Retaliation in a Dictator Game

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Abstract

There have been few studies conducted into the effect of victimisation in the context of the bystander effect, wherein one person is mistreated while onlookers take no action to help. Previous research indicates that potential impacts may include a feeling of ostracism or an adjustment of perceived social norms. This study explored how participants would react in a dictator game wherein they are given less money than their peers, in circumstances where the peers do or do not try to help, measured by their retaliation against the perpetrator, their psychological needs evaluation and ratings of fairness and justifiedness. No significant differences were found between the two conditions. However, as some research previously suggested, there are differences in coping strategies and responses to mistreatment between individuals. This study found that retaliators also had poorer psychological needs scores for control and self-esteem, rating the perpetrators behaviour as unjustified whilst their own vengeful retaliation was, according to them, justified. Future avenues for research are explored.

Introduction

The bystander effect is a phenomenon wherein a victimised individual is not helped by others (bystanders) despite these others having the ability to intervene. It has been studied in many forms, in both emergency and non-emergency (Fischer et al., 2011), as well as financial situations (Panchanathan et al., 2013). Previous research has usually attempted to explore the behaviour and psychological response of bystanders under various circumstances; yet little has been done to investigate the responses of the actual victim of the bystander effect.

One way to interpret how the victim may feel is as being ostracised from their peers. Being unsupported by those around oneself may lead to feelings of being excluded from the social group that one deemed oneself to be a part of. In one short experiment, it was found that social exclusion threatened an individuals' basic psychological needs, including: belonging, self-esteem, control and meaningful existence (Williams & Nida, 2011). In a bystander effect case, if the victim had expected the bystanders to intervene, then they may perceive that they are excluded from basic fair treatment by others. In this way, the bystanders become assimilated with the perpetrator of the mistreatment in the mind of the victim, and the situation could be likened to the impact of uninterrupted bullying.

It has been shown that bullying can impede on the emotional intelligence of a victim via social distress (Giorgi et al., 2016), which can lead to resentment, irritability, impulsivity and poor self-management. On this basis, it is quite possible that bullying and ostracism can result in a behavioural change in the victim. Longstanding childhood bullying has been

shown to result in greater levels of social anxiety, mediated by victim self-blame (Boulton, 2013). Therefore, peer-victimisation could lead an individual to blame oneself for their mistreatment. Other studies into bullying in schoolchildren have shown that perceived victimisation can lead to characterological self-blame (Graham & Juvonen, 1998; Shelley & Craig, 2010), whereby the individual attributes their mistreatment to an uncontrollable fault in their own character traits. Self-blame from bullying has also been seen in older individuals at the adolescent level (Boulton & Boulton, 2017) and in individuals in the workplace (Felblinger, 2008; Corney, 2008). In one study, witnessing mistreatment towards another individual attenuated the effect of self-blame (Felblinger, 2008), indicating that perhaps being an individual victim in the presence of other non-victimised individuals could moderate the self-blame effect of bullying.

There may be some amount of variation between individuals' coping ability and strategies. Singh and Bussey (2007) found that some individuals have a higher coping efficacy, enabling them to 'disengage' from the victim role in situations where they are victimised. The victim role includes behaviours such as self-blame, seeking social support, and exhibiting either forgiving or aggressive behaviours towards the perpetrator. Therefore, it could be expected that some individuals are better equipped to handle victimisation and not resort to strategies such as self-blame or retaliation to cope. Kristensen and Smith (2003) indicate other possible coping strategies such as self-reliance/problem-solving or distancing, which are perhaps the strategies more successfully pursued by those with high coping efficacy. In turn, it could be suggested that the victim role may be more difficult to avoid in situations where distancing or problem-solving are less of a possibility.

Another possible effect that mistreatment in the presence of bystanders could have on an individual, is for the them to believe that such behaviour was normal or socially acceptable. Moisuc and Brauer (2019) describe bystander intervention as a method of 'social control' to enforce moral social norms. As such, when no intervention is undertaken, moral social norms may be replaced by ones usually deemed immoral. Nesdale et al. (2008) showed that social norms can impact bullying intentions among children, so it may be the case that there is a relationship between mistreatment behaviours and norms wherein they are socially acceptable. In another study into bullying in schoolchildren, it was found that low levels of perceived norms for defending victims increased pro-bullying bystander behaviour (Troop-Gordon et al., 2019). This suggests that a lack of bystander intervention might create a social norm that mistreatment is acceptable. Thereby, one may expect retaliatory behaviour after victimisation to act unfairly under the social norms which have been created.

Retaliatory behaviour also sometimes occurs under conditions of ostracism, especially in situations where the prospect of 're-inclusion' into the social group from which one was ostracised seems unlikely (Williams & Nida, 2011), as opposed to conditions where

there is an opportunity to redeem oneself. The current research imposes a bystander effect wherein there is no opportunity to 'win back' what was lost once the mistreatment has occurred, so some form of retaliation may be expected.

The study will model the dictator game paradigm, wherein a dictator is supplied with a sum of money which they are appointed to share between themselves and a recipient. The experiment has been manipulated such that there are multiple recipients in the bystander condition, and one recipient (the participant) receives less money than the other recipients. The other recipients do not intervene (elect to redistribute the share) despite having the opportunity to do so, thus emulating the bystander effect, in which there is deliberate mistreatment that goes uninterrupted. We suggest that this may create a social norm of unfair behaviour and incite a sense of ostracism and victimisation in the mistreated participant.

The bystander effect has already been manipulated within the context of a dictator game by other researchers (Panchanathan et al., 2013), except they used multiple dictators instead of multiple recipients. It is important within the context of this study that the victim of the mistreatment resides in the same group and social status as the bystanders that did not intervene given the chance. This may be more likely to incite a feeling of exclusion and betrayal by the victim of the mistreatment, and more closely emulate bystander situations seen in real life (Fischer et al., 2011). Furthermore, our goal to study the reactions of the victim causes us to control for the social level of the bystanders in respect to the victim themselves.

