

## Different Reactions to Deviant Group Members in the Public Goods Dilemma

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There have been contradictory findings concerning our attitude toward deviant group members; some argue that pro-norm deviants are preferred to anti-norm deviants (e.g., Abrams et al., 2000); others propose that any type of deviant is negatively evaluated to be the target of expulsion (e.g., Parks & Stone, 2010). This article argues that group task conditions could cause these conflicting findings. Employing a revised intergroup public goods dilemma game, this study found that people were willing to expel a selfish member (an anti-norm deviant) even by sacrificing their own income when the deviant's actions seriously deteriorated the group performance as well as their personal performance. By contrast, people hoped to retain an altruistic member (a pro-norm deviant) as the deviant's behavior was beneficial to them and had a positive influence on team morale. The intention to expel a selfish member became stronger when an altruistic member being in the same group than when no altruistic person being in the group. Results suggest that conflicts of interests as a group task feature can be a critical factor to influence people's judgment and reaction to pro-norm and anti-norm deviants.

*Key words* : social exclusion, selfish, unselfish, public goods dilemma, group competition, conflicts of interest

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As we may know well, not everyone can be Mother Teresa, a Roman Catholic saint and Nobel laureate who devoted her life to serving the poor. Most of us are sometimes good and sometimes bad. Likewise, with regard to our benefit-seeking nature, most people are cooperative and individualistic to some degree, whereas completely altruistic or competitive people are rare (Au & Kwong, 2004). The way these latter types behave looks very different from most others' ways of behaving (Balliet, Parks, & Joireman, 2009). Previous studies investigating people's preferences have reported that there are very a few amount of people who make too altruistic or too selfish decisions consistently in multiple choice situations (Murphy, Ackermann, & Handgraaf, 2011). As found in Asch's conformity experiments, people tend to behave in accordance with majority's behavior (Asch, 1951). Also, it is very well known that a majority largely influences the standards of acceptable behavior in the group (Deutsch & Gerard, 1955), which is closely related to social norms. Those who behave too altruistically or selfishly despite the social pressure are different from most others and their behavior far deviates from the average majority's behavior. Whether they are too nice or too bad, these people can be regarded as deviants, therefore. Experimental studies dealing with our attitude to these deviants have reported somewhat inconsistent findings. Some studies showed that any type of deviant is equally hated

(e.g., Parks & Stone, 2010), while other studies reported that only the antisocial deviant is disliked and the prosocial deviant is not (e.g., Abrams, Rutland, Cameron, & Ferrell, 2007). This study intends to find out what may cause conflicting findings.

### **Prior Studies on Two Deviant Types:**

#### **Pro-norm vs. Anti-norm**

Subjective group dynamics researchers say that our attitude to outliers or deviants is affected by group membership and the direction of deviance (Abrams, Marques, Bown, & Henson, 2000; Abrams et al., 2007). They found that a person deviant toward norm (i.e., a pro-norm deviant) was viewed as more attractive than a deviant person toward anti-norm (i.e., an anti-norm deviant). Also, an anti-norm in-group deviant was evaluated more negatively than an anti-norm out-group deviant. Another study showed that in-group members were punished more harshly than out-group members for fairness norm violation (Mendoza, Lane, & Amodio, 2014).

Some scholars take the pro-social morality perspective to account for our attitude to deviants. A person evaluated less moral relative to the group's standards were likely to be rejected (van der Lee, Ellemers, Scheepers, & Rutjens, 2017). Kerr and colleagues (2009) found that selfish people were not welcome and

rather preferred to be excluded from the group by other members (Kerr et al., 2009). Compared with cooperators, non-cooperators were much more disliked, and some people punished non-cooperators at their own cost (van Dijk, Molenmaker, & de Kwaadsteniet, 2015). This is called altruistic punishment, a form of prosocial behavior promoting cooperation (Fehr & Gächter, 2002). Given the findings of previous studies, it seems that altruistic people are preferred and liked versus that selfish people are rejected and disliked.

However, Parks and Stone (2010) found that extremely nice people (i.e., pro-norm deviants) were evaluated as much negatively as anti-norm deviants. In their study, participants rated unselfish members as unfavorably as selfish members and did not intend to retain the unselfish as much as they did not want the selfish. They argued that altruistic members were seen as a rule breaker to establish an extraordinary behavioral standard. Actions far deviated from the mean were considered abnormal and this nice actor undesirably made all the others look bad. Thus, an extremely behaving person equally became the target of expulsion whether s/he is altruistic or selfish. According to Irwin and Horne (2013), punishing good people can occur in situations where strong descriptive norms exist. The descriptive norm means that there is social pressure under which people are afraid of showing atypical behavior. In such circumstances, atypically cooperative

people, although their behavior is beneficial to the group, are viewed non-conformists (Irwin & Horne, 2013). The influence of the descriptive norm is observed even in 8- to 10-year-old children (Tasimi, Dominguez, & Wynn, 2015). When they were to compare themselves with a generous peer, their positive attitude toward the generous child was reduced. Likewise, the altruistic punishment discussed above can be explained by egalitarian motives or inequality aversion (Fehr & Gächter, 2005). Monin, Sawyer, and Marquez (2008) suggested that negative reactions emerge toward atypical but altruistic individuals because they may be seen as a threat; their excessively good behavior implicitly condemns colleagues who do not engage in that behavior.

