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In-group favouritism in multiple social category contexts: extending generosity towards out-group members.

A thesis submitted by

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Abstract

Intergroup prosocial behaviour can potentially help us solve intergroup conflicts, but in-group favouring behaviour hinders building a cooperative relationship between different groups. However, why individuals favour in-group members over out-group members has not been well understood, and ways to reduce discrimination in prosocial behaviour have not been sought either.

The present research first aimed to elucidate the mechanism of parochial prosocial behaviour (Study 1 and Study 2). Secondly, it tested the hypothesis that individuals would treat partial out-group members more favourably than out-group members, which would help reduce intergroup discrimination (Pilot study, Study 1, and Study 2).

Overall, it found support for the group neutral increased prosociality perspectives (Study 1) which assumes that both social identity and reputational concern shape intergroup prosocial behaviour. Previously dominant theories concerning in-group favouritism such as the social identity theory approach (Tajfel & Turner, 1979) and bounded generalized reciprocity (Yamagishi, Jin, & Kiyonari, 1999) were not supported. In addition, the pilot study and Study 1 provided evidence in favour of the hypothesis, but not in Study 2. Discrepancies in findings among those studies were discussed.

The research provides theoretical implications for future research concerning in-group favouring behaviour, suggesting possible key issues that will help further elucidate parochialism. Furthermore, the finding that individuals extend in-group favouring behaviour towards partial out-group members is of practical importance as it will potentially reduce intergroup discrimination.

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Ch. 1 Literature Review

1-1. Prosocial behaviour

Prosocial behaviour plays such an essential role in our social life. It takes a variety of forms, such as cooperation, helping, donation, and volunteering (Schroeder & Graziano, 2015). This other-regarding behaviour has been detected in various interpersonal relations and contexts (for a review, see Penner, Dovidio, Piliavin, & Schroeder, 2005). Although it is often costly, people are known to display other-regarding behaviour not only towards their family members, but also others in the same group and strangers.

Evolutionary psychology has long investigated human prosociality and produced theories. As it is rooted in evolutionary theory, researchers began with explaining prosocial behaviour by natural selection processes. It was then argued that prosocial behaviour toward kin was adaptive in the long run and served benefactors' survival (the kin selection theory, Hamilton, 1964). However, this did not sufficiently account for costly prosociality directed to non-kin.

Subsequently, some researchers pointed out that the kin selection system is not perfect because humans, who used to live in a small community consisting of family members and relatives, did not need to develop the system. As a result, people have evolved to be generous toward any members of their group, erroneously believing that they were kin (the big mistake hypothesis; see Van Vugt, Roberts, & Hardy, 2007). This could explain in-group favouring behaviour, but it has received criticism that people are well aware that in-group members are not kin (Van Vugt et al., 2007).

Alternatively, the theory of reciprocal altruism (Trivers, 1971) suggested that prosocial behaviour is worthwhile when one can expect a recipient of prosociality to return the favour. This explains generosity extended towards non-kin on some occasions, but it still fails to address a problem about freeriders; expectation about direct reciprocity is massively

undermined in a large group where freeriders are never detected. In addition, it does not fully explain why people engage in altruistic punishment (Fehr & Gächter, 2002).

Nowak and Sigmund further extended the reciprocal altruism hypothesis and held that indirect reciprocity, where one's prosocial behaviour is reciprocated by a person who saw one acting prosocially towards others, plays an essential role in human cooperation (Nowak & Sigmund, 1998). This placed the role of reputation in human societies as a key mechanism of the evolution of human cooperation, and a number of studies have addressed it (Wu, Balliet, & Van Lange, 2016b).

A positive reputation not only increases the chance to enjoy indirect reciprocity but also results in having good coalitions. Competitive altruism theory proposed that members of a group need to compete to have better mates and exchange partners, and therefore they show their generosity to group members, which explains in-group favouring behaviour in a large group (Roberts, 1998).

In summary, evolutionary psychology has documented and explained costly other-regarding behaviour in different contexts. Additionally, it has long discussed why individuals extend their generosity towards non-kin, given that it does not seem to always serve for their survival. Although the evolution of prosociality has been studied dominantly in evolutionary biology and evolutionary psychology, intergroup prosocial behaviour, i.e., in-group favouritism, has collated studies and evidence not only from these disciplines, but also social, experimental psychology. Interestingly, social and evolutionary psychologists do not agree on the mechanism of in-group favouring behaviour. In the next section, I shall summarize the literature investigating intergroup parochial prosocial behaviour.

1-2. In-group favouritism in prosocial behaviour

Intergroup prosocial behaviour contributes to building peaceful and positive relationships, and it can bring a better relationship between conflicted groups as well as a better relationship between two groups (e.g., Adachi, Hodson, Willoughby, Blank, & Ha, 2016). However, in many different contexts, people discriminate between in-group members and out-group members. Particularly, they tend toward favouring in-group members over out-group members (Brewer & Kramer, 1985; Hewstone, Rubin, & Willis, 2002; Mullen, Brown, & Smith, 1992). Previous studies have found that this tendency is a product of in-group favouritism, rather than out-group derogation (Aaldering, Ten Velden, van Kleef, & De Dreu, 2018; Balliet, Wu, & De Dreu, 2014; Brewer, 1979; Koopmans & Rebers, 2009; Levine, Prosser, Evans, & Reicher, 2005; Yamagishi & Mifune, 2008). People evaluate in-group members more favourably than out-group members (Perdue, Dovidio, Gurtman, & Tyler, 1990), show more positive attitudes toward in-group members than out-group members (Ben-Ner, McCall, Stephane, & Wang, 2009), work harder to achieve goals of own group than those of out-groups (Ellmers, Gilder, & Haslam, 2004), and tend to make unfair rewards and money allocations between an in-group member and an out-group member (Hartstone & Augoustinos, 1995; Tajfel, Billig, Bundy, & Flament, 1971; Turner, Brown, & Tajfel, 1979). It is, thus, a prevailing phenomenon in human social life.

A large number of previous studies have consistently detected in-group favouritism in various forms of prosocial behaviour, such as donation and charitable giving (Fiedler, Hellmann, Dorrough, & Glöckner, 2018; Fowler & Kam, 2007; Güth, Ploner, & Regner, 2009; Kogut & Ritov, 2007; Platow et al., 1999; Rachlin & Jones, 2008; Rand et al., 2009; Ruffle & Sosis, 2006; Stagnaro, Dunham, & Rand, 2017; Whitt & Wilson, 2007), cooperation (Aaldering et al., 2018; Ahmed, 2007; Goette, Huffman, Meier, & Sutter, 2012; Guala, Mittone, & Ploner, 2013; Kramer & Brewer, 1984; Koopmans & Rebers, 2009; Krupp, Debruine, & Barclay, 2008; Simpson, 2006; Wit & Wilke, 1992; Yamagishi &

Kiyonari, 2000), and helping (Dovidio et al., 1997; Levine et al., 2005). In-group favouritism has been supported in neuroscience (Hackel, Zaki, & Van Bavel, 2017; Telzer, Ichien, & Qu, 2015). Numerous studies have reported this parochialism in diverse countries and communities of different cultures (Fiedler et al., 2018; Ruffle & Sosis, 2006), and that it occurs even when people have to incur a cost (Everett, Faber, & Crockett, 2015a; Rachlin & Jones, 2008). Moreover, previous studies have repeatedly shown that mere, arbitrary social categories are sufficient enough to elicit in-group favouritism (Aaldering et al., 2018; Ahmed, 2007; Everett, Faber, Crockett, 2015a; Güth et al., 2009; Simpson, 2006; Yamagishi & Kiyonari, 2000). Therefore, parochial prosocial behaviour is a robust human disposition.

1-3. The mechanism of in-group favouritism in prosocial behaviour

There are two major accounts for parochial prosocial behaviour (Balliet et al., 2014; Everett, Faber, & Crockett, 2015b): the social identity theory (SIT; Tajfel & Turner, 1979) and bounded generalized reciprocity (BGR; Yamagishi, Jin, & Kiyonari, 1999). SIT is a social preference-based explanation built upon social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Brown, & Tajfel, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), and BGR is a belief-based explanation rooted in evolutionary theory that focuses on reciprocity and reputational concerns (Yamagishi et al., 1999; Yamagishi & Kiyonari, 2000; Yamagishi & Mifune, 2008). Those two perspectives are conflicted in that they assume different factors that make in-group members deserve prosocial behaviour more than others do.