The potential impact of this research would be to contribute to our understanding of how the bystander effect operates, as well as victim psychology. If the findings are significant, it could also assist in creating policy against hate and bullying due to a greater insight into its effects, as well as aid in the development of new strategies or interventions to combat and mitigate mistreatment.

Hypotheses

Psychological Needs

$H1_a$: There will be more negative psychological consequences in the form of low psychological needs scores when other bystanders do not intervene than when they do.

> Bystander intervention should help to alleviate any feeling of ostracism caused by the mistreatment.

$H1_b$: There will be fewer negative psychological consequences in the form of low psychological needs scores when there are no bystanders than when there are.

The presence of bystanders in general should amplify a feeling of victimisation caused by unfair treatment if there are other fairly-treated recipients present.

H1$_c$: There will be lower psychological needs scores as a result of unfair treatment, in the form of being dealt less coins than the other players, than control.

We assume that unequal treatment, at least, will cause psychological distress to some extent. This is a control hypothesis.

Dictator Evaluation and Retaliation Behaviour

H2$_a$: There will be greater retaliation when there are bystanders than when there are no bystanders.

The amplified effect of victimisation due to bystander presence should increase the urge to retaliate against the perpetrator.

H2$_b$: There will be greater retaliation when bystanders intervene than when they do not intervene.

Mediated by an increased belief in unjustifiedness of the mistreatment when bystanders intervene in solidarity with the victim against the perpetrator, the participant may have a greater urge to retaliate against the dictator as a form of punishment.

H2$_c$: There will be greater retaliation in unequal conditions than equal control conditions.

We assume that unequal treatment in general will lead to greater levels of retaliation. This is a control hypothesis.

H2$_d$: Participants in the non-intervention bystander condition will rate the game as more justified than participants in the intervention condition.

A lack of intervention by bystanders given the opportunity may create a norm of mistreatment, causing participants to rate mistreatment behaviour as more justified.

H2$_e$: There will be no difference between ratings of unfairness between the intervention and non-intervention conditions.

The perception of fairness should be more of an objective judgement than justifiedness, related to whether or not the participant was treated unequally. The difference between ratings of justifiedness and fairness enable us to detect if perceived norms have changed, because ‘normal’ unfair treatment would be seen as justified but not necessarily fair.

$H2_f$: There will be an interaction between bystander presence and distribution equality for justifiedness, such that the presence of bystanders makes unequal behaviour seem less justified to participants.

Being singled out amongst the other recipients for unfair treatment rather than against no other recipients should amplify the perception of unjustified behaviour.

$H2_g$: There will be an interaction between bystander presence and distribution equality for fairness, such that the presence of bystanders makes unequal behaviour seem more unfair to participants.

As above, being treated uniquely unfairly should increase perceptions of unfairness.

Retaliators in the unequal conditions

Given it is not expected that all players will retaliate or respond to the effect of mistreatment, since some subjects may respond with different coping mechanisms (Singh & Bussey, 2007), we expect there will be some unique differences between those who retaliate and those who do not (in the unequal distribution conditions only).

$H3_a$: Participants who retaliate will rate the experiment game as less justified than those who do not retaliate.

Retaliators should perceive a greater wrongdoing in the mistreatment, and therefore rate the game as less justified.

$H3_b$: There will be no difference between scores of fairness between those who retaliate and those who do not retaliate.

The judgement of unfairness should be objective, so there should be no difference between retaliators and non-retaliators.

$H3_c$: There will be no difference between ratings of justifiedness in the follow-up game between participants who retaliate and participants who do not retaliate.

Participants should rate their own behaviour as justified regardless of whether or not they chose to retaliate, because their behaviour is a representation of their perceived norm.

$H3_d$: Participants who retaliate will rate their behaviour in the follow-up game as less fair than those who do not retaliate.

As the judgement of fairness should be objective, we expect participants to rate their own behaviour as unfair if they so choose to distribute the coins unequally.

$H3_e$: Participants who retaliate will have lower psychological needs scores than participants who do not retaliate.

> We expect that retaliators will be participants who were significantly affected by victimisation, which in turn leads them to behave as such. This should, therefore, also characterise itself in their psychological state through their psychological needs score.

Methods

Design

The experiment will take place online at any computer from which the participant chooses to undertake the study. It will be requested that the participant does the experiment entirely alone and does not share information to other potential participants about the procedure.

This study will use a 2x2+1 between subjects design: 2 (recipient number 1 vs. 3) x 2 (distribution: equal vs. unequal) + 1 (3 recipients, unequal distribution with bystander intervention).

There will be approximately 35 participants in each condition, sampled from a mixture of undergraduates at Leiden University, in return for course credits, and participants recruited online at prolific.co, in return for a small participation reward. Participants will be randomly allocated to each condition. The sample will be split equally between male and female, and the age range will be between 18 and 64.

Procedure

1. Pre-measure

This is the participant's opportunity to 'get to know' the other players, to help create the illusion that they are real. The participant will fill in a 24-item Brief Hexaco Inventory (BHI) personality test (De Vries, 2013) to ascertain their 'Big 5' personality type. The other players in the game will be appointed a personality type at random, with scores for each dimension randomised to at least a score of 10/20, and all players will be given a letter W, X, Y or Z to stand for their name in the experiment. It will be explained that names are not revealed in the interests of anonymity. Using letters instead of names will also reduce the confounding impact of any preconceived biases towards any nickname or name that would be chosen. The participant is always allocated as Player Y. After an interval of around half a minute to 'wait for the other players to finish their questionnaires', the personality types will be shared

to the participant with their corresponding letter-name. Participants will be given 3 minutes to assess the personality types of the other players.