According to some cultural researchers, norms on fairness and cooperation account for our reaction to pro-norm deviants. Too generous offers are rejected as much as too stingy offers in cultures with the "hyper-fairness" norm like Russia (Bahry & Wilson, 2006) and China (Hennig-Schmidt, Li, & Yang, 2008). Also, in some cultures of weak cooperative norms, people punish high contributors as much as they punish low contributors (Herrmann, Thoni, & Gächter, 2008). However, the study conducted by Parks and Stone (2010) had participants of the United States, where a cooperative act is highly valued. Thus, the cultural norm account is not sufficient to explain the negative attitude to generous people.

In order to understand the conflicting findings on the reaction to deviant group members, it is necessary to consider the features of group tasks used in previous studies: the conditions in which participants worked as a group, the goal of a group task given to participants, the impact of deviant members' behavior on other members' interests, whether there is an outgroup or not, and so forth. For instance, individual's cooperation level was found to get higher when working in a group than working as a single player (Bornstein & Ben-Yossef, 1994), which implies that a person working alone behaves differently if s/he works as part of a group. Then, the question is raised what makes this difference. As Abrams and colleagues pointed out, it may be the group membership that influences one's judgment and behavior (Abrams, Marques, Bown, & Dougill, 2002; Abrams et al., 2000, 2007; Marques, Abrams, Paez, & Martinez-Taboada, 1998). That is, whether someone belongs to a group or not, whether there is a deviant member in the group or not, whether the deviant affects other members or a whole group, etc. The group membership is associated with cognitive processes to recognize a group, other members, interpersonal relations, and the boundary of the in-group which draws a borderline between inside and outside. According to the intergroup threat theory (Stephan & Stephan, 2000), if group's external environment is perceived as unfavorable and hostile (e.g., there are other groups competing

for a fixed amount of resource), one's group membership gets stronger to cope with external threats and to protect one's own group. Confirming this argument, the intergroup competition was found to improve collective outcomes (Bornstein, Gneezy, & Nagel, 2002), and that free-riding was reduced when intergroup competition existed although there were intragroup conflicts of interests (Gunnthorsdottir & Rapoport, 2006). These findings suggest that external circumstances to increase the recognition of one's group identity, especially, through intergroup competition are likely to establish a norm in favor of a group over individuals.

Going back to Parks and Stone's study (2010), their finding that altruistic players were disliked and unwelcome as much as selfish players might have been caused by the feature of the group task employed in their study. In other words, there was no external threat to reinforce participants' in-group identity. This study argues that situational forces that have in-group members recognize threatening out-groups would lead to developing one's different attitude toward deviant in-group members. Specifically, it is inferred that pro-norm deviants are positively evaluated, but anti-norm deviants are disliked and likely to be the target of expulsion. Applying this inference to the social dilemmatic context, a hypothesis is described as below.

***Hypothesis:** A selfish person, rather than an altruistic person, would be more disliked by other group members and more likely to be expelled from the group when there is an outgroup competing in a public goods dilemma.*

This paper focuses on examining the effect of intergroup competition on people's judgment and reaction to two types of deviants. More accurately, the deviants in this study are defined as game players who make too altruistic or too selfish decisions. If the hypothesis is supported, it can be argued that earlier contrasting findings regarding in-group deviants are able to be accounted for by some important features of group tasks such as intergroup competition.

### **Study Design**

The experiment used in this study was inspired by two previous studies (Parks & Stone, 2010; Rapoport, Bornstein, & Erev, 1989). The game employed in Parks and Stone (2010) combined the public goods dilemma and the commons dilemma for a five-person group to play. First, a participant was asked to contribute to the public resource pool and, when the resource collected from five players was doubled and, then, returned (i.e., the public goods dilemma), s/he was asked again to make another decision how much to use from the returned resource (i.e., the commons dilemma). In fact,

four group members except the participant were bogus players. Authors provided with group performance feedback that included the information about an unselfish player who made a large contribution and small use, and also a selfish player who made a small contribution and large use. Then, the final question was asked to indicate, on a 9-point scale (from not at all to very much), to what extent they would like each of the others to remain in the group if the task was to continue.