SIT assumes that people categorize themselves as members of certain groups and this encourages them to favour in-group members so that they can maintain a positive social identity (Tajfel & Turner, 1979; Turner et al., 1979; Turner et al., 1987). As noted in Everett et al. (2015a), in-group favouring behaviour, which serves to achieve positive distinctiveness

for their identity, is not the only means; people are known to engage in social creativity and individual mobility behaviour, instead of social comparison, in order to gain a positive social identity. Previous studies suggested that social competition is rather a default strategy to maintain a positive social identity, and the other means are triggered in response to negative events, such as experience of negative social identity (Shinnar, 2008) and social identity uncertainty (Hogg, 2014). Therefore, it can be reasonably argued that previous studies that explained parochialism in terms of the social identity theory successfully captured in-group favouritism that was derived from social comparison. According to SIT, as long as a person has an in-group membership, people would like to exhibit prosocial behaviour to them more than they would to out-group members and unclassified strangers. Therefore, SIT further posits that in-group identity itself sufficiently elicits in-group favouritism in prosocial behaviour (Everett et al., 2015a).

In contrast, BGR takes an evolutionary approach to intergroup prosocial behaviour, focusing on reputational concerns and indirect reciprocity (Trivers, 1971). It assumes that it is a group heuristic that engenders in-group favouritism, and it works in the following way; (1) intergroup contexts triggers the group heuristics, (2) people under the heuristic assume that social interactions within an in-group involves the system of generalized exchange, where members of the group give a favour with the expectation that someday they will receive a favour from someone in the system, (3) they display prosocial behaviour toward in-group members (Kiyonari, Tanida, & Yamagishi, 2000; Yamagishi et al., 1999; Yamagishi & Kiyonari, 2000; Yamagishi & Mifune, 2008; Yamagishi, Mifune, Liu, & Pauling, 2008). Thus, in-group costly prosocial behaviour is adaptive; on the one hand, by continually damaging his/her reputation in his/her community, he/she eventually is ostracized. On the other hand, to gain a positive reputation potentially brings direct and indirect reciprocity within his/her community. BGR assumes that people would act prosocially when they can

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expect to gain a positive reputation and receive a favour from somebody. Hence, BGR describes in-group favouritism as a by-product of reputational concerns; people anticipate that prosocial behaviour towards in-group members is more likely to earn positive reputation and be reciprocated than that towards out-group members. In other words, unlike the other account, it asserts that people would not favour in-group members when their prosocial behaviour is anonymous because it will not affect their reputation (Kiyonari et al., 2000; Yamagishi et al., 1999; Yamagishi & Kiyonari, 2000; Yamagishi & Mifune, 2008; Yamagishi et al., 2008). Furthermore, Yamagishi and Kiyonari (2000) demonstrated that reputational cues exert their influence even when group membership seems transitory and they do not expect any future interactions, for instance, when engaging in a one-shot economic game under the minimal group paradigm. Therefore, the prediction holds even when the strategy is not apparently adaptive.

The debate about the mechanism of in-group favouritism has produced the rich empirical literature over the decades. Interestingly, those two conflicting perspectives have both garnered empirical support from many studies as well as evidence against them.

Several studies have directly compared SIT with BGR. Balliet et al. (2014), for example, conducted a meta-analysis comparing those two theories and found that in-group favouritism was stronger when reputational concerns were present than when they were absent[1]. On the other hand, Everett et al. (2015a) carried out a lab experiment directly comparing in-group favouritism with and without reputational concerns. They used the intergroup lottery task where participants made a choice between two lotteries that could win money for a paired hypothetical player. They detected in-group favouritism even when reputational concerns were completely absent, supporting SIT, and suggested that both social preference and reputational concerns accounted for in-group favouritism as they both had main effects on it. In other words, they found the group-neutral increased prosociality by reputational concern

where reputational cues exert their influence regardless of the group membership of a recipient of prosocial behaviour. Furthermore, Aaldering et al. (2018) also addressed this debate with a nested social dilemma and a nested social dilemma-intergroup prisoner's dilemma. They found both supporting and contradictory results for SIT and BGR across their three experiments. The empirical literature has garnered conflicting findings on the mechanism of in-group favouritism in prosocial behaviour.

While SIT and BGR have dominated the discussion on discrimination in prosocial behaviour, Wu, Balliet, and their colleagues thoroughly investigated the role of reputational concern in human cooperation (Wu, Balliet, & Van Lange, 2015a; Wu, Balliet, & Van Lange, 2015b; 2016a; 2016b), and they found that when reputation was at stake, people tended to be prosocial regardless of whether a recipient was an in-group member or an out-group member (Romano, Balliet, & Wu, 2017). Therefore, three different patterns of reputation-based intergroup prosocial behaviour have been found[2]: bounded reputation-based reciprocity (BGR: Yamagishi et al., 1999), unbounded reputation-based reciprocity (Romano et al., 2017), and group neutral increased prosociality (Everett et al., 2015b).

In summary, the mechanism of prosocial behaviour has been long studied from the social and evolutionary psychological perspectives, and the literature has identified two determinants: social preference based on group membership, and reputational concern. Nevertheless, it has garnered mixed findings, and it is not clear yet why individuals favour in-group members over out-group members.

1-4. Intergroup discrimination and social categorization

Unfortunately, people show the tendency to favour in-group members over out-group members, and this parochialism in prosocial behaviour impedes building cooperative relationships between groups and individuals of different groups. In other words, although

intergroup prosocial behaviour should nurture a positive relationship with out-group members, people do not practice it, and hostile relationship between groups remains commonplace. Accordingly, ways to eliminate in-group favouritism in prosocial behaviour have been sought to create a better relationship and solve conflicts between groups and individuals of different groups. Past research has already shed lights on such possible ways to address parochial prosocial behaviour.

As the previous studies on parochial prosocial behaviour demonstrated, social categorization has a substantial influence on intergroup processes. People are, for instance, known to favour some over others purely based on social identification. Surprisingly, this phenomenon has been reported even among members of arbitrarily created groups, i.e., in minimal group paradigm (e.g., Ahmed, 2007; Everett et al., 2015b; Güth et al., 2009; Tajfel & Turner, 1979). As a result, past research has developed techniques utilizing the fluidity and permeability of social cognition in order to address intergroup discrimination.

The contact hypothesis (Allport, 1954; Pettigrew, 1998) has been one of the most prominent theories for understanding intergroup biases. This specifies circumstances where intergroup contact is likely to have a positive impact. The recent empirical literature goes beyond the contact hypothesis, revealing underlying processes of the reduction in bias in intergroup contact.

Recategorization refers to reconstructing group boundaries in order to reduce intergroup bias, and it is one of mediating factors on the relationship between intergroup contact and bias reduction (Dovidio et al., 2006; Dovidio, Gaertner, Shnabel, Saguy, & Johnson, 2010; Oskamp, 2000). Specifically, recategorization manipulation is to unite two categories into one superordinate group. Its induction can be done, for example through making an existing superordinate category salient and arbitrarily creating a new superordinate category. Based upon the social identity theory, self-categorization theory, and recategorization, Dovidio and

his colleagues have theorized underlying processes in bias reduction with recategorization technique as the common in-group identity model (CIIM: Dovidio et al., 2006; Dovidio et al., 2010; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1994).