2. The games

a. Pre-game 1. The participant is allocated as the dictator and given 20 chips to share between themselves and 3 recipients. They are notified that the recipients are given the opportunity to redistribute the money between the recipients after the donation has been made (if they donated any money). After the game, the participant is given a questionnaire asking them to rate the game on fairness and justified-ness on a 5-point Likert scale and reasons for such amount. Subsequently, there is a 12-item questionnaire with 5-point scales (Gonsalkorale & Williams, 2007) to evaluate the four basic needs (belonging, self-esteem, control and meaningful existence). There is a screen following the questionnaire informing them that the other players are finishing their questionnaire before the next game.

b. *Pre-game 2*. The participant is appointed as the recipient in a 1-recipient dictator game against a random other player. They are notified that the dictator has 20 chips to share. The dictator shares with them 10 chips, as a 'fair' distribution. The participant is given a questionnaire afterwards asking them to rate the game on fairness and justified-ness on a likert scale (1-5) and interpret reasons for such amount. Next, the participant answers the 12-item basic needs questionnaire. There is a screen following the questionnaire informing them that the other participants are finishing their questionnaires before the next game.

The order of pre-game 1 and pre-game 2 is counterbalanced equally within each condition in order to eliminate order effects.

c. *The experiment game*. The participant is always a recipient, and always notified that the dictator has 20 chips to share, as well as the amount donated to the other recipients. The dictator is a random, different player to the one in pre-game 2. In the 3-recipient conditions, the participant is given the option to elect to redistribute the donated money between the recipients. In the bystander effect condition, they are told that the other recipients chose not to redistribute the money, and as such no redistribution occurs. In the bystander intervention condition, they are told that the other participants voted to redistribute the money, and 4 chips each (from 12 donated chips) are shared between the recipients.

In the *equal, 1-recipient* condition (N=37), the dictator gives the participant 10 chips. In the *equal, 3-recipients* (N=36) condition, the participant is given 5 chips, and told that the other recipients were also given 5 chips. In the *unequal, 1-recipient* (N=38) condition, the dictator gives the participant no money. In the *unequal, 3-recipients* ***bystander effect*** condition (N=35), the dictator gives the participant no money, but told that the other 2 recipients receive 6 chips each. In the *unequal, 3-recipients* ***bystander intervention*** condition (N=36), the dictator gives the participant no money, but the participant is told that

the other recipients voted to redistribute their donated money, such that each recipient is given 4 chips.

The participant is given a questionnaire afterwards asking them to rate the game on fairness and justified-ness on a likert scale (1-5) and interpret the reasons they were donated such an amount of money. This is followed by a 12-item basic needs questionnaire. There is a screen following the questionnaire informing them that the other participants are finishing their questionnaire before the next game.

d. ***The follow-up game*****.** As in the pre-game, the participant is the dictator to 3 recipients with 20 chips to donate. They are notified that the recipients are given the opportunity to redistribute the money between the recipients after the donation has been made (if they donated any money), however informed that they chose not to redistribute. The participant is then given a questionnaire afterwards asking them to rate the game on fairness and justified-ness on a likert scale (1-5) and give reasons for why they donated such an amount of money. There is a screen following the questionnaire informing them that the games are over, accompanied by a debrief to explain the aims of the experiment.

Analyses

To test the differences between conditions on the four psychological needs, 2x2 (bystanders x distribution) between-subjects ANOVAs with planned comparisons will be run with the four questionnaire components tested as dependent variables to calculate the psychological effects of bystanders and unequal distribution.

A further MANOVA will be run to test the effects of bystanders and distribution equality on ratings of fairness and justifiedness of the actions of the dictator.

To assess the effects of bystander intervention, T-tests will be run to find out if there are any resultant differences between the bystander, unequal distribution group and the bystander, unequal distribution group with intervention. The dependent variables to be analysed in these T-tests are the psychological needs as well as ratings of fairness and justifiedness.

To assess the difference in attitudes between those in the unequal conditions who retaliate versus those who do not retaliate, T-tests will be run to find out if there are differences between ratings of fairness and justifiedness, and a MANOVA to assess the differences in psychological needs scores.

Reliability analyses revealed that all scales within the psychological needs questionnaire were reliable for the experimental game, with Cronbach's Alphas (α) greater than .700 (Belonging, α=.896; Self-esteem, α=.888; Control, α=.871; Meaningful Existence, α=.927).

Ethics

Ethical concerns with regards to this research includes deliberately causing the unfair treatment of individuals in an attempt to cause temporary psychological and behavioural change. However, a research proposal was submitted to and approved by the Psychology Research Ethics Committee, Institute of Psychology, Leiden University. Therefore, this research was conducted within the scope of ethical practice.

Results

As per the assumptions of ANOVA and T-tests, the data was checked for a normal distribution prior to commencing the analyses. It was found that the data were indeed normally distributed.

Psychological Needs

Table 1: Psychological needs scores for the Non-intervention bystander condition and the intervention bystander condition (Mean±SEM).

	Belonging	Self-Esteem	Meaningful Existence	Control
Non-Intervention	3.05±.26	2.93±.19	3.50±.28	1.87±.16
Intervention	3.06±.24	2.69±.20	3.99±.30	1.62±.13

The psychological needs hypotheses were mostly not supported. There were no significant differences in psychological needs outcomes between the bystander intervention conditions versus the no intervention condition (**H1$_a$**) (see Table 1) for belonging (t(69)=-.048, p=.962, d=0), self-esteem (t(69)=.863, p=.391, d=.206), control (t(69)=1.207, p=.231, d=.298) and meaningful existence (t(69)=-1.208, p=.231, d=.284).

Table 2: Psychological needs comparisons between No-Bystander conditions and Bystanders conditions, and between the unequal and equal distribution conditions (Mean±SEM).

