify with, and will also behave accordingly to, the social group (or subgroup) they belong to. People belong to all different kinds of social groups. For example, in an organization people belong to the financial department (their subgroup) but they also belong to the bigger group (the whole organization). This is called a dual identity (Gaertner, Dovidio & Bachman, 1996). Both identities are thus salient. In organizational contexts, dual identities are not desirable. Dual identities result in intergroup bias: only behaviours that support one's positive view of their own (sub)group, will be seen and will also be rated more positively. People tend to favour interacting with people from their own group (Gaertner et al., 1996). This is not desirable in an organization, because all employees should feel like one inclusive group in order to work together efficiently and harmoniously.

In our experiment, participants will also be part of two different groups: a subgroup and a superordinate group. When a sacrifice needs to be made, one will be more likely to do this when the sacrifice needs to be made in the interest of their own social group instead of in the interest of a group to which one does not belong (Gaertner et al., 1996). In our experiment, participants do not personally know the people from their subgroup, neither the people from the larger group. Therefore, participants can feel less identified with their group(s), than in other situations in which people from the same group often also personally know each other. This can influence their choices, meaning that they are less motivated to volunteer. According to the Common Ingroup Identity Model (Gaertner et al., 1996), a more inclusive social entity –and thus more identification- can be created by transforming one's cognitive representations of the other groups. Participants do not know each other, but they do have a common target: succeeding the task and by that earning a bonus. By introducing or emphasizing a common factor, one's social identity can be transformed into a more inclusive one. In this case, their

common factor is thus completing the (group) task. In other words, participants from the dependence condition (Table 1), are expected to show behaviour based on their social identity, because of the emphasis on the common target. Participants are expected to experience more identification with the larger group because of this dependency that enlarges a sense of responsibility for the group as a whole. Also, identification with the whole group is more strongly present because of the common target of the two subgroups. Research from Sherif (1956) has also shown that working on a common target or endeavour, will promote prosocial behaviour. It is important however that the common target is relevant (in our experiment earning a bonus in the form of money) and that the task cannot be accomplished without the other. Sherif's research (1956) has also shown that the presence of a common goal can even make two groups that are in state of conflict, cooperate with each other in a harmonious way. When decisions that are being made by the subgroup have consequences for the larger group, all participants will thus feel more like one and the same. Identification is thus expected to be larger in the presence of a common goal. In the conditions in which participants' decisions have consequences on others, participants are thus expected to show more prosocial behaviour because one will be more likely to make a sacrifice when they identify more with the larger group.

Previous research has been done concerning dependence between subgroups, but not much research has been done in an online setting. Nowadays more people than ever work from home and thus need to make professional decisions in an online group setting. Also, not much research has been done concerning the influence of dependence alone and subsequently together with another variable. Therefore, in this experiment we firstly want to investigate whether the larger group being dependent on the subgroup or not, has influence on one's willingness to cooperate or not. When decisions do not have consequences for the larger group, less cooperative behaviour is expected. Based on literature and previous findings, the first hypothesis is thus formulated as (h1): more cooperation is expected when volunteering decisions from the subgroup are consequential for the larger group and the larger group is thus dependent on the subgroup. In other words: participants belonging to the dependence condition are expected to volunteer more than participants in non-dependence conditions.

Observability

When an individual is being observed while making a decision in volunteering for a group, one will experience a sense of social control and one will be aware of their reputation (Ekström, 2012; Dyer & Singh, 1998). Social control is about informal unwritten rules. These

are certain expectations and trust patterns that are used to strengthen desirable behaviour (Dyer & Singh, 1998). Social control is something that is always present, but when people feel observed, it is greatly strengthened. Observability creates awareness of these expectations and patterns and one will therefore be likely to act based on these expectations. In the study of Ekström (2012) it is also found that participants who are being observed, cooperate more often and act in a more prosocial way. Researchers Bradley, Lawrence & Ferguson (2018) have also investigated the impact of observability on prosocial behaviour. They state that people want to maintain a good reputation and that showing prosocial behaviour will support this.