The CIIM explains how and when recategorization reduces intergroup biases. According to this theory, the effect of intergroup contact is mediated by the cognitive representation of social categories (Dovidio et al, 2006; Dovidio et al, 2010; Dovidio, et al., 1997; Gaertner et al., 1993; Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990; Gaertner, Mann, Murrell, & Dovidio, 1989). It specifies four different representations involving one superordinate category and two subgroups under it: one group, two subgroups in one group, two groups, and separate individuals. The first representation is what recategorization aims to induce, and those contribute to the reduction in biases, while the others do not (Dovidio et al., 2006; Dovidio et al, 2010; Dovidio, et al., 1997; Gaertner et al., 1993; Gaertner, et al., 1999; Gaertner, et al., 1989). The positive effect of recategorization has been consistently confirmed by many different studies (for reviews, Gaertner & Dovidio, 2005; Gaertner et al., 1993; Gaertner, Dovidio, & Bachman, 1996). In other words, how individuals perceive social categorization of others forms behaviour towards them.

However, a few circumstances, in which the strategy is counterproductive, have been identified (Dovidio et al., 2006; Dovidio et al., 2010; Hewstone & Brown, 1986; Hogg & Hornsey, 2006; Hornsey & Hogg, 2000). First, when two subgroups are competing against each other, inducing a common in-group identity increases bias (Hornsey & Hogg, 2000). Second, when individuals have to desert their subgroup identity to accommodate superordinate one, recategorization negatively develops intergroup bias (Hogg & Hornsey, 2006; Hornsey & Hogg, 2000). Those are consistent with the mutual intergroup differentiation model that suggested that recategorization would be most effective when

original subgroup identities were maintained (Hewstone & Brown, 1986). On the whole, inducing a common superordinate identity while keeping original group boundaries, i.e., dual identity representation, has been proven to be an effective tool to intervene to intergroup bias.

Crossed categorization is an alternative method to approach intergroup bias (Crisp & Hewstone, 2006; Crisp & Hewstone, 1999; Nicolas, Fuente, & Fiske, 2017). While recategorization is designed to induce a superordinate category to reframe an existing intergroup boundary, crossed categorization is to explain patterns of intergroup bias in a situation where two different social identities are involved, and they generate four subgroups: double in-group, two partial in-groups, and double out-group. To put it concretely, when gender and race are crossed, Black females and White males are double in-group and double out-group members, respectively, for Black females. Remaining two subgroups, Black males and White females, are partial in-group members.

Seven major patterns of intergroup bias in cross categorization contexts have been proposed: the additive pattern, the dominance pattern, the social inclusion pattern, the social exclusion pattern, the hierarchical ordering pattern, and the hierarchical derogation pattern (for a review, Crisp and Hewstone, 1999; Urban & Miller, 1998). Those patterns are summarized in Table 1. Each pattern has garnered support from different studies (for a review, see Crisp & Hewstone, 1999), the additive model has collected support the most (Crisp & Hewstone, 1999; Singh, Yeoh, Lim, & Lim, 2017). A meta study revealed that the default is the additive pattern, and moderators led to a shift to another model (Crisp & Hewstone, 1999). Crisp & Hewstone (1999), for example, found that "we" priming, which is one of the common manipulations for recategorization, predicted the social inclusion pattern. Other moderators include, for instance, affective states (Crisp & Hewstone, 2000), integral affect and category relevance (Ensari, Stenstrom, Pederson, & Miller, 2009), and mood (Ensari & Miller, 1998; Urada & Miller, 2000). All in all, studies that employed crossed

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categorization paradigm have identified those patterns of intergroup bias, specifically bias in

evaluation, and moderators causing the shift from the default pattern to another.

Table 1.

Six main patterns of intergroup evaluation resulting from crossed categorization

Pattern	Dimension 1: in-group		Dimension 1: out-group	
	Dimension 2: in-group	Dimension 2: out-group	Dimension 2: in-group	Dimension 2: out-group
Additive	+2	0	0	-2
Dominance	+1	+1	-1	-1
Social inclusion	+1	+1	+1	-3
Social exclusion	+3	-1	-1	-1
Hierarchical ordering	+4	0	-2	-2
Hierarchical derogation	+2	+2	0	-4

However, when two identities are crossed, it does not always contribute to the reduction in

intergroup bias in an original, simplistic category paradigm (Mullen, Migdal, & Hewstone,

2001; Vescio, Judd, & Chua, 2006; Vescio, Judd, & Kwan, 2004). Vescio et al. (2004), for

example, compared intergroup bias between simple categorization conditions and a crossed

category condition and found that when gender and race were crossed, the level of intergroup

bias was strong as in simple categorization conditions. In addition, when relationship status

and hometown size were crossed, there was a higher level of bias in crossed categorization

condition than in simple category conditions; crossing categories could counteract. Therefore,

although crossed category paradigm is useful in predicting a pattern of intergroup biases

when two identities are at stake, this strategy does not always reduce biases (Mullen et al.,

2001; Vescio et al., 2006; Vescio et al., 2004).

Recategorization and cross categorization are for when two social categories are at stake.

Extending those categorization paradigms, researchers have investigated intergroup biases in

a situation where more than two social identities are involved (Mullen et al., 2001; Vescio et

al., 2006; Vescio et al., 2004). Typically, though using social categories is adaptive and gives quick and sufficient understandings of others, people sometimes stop processing others by social identities, especially when the category-based process is too complex and no longer economical. This shift is referred to as decategorization (Oskamp, 2000). When it occurs, people are seen as unique individuals, rather than members of a certain group. Previous studies have investigated the use of decategorization in reducing bias (Hall & Crisp, 2005; Oskamp, 2000; Urada, Stenstrom, & Miller, 2007). Hall and Crisp (2005), for example, found that the generation of multiple social categories reduced intergroup bias, but only when newly created categories were not relevant to the initial group identity.

Though those three social categorization manipulations have established themselves as useful tools to understand patterns of intergroup biases, they have mostly focused on biases, for example, intergroup evaluation (Crisp & Hewstone, 2006). In other words, researchers have not endeavored to apply it to in-group favouritism in prosocial behaviour. Previous studies, for instance, have revealed that prejudice and intergroup biases were not strong predictors of how individuals act toward those who they had prejudices about (e.g., Gaertner & Dovidio, 2005; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013). In addition, biases and behavioural discrimination in economic games are essentially different; previous studies relied largely on economic games to measure prosocial behaviour which captures deliberate decisions (e.g., Yamagishi et al., 1999), while biases were measured mostly by liking and evaluation that can be of rather automatic decisions (Crisp & Hewstone, 1999). As thoughtful and spontaneous decisions are known to often generate different responses to the same event (Kahneman, 2011), the generalizability of the findings on intergroup bias to intergroup behaviour should be challenged. Therefore, whether social categorization-based approaches would affect positive change in in-group favouritism in prosocial behaviour should be rigorously investigated.

On applying social categorization manipulations to intervene to in-group favouritism in prosocial behaviour, there are issues to be considered: namely, ecological validity and feasibility to apply. Recategorization, for example, is commonly done by arbitrarily creating a superordinate category or experimentally inducing an existing one. Although it serves for the reduction in bias, it is obviously difficult to address real conflicts due to the nature of the manipulation, especially when no superordinate category is available (e.g., between Japanese and British), except meaninglessly broad categories such as human beings. Similarly, cross categorization can at best explain the pattern in a unique situation where two categories are crossed. When encountering others, it is not likely that one perceives them in one of the crossed categories. Therefore, given that it is of vital importance to be able to address intergroup prosocial behaviour in the real world, social categorization manipulation that can be performed in contexts that are to some extent analogous to the real world is sought.

In summary, previous studies have shed light on social categorization manipulation as to understand and intervene to intergroup biases, but researchers have not applied those to intergroup prosocial behaviour. In addition, while previous studies successfully identified patterns in specific situations and some studies reported a reduction in biases, they suffer from the lack of ecological validity and, hence, their applicability to address issues in the real world. In-group favouritism in prosocial behaviour needs to be rigorously examined in tandem with social categorization manipulation that has practical implications, which would result in a reduction in intergroup discrimination in prosocial behaviour.

1-5. The present research

As intergroup prosocial behaviour can attenuate intergroup conflicts (Adachi, Hodson, Willoughby, Blank, & Ha, 2016), researchers have long discussed why people discriminate between in-group and out-group members. While they have identified two possible accounts for it, SIT and reputation-based cooperation, the empirical literature suffers from mixed

results. To my knowledge, there have not been many studies that directly compared those two accounts, and, thus, further empirical evidence that delineates the results of those studies is sought in order to elucidate in-group favouritism in prosocial behaviour.