	Belonging	Self-Esteem	Meaningful Existence	Control
No Bystanders	4.30±.22	4.03±.19	4.30±.23	2.56±.17
Bystanders	4.50±.23	4.02±.18	4.53±.22	2.59±.15
Unequal	3.10±.19	3.01±.15	3.37±.21	1.90±.14
Equal	5.70±.14	5.03±.14	5.45±.16	3.24±.15

Furthermore, there were no main effects of bystander presence on psychological needs (**H1$_b$**) (see Table 2; belonging, F(1,142)=.482, p=.489, η_p^2=.003; self-esteem, F(1,142)=.031, p=.860, η_p^2=0; control, F(1,142)=.007, p=.933, η_p^2=0; meaningful existence, F(1,142)=.573, p=.450, η_p^2=.004). These results indicate that the presence of bystanders, as

well as bystander intervention, had no significant effect on psychological outcomes of victimisation in the dictator game.

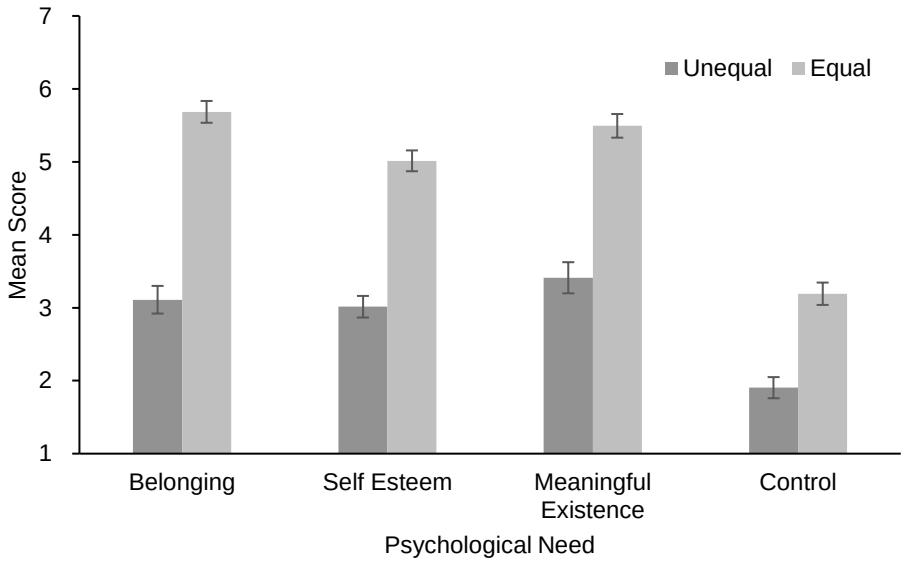

Figure 1: Mean questionnaire scores for the four psychological needs between equal distribution and unequal distribution conditions. Error bars are standard error.

On the other hand, equality of distribution had a significant impact on all four psychological needs (**H1$_c$**) (see Table 2, belonging (F(1,142)=121.020, p<.001, η_p^2=.460), self-esteem (F(1,142)=100.380, p<.001, η_p^2=.414), control (F(1,142)=42.894, p<.001 η_p^2=.232), meaningful existence (F(1,142)=42.894, p<.001 η_p^2=.303)) (see Fig. 1). Therefore, being treated unequally in the dictator game has a significant impact on psychological needs. There were no interactions between bystander presence and equality of distribution for psychological needs.

Dictator Evaluation and Retaliation

Table 3: Fairness and Justifiedness Ratings, as well as Retaliation against the Perpetrator, between the bystanders conditions and the distribution conditions (Mean±SEM).

	Fairness	Justifiedness	Retaliation
No Bystanders	3.07±.21	3.17±.18	.34±.20
Bystanders	3.04±.21	3.03±.21	.60±.22
Unequal	1.37±.07	1.74±.12	.93±.24
Equal	4.74±.07	4.47±.10	0±.15

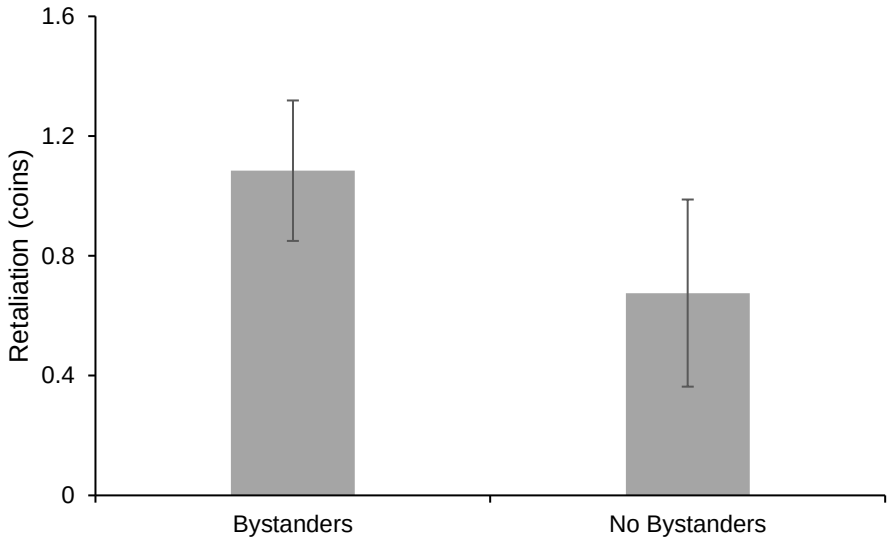

Figure 2: Retaliation at Player Z (dictator) between conditions with bystanders and conditions without bystanders. Error bars are standard error.

The behavioural retaliation hypotheses were also mostly not supported. The difference in retaliation between the groups with bystanders compared to the groups with no bystanders (see Fig. 2 and Table 3) was non-significant (**H2$_a$**) (F(1,141)=1.369, p=.244, η_p^2=.010). Furthermore, there was no greater retaliation in the bystander-intervention condition than the non-intervention condition (**H2$_b$**) (t(69)=.005, p=.996, d=.001). This indicates that neither the presence of bystanders nor bystander intervention influence retaliation in this context. Although, there was a significant main effect for distribution (equal vs unequal) (**H2$_c$**) (F(1,141)=9.813, p=.002, η_p^2=.065), demonstrating that being treated unequally may lead to retaliatory behaviour.