However, researchers (Bradley et al., 2018) claim that the strength of the observability effect is dependent on the identity of the observers. Is the observer a stranger, a group member or is it perhaps just the researcher. People are aware of the fact that being observed by someone from your 'own' group, would enlarge eventual opportunities to receive help and support from them. In our experiment, participants will be observed by people from the larger group to which they also belong. Participants' decisions will subsequently be observed and evaluated by the same subgroup. This should, according to Bradley et al. (2018), result in more prosocial behaviour, because these observers are also part of one's group.

In our study design we will analyse participants, operating in different experimental conditions to investigate whether participants make different decisions when these decisions are consequential for the collective or not. But also, participants will in some conditions (Table 1) be observed by people from the larger group to which they also belong (the collective). In our study design, participants' awareness of their reputation as well as them being aware of the person observing them, is expected to be taken into account when making decisions. Based on previous findings in literature, the second hypothesis (h2) is formulated as: participants are expected to cooperate more when they are being observed by someone from the larger group, than when they are not being observed.

Observability and Dependence

A theory about competitive altruism, mentioned by Bradley et al. (2018), claimed that the effects of observability will be optimal when decisions are consequential for the collective. One will always feel a sense of competition with others. Competitive altruism is about people feeling the need to show off their prosocial behaviour in order to create a good (the best) reputation. When people are then being observed when making decisions that are also consequential for the collective, prosocial behaviour is expected to be shown more frequently. With the combination of observability and dependence, people can show off their prosocial

behaviour in two different ways. The larger group will not only evaluate them on their (prosocial) behaviour after observing them, but the larger group will also profit from it. The larger group will then expectedly evaluate them more positively because they have seen it and they have benefited from it. According to this theory, that claims that people feel the need to show off their prosocial behaviour, participants are thus expected to show the most prosocial behaviour in this condition.

These findings lead to the third hypothesis (h3) that states: "Participants are expected to behave in the most cooperative way in the combination of them being observed and when their decisions have consequences for the larger group". In other words: an interaction effect is expected. Dependence and observability will yield different results in cooperative behaviour, than when one is for example not dependent on one another, but only observed. Participants in the Obs & Dep condition, are expected to show the most prosocial behaviour, because of the combination of them both being observed and the larger group being dependent on them. When participants are not being observed, but their decisions have consequences for the collective, prosocial behaviour is still expected but less than in the Obs & Dep condition.

Table 1

The experimental design

		Dependence *"Is the larger group dependent on the subgroup?"*	
		-	+
Observability *"Are the participants being observed when making a decision?"*	-	Control condition	Dependence condition
	+	Observability condition	Obs & Dep condition

Method

Participants

Participants (N = 147) were mainly students from Leiden University of which 101 were female (68,7%) and 46 were male (31,3%). 18 participants from the original data were excluded for the analyses, because they did not fill in the comprehension questions completely. The average age was 26.27 (SD = 7.54), ranged from 19 to 66. To maximize statistical power, we strived to create a balanced design. Meaning that each condition contained the same number of participants, including the control condition. The control condition and the observability condition both consisted of 37 participants, the dependence condition consisted of 35 participants and the Obs & Dep condition included 38 participants. Requirements for participating were English comprehension and being 18 years or older. Every participant received a compensation pay of €1 or of €2, based on the decisions they made. Participants could also choose to be rewarded with 1 credit plus money from the game.

The experiment

All participants were first told that they belonged to a three-person group, that was also part of a larger group. The larger group consisted of six people in total, in other words: of two different subgroups. In our experiment, participants were asked to correctly enter literature references in APA style. They were told that only one individual (from their 3 person group) needed to do this. We formulated this as 'volunteering'. Participants were told that one can provide all members with a bonus of €1 extra when the task is completed. All group members were individually asked to volunteer or not. Group members who volunteered were presented with the first pages of 5 scientific articles and had to correctly reference these articles in APA style. Examples of how to reference in APA style were given to assist the volunteer. Those who choose not to volunteer were taken to the end of the study immediately.