Additionally, intergroup prosocial behaviour has not been examined in multiple social category contexts as much as intergroup biases, and not many studies designed to address parochialism in prosociality has been conducted. To take one step further, intergroup discrimination in prosocial behaviour should be addressed in multiple social category contexts, incorporating social categorization manipulation designed to reduce intergroup biases, to suggest ways to promote intergroup prosocial behaviour.

Therefore, the present research aims to elucidate the mechanism of in-group favouritism in multiple social category contexts, applying social categorization manipulations, with the hope of reducing intergroup discrimination in prosocial behaviour.

Ch. 2 Experiments: In-group favouritism in multiple category contexts

Pilot Study

Past research, which employed social categorization manipulations such as recategorization and cross-categorization, have rigorously examined intergroup biases in multiple social category contexts (Crisp & Hewstone, 2006). Those categorization manipulations, e.g., making a superordinate category salient (Dovidio, et al., 1997), have been found to reduce intergroup biases in evaluation in a number of studies with diverse contexts (Dovidio et al., 2006; Dovidio et al, 2010; Dovidio, et al., 1997; Gaertner & Dovidio, 2005; Gaertner et al., 1993; Gaertner, et al., 1990; Gaertner, et al., 1989). However, the previous literature did not focus on intergroup prosocial behaviour, and whether the successful interventions against intergroup biases hold for parochial prosocial behaviour should be examined. I shall briefly introduce and discuss the applicability of previous social categorization manipulations designed to reduce intergroup biases.

Recategorization reconstructs group boundaries by inducing a superordinate category that merges two subgroups, and it has been one of the most effective and established ways to reduce intergroup biases (Dovidio et al., 2006; Dovidio et al., 2010; Dovidio et al., 1997; Gaertner et al., 1993; Gaertner et al., 1990; Gaertner et al., 1989; Oskamp, 2000). However, there are numerous circumstances where there is no meaningful superordinate category, and it is not always feasible as an intervention. For instance, there appears to be no superordinate category, except human, between British and Japanese. It is too broad and not likely to be effective unless we could have animals or aliens as out-group members.

Cross-categorization manipulations have been employed to capture patterns of intergroup biases when two different categories are crossed. In other words, it is descriptive, not predictive. It is hard to implement as an intervention to reduce discrimination in prosocial behaviour.

Therefore, the commonly used categorization techniques such as recategorization and cross categorization are not apparently able to fully address whether changing social categorization affects the extent of prosocial behaviour one would display. A new social categorization paradigm which overcomes the limitations is sought.

Looking at interactions between individuals, contact with others begins when people meet with others for the first time and introduce themselves to one another. The more they interact, the more they learn about other's social identities. For instance, one can only perceive others' social identities by appearance without exchanging words, but interactions allow to confirm identities they perceived and know other identities. On the whole, people gradually learn others' identities, getting to know about them more.

What if people realize that an out-group member shares an in-group membership of different domain? To put it concretely, imagine a black university student sees a white person. Here, he/she can only perceive the racial out-group identity in the person. When he/she talks with this white person, however, he/she comes to know the white person attends the same university as he/she does; an in-group identity of another domain is revealed. Would the black student change his behaviour towards the white person once realizing the in-group membership?

The scenario raises the question of whether once realizing an out-group member has an in-group identity of another domain, individuals would change their behaviour toward the out-group member or not. Previous studies on cross categorization have provided relevant underpinnings. Vescio et al., (2004; 2007) investigated the effect of cross categorization in the reduction in biases by comparing intergroup favourability in a simple categorization context (i.e., in-group vs. out-group) with one in a cross-categorization context. They found no evidence that the strength of bias in the simple categorization condition was less strong in the cross categorization context. This suggests an answer to the question in terms of

intergroup bias; individuals would not change their pattern of intergroup bias toward out-group members even when figuring out they share an in-group identity of a different kind.

However, it is not clear whether the pattern of intergroup bias found in Vescio et al., (2004; 2007) is generalized to intergroup prosocial behaviour, but a previous study suggested that it does not. Nier et al. (2001), for example, found that when race and university affiliation were crossed, black research confederates elicited more help from white people when their university affiliations were same, compared to when they were not. The increased prosocial behaviour toward the out-group member with an in-group membership of another domain can be explained by in-group favouritism elicited by the common university affiliation and / or out-group derogation triggered by the out-group identity in terms of university affiliation. Given that other previous studies have revealed that intergroup discrimination in prosocial behaviour is due to favouritism, rather than derogation (e.g., Aaldering et al., 2018), their finding could be interpreted as suggesting that people would favourably treat out-group members sharing an in-group identity in another domain (i.e., a partial out-group members) more than out-group members. In addition, Dovidio, Brigham, Johnson, and Gaertner (1996) suggested that the relation between prejudice and behavioural discrimination may be weak for deliberate behaviour. Therefore, this would support the hypothesis that individual would display more prosocial behaviour to partial out-group members, compared to out-group members; the black student would be more generous toward the white person when he/she knows they attend the same school.

In addition, the empirical literature on the mechanism of intergroup prosocial behaviour adds further support for the hypothesis. SIT assumes that individuals favour in-group members because this helps them, for example, boosting their self-esteem (Abrams & Hogg, 1988). In the other words, individuals should be able to benefit from anyone with a shared identity. Provided out-group membership does not discourage them to be less prosocial, they

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should treat partial out-group members in favourable manner, which results in gaining positive social identity.

Similarly, according to BGR, people prefer in-group members because they can expect to receive indirect reciprocity (Kiyonari et al., 2000; Yamagishi et al., 1999; Yamagishi & Kiyonari, 2000; Yamagishi et al., 2008). According to this, individuals should be able to expect indirect reciprocity from partial out-group members because they share the group membership. Therefore, it can be assumed that individuals show increased prosociality toward partial out-group members compared to out-group members.

The present pilot study was conducted to provide initial evidence for the hypothesis that people would favour partial out-group members over out-group members, when deciding whether to act prosocially.

Method and procedure

Sixty-six undergraduate students at a college in the United States participated in the study (35 male, 30 female, and 1 others; M_{age} = 19.80, SD = 1.28). Three study sessions were run, and each had roughly 20 participants. On arriving in a classroom, participants were seated and given enough space to keep their privacy. The informed consent form and a questionnaire, which contained two envelopes, one with 16 quarter coins and the other without anything, were placed in front of them. After they agreed to participate in the study, the researcher informed them of the cover story that the present study investigated the relationship between economic decision making and performance in group tasks. They were told that after completing economic decision making tasks individually, they would form groups with other participants in the room and do group tasks. In actuality, however, the study ended with the individual economic decision making part, and the cover story was to efficiently induce minimal groups and reinforce group identifications. Participants were then instructed to individually complete a questionnaire that consisted of two major parts, minimal

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group induction and a dictator game (DG). In the minimal group induction phase, participants were first informed that all participants were randomly assigned to one of two groups, group X or Y, for subsequent group tasks. They were all assigned to group X, and this was the first group category. They were instructed that the group was for the subsequent group task. Then, they proceeded to the second minimal group induction and were asked to look at a painting for ten seconds. The painting was an optical illusion and had two objects. They were asked to indicate which object they first saw in the picture, and the second minimal group was created based on the response to the question, perceptual preference in-group and out-group. After completing the minimal group induction phase, and they were in two minimal group identities of two kinds, they did a DG with a real monetary incentive of $4.00. The instruction was the following;

You have been randomly chosen as the giver in this economic decision making task. You will find 20 quarter coins in "the giver" envelope. Your role is to take and keep as many of these coins as you would like, knowing that the remaining coins, if any, will be given to the receiver to keep. Only the receiver would know your decision. Also, your identities would be perfectly hidden from the receiver and the investigator, while you are given information about the receiver.

The group identification (s) of the receiver was manipulated as an independent variable, generating three conditions: a member of group X, a member of group Y, and a member of group Y with the same perceptual preference. Those represented the in-group, out-group, and partial out-group member, respectively. The amount of money they left for the recipient was a dependent variable measuring prosocial behaviour, namely charitable giving. They placed coins in the giver and receiver envelopes and filled out a post-experiment demographic questionnaire. Then, they were debriefed, thanked, and dismissed.