Table 4: Fairness and Justifiedness ratings in the experimental game between the non-intervention condition and the intervention condition (Mean±SEM).

	Fairness	Justifiedness
Non-Intervention	1.77±.20	1.74±.19
Bystander Intervention	1.75±.15	1.72±.13

The experiment rating hypotheses were also mostly unsupported. Participants in the non-intervention condition did not rate the experimental game as more justified than those in the intervention condition (**H2$_d$**) (t(69)=.1.211, p=.230, d=.288), but, as expected, there was no significant difference between ratings of fairness between the two conditions (**H2$_e$**) (t(69)=1.329, p=.188, d=.306) (see Table 4). This suggests that the bystander non-intervention did not amount to an increased social norm for victimising behaviour.

Table 5: Justifiedness Ratings across Bystanders and Equality Distribution conditions (Mean±SEM).

	No Bystanders	Bystanders
Unequal	4±.15	4.54±.15
Equal	1.62±.15	1.44±.15

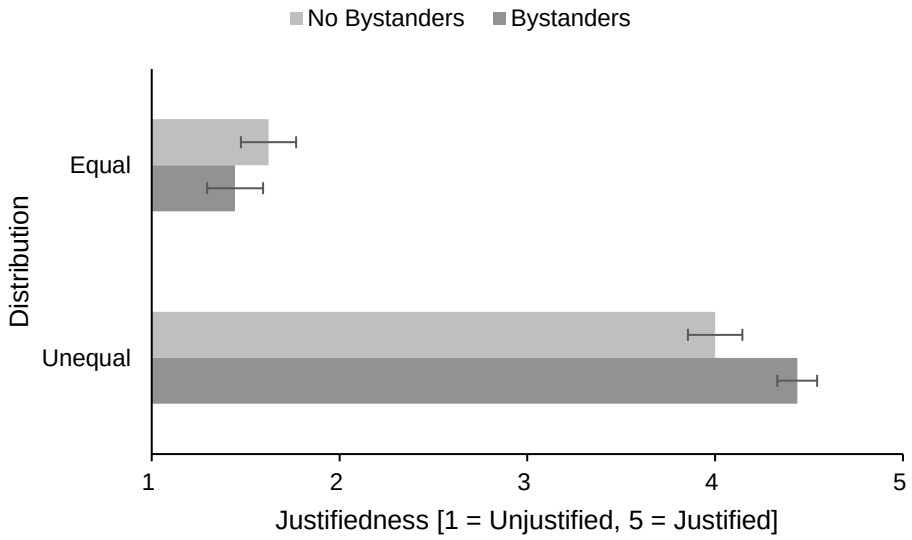

Figure 3: Chart showing the interaction between Equality of Distribution and Presence of Bystanders for ratings of Justifiedness. Error bars are standard error.

There was an interaction between presence of bystanders and equality of distribution for justifiedness (**H2$_f$**) ($F(1,142)=5.580$, $p=.020$, $\eta_p^2=.038$, see Figure 3) wherein participants rated the unequal experiment game as more justified when there were no bystanders present than when there were (see Table 5), while the opposite, or little difference, was the case for the equal conditions. This suggests that the presence of non-mistreated bystanders causes mistreatment to be perceived as less justified than when it is an individual attack, meanwhile, in fair conditions, the presence of bystanders likely does not influence how the participant perceives the actions of the dictator in terms of justifiedness. There was no interaction for fairness (**H2$_g$**) ($F(1,142)=.815$, $p=.368$, $\eta_p^2=.006$), so this hypothesis was not supported, suggesting that the impact of bystanders on fairness perception does not change across equal or unequal groups.

Table 6: Fairness and Justifiedness ratings across the experimental and follow-up games, between those who retaliated against the perpetrator and those who did not, in the unequal conditions (Mean±SEM).

		Fairness		**Justifiedness**	
	N	Experimental Game	Follow-Up Game	Experimental Game	Follow-Up Game
Retaliated	36	1.25±.08	3.78±.16	1.44±.12	4.08±.16
Did Not Retaliate	73	1.48±.08	4.38±.11	1.85±.12	4.32±.11

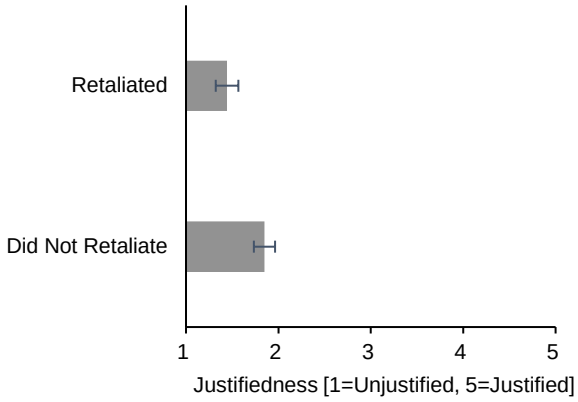

Figure 4: Justifiedness ratings for the experiment game between participants who retaliated and participants who did not retaliate in the unequal conditions. Error bars are standard error.

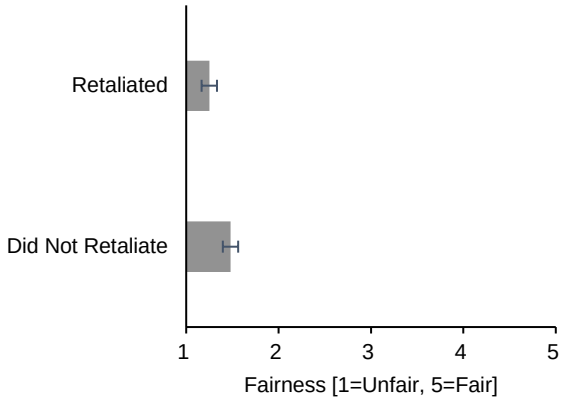

Figure 5: Fairness ratings for the experiment game between participants who retaliated and participants who did not retaliate in the unequal conditions. Error bars are standard error.