The experiment was split in four different conditions (Table 1). Different individuals participated in different conditions: a between-subject design was chosen. To correctly analyse our statistical results, a control condition was used. Participants in the control condition were not observed while making the volunteer decision, neither was the larger group dependent on their choice to volunteer or not. In the dependence condition, participants were not observed, but the larger group was dependent on their choices. This means that participants were told that members of this other subgroup will also receive a bonus of €1 if one individual chooses to volunteers in this task. In other words: volunteering to do the task did not only benefit your own

three-person group, but also the other three-person group. Participants assigned to the observability condition, were observed, but the larger group was not be dependent on them. In the Obs & Dep condition, participants were observed and the larger group was also dependent on their choices. Participants that were being observed, were being observed and evaluated by people from the other 3 person group (control condition and dependence condition).

Procedure

Participants were recruited via their Leiden University email account, via our own network and via SONA. SONA is a website that is used by researchers, to recruit participants, data and schedule timeslots. Participants received an email including a link that led them to the experiment. Before the experiment was set up, the ethic commission released permission for our informed consent and our experiment to take place. Every participant got randomly assigned to the different conditions.

For every session, six participants were needed. In total we ran 24 useful sessions, which resulted in a total of 147 participants. The first three participants of each session were labelled as subgroup 1 and played the game. The other three were labelled as subgroup 2 and always observed group 1. Group 2 was never observed (control condition and dependence condition).

All participants first read an introduction that consists of an informed consent and a first explanation about our experiment. Before this decision needed to be made, participants were presented with some comprehension questions to check whether they understood the rules of the task. This questionnaire contains questions like “What happens when none of the group members volunteers to do the task?”. Then, participants were asked to volunteer or not. Like aforementioned, those who choose not to volunteer, were taken to the end of the study immediately. At the end of the experiment, participants were asked to fill in some statements concerning their degree of identification with their group. An example of such statement is “I’m glad to be part of this group”. Participants could answer to what extent they agreed or disagreed based on a seven point scale (7 = strongly agree, 1 = strongly disagree). Finally, after participants filled in their gender and age, they were presented with a debriefing, concerning a word of appreciation for participating, followed by an explanation that told them what the aim of our experiment was.

Instruments

Participants have participated in our study from their own chosen location, via a link that led them to the online experiment instead of to a lab setting. The study was set up online via Otree.

The online setting was chosen as a result of the safety measures required due to the covid-19.

Statistical analyses

All analyses were carried out using IBM SPSS Statistics. Data was first checked on missing values, normality and outliers. A variable was considered normally distributed when there were no outliers detected, or when the outliers that were detected did not have much influence on the data. A score was considered as an outlier when it was more than three standard deviations away from the mean. This research was focused on three different effects. An effect of observability on volunteering, an effect of dependence on volunteering and finally, an effect of the combination of those two has been investigated.

The first hypothesis is formulated as: more cooperation is expected when volunteering decisions from the subgroup are consequential for the larger group (and the larger group is thus dependent on the subgroup). A positive relation is expected: the dependence condition will result in more cooperation than the non-dependence conditions. The dependent variable is a nominal, binary variable: one will volunteer or not. To test this hypothesis, a binary logistic regression was carried out. In this regression, the dependence condition served as a reference point, in order to compare all other conditions to the dependence condition. A significant result indicates a significant difference between two conditions. The direction and the weight of the found β value, will tell more about this difference.

To test the second hypothesis "participants are expected to cooperate more when they are being observed by someone from the larger group" the same procedure as mentioned above was performed. However in this case, the observability condition served as a reference point.

Finally, to test the last possible effect, a logistic regression was carried out. In this logistic regression, the Obs & Dep condition was compared to all other conditions to check for significant differences. A significance level of $< .05$ is used for all analyses. In the up following section, the statistical results will be discussed.

Results

In total, 91 participants (61,9%) decided to volunteer and 56 participants decided not to volunteer. Looking at every condition specifically, the following results were found: in the dependence condition, 22 out of 35 people volunteered. In the observability condition, 26 out of 37 people volunteered. In the Obs & Dep condition, the condition in which participants were both observed and dependent, 16 out of 38 participants volunteered. Finally, in the control condition, 27 out of 37 participants volunteered to complete the APA task.