Results and discussion

A one way ANOVA revealed that there was a significant main effect of the recipient' group identity, $F (2, 63) = 5.05$, $p = .009$, partial $\eta^2 = .14$. A post hoc Tukey HSD test showed

that participant in the partial out-group condition left a significantly larger amount of money to the receiver, compared to those in the out-group condition and that there was no significant difference in endowment between the in-group and the partial out-group conditions (Table 2).

Table 2. The amount of endowment in DG

	M (*SD*)
In-group	1.73[ab] (0.33)
Out-group	1.49[a] (0.99)
Partial out-group	2.24[b] (0.85)

Note: superscript letters indicate the result of post hoc test, where conditions with different letters are significantly different.

Surprisingly, the difference between the in-group and out-group conditions did not reach statistical significance though the average endowment in the in-group condition was higher than that in the out-group condition. While in-group favouritism was not detected, it was found that people would favour out-group member with an in-group identity of another domain more than they would simple out-group members.

This pilot study employed two different minimal group inductions: random assignment and perceptual preference task. Previous research that compared different minimal group methods showed that the former tended to lead to weaker in-group identification than the latter (Pinter & Greenwald, 2011). Thus, the random assignment procedure for the first group categorization might result in a non-significant difference between in-group and out-group condition. Therefore, further studies should employ similar induction methods for two group categorizations to rigorously address the mechanism of prosocial behaviour.

Adding an in-group membership to an out-group member encouraged people to treat the out-group member more favourably, as people left a larger amount of money for the partial out-group member. However, it is not conclusive that it is because of the added in-group

membership; it could be due to individuation process in which the social identity complexity causes a shift from seeing others in terms of their group identity to treating them as unique individuals (Hall & Crisp, 2005; Oskamp, 2000). Thus, this alternative explanation for the result was not very likely, but future studies should ensure that the effect of added in-group identity is purely caused by the nature of the identity. Another condition where the target is a double out-group member would solve this issue, providing a reference point to assert that the nature of added identity, rather than extra information resulting in individuation, differentiate multiply categorized out-group members from pure out-group members.

In summary, the pilot study provided support for the hypothesis that partial out-group members would receive more prosocial behaviour than out-group members, while in-group favouring behaviour was not detected. The results called for refined minimal group induction method, further measurements for individuation, and another experimental condition.

Study 1

The pilot study tested the proposition that people would favour partial out-group members over out-group members, despite the out-group membership. While the results partly supported it, there was another plausible explanation for the result; added group identity, not specifically in-group identity, caused individuation and resulted in increased prosocial behaviour for partial out-group members. Therefore, Study 1 aimed to rule it out, by creating a condition where the recipient of prosocial behaviour was a double out-group member who belonged to two out-groups of different domains as well as measuring the extent to which individuation occurred. If the increased prosociality were observed for partial out-group members, but not for double out-group members, it would provide evidence directly supporting the hypothesis. In sum, there were four conditions varying in social identity of a

recipient of social prosocial behaviour: an in-group, out-group, partial out-group, and double out-group.

The methodological concerns regarding minimal group induction discussed in the pilot study were also dealt with by a single procedure that generates two categories of equal importance. This allowed controlling for the effect of possible differences in the salience between different minimal groups that possibly confounded the results in the pilot study.

In addition, the present study was aimed to examine the mechanism of parochial prosocial behaviour. The empirical literature has provided two major accounts, SIT and BGR. The crucial distinction between them is that the former predicts favouritism in anonymity, but the latter does not (Everett et al., 2015a). Therefore, manipulation of anonymity was introduced to address it.

This manipulation also allows to discuss other evolutionary perspectives on in-group favouritism: unbounded reciprocity approach (UGR: Romano et al., 2017), and the group-neutral increased prosociality (Everett et al., 2015b). When reputation is at stake, BGR assumes that people favour in-group members; reputation-based prosociality is bounded by group membership. In other words, reputational concern would not affect individuals' behaviour when they are interacting with out-group members. By contrast, Romano and his colleagues found that reputation-based cooperation is unbounded, and reputational concern makes people more generous regardless of group membership of others. However, this unbounded reciprocity perspective does not offer any predictions in terms of in-group favouritism as its prediction is purely about the influence of reputational cues.

There can be two patterns that fits UGR perspective. One is the group-neutral increased prosociality proposed by Everett et al. (2015b); reputation make people more prosocial towards others regardless of their social identity, and in-group favouritism is present both when their personal reputation is at stake and when not. In other words, this ascribes in-group

favouritism to social identity with the equal influence of reputation on in-group and out-group prosocial behaviour. The second pattern is where in-group favouring pattern is always absent but reputational concern increases prosociality. Four theories are summarized in Figure 1.
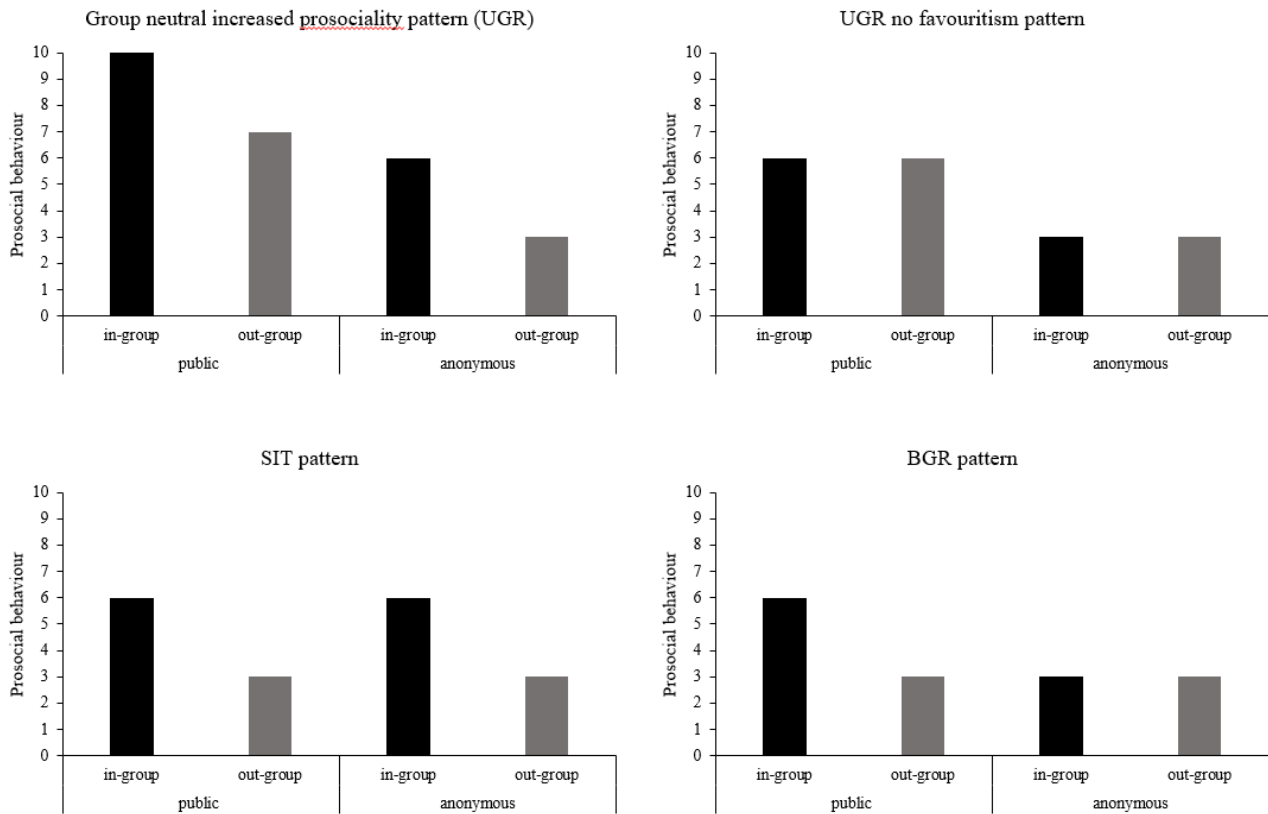
Figure 1. Four patterns of intergroup prosocial behaviour in relation to anonymity.