As this study focuses on the intergroup competition in which unselfish altruistic plays, compared with selfish plays, increase the probability of group wins and, therefore, improve economic benefits to other in-group members, the intergroup public goods game used in Rapoport et al.'s study (1989) was slightly revised and used in the present study. Participants played a public goods dilemma game where an individual's interest-seeking can harm collective group outcomes. Each was instructed to get as many points as possible, which is possible by contributing less than others (i.e., within-group competition), but the chance for a player to earn many points gets high when the player's group wins the other group by sacrificing one's endowment and contributing a lot for the better performance of her group than that of the other group (between-group competition). Therefore, internal and external conflicts of interest exist.

Specifically, participants were told that there

are two competing groups playing a 10-round game, each group has five players, and every player decides how many points to submit to the group from their personal endowment (ten points given at each round). The rule is simple. A group collecting more points wins, and it takes all the resources as a reward. The returned prize is equally distributed to each member in a winner group. Losers in the other group get no reward. In the case of a tie, combined points are equally divided and returned to ten players. The strategy to maximize one's income over ten rounds is (1) to keep as many points as possible from the endowment and (2) to receive as many reward points as possible from group victories. Again, there is a conflict of interests; At the group level, the more contribution, the more chances to win; At the individual level, the more contribution, the more personal loss.

According to Balliet and colleagues, outcome interdependence among group members is one factor to create in-group favoritism. In-group favoritism is stronger when there is common (vs. unilateral) knowledge of group membership, and stronger during simultaneous (vs. sequential) exchanges (Balliet, Wu, & De Dreu, 2014). The game used in this study seems to provoke in-group favoritism. Thus, a pro-norm deviant would not be unwelcome but welcome. The anticipated result from this experiment is that if personal decision affects group performance and multiple groups compete, selfish in-group members would be likely to be the target of

expulsion due to their negative effect on group performance, while unselfish in-group members would not be likely to be the target of expulsion due to their positive impact on group performance.

### Experiment Design

Participants were designated to be Member 3 of Group 2. Others were all bogus players. Previous literature suggests that the average contribution rate in the public goods dilemma with intergroup conflict is about 60% (Bornstein, 1992; Bornstein, Erev, & Goren, 1994; Rapoport et al., 1989). Based on this rate, simulations were conducted to produce eight bogus players' submitted points for ten rounds. Each bogus player yielded a random integer in the range [1, 5.5] for ways rounds and in the range [5.5, 10] for 6 rounds. From these simulations, the mean ( $M = 6.0$ ) and the standard deviation ( $SD = 2.48$ ) were computed with which un/selfish member's contribution range was determined. From the mid-point, 5.5, ten integers were randomly withdrawn between 7.98 (1  $SD$  above from 5.5) through 10 for unselfish player's contributions. Ten integers were extracted between 1.0 through 3.02 (1  $SD$  below from 5.5) for selfish player's contributions. All members in Group 1 were assumed to do average plays, whereas Member 4 in Group 2 was set as either a selfish player or an unselfish player. Then, three conditions were made up

Table 1. Bogus players' contribution simulation result

Group 1	High Range [5.5, 10]					Low Range [1, 5.5]					Mean
Player 1	8	7	7	7	9	7	4	5	2	1	5.7
Player 2	8	9	7	9	10	9	1	4	5	1	6.3
Player 3	6	10	7	9	7	9	2	2	4	1	5.7
Player 4	8	8	9	9	7	8	4	3	5	4	6.5
Player 5	8	7	7	10	7	7	2	5	3	2	5.8

Group 2	High Range [5.5, 10]					Low Range [1, 5.5]					Mean
Player 1	10	6	9	6	6	10	3	5	3	2	6.0
Player 2	7	9	8	7	8	6	1	5	4	5	6.0
Player 5	9	8	7	8	7	8	2	5	4	2	6.0

UNSELF Range [7.9, 10]											Mean
Player 4	9	9	10	9	10	10	10	10	9	9	9.5

SELF Range [1, 3.0]											Mean
Player 4	2	2	1	1	1	2	2	1	2	1	1.5

that a selfish player included, an unselfish player included, and both players included, namely, SELF, UNSELF, and BOTH. The last condition used seven bogus player's simulated contributions. Although most group members' play was set up in advance, Member 3 of Group 2 - a participant - could critically influence the group performance (whether the group wins or loses) and the amount of earned points. Simulation results are presented in Table 1.

### Procedure

Sixty-seven participants were recruited from a

university located in the northwestern area in the U.S. The experiment was conducted in a large laboratory with 16 individual rooms. Upon their arrival, participants were and guided to one of the rooms by experimenters and randomly assigned to one of the three conditions (SELF, UNSELF, and BOTH). As soon as a participant entered a room, the door was closed to make them believe that there were other players. A written experiment instruction, a pencil, individual decision sheets for ten rounds with an envelope, and blank feedback sheets for group decisions, group competition results, and individual performance summary were provided. They could ask questions for experimenters any

time during the experiment by sliding the 'help' card under the closed door.