The first hypothesis (h1) stated: more cooperation is expected when volunteering decisions from the subgroup are consequential for the larger group and the larger group is thus dependent on the subgroup. In other words: participants belonging to the dependence condition are expected to volunteer more than participants in non-dependence conditions. In a binary logistic regression (Table 2) the amount of volunteering in the other conditions was compared to the amount of volunteering in the dependence condition. The dependence condition was set a reference point here. Table 2 shows the results of this analysis. Results show that none of the conditions show a significant difference with the dependence condition (p = .359, p = .505, p = .078). To test the hypothesis specifically, the dependence condition should be compared with the non-dependence conditions only: observability (p = .505) and control (p = .359). Results thus show no significant difference in volunteering between the dependence condition and the non-dependence conditions.

Table 2

The binary logistic regression: all conditions compared to the dependence condition as a reference point (h1)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Conditions			8.959	3	.030	
	Control	.467	.509	.841	1	.359	1.595
	Observability	.334	.502	.443	1	.505	1.397
	Obs & Dep	-.845	.480	3.097	1	.078	.430
	Constant	.526	.350	2.262	1	.133	1.692

a. Variable(s) entered on step 1: Conditions.

To test the second hypothesis (h2): participants are expected to cooperate more when they are being observed by someone from the larger group, than when they are not being observed, the same analysis was carried out, but another reference point was set. In this case, all conditions were compared to the observability condition in order to detect eventual (significant) difference in volunteering between the observability conditions and the non-observability conditions (Table 3). To test this hypothesis specifically, one should thus check for eventual differences between observability and control and between observability and dependence. Both analyses turned out non-significant (p = .797, p = .505). No significant differences were found between the observability condition and the non-observability conditions. Looking further at Table 3, one can see that a significant result was found. A significant difference in volunteering was detected between the observability condition and the Obs & Dep condition (p = .016). Looking at this difference more specifically, one can see a corresponding β value of (β = .308). Indicating a negative relation between the two.

Furthermore, it is worth to mention the significant result that was found in the chi-squared test that was carried out. The chi-squared table (Table 4) shows a significant result in the observability row. Meaning that the amount of volunteering in the observability condition was significantly different from an expected 50/50 distribution. In the observability condition, 26 out of 37 participants volunteered. Results thus show that this is significantly different than expected, based on a 50/50 ratio. The amount of volunteering in the observability condition is thus not significant when it is compared to the other conditions, but compared to a 50/50 ratio, it did turn out significant.

Table 3

The binary logistic regression: all conditions compared to the observability condition as a reference point (h2)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Conditions			8.959	3	.030	
	Control	.133	.516	.066	1	.797	1.142
	Dependence	-.334	.502	.443	1	.505	.716
	Obs & Dep	-1.179	.487	5.854	1	.016	.308
	Constant	.860	.360	5.720	1	.017	2.364

a. Variable(s) entered on step 1: Conditions.

Table 4

Test Statistics of the chi-squared tests

Conditions		Decision to Volunteer
Control	Chi-Square	7.811[a]
	df	1
	Asymp. Sig.	.005
Dependence	Chi-Square	2.314[b]
	df	1
	Asymp. Sig.	.128
Observability	Chi-Square	6.081[a]
	df	1
	Asymp. Sig.	.014
Obs & Dep	Chi-Square	.947[c]
	df	1
	Asymp. Sig.	.330

To test the final hypothesis (h3) that stated: participants are expected to behave in the most cooperative way in the combination of them being observed and when their decisions have consequences for the larger group, a new logistic regression was carried out. This regression compared the Obs & Dep condition (the condition in which participants were both observed and dependent), to all the others. Looking at Table 5, one can see that two out of three conditions turned out to be significant (p = .008, p = .016). The dependence condition compared to the Obs & Dep condition shows a p value of .078. Meaning that in all other conditions, except for the dependence condition, a significant difference was found in the amount of volunteering compared to the Obs & Dep condition. Looking at the corresponding β values, both values are > 1 (β = 3.712, β = 3.250) This indicates positive relations. In other words: participants volunteered significantly more in the control condition and in the observability condition, compared to the Obs & Dep condition. This is not in line with the hypothesis; people were expected to volunteer most in the Obs & Dep condition, compared to the others.