Participants who retaliated in the unequal conditions did rate the experiment game as less justified than those who did not retaliate (**H3$_a$**) (t(107)=2.189, p=.031 d=3.147, see Fig. 4), but there was no significant difference in rating of fairness (**H3$_b$**) (t(107)=1.738, p=.085, d=2.875, see Fig. 5). This suggests a belief in unjustifiedness of the perpetrator is related to retaliation behaviour, whereas a belief in unfairness is less likely to be.

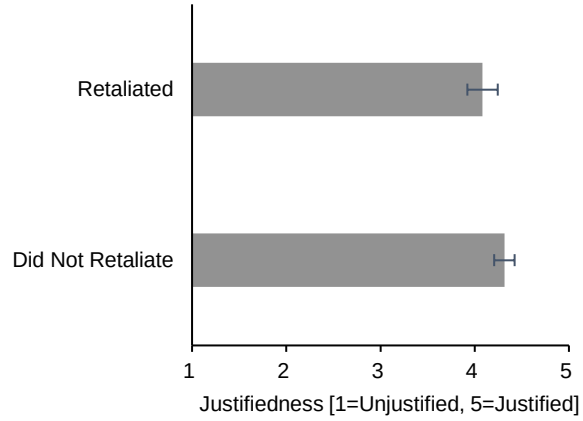

Figure 6: Justifiedness ratings for the follow-up game between participants who retaliated and participants who did not retaliate in the unequal conditions. Error bars are standard error.

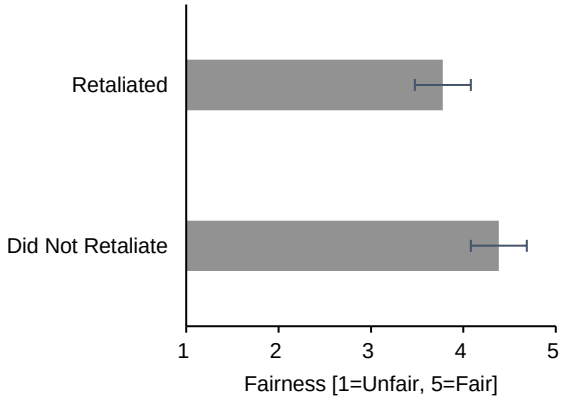

Figure 7: Fairness ratings for the follow-up game between participants who retaliated and participants who did not retaliate in the unequal conditions. Error bars are standard error.

Furthermore, as expected, retaliators did not rate the follow-up game in which they retaliated against the perpetrator as significantly less justified than those who did not retaliate (**H3$_c$**) (t(107)=1.211, p=.229, d=1.748, see Fig. 6), but they rated the game as more unfair than those who did not retaliate (**H3$_d$**) (t(107)=3.116, p=.002, d=4.370, see Fig. 7). This indicates that retaliators generally found their own behaviour unfair, but not unjustified (see Table 6).

Retaliation and Psychological Needs

Table 5: Psychological Need scores between participants who retaliated and participants who did not (Mean±SEM).

	N	Belonging	Self Esteem	Meaningful Existence	Control
Retaliated	36	2.69±.26	2.48±.20	3.4±.30	1.46±.18
Did Not Retaliate	73	3.29±.18	3.12±.14	3.66±.21	1.98±.13

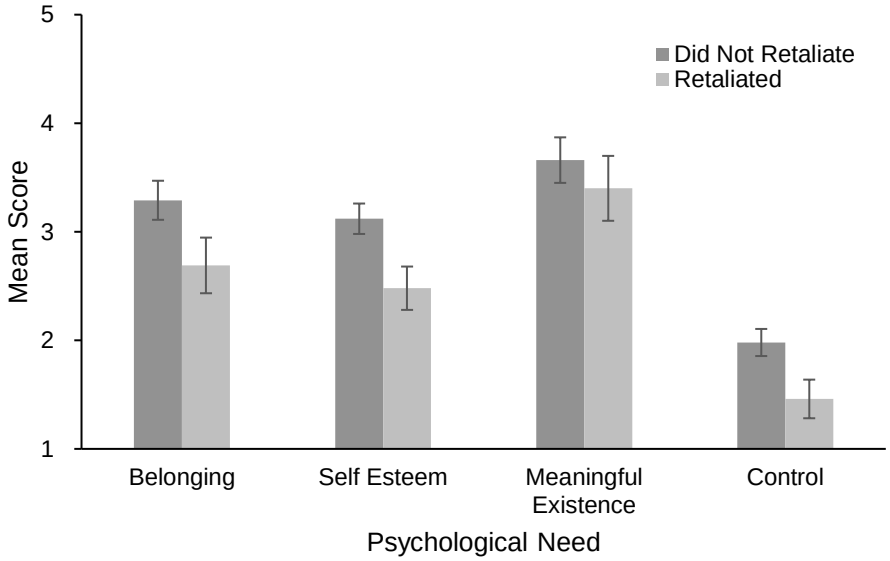

Figure 8: Chart showing the differences in Psychological Needs scores in the unequal conditions between participants who retaliated and those who did not retaliate Error bars are Standard Error.