Moreover, the present study employed two economic decision making games varying in the cost of prosocial behaviour. Kiyonari et al. (2000) found that BGR was supported only when payoff was expressed in money, while it was not when participants used hypothetical points. This suggested that the salience of social exchange and cost played a key role in determining the influence of reputational concern. Therefore, it was expected that the influence of reputation would be enhanced when prosocial behaviour was costly.

In summary, Study 1 aimed to test whether individuals would display more prosociality toward partial out-group members than toward out-group members. In addition, it aimed to disentangle the mechanism of in-group favouring prosocial behaviour, manipulating anonymity and cost of prosocial behaviour. Thus, it was a 4 (group identity of a recipient: in-

group vs. out-group vs. partial out-group vs. double out-group) x 2 (decision setting: private vs. public) x 2 (cost of prosocial behaviour: zero and costly) within-subject design.

Hypotheses

In-group favouritism. As presented in Figure 1, there are four possible results in terms of when in-group favouritism is present. Based on SIT, it was hypothesized that in-group favouritism would be present both anonymous and public conditions (H1a: the main effect of group membership) and the extent of the tendency is same across the two decision making conditions. Based on BGR, by contrast, in-group favouritism would be present only when decisions are public (H2a: interaction between group identity and decision setting). Alternatively, the group neutral increased prosociality account predicts that individuals always favour in-group members but they are more generous towards both in-group and out-group members when their prosocial behaviour is publicly delivered (H3a: the main effects of group membership and decision setting)[3]. Lastly, it was also hypothesized that there would be no in-group favouring patterns but individuals would be more prosocial when reputational cue is present (H4a: the main effect of decision setting).

According to the previous literature, discrimination between in-group and out-group members is a product of favouritism, rather than derogation (e.g., Aaldering et al., 2018). Thus, it can be hypothesized that individuals would treat out-group and double out-group members in the uniform manner (H5).

Prosociality towards partial out-group members. Similarly to hypotheses about in-group favouritism, four different predictions were stated;

a partial out-group member would be treated more favourably,

H1b: in both decision settings, and publicity does not affect prosociality (SIT).

H2b: only when prosocial behaviour is public (BGR).

H3b: in both decision settings, and people are more generous towards partial out-group and out-group members in the public condition (Group neutral increased prosociality).

H4b: a partial out-group member would not favoured, and prosociality is only influenced by decision setting (UGR: no in-group favouring pattern).

Cost of prosocial behaviour. Based on the findings in Kiyonari et al. (2000), it was proposed that the effect of decision settings would be stronger when prosocial behaviour was costly, compared to when it was not (H6).

Method

Participants and design. 59 psychology major students at University of Kent were recruited to take part in an online survey for course credits. It was a 4 (group identity of a recipient: in-group vs. out-group vs. partial out-group vs. double out-group) x 2 (decision setting: private vs. public) x 2 (cost of prosocial behaviour: zero and costly) within-subject design. A priori power analysis revealed that 32 participants were required to detect a medium effect size at the 5% level with 80% chance. Hence, the present study was sufficiently powered.

Procedure. The online survey consisted of three main parts: minimal group induction, economic decision making games, and a post-experiment questionnaire. Participants were first informed that the study aimed to understand the relationship between artistic preferences and economic decision making. This cover story was delivered in order to sufficiently induce minimal groups based on their artistic preference without invoking participants' doubts.

Minimal group induction. After giving consent, participants proceeded to the minimal group induction procedure adapted from Yamagishi and Mifune (2008). They rated 20 pictures with two 7 point bipolar scales (dislike very much to like very much; not at all valuable to extremely valuable), and they received feedback on their artistic preference and artistic value orientation. They were presented a screen which read "Processing your

responses. It automatically jumps to the next page in a few seconds", in order to make the procedure look real. The feedback briefly introduced that people could be seen as having one of two artistic preferences and one of two artistic value orientations. It introduced group categories: group A and B for artistic preference and group X and Y for artistic value orientation. They were told that group categories' names were intentionally masked as they might affect their decisions in the following phase. To reinforce the reality and strength of the minimal group induction, they were told about hypothetical features shared by members of the same group. For instance, the feedback read that those who belonged to Group A tended to process information in a bottom-up fashion, while those in Group B tended to have a top-down approach. They were made to believe that the feedback reflected their ratings of 20 pictures, but, in actuality, every participant got the same feedback as the process was purely to create two group categories with two levels. All participants were informed that they belonged to artistic preference Group A and artistic value orientation Group Y. The minimal group induction was followed by attention check questions.

Economic decision making. The economic decision makings phase, consisted of two subparts: a dictator game (DG) and a modified public goods game (PGG). The instruction for the DG was the following;

The scenario consists of two participants. One takes a giver role and the other takes a receiver role. Two participants are paired at random, and they are randomly assigned either to be the giver or the receiver.

The giver has 400p, and can determine the division of 400p between the two players.

If the giver decides to take 200p for example, the remaining 200p is given to the receiver.

The giver can keep 400p, leaving nothing to the receiver, and the giver can also keep 0p, leaving 400p to the receiver.

The giver can decide on any amount between 0 and 400p to keep, and the remainder will be given to the receiver.

The receiver can only accept the division that the giver decides.

All participants were told that they were randomly chosen as the giver, but every participant was assigned to the giver role in actuality. The amount of money they left for the other player was a dependent measurement of prosocial behaviour with a significant monetary cost. At the end of the instruction, it was clearly explained that one participant would be chosen to receive the actual payment of the money earned in the decision making scenarios, and they were made sure to engage in them seriously. Then, further instruction on their decision setting was given. This explained that there were two decision making settings varying in whether their group identities would be disclosed to a receiver. They completed 2 trials varying in decision settings, with four different other participants who belonged to Group A (in-group member), Group B (out-group member), Group B and Y (partial out-group member), Group B and X (double out-group member). Therefore, they had in total of 8 trials. Each trial consisted of three phases: trial instruction, attention check, and decision making. They read brief instruction on the DG again and were presented their group membership and the pared participant's group membership. Decision setting was also clearly explained. They proceeded to an attention and comprehension check phase where they had to indicate correct group membership of the paired player. Wrong responses sent them back to the instruction page, and they could not proceed to the decision making phase. Finally, they decided how much they wanted to take, knowing the remainder would be given to the other participant. Group identities of participants and paired players and decision setting were presented on the decision making phase as well.

Participants completed 8 trials of the PGG. Procedures and instructions were parallel to the DG, except the instruction of the rules of PGG. It was the following;

For this scenario, you are paired with another participant, and both of you and the participant have a personal endowment of 400p. You will shortly have the choice of whether to keep your 400p in your personal fund or invest any amount of it into a central fund.

Money in the personal fund is your property. Money in the central fund is a collective resource shared by two participants, you and the participant.

*Importantly, any money donated to the collective central fund will be **doubled**. Money in the central fund will then be distributed equally between two, regardless of their contribution. At the end of the scenario, all participants will therefore finish with any money remaining in their personal fund, and any money distributed from the central fund.*

You can invest any amount of your endowment between and inclusive of 0-400p.

Example:

A number of potential outcomes are possible.

If two participants keep all of their £4 endowments in their personal fund, they will leave with £4. Nothing is contributed to the central fund and nothing is gained from the central fund.

On the other hand, if both of them donate all of their endowment to the central fund, the central fund when doubled will be worth £16. They will finish with an equal share of this central fund, totally £8 each.

Alternatively, one, for instance, may choose to invest £4 in the central fund, and the other may keep £4 in the personal fund. In this case, the central fund, when doubled, would contain £8. The one who did not invest their endowments will leave with their retained £4 endowment, plus their £4 share of the central fund. The other who did invest their full endowment in the central fund, on the other hand, will have nothing remaining in their personal fund and will leave with only their share of the central fund, totalling £4 each

You will shortly be asked to decide how much of your 400p you would like to invest in the central fund.