Before the game began, they filled out a questionnaire to measure individual characteristics such as personality (John & Srivastava, 1999), belief in just world (Lipkus, 1991), and aggression (Buss & Perry, 1992). After every participant read the instruction and completed a short test to check their understanding of the game, the first round started. When each of them made a contribution decision, experimenters collected decision sheets and coded the submitted points in an experiment worksheet program that automatically computed group contributions, informed intergroup competition results, and filled out an individual player's performance summary note. Then, experimenters returned feedback sheets to each participant and provided with a new decision sheet for the next round. Appendix A and B present with examples of the experimenter's worksheet and feedback sheets for participants. After the experiment, a short survey was given to ask if they would like to eliminate any group member and, if so, to identify the person. Also, they were asked to indicate to what extent they were willing to pay to expel the member and, then, the maximum points they would submit for the expulsion. Then, experimenters debriefed participants. Course credits were given to all as a reward and, then, lottery tickets were also given in accordance with their earned points. Ten game points were converted into one ticket. Thus, good

performance increased the probability to win the prize, \$10 gift cards usable at the university café and the bookstore. The lottery incentive payment method had been utilized in many prior studies (Herrmann et al., 2008; Irwin & Horne, 2013; Parks & Stone, 2010). An instruction used in this study and other experimental materials are available upon request.

## Results

In total, data from 67 participants (37 females and 30 males) were analyzed. First, it was examined if contribution behavior was related to individual factors like belief in just world, aggression, and personality. There were few noticeable associations. Only among three individual characteristic scales were found some significant relations. Appendix C presents inter-item correlations and reliabilities of three scales. Significant gender differences were revealed in personality scores. Females were significantly higher than males in the conscientiousness factor ( $t(65) = 2.191, p = .032$ ) and in the neuroticism factor ( $t(65) = 2.963, p = .004$ ), whereas males were significantly higher than females in the openness to experience factor ( $t(65) = -2.191, p = .032$ ). However, as females and males were randomly assigned to three conditions, there was no significant difference in big-five inventory scores across conditions.



Table 2. Descriptive statistics of group performance

	Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>
Group Wins	UNSELF	22	7.05	1.21
	SELF	22	2.73	1.49
	BOTH	23	4.87	1.14
Mean Income	UNSELF	22	128.98	6.44
	SELF	22	64.56	9.68
	BOTH	23	95.03	6.95
Mean Contribution	UNSELF	22	6.52	1.59
	SELF	22	6.91	2.09*
	BOTH	23	6.67	1.52

Comparing three conditions, there was a significant difference in the group performance; The mean income was 128.98 points in the UNSELF condition, 95.04 points in the BOTH condition, and 64.56 points in the SELF condition,  $F(2, 64) = 374.80, p < .01$ . The number of group wins was also significantly different; Those in the UNSELF condition experienced more wins than those in other conditions (UNSELF = 7.05, BOTH = 4.87, & SELF = 2.73),  $F(2, 64) = 61.97, p < .01$ . Due to extreme outliers (i.e., a selfish or an unselfish player) who could influence group competition outcomes, these results were, of course, expected. Descriptive statistics are found in Table 2.

### Mean Contribution

Next, the participant's submitted points were

analyzed. It was found that those more highly scored on the openness to experience dimension tended to submit more points in general, ( $r(67) = .324, p = .008$ ). Dividing participants into two groups based on the mean (i.e., High Openness vs. Low Openness), those in the high openness group contributed marginally more than did those in the low openness group ( $F(1, 61) = 2.803, p = .099$ ). Further, the interaction happened ( $F(2, 61) = 2.522, p = .089$ ) in such a way that those in the low openness group submitted more points than those in the high openness group in the unselfish condition, while the pattern was reversed in other conditions where those in the high openness group contributed more than those in the low openness group.

Examining the effect of deviants on participant's contribution, there was no significant difference across conditions with