There was a difference in psychological needs scores between those who retaliated and those who did not (see Table 7 and Figure 8). A Multivariate ANOVA revealed that those who retaliated reported significantly lower scores for the psychological needs (**$H3_e$**): self-esteem ($F(1,107)=7.143$, $p=.009$, $d=3.707$) and control ($F(1,107)=5.939$, $p=.016$, $d=3.312$); but did not quite reach significance for belonging ($F(1,107)=3.745$, $p=.056$, $d=2.683$) and the differences were non-significant for meaningful existence ($F(1,107)=.384$, $p=.537$, $d=1.004$). This partially supports the hypothesis that there is a relationship between psychological needs and retaliation behaviour, such that lowered psychological needs scores may contribute as a causative factor in retaliation behaviour.

These analyses were planned a priori and no post-hoc tests were done. As such, these results are ethically produced and are less likely to be prone to type I or type II errors.

Discussion

Findings

The aim of this research was to further understanding of the impact of the bystander effect on a victim, both psychological and behavioural. The approach of this study was to conduct a carefully prepared dictator game in which participants are placed in a position of unfair treatment compared to their peers, who either do or do not take action to alleviate such mistreatment.

This experiment provided evidence that mistreatment can result in negative psychological consequences in the form of lowered psychological needs scores and retaliation against the perpetrator, because an unequal distribution of coins caused participants to respond as such in comparison to equal treatment.

However, the results do not support the theory that bystander intervention could have an impact on victim psychology. There was no evidence that mistreatment in the form of financial inequality causes a feeling of ostracism, because the intervention of other fairly-treated recipients did not result in an improvement in retaliation or psychological needs scores.

Furthermore, the presence of bystanders did not result in a poorer psychological outcome or greater retaliation, suggesting that bystanders have no greater impact on a victim of mistreatment than if they were mistreated without anyone else present. Although, in this game, the experiment was conducted online, meaning that the presence of others in the game may have been less salient than if it were conducted in real life. Nonetheless, this experiment provides no evidence for a significant impact of the bystander effect on a victim compared to no bystanders.

There was also no significant effect on ratings of justifiedness or fairness between the intervention and non-intervention conditions, suggesting that the bystander effect does not have an impact on social norms of mistreatment. Although, as predicted, there were a group of participants who were impacted more than others by the mistreatment, which led them to retaliate against the perpetrator, rate the games differently compared to others and have lower psychological needs scores.

The retaliators in the unequal conditions, defined as those who distributed less money to the perpetrator than they did in the pre-game, also scored lower than their counterparts who did not retaliate in terms of psychological needs scores. However, only control and self-esteem, were significantly affected, whereas meaningful existence and belonging were not significantly lower. This could indicate that unfair treatment in form of financial inequality may have an effect on subjects' sense of control and their self-esteem, but it may not worsen their sense of belonging or meaningful existence. In context of this

dictator game, they are stripped of their control to ensure that they receive a fair portion of the coins in the game, and they also are aware that the only knowledge the perpetrator has of them is how they scored on the personality test, which may mean that they felt targeted based on their personality, which could explain their reduced self-esteem. On the other hand, the nature of the experiment being online, and not having any real visibility of the other players could mean that they did not build any sense of group mentality among the other recipients, and they had no reason to identify with them, which in turn resulted in no significantly reduced sense of belonging. Furthermore, a lab experiment of this nature, may not be expansive or long enough to have a significant impact on subjects' sense of how meaningful their existence is, which is an existential, broader sense of self, impacted by many other life factors.

However, the difference in psychological needs was not hypothesised, as such, we cannot make post-hoc conclusions about why these differences may exist. But to postulate on whether this phenomenon is repeatable and worthy to explore, could be tested in future studies, because this phenomenon could have implications about the psychological impact of experiments, in particular, experiments involving psychological or financial mistreatment.

Fairness, as opposed to justifiedness, is a relatively objective judgement and participants may have a strong awareness of when behaviour is unfair, because there is an unequal distribution. However, justifiedness is judged more subjectively, and depends on how much they think the behaviour was reasonable or acceptable, which may be prone to factors such as the presence of bystanders, and whether or not they choose to retaliate.

As predicted, retaliators rated the behaviour of the perpetrator as less justified than non-retaliators because they perceived more of an injustice had been done, which may have been a cause of their retaliation. On the other hand, they rated the actions of the dictator as no more unfair than others who did not retaliate, because of fairness being an objective rating. This suggests that both retaliators and non-retaliators were both aware of the mistreatment of the dictator, but only some perceived it to be unacceptable behaviour.

Furthermore, as expected, those who retaliated perceived their own behaviour in the follow-up game as equally justified as those who did not retaliate, whilst they were simultaneously aware that their behaviour was unfair compared to those who did not retaliate. This suggests that retaliators either perceived that the social norms had changed and that unfair behaviour was now justified, or that their personal revenge was justified against the perpetrator of mistreatment. This question could be an interesting avenue to explore in future research.

Finally, there was an interaction effect for ratings of justifiedness between the presence of bystanders and the equality of distribution, such that subjects' perceived behaviour as less justified in the unequal conditions when bystanders were present. This

suggests that subjects found unequal treatment more unjustified in the presence of other recipients, because they were treated less fairly than others. This indicates that bystanders can affect the perception of a victim, but the actions of those bystanders may not have an impact on the consequences. Further research into this comparison could verify if this is always the case.

Limitations

There are some limitations to this study which may have had an effect on the validity of the results. First, the study did not use real money, participants were always either paid a standard amount, or given study credits, meaning that the coins in the experiment had no further impact than in the context of the study. Participants were also, as per anti-deception guidelines, made aware of this before the study started. This may have had the consequence that participants did not take the study seriously and the shares of money were not as impactful as they would otherwise have been. There is a chance that the results may have been more significant had this been the case.

The other players in the game were also not real. We took several measures to ensure that the other players seemed as realistic as possible, such as personality scores of the other players, as well as waiting times for other players to complete their tasks. However, participants that engage with these types of experiments may have guessed that the other players were not real, and therefore not taken it seriously, or been impacted by the behaviour of the other players. It is conceivable that the bystander effect may not have been significant as a result of this. In future, using confederates or introducing more interactions with the other players before the experiment could increase the believability of the other players in the game. Moreover, controlling for the other players' personality results or manipulating and testing them, rather than randomising them, could increase reliability of the results. Although it is unknown whether or not the participants take the other players' personalities into much consideration.