Table 5

The binary logistic regression: all conditions compared to the Obs & Dep condition as a reference point (h3)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Conditions			8.959	3	.030	
	Control	1.312	.495	7.023	1	.008	3.712
	Dependence	.845	.480	3.097	1	.078	2.327
	Observability	1.179	.487	5.854	1	.016	3.250
	Constant	-.318	.329	.939	1	.332	.727

a. Variable(s) entered on step 1: Conditions.

Discussion

In this study, research has been done to investigate the influence of observability and dependence on cooperative behaviour. Beforehand, three different hypotheses were set up concerning the dependence, the observability and the combination of these two variables. Expectations and hypotheses were based on findings from previous literature.

Dependence

The first hypothesis concerns dependence. A positive effect of dependence was expected: participants in the dependence condition were expected to volunteer significantly more than participants belonging to non-dependence conditions. Results did not show a significant difference in volunteering between the dependence condition and the non-dependence conditions. This indicates that, against expectations, participants who were assigned to the dependence condition, did not volunteer significantly more than people who were assigned to the non-dependence condition (observability and control). Based on existing literature, participants were expected to cooperate more when their decisions had consequences for the larger group. They were expected to feel identification with the larger group because of their common target, which in turn would result in more cooperative behaviour. The data we generated did not support this expectation.

The contrary result could have been caused by the ingroup-outgroup mechanism. In our study, participants from the dependence condition and the Obs & Dep condition belonged to a subgroup that was part of a larger group. Figure 1 (Hornsey & Hogg, 2000) illustrates these groups. The decisions that were being made by participants from the aforementioned conditions (AX), had consequences for the other three-person group as well (BX). People from the BX group were thus dependent on the AX group. The ingroup-outgroup attitudes that might have arose can be explained as follows: in society, people belong to all different kinds of groups, for instance the province one comes from. But there will always be one overarching group, namely the country to which these provinces belong. Within every overarching group, there are thus all different subgroups. In our study, all participants belonged to a three-person group and a six-person group. The decisions of some three-person groups, also had an influence on other groups. In these cases, the two groups together thus formed one group. Based on literature that, participants were expected to behave on behalf of this one (overarching) group identity. Meaning that participants would feel a sense of responsibility towards the other group and a sense of common ground by reaching the common goal together. Still, people also tend to favour their own subgroup, namely their three-person group. (Sherif, 1958). Favouring one's

own group can be manifested implicitly by for instance thoughts or actions that implicate a distance with the outgroup, or explicitly by simply asking participants whether they felt connected or not with the other group. By favouring one's own group, a distance from the other three-person group is automatically created. And by that, the ingroup-outgroup mechanism is built in. In our experiment, questions concerning involvement and connection with the larger group were being asked afterwards and results showed that participants indeed did not feel connected to the larger group. Specifically, 68,4% of participants belonging to the dependence condition, answered the questions that affected their group identification with a 3 or lower. The answer scale was based on a seven point scale (7 = strongly agree, 1 = strongly disagree). Meaning that participants (strongly) disagreed on statements such as "'I feel strong ties with this group" or "I identify with this group". In other words, participants were not able to explicitly favour their own group and connect actions to that, but it is still plausible that because of the lack of feeling connected to, and involvement with the other group, participants experienced the other three-person group as an outgroup. This in turn could have resulted in less volunteering than expected, even though choosing not to volunteer also harms one's own group.

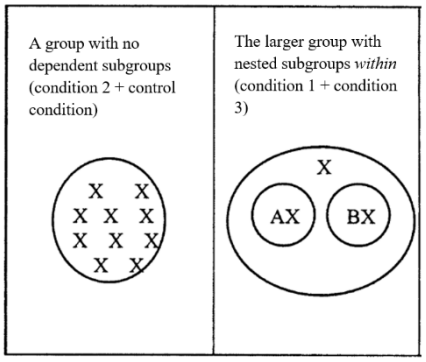

Figure 1. The illustration of the groups (Hornsey & Hogg, 2000)