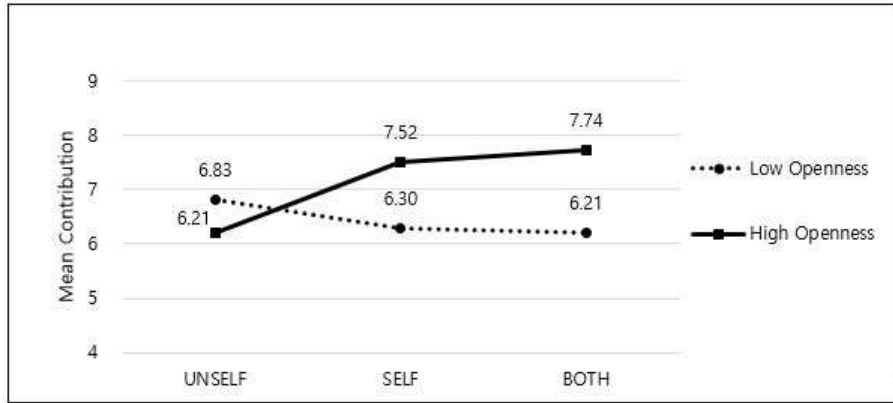
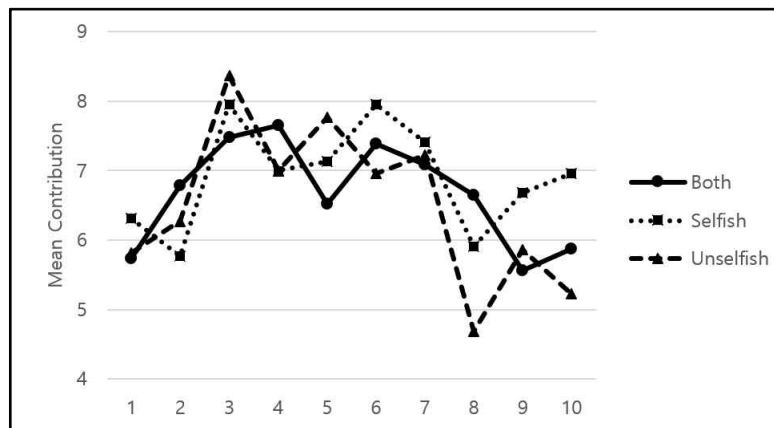


Fig 1. Mean contribution between high and low openness groups across conditions

regard to participant's mean submitted points ( $R^2, 64) = .278, p = .758$ ), but the difference in the variance of submitted points was marginally significant among three conditions as a result of the test of homogeneity of variances,

$F(2, 64) = 2.926, p = .061$ . Specifically, the fluctuation in the mean contribution was higher in the selfish condition than in other conditions as seen in Table 2. This indicates that each individual's contribution strategy was unfolded in



<i>M (SD)</i>	first five rounds	last five rounds
BOTH	6.83 (1.372)	6.51 (1.974)
SELF	6.84 (2.020)	6.98 (2.502)
UNSELF	7.05 (1.451)	5.99 (2.182)

Fig 2. Mean contribution trend across conditions

a more scattered way in the selfish condition because the selfish player's negative impact on the group performance might split group members between those who tried to contribute a lot to have the group win and those who just gave up the intergroup competition and just decided to preserve their own endowment.

Comparing the earlier contribution (Round 1 to 5) with the later (Round 6 to 10), there is a marginally significant difference across three conditions ( $F(2, 64) = 2.692, p = .075$ ). Despite the general downward trend in contribution over time, in the UNSELF condition, the mean contribution from the first five rounds ( $M = 7.05$ ) largely and surprisingly dropped during the last five rounds ( $M = 5.99$ ),  $t(21) = -2.619, p = .016$ . It seemed like people, after realizing how useful the unselfish in-group member was to have the group win, might have decided to take advantage of this person and, thus, changed their strategy to minimize personal endowment losses.

#### Willingness to Expel a Group Member

At the end of the experiment, participants were asked to indicate to what extent they would like to remove one of the in-group members and to specify whom to be expelled. Responses are presented in Table 3. It was shown that the intent to eliminate a group member was greatly different according to the condition; 83% in the BOTH condition (19 of

23) and 68% in the SELF condition (15 of 22) wished to expel a group member, while only 23% in the UNSELF condition (4 of 22) did,  $\chi^2(8, N = 67) = 29.31, p < .01$ . It should be noted that the difference between the two conditions with the selfish player is not ignorable. When there were both types of deviants in the same group (i.e., BOTH), the willingness to expel the selfish member got stronger than when there was a selfish player alone (i.e., SELF). This may indicate that a contrast effect occurred by social comparison in the BOTH condition that the anti-norm deviant (the selfish) was evaluated very negatively relative to the pro-norm deviant (the unselfish). As to the question of the expulsion target, 81% (18 of 22) in the UNSELF condition did not want to specify whom to be expelled, but 68% (15 of 22) in the SELF condition and 83% (19 of 23) in the BOTH condition pointed the selfish member as an outcast ( $\chi^2(6, N = 67) = 81.33, p < .01$ ).