Post-experiment questionnaire. Participants answered a few comprehension questions about the rule until they gave the right answers. The amount of money that participants decided to invest in the central fund was the dependent measurement of costless prosocial behaviour because they would never lose their money by putting money in the central fund. Their investment would be returned, and the same amount of money was transferred to the other participant. In contrast to the DG, giving does not mean losing their money in the modified PGG. In addition, unlike an ordinary PGG, the final payoff did not involve coordination between two participants; their final payoff depended only on the investment in the central fund that the other participant decided to make.

The post-experiment questionnaire included items measuring in-group identification of and how much they individuated the in-group, out-group, partial out-group, and double out-group targets. The former was measured by the following two items (examples were ones for in-group target); "To what extent do you perceive people whose artistic preference group is A as members of the same group" and " To what extent do you perceive that you have characteristics in common with people hose artistic preference group is A" (seven-point polar scale, from not at all to very much). The following three items were used for individuation; "How much do you view people whose artistic preference group is A?" (seven-point bipolar scale, from individuals to group members), "To what extent do you think people whose artistic preference group is A as typical group members?" (seven-point polar scale, from not at all to very much), and "how similar are people whose artistic preference group is A to another member of the same group(s)?" (seven-point polar scale, from not at all similar to very similar). Those were followed by suspicious probe questions and debriefing.

Results

In-group identification and individuation. Using scores on two items, in-group identification indices were created (Index for the in-group target: Cronbach's $\alpha = .87$; index

for the out-group target: Cronbach's α = .72; index for the partial out-group target: Cronbach's α = .79; index for the double out-group target: Cronbach's α = .88), Similarly, three item scores of individuation were reverse coded and collapsed into one single index (Index for the in-group target: Cronbach's α = .89; index for the out-group target: Cronbach's α = .82; index for the partial out-group target: Cronbach's α = .89; index for the double out-group target: Cronbach's α = .85). There were significant negative correlations between in-group identification and individuation (in-group: r = -.69, p < .001; out-group: r = -.56, p < .001; partial out-group: r = -.73, p < .001; double out-group: r = -.58, p < .001). Mean scores and standard deviations of those indices are reported in Table 3.

A one way repeated measure ANOVA on in-group identification was conducted to compare the effect of group identity. Mauchly's test indicated that the assumption of sphericity was violated for group identity, $\chi2$ (5) = 33.91, p < .001. Greenhouse-Geisser corrected degree of freedom was used for subsequent analyses. It found that the main effect of group identity was significant, F (2.09, 121.41) = 20.59, p < .001, partial η^2 = .26. Pairwise comparisons of estimated marginal means revealed that all comparisons, except one between the out-group and double out-group member, were statistically significant, ps < .002. Therefore, participants overall correctly understood the social identities of the four targets.

The same statistical analysis was carried out on individuation. The assumption of sphericity was also violated for group identity, and therefore Greenhouse-Geisser corrected degree of freedom was adapted ($\chi2$ (5) = 66.56, p < .001). It was found that there was a significant effect of group identity, F (1.72, 99.94) = 5.10, p = .011, partial η^2 = .08. Pairwise comparisons revealed that participants individuated the in-group member less than the rest and the magnitudes of individuation toward the out-group, partial out-group, and double out-group members were not statistically significant. In sum, the manipulation of social identity was successful.

Group Identity, decision setting, and the cost of prosocial behaviour. A 4 (group identity: in-group vs. out-group vs. partial out-group vs. double out-group) x 2 (decision setting: private vs. public) x 2 (cost: costly vs. costless) repeated measure ANOVA was conducted on the amount of money given in the economic decision making games. Mauchly's test indicated that the assumption of sphericity was violated for group identity, its interaction with decision setting and cost, and a three-way interaction term ($\chi2$ (5) = 13.72, *p* = .02; $\chi2$ (5) = 11.74, *p* = .04; $\chi2$ (5) = 18.84, *p* .002; $\chi2$ (5) = 15.11, *p* < .01, respectively). Greenhouse-Geisser corrected degree of freedoms were used for subsequent analyses. Cell means and standard deviations are reported in Table 4.

Table 3. Means and standard deviations of in-group identification indices and individuation indices

	In-group member		Out-group member		Partial out-group member		Double out-group member	
	M	SD	M	SD	M	SD	M	SD
In-group identification	4.52	1.38	3.27	1.23	3.73	1.22	3.23	1.4
Individuation	3.79	1.27	4.21	1.21	4.29	1.18	4.22	1.26

Table 4. Cell means and standard deviations of prosocial endowment

	In-group		Out-group		Partial out-group		Double out-group	
	Private	Public	Private	Public	Private	Public	Private	Public
Costly	175.75 (82.24)	189.71 (67.06)	161.36 (89.41)	186.07 (72.99)	161.02 (79.84)	189.36 (76.97)	163.51 (97.80)	197.88 (77.23)
Costless	249.07(123.90)	246.00(126.31)	213.14(134.86)	220.98(134.41)	232.41(127.31)	242.25(122.96)	212.34(139.68)	233.88(129.14)

There was a significant main effect of group identity (in-group: *estimated marginal mean (EMM)* = 215.13, *SE* = 9.10; out-group: *EMM* = 195.39, *SE* = 10.55; partial out-group: *EMM* = 206.26, *SE* = 9.45; double out-group: *EMM* = 201.90, *SE* = 10.76), F (2.66, 154.31) = 3.98, p = .01, η^2 = .06. Participants left significantly larger amount of amount of money for the in-group recipient more than for the out-group and double out-group recipient, and the partial out-group recipient was given more money compared to the out-group recipient (Figure. 2).
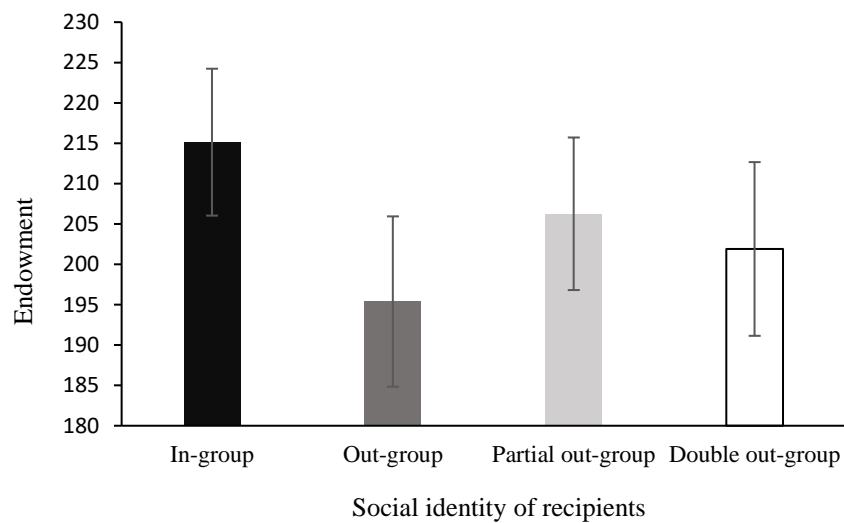
Figure 2. The endowment in the DG by group identity of the recipient.

The main effect of decision setting was significant, F (1, 58) = 17.77, p < .001, η^2 = .24 (private: *EMM* = 196.07, *SE* = 9.94; public: *EMM* = 213.27, *SE* = 9.12). The endowment was significantly greater when it was delivered publicly, than when it was privately transferred.

There was also a significant effect of cost of prosocial behaviour, F (1, 58) = 10.42, p = .002, η^2 = .15 (costly: *EMM* = 178.08, *SE* = 8.27; costless: *EMM* = 231.26, *SE* = 15.53). Participants gave more when giving does not mean losing their money, compared to when giving was equal to losing.

The interaction between group identity and decision setting was marginally significant, F (2.65, 153.50) = 2.62, p = .06, η^2 = .04. The simple effect analysis revealed that the in-group recipient received money significantly more than the remaining three in the private condition,

but the in-group recipient was left a significantly larger amount of money compared to only the out-group member in the other condition.