In addition to that, participants were told their decisions had influence on the other group, while they did not actually know the other group. They could not see them, nor communicate with them. This creates a distance between the two groups. Studies have shown (Allport, 1954) that contact between groups can significantly reduce (negative) attitudes and stereotypes. Contact includes but is not limited to, oral communication, seeing the other directly by vision, or even by seeing pictures of one another. The lack of contact between participants in our study could possibly also have led to more distance and (negative) attitudes between the two groups, which in turn resulted in less volunteering than expected. The percentage of

volunteering was quite high in the dependence condition (62,9%), but the results did not turn out to be significant. The hypothesis was focused on a high expectation of volunteering in the conditions, compared to the non-dependence condition. Even though the frequencies of volunteering was quite high, the hypothesis was not supported and the results turned out differently. In conclusion, one can state that participants were already showing cooperative behaviour themselves and the dependence condition did not make a significant difference.

Observability

For the second hypothesis, concerning the observability condition, different results were found. First of all, results showed no significant differences between the observability condition and the non-observability conditions. Meaning that people in non-observability conditions did not volunteer significantly less, than participants belonging to the observability condition. This was contrary to the expectation. Based on literature, a significant difference was expected in the following direction: people from the observability condition were expected to cooperate significantly more than people from non-observability conditions.

In the observability condition, 26 out of 37 participants decided to volunteer (70,3%). Still, results did not turn out significant when compared to the non-observability condition. One can thus conclude that participants were quite cooperative from themselves and that the observability condition they belonged to, did not make a (significant) difference in this case.

This can be explained as follows. Participants were told that they would be observed by the others. However, no camera nor eyes were directly pointed at them. They were thus only told about it when reading the instructions. Participants were not directly aware of the people observing them. The unsignificant found results could have been caused by the lack of a direct observability variable like cameras or eyes. Studies have shown that prosocial behaviour can be stimulated by the so called audience effect (Canigueral & Hamilton, 2019). The audience effect can be explained by changing behavior (namely being more prosocial) as soon as someone is watching you. According to this article, the belief that someone is watching you should be enough to evoke prosocial behavior. However, other studies (Ernest-Jones, Bateson & Nettlehave, 2011) have shown that just the presence of staring eyes on a poster or a photo, can stimulate prosocial behavior significantly. Researchers explain this by a built-in system that all humans have, that serves as a sort of detecting tool for eventual danger. In social situations, this system is scanning other people's facial expressions. Interesting about this system, is that the scanning tool is not voluntary based, meaning that people cannot control this system which

in turn means that it is possible to trick people. In this example, people can thus be tricked into thinking someone is watching them, while in reality it is only the eyes in a photo staring at them. As demonstrated in the experiment from Ernest-Jones et al. (2011) the presence of human eyes, triggers people to show more prosocial behavior. In that study it is also about the belief of being observed (as in our study), but the difference is that there is a direct traceable reason for the strong belief, namely the staring eyes on the poster. In our study it is possible that because of the lack of a direct observability variable, like a camera or a photo with staring eyes, participants were not stimulated enough in the observability condition to volunteer significantly more.

However, a significant difference in the observability condition was found in the chi-square analysis. This significant result indicates that participants in the observability condition volunteered significantly more than expected on a 50/50 ratio. Although this is not in line with the hypothesis, since it is not compared to the non-observability conditions, it still is interesting to mention: participants volunteer significantly more in the observability condition when it is compared to a 50/50 ratio, but participants do not volunteer significantly more when it is compared to the non-observability conditions. This means that –as mentioned before- the sample that was used, consisted of cooperative participants, which is one of the reasons why results did not turn out significant when compared to the other conditions. The cooperative sample can also be seen in the control condition in which 27 out of 37 participants (73,0%) volunteered, without having stimulations like observability or dependence that should have caused more cooperative behaviour. In the observability condition, results showed that participants were significant more cooperative, when compared to a 50/50 ratio. This study has thus shown that the variable that is set as the comparison, is crucial. Further research is needed to establish the precise reasons for these differing results.