Additionally, it was tested whether there was any significant difference in terms of the willingness to pay to exclude a member. As this is an additional cost for an individual player, it is not a rational choice to sacrifice one's income from an economic perspective. However, the member exclusion increases the likelihood of group wins and, so, collected personal payments could be benefits to the group in the long run. The maximum voluntary payment was asked as a fee to outcast a group member, and the

Table 3. Member exclusion survey responses

<i>Would you like to remove one person from the group?</i>				
Condition	No	Yes	Don't Know	Total
UNSELF	17 (77.3%)	4 (18.2%)	1 (4.5%)	22 (100%)
SELF	4 (18.2%)	15 (68.2%)	3 (13.6%)	22 (100%)
BOTH	3 (13.0%)	19 (82.6%)	1 (4.4%)	23 (100%)

<i>Whom do you want to expel?</i>				
Condition	Selfish Member	Other Members	No Answer	Total
UNSELF	N/A	4 (18.2%)	18 (81.8%)	22 (100%)
SELF	15 (68.2%)	0 (0.0%)	7 (31.8%)	22 (100%)
BOTH	19 (82.6%)	0 (0.0%)	4 (17.4%)	23 (100%)

<i>How much are you willing to pay to expel the person?</i>					
<i>(Note: Scores are based on mean fee ratios for an outcast)</i>					
Condition	<i>N</i>	<i>Mean</i>	<i>SD</i>	Minimum	Maximum
UNSELF	21	.0862	.15211	.00	.71
SELF	21	.1937	.22001	.00	1.00
BOTH	18	.1382	.14676	.00	.45

payment was divided by one's total earning because the mean personal income was largely varied across conditions. This fee ratio (i.e., one's maximum payoff/one's total income) was tested. It was found that there was no significant condition difference ( $F(2, 57) = 1.926, p = .155$ ). However, noticeable patterns were observed as presented in the bottom panel of Table 3. Those in the SELF condition were willing to pay the most to expel the selfish player. The mean fee ratio reached almost 19.4% of their earning. However, those in the UNSELF condition offered just 8.6% of their

income. The ratio in the BOTH condition was in-between, 13.8%. Also, the correlation analysis revealed that the stronger desire a player had to expel a group member, the higher ratio fee s/he was willing to pay,  $r(60) = .447, p < .01$ . It suggests that people dealing with an outstanding selfish member wished to exclude this person most seriously and, as explained below, it looked like a negative emotional reaction. Interestingly, the extraversion personal factor was found to be associated with the willingness to pay. Those with a higher score on the extraversion were related to a higher fee ratio,  $r(60) = .275, p =$

.033.

Lastly, participants were asked to voluntarily write down why or why not they liked to expel a group member and responses were collected from 47 participants. Five judges who had no idea about the experiment were recruited and they analyzed the content of written explanations. Multiple counts were allowed if multiple reasons were written. Several categories were created as a reason for no-expulsion or expulsion. As presented in Figure 3, players in the UNSELF condition preferred to exclude no one from the team because they made lots of wins, teamwork was great, they were satisfied with outcomes, etc. On the other hand, people in the SELF condition wished to expel a group member since the person made low contributions in a selfish way, there was no teamwork, they made lots of losses, etc. Answers in the BOTH condition were similar. A few mentioned that

the selfish hurt team morale and team performance was so poor. Participants in the SELF and the BOTH condition criticized the selfish member for consistently low contribution, being selfish, and leading to group defeat. On the contrary, people in the UNSELF condition gave much credit to the team, rather than to the altruistic pro-norm deviant (the unselfish member) by describing general fair contribution, good teamwork, etc. This is quite intriguing that people blamed the selfish (i.e., an individual) when their group lost but praised the team (i.e., a group) when they won, not attributing frequent group victories to the unselfish. It seems participants did not clearly recognize the fact that the high winning rate was caused by the altruistic member or by the synergetic effect that the pro-norm deviant aroused. At least, it was not literally mentioned.

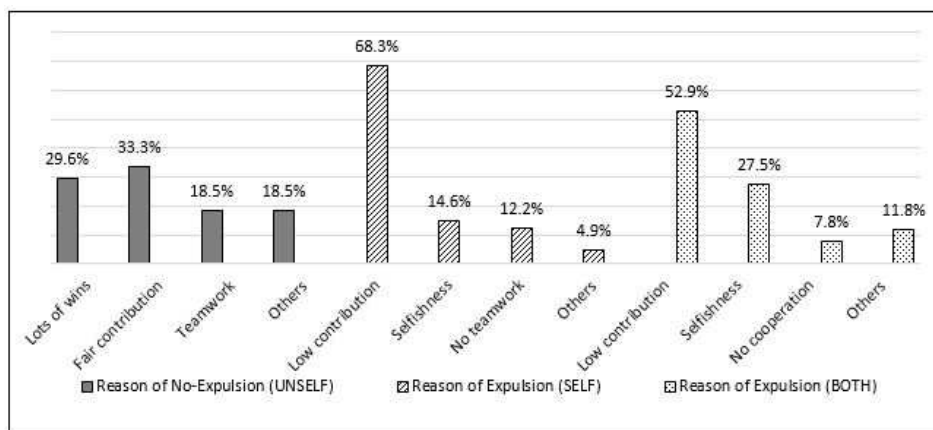


Fig 3. Content analysis of expulsion or no-expulsion reasons

### Conclusion

This study has a purpose to find out why previous findings were mixed concerning our attitude to deviants, especially, pro-norm deviants or prosocial outliers. One possible explanation is that our preference for too nice people depends on the context of group tasks and that intergroup competition can be one of the contextual factors. The intergroup public goods dilemma game used in this study allows deviant's decision to have a direct effect on other members' earning as well as the group's victory.