Time to complete the experiment ranged from 8.23 minutes to 49.75 minutes. Since variation in duration could depend on a multitude of factors, including ability to understand, browser speed, attention to detail, plausible distractions whilst taking the experiment; it is important to consider that these types of factors may also impact the outcome of their sessions. One could argue that the data might be adjusted to exclude outliers that could be significantly affected by confounding factors. However, due to the nature of this experiment being undertaken in isolation with no environmental factors nor individual factors being measured, the exclusion of outliers has no valid justification. Nonetheless, it is plausible and worthy to consider that particularly slow participants may not have been paying much

attention or were interrupted, whilst particularly fast participants may also not have been paying much attention, which both in turn may have broken any illusion that the other players were real. Therefore, such cases may have reduced the validity of the results. The best way to control for this in a replicated study would be to conduct the experiment in a controlled environment instead of online.

Future studies, aside from using real money, confederates and offline contexts, could also involve more pre-games and more experimental games, to see if engaging players for a longer period of time may result in a greater impact.

It is important to consider ethical issues in relation to this experiment, since it involved purposeful mistreatment of some participants. There is a chance that this kind of study could have a lasting impact on players' psychological wellbeing, since in some cases their psychological needs scores were significantly lower than control. However, finding out that the other players were fake in the debrief at the end should have alleviated any sense that they were mistreated based on their personality or any feelings that they deserved what had happened to them. Furthermore, this experiment was no less ethical than the purposeful ostracism research conducted by Williams & Nida (2011), wherein participants were caused to feel socially excluded in an online game. The experiment proposal also met the guidelines for ethical conduct as laid out by the Faculty of Social Sciences at Leiden University. A repeat study could include a follow-up in the days following the experiment to check that participants were not significantly affected.

Nonetheless, this study was well-planned and conducted carefully, such that almost all possible measures were taken to convince participants that the other players were real, under the circumstances of an online study. Furthermore, the variables measured were relevant to the desired outcomes of the study, and adequate sampling and analysis methods were used.

Implications

The implications of this study could include providing insight into victimisation, not just in the context of the bystander effect. This study found that some people react differently than others to mistreatment, notably, in the way that some choose to retaliate, with a related loss of self-esteem, lack of perceived control, and a changed judgement in social norms. In order to consolidate these findings, future research could also explore mistreatment in other contexts, for example, in bullying, or sports. These findings could also be integrated into the wider literature surrounding psychopathology of perceived victimhood, in cases where mistreatment is not so clear, although it may have been perceived as such by the victim.

Further research should build a clearer understanding of how victim psychology may work in similar contexts. This could lead to valuable information for policy or intervention planning to aid in combatting harmful effects of unfair treatment.

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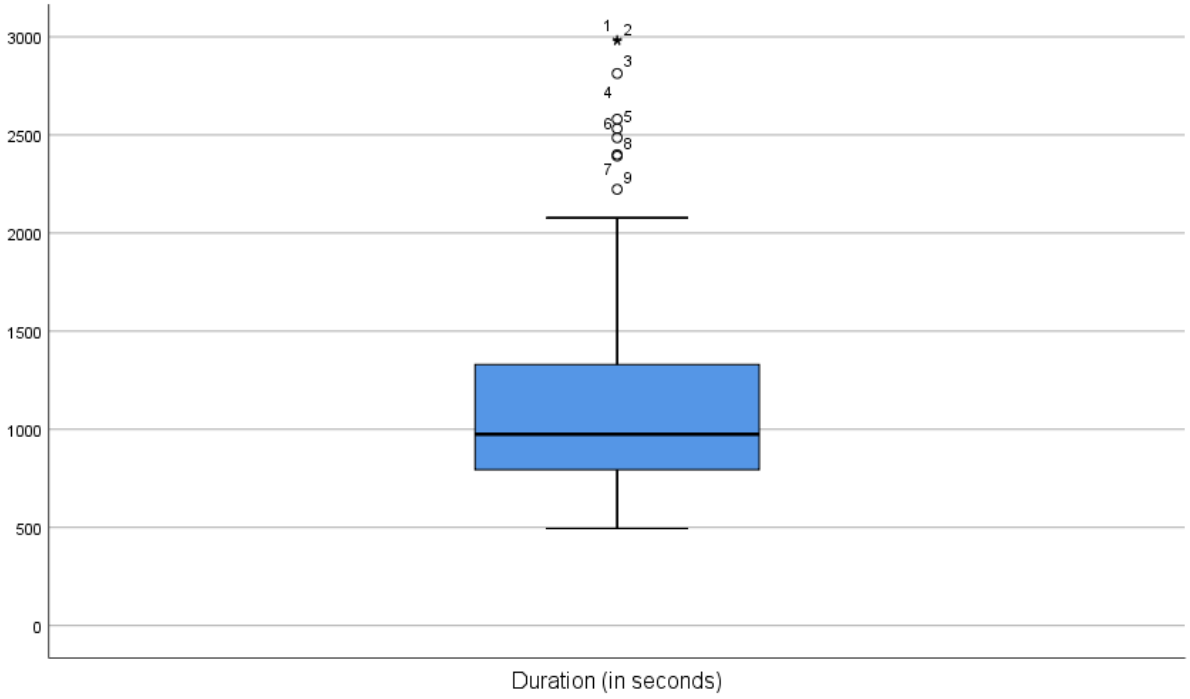
Appendices



Appendix A: Boxplot of time taken to complete the experiment for all participants. There are several notable outliers that took longer to complete the experiment than the normal range. However, there is no known or valid justification to exclude these participants from statistical analyses.