Observability & Dependence

The third hypothesis stated "Participants are expected to behave in a more cooperative way in the combination of them being observed and when their decisions have consequences for the larger group". A significant difference was expected between the Obs & Dep condition and the other conditions. Results showed significant differences between the Obs & Dep condition and the control and the observability condition. However, these differences were not in the expected direction. The corresponding β value indicates a positive difference. Meaning that in the control condition and in the observability condition, participants volunteered significantly more than in the Obs & Dep condition. No significant difference was found

between the Obs & Dep condition and the dependence condition. Meaning that people from the dependence condition did not volunteer significantly more or significantly less than participants who belonged to the Obs & Dep condition. Based on literature (Bradley et al., 2018) the most volunteering was expected in the Obs & Dep condition, due to the competitive altruism theory. This theory claims that optimal effects of observability on cooperative behaviour, will occur when decisions have consequences for the collective.

An opposite effect was found. This effect can be explained by an effect of performance, that brings insecurities and pressure along with it. It is possible that participants were afraid of failing the APA task and/or felt too much pressure coming along with that. Pressure (Baumeister, 1984) can be defined by any variable that emphasises the importance of performing well. In our study these variables are the observability and the dependence. Having all eyes on you emphasizes the importance of performing well. In addition to that, making decisions that also have an impact on the other group will emphasize the importance of doing well and choosing wisely. It is possible that participants got insecure and were too much aware of the possible reputational damage: they had a lot to lose. Baumeister (1984) refers to 'choking under pressure', meaning that people perform less (choke) when being under pressure. Being observed and at the same time making decisions that have consequences for the collective, brings a lot of pressure along with it. This pressure will in turn lead to more insecurities and thoughts telling them that they do not have the capacities to succeed at the task. It is plausible that participants were influenced by both variables and felt too much pressure, which in turn led to worse performances, namely significantly less cooperative behaviour compared to the other two conditions.

Summarizing our results, it has been shown that neither observability nor dependence have significant influence on cooperative behaviour: participants assigned to the observability condition or the dependence condition did not volunteer significantly more than others. In the present study, it is likely that participants who joined the study were already cooperative themselves, since the conditions did not make a significant difference. Also, against expectations, the results on the third hypothesis have shown that participants from the control condition and the observability condition volunteered significantly more than participants from the Obs & Dep condition.

Limitations and suggestions for future research

Our study is limited to an online setting. This is a new field of research which is relatively unexplored. Choosing for an online setting, means that our conclusions also have to

be limited to online settings. The online design of our study caused a form of distance between participants which in turn possibly resulted in less volunteering in the observability and the dependence condition. An online setting may not create the feeling that one is actually observed, since people cannot see each other, nor are they psychically present in the room. Besides, seeing people from your group in real life, instead of doing the task online without seeing each other and thus without being aware of each other, could also have created a stronger ingroup identity. A stronger group identity would in turn expectedly have resulted in more cooperative behaviour. In addition to that, the formulation of our instructions of the task and situation could possibly have emphasised 'the other group' too much. This could possibly have led to an ingroup-outgroup mechanism which resulted in less volunteering. This is considered as another limitation of our study. Finally, the significant difference found in the observability condition compared to the 50/50 ratio was remarkable. Results cannot tell where this difference comes from and why there was no significant difference found when compared to the non-observability conditions.

Our results indicate that the variables did not cause the expected effects in this online setting. For future research it is thus recommended to find out what the effect of an online setting exactly is and how big the influence of the conditions on volunteering is. In addition to that, it is recommended to investigate if the presence of staring eyes would make a difference in volunteering, or if just the belief of being observed is sufficient. Also, it would be interesting to investigate the extent to which the formulation of 'the other group' caused the ingroup-outgroup attitudes or if something else caused less volunteering in the dependence condition. Furthermore, future research should investigate if the combination of observability and dependence brings too much pressure along with it, or if the significantly less volunteering can be attributed to something else. Finally, this study has shown that all the condition did not cause the significant effect that was expected. It is thus recommended to investigate whether these conditions would make a difference when another sample of participants is used.

Results that were found, are relevant for organisations and teams in which volunteer's dilemmas emerge. In organisations there are a lot of tasks that need to be completed by someone on a voluntary basis. Our research is a first step for organisations deciding to change the current protocol or the way teams are composed. This all in order to achieve the optimal result: efficient volunteering and completing of the tasks.

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