Findings show that performance outcomes were as expected, the best in the UNSELF condition but the worst in the SELF condition. Individual factors like belief in just world, aggression, and personality had little effect on contribution behavior. The exception were personality traits of extraversion and openness to experience. Highly extraverted people were likely to pay more to remove a deviant group member. People with higher scores in openness, relative to those with lower scores, contributed more in the conditions with a selfish deviant (i.e., BOTH and SELF). This behavior can be interpreted as prosocial risk-taking (Do, Guassi Moreira, & Telzer, 2017) because the high contribution was self-sacrificing to help one's own group win, but also risky due to the bad apple in the basket whose behavior decreases the chance of group wins. If the group loses, the

high contributor would suffer a great loss. The meta-analysis study conducted by Kline and colleagues (Kline, Bankert, Levitan, & Kraft, 2019) showed that agreeableness and openness traits are significantly and positively associated with prosocial behavior. In terms of risk-taking behavior, some published studies mentioned its positive relation to extraversion or openness (Czerwonka, 2019; McGhee, Ehrler, Buckhalt, & Phillips, 2012; Nicholson, Soane, Fenton O'Creevy, & Willman, 2005). The result of this study seems to be in line with previous findings.

Lastly, any participant in this study played a ten-round game with one or two deviant in-group member(s) and was asked to indicate whom they would like to expel after the game. In the SELF condition, most people chose the selfish to be excluded from the group. Likewise, in the BOTH condition, most people preferred to exclude the selfish. The level of willingness to pay for expelling the person was lower in the latter condition. In Irwin and Horne's study (2013) the percentage of participants punishing a deviant as well as the cost participants were willing to pay to punish the deviant was higher in the under-contribution condition where an anti-norm deviant was included than in the over-contribution condition where a pro-norm deviant was included. This may suggest that negative attitude toward deviants is common with differences in relative preferences for either type, that is, people feel uncomfortable with both deviants but they do so more toward

anti-norm deviants than to pro-norm deviants. In this study, there was no option to expel multiple group members. Participants were asked to choose only one group member. The results might have been different if multiple members could have been selected.

Inspired by Parks and Stone (2010) who argued that any type of deviants (a person too generous or a person too self-interested) are equally disliked, this study posed a question that unselfish altruistic people would be perceived negative even when they promote economic profits of in-group members and help the group be successful. In the present study, no intent to ostracize an altruistic member was detected. It can be argued that, at least, if deviant's performance contributes to others' interests, an unselfish altruistic member is not badly evaluated. On the other hand, if deviant's performance hurts others' interests, an anti-norm deviant (i.e., a selfish person) is not welcome and likely to be excluded from the group. Therefore, it is concluded that our attitude toward deviants is determined by their usefulness in dealing with conflicts of interests among intragroup (and probably intergroup) members.

Based on previous studies reporting equally disliked deviants, there seem to be certain conditions that cause people to reject outliers (e.g., when there's a strong descriptive norm; when there's a pro-norm deviant but not an anti-norm deviant in the group; when there's an

option to allow for people to exclude someone in the group, etc.). These conditions suggest important contextual factors to be examined for future studies. For example, Irwin and Horne (2013) argued that descriptive social norms make people stick to uniform behavioral codes and any person deviated from the norm is negatively evaluated. This echoes conformity tendencies commonly occurring in group situations. But, in the present study, the bogus players' mean contribution was set close to 6.0 but a single contribution point per round was determined randomly. Superficially, the descriptive norm was hard to be detected as their plays seemed to fluctuate naturally. There was no strong descriptive norm informed of or announced to participants. Can the findings of this study be repeated under such a strong descriptive norm? It would be an interesting follow-up research question.

Also, future studies can explore effects of other factors, for example, by varying the group composition of in-group or out-group deviants (e.g., the percentage of altruistic or selfish members), by manipulating the social distance among group members (e.g., a group of close friends or acquaintances), or by measuring promising individual variables as a mediator (e.g., social value orientation). Does the players' mean contribution go up or down when dealing with an out-group full of unselfish members? Does the tolerance level toward a selfish in-group member increase if the person is a

friend? Do cooperative people and individualistic people take a different strategy in dealing with selfish in-group members? These could be interesting research themes for follow-up studies.

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## 공공재 딜레마에서 이탈적 집단구성원에 대한 반응

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이탈적 집단구성원에 대한 태도를 연구한 기존연구의 결과는 크게 둘로 나뉜다. 규범에 반하는 행동을 보이는 구성원보다 규범을 과잉 준수하는 구성원을 더 선호한다는 주장(예: Abrams 등, 2000)과 일반 규범에서 벗어난 이탈적 행동을 보이면 어느 구성원이든 부정적으로 평가하고 퇴출하려 한다는 주장(예: Parks와 Stone, 2010)이 그것이다. 본 연구는 선행연구에서 나타난 이런 결과의 차이가 집단과제의 특성 때문이었을 것이라 보고, 집단 간 공공재 딜레마 게임 과제를 사용해 이탈적 구성원에 대한 반응을 알아보았다. 그 결과, 한 구성원이 개인과 집단의 수행을 심각하게 저해할 때 나머지 집단구성원은 비용을 치러서라도 그 이기적 구성원(반규범적 이탈자)을 내보내려고 하였다. 반대로, 이타적 구성원(친규범적 이탈자)에 대해서는 집단 수행과 집단의 사기에 긍정적인 영향을 미치므로 집단에 남기를 원했다. 이기적 구성원을 퇴출코자 하는 의도는 집단 내에 이타적 구성원이 없을 때보다 있을 때 더 강하게 나타났다. 이 결과는 친규범적인 혹은 반규범적인 이탈적 집단구성원에 관한 우리의 판단과 반응에 집단과제의 이익충돌 속성이 주요한 영향을 미칠 수 있음을 시사한다.

주제어 : 사회적 배제, 이기적, 이타적, 공공재 딜레마, 집단 경쟁, 이익충돌

**Appendix**

Appendix A: EXPERIMENTER'S WORKSHEET (Example)

Round5

**Room**                      **M**

GROUP DECISION FEEDBACK SHEET				
Round5		Group 2		
Member 1	Member 2	Member 3	Member 4	Member 5
9	5	7	1	5
Your group offers		27	points in total.	

GROUP COMPETITION FEEDBACK SHEET	
Round5	
Group 1 submitted	24 points in total.
Group 2 submitted	27 points in total.
Thus, Group	<u>2</u> WINS
As a result,	
Each Group 1 member earns	0 points
Each Group 2 member earns	10.2 points

INDIVIDUAL PERFORMANCE SUMMARY SHEET

ID: Group 2 - Member 3

Round #	Submit	Reward	Final points	Cumulative
Round 1	4	0	6	6
Round 2	5	6.8	11.8	17.8
Round 3	5	0	5	22.8
Round 4	8	0	2	24.8
Round 5	7	10.2	13.2	38
Round 6				
Round 7				
Round 8				
Round 9				
Round 10				
Sum				

*Note:* Once an experimenter entered the submitted point by a participant, the in-group total, the group competition result, and the individual player's performance summary were all automatically calculated.

Appendix B: PARTICIPANT'S FEEDBACK SHEETS (Example)

<b>GROUP DECISION FEEDBACK SHEET</b>				
Round1		Group 2		
Member1	Member2	Member3	Member4	Member5
10	5	<b>10</b>	2	2
Your group offers		<b>29</b>	points in total.	

<b>GROUP COMPETITION FEEDBACK SHEET</b>			
Round 1			
Group 1 submitted	<b>33</b>	points in total.	
Group 2 submitted	<b>29</b>	points in total.	
Thus, Group	<b>1</b>	WINS	
As a result,			
Each Group 1 member earns	<b>12.4</b>	points	
Each Group 2 member earns	<b>0</b>	points	

<b>INDIVIDUAL PERFORMANCE SUMMARY SHEET</b>				
ID: Group 2 – Member 3				
Round #	Submit	Reward	Final points	Cumulative
Round1	10	0	0	0
Round2	10	14.6	14.6	14.6
Round3	<b>10</b>	<b>0</b>	<b>0</b>	<b>14.6</b>
....				
Round9				
Round10				

*Note.* An experimenter manually wrote calculated results on feedback sheets and delivered them to a participant.

Appendix C: INTER-ITEM CORRELATIONS OF SURVEY ITEMS

	<i>N</i> =67	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	$\alpha$	Items
1	Just World	3.53	.655							.696	<u>6</u>
2	Aggression	2.38	.565	.166						.895	29
3	Extraversion	3.58	.705	.260*	-.009					.801	<u>7</u>
4	Agreeableness	3.98	.452	-.074	-.631**	.016				.645	9
5	Conscientiousness	3.67	.601	.144	-.358**	.055	.304*			.795	9
6	Neuroticism	2.74	.654	-.261*	.300*	-.109	-.224	-.305*		.755	8
7	Openness	3.43	.664	-.013	-.029	.181	-.176	-.070	-.256*	.821	10

*Note.* Underscore indicates one item dropped; \* indicates  $p < .05$ ; \*\* indicates  $p < .01$