There was a marginally significant interaction between group identity and cost, F (2.45, 141.97) = 2.43, p = .08, η^2 = .04. It was found that only in zero-cost condition (the modified PGG), the main effect of social identity was significant that the in-group recipient was left a significantly larger amount of money compared to the out-group and double out-group receivers. In addition, an endowment to the partial out-group member was significantly bigger than that to the out-group and double out-group members.

The interaction between decision setting and cost was significant, F (1, 58) = 4.23, p = .04, η^2 = .07. Pairwise comparisons revealed that the main effect of the decision setting was present only when prosocial behaviour was costly (the DG).

The three way interaction did not reach significance, F (2.5, 146.16) = .05, p = .98, η^2 = .001.

Discussion

The present study examined in-group favouritism in the multiple social category context. Specifically, it was to establish the pattern of intergroup prosocial behaviour towards partial out-group members who belonged to an in-group and out-group of different domains. In addition, this had two decision making conditions to address the mechanism of intergroup prosocial behaviour: whether people would favour in-group members purely because of the shared identity or because of the reputational concern. Furthermore, Study 1 looked at two different types of prosocial behaviour varying in the cost: one where giving meant losing, and the other where they lost anything by giving.

In-group identification of four different targets was measured by 7-point bipolar scale items, where 4 meant that they saw a target neither as an in-group nor an out-group member. As shown in Table 2, although the partial out-group member was identified as an in-group

member more than the out and double out-group member, the mean did not exceed 4, suggesting that he / she was yet seen as an out-group member, rather than an in-group member. Therefore, the result suggests that one out-group membership overrides another in-group membership and individuals identify those who share in-group identities but not belong to any out-groups as in-group members; partial out-group members are cognitively represented as out-group members, rather than in-group members.

According to the social identity theory (Tajfel & Turner, 1979), a group consists of depersonalized individuals, suggesting that in-group members would not be individuated. Consistently with this, in-group members were seen as individuals to less extent, compared to the rest of the targets. In addition, negative correlations between individuation and in-group identification fit the theory.

Regarding in-group favouritism, the results of the main analysis supported the hypothesized patterns of intergroup prosocial behaviour. Firstly, participants showed in-group favouritism both in the anonymous and public. Therefore, the group neutral increased prosociality perspective was supported (H3a). In-group favouring pattern was observed unlike the pilot study. This suggests that the methodological concerns with regard to the minimal group in the pilot study were solved. Particularly, this study induced minimal groups by more elaborate task than a random assignment in the precious experiment which tends to fail to successfully create socially meaningful groups (Pinter & Greenwald, 2011).

In terms of prosociality towards partial out-group members, the present study replicated the results in the pilot study, demonstrating that individuals favoured the partial out-group more than the out-group member regardless of the decision setting (H3b). The research design allowed to overcome the limitation of pilot study and found that added in-group identity increased prosocial behaviour towards the partial out-group target; considering the results on individuation where there was no significant difference among out-group, partial

out-group, and double out-group targets, the results successfully ruled out the alternative explanation that increased prosociality towards partial out-group members were due to added identity that led to individuation. Therefore, it can be concluded that individuals are more generous towards partial out-group members compared to out-group members. However, it should be noted that discrimination between the partial out and out-group members was marginally significant. Consistently with the pilot study, they did not discriminate between the in-group and the partial out-group target, although they did not identify the latter as an in-group members in the same manner as the former. This implies that how people cognitively categorize others does not predict how much they would display prosocial behaviour towards them, but they just refer to social identities that a recipient has; in-group favouring behaviour may target anyone with an in-group identity, regardless of the cognitive representation of their social identities.

The out-group and double out-group recipients were treated in the same manner, supporting the previous finding that out-group membership does not discourage people to exhibit prosocial behaviour, but in-group membership facilitates it (H5). Previous studies demonstrated the absence of out-group derogation by comparing prosocial behaviour toward out-group members with that to non-classified individuals who are not identified with any groups. By contrast, the research design of the present study not only provided support for the absence of out-group derogation in intergroup prosociality but also showed that out-group memberships do not additively hinder prosocial behaviour.

As there was not a significant three-way interaction, the hypothesized effect of the cost of prosocial behaviour on the pattern of prosocial behaviour was not detected (H6). However, the results demonstrated that people would be more prosocial when prosocial behaviour did not cost, compared to when it was not, and revealed significant interactions with group identity and decision setting.

First, it was found that group identity lost its influence on prosociality in the DG where the substantial cost was salient, and the pattern of intergroup prosocial behaviour that was revealed by the significant main effect of group identity derived only from the PGG where participants did not incur any cost. This is inconsistent with several previous studies that detected in-group favouritism in the DG (e.g., Ahmed, 2007). However, Balliet et al. (2014) in their meta-analysis that the DG had a negative relation with the effect size of in-group favouritism, and the present result is apparently similar. As suggested in Balliet et al. (2014) that included only a little unpublished data, the publication bias might have blurred the actual in-group favouritism in the DG. Thus, the result seems to call for a comprehensive meta-analyses, including more unpublished manuscripts.

Second, the interaction with decision making setting indicated that whether they could expect to gain a positive reputation had on influence on prosociality only in the DG. In other words, reputational concern plays a role only when prosocial behaviour is costly, which is consistent with costly signaling theory (Zahavi & Zahavi, 1997) that proposed that people display costly prosocial behaviour all the better for its cost that communicates many traits to others.

In summary, the present study provided support for the group neutral increased prosociality, meaning that both social identity of the target contributes to shaping intergroup prosocial behaviour and reputational cues makes individuals more prosocial in general: reputation-based cooperation is not bounded by group membership. Moreover, the present study replicated the tendency to treat partial out-group members more favourably than out-group members. In addition, participants did not discriminate between in-group members and partial out-group members. Those results together suggest that revealing a shared membership of another domain is sufficient to elicit prosocial behaviour from out-group members and this simple procedure, which can be adapted, for example, in self-introduction,

can potentially encourage individuals to extend favouritism towards initial out-group members.

Study 2

Study 1 demonstrated that the cost of prosocial behaviour for a benefactor affected the influences of group identity of a recipient and decision making settings on prosociality. Study 2 was conducted to replicate the findings of Study 1 with a focus on costly prosocial behaviour, as prosocial behaviour usually costs a benefactor. Also, the marginally significant interaction between social identity and cost in Study 1 suggested that prosocial behaviour would not be affected by beneficiaries' social identity, which was against the robust finding of in-group favouritism in a dictator games in numerous previous studies. Thus, prosociality with substantial cost should be rigorously examined again with a similar research design. Additionally, the present study aimed to investigate the mechanism with additional variables, e.g., evaluation and trust that allowed thorough analyses.

Method

Participants and design. 121 individuals registered to Prolific were recruited to take part in an online survey. It was a 4 (group identity of a recipient: in-group vs. out-group vs. partial out-group vs. double out-group) x 2 (decision setting: private vs. public) mixed design, with the decision setting being a between-subject factor and the rest being within-subject factors. The decision setting was made to be a between-subject factor in order to reduce the complexity of the scenarios for participants.

Procedure. The online survey had three main parts: minimal group induction, economic decision making games, and post-experiment questionnaire. The basic flow and structure of the survey was identical to that in Study 1 except the extended post experiment questionnaire. After participants consented, they completed minimal group induction. The minimal group induction used in Study 1 was administrated in Study 2, but 10 pictures were dropped in

order to shorten the length of the survey. Thus, participants rated 10 pictures, and two minimal groups, artistic preference and artistic value orientation, with two levels (A and B; X and Y) were generated in the same manner as in Study 1, and they were assigned to the group A and Y.

Then, they proceeded to the DG. Four trials varying in group identity of the other player were randomly carried out. Instructions for the DGs and the following;

DG (private decision making condition)

This scenario consists of two participants. One takes a decider role and the other takes a receiver role. Two participants are paired at random, and they are randomly assigned either to be the decider or the receiver.

The decider has 400p, and can determine the division of 400p between the two participants.

If the decider take 200p, for example, the remaining 200p is given to the receiver.

The decider can keep 400p, leaving nothing to the receiver, and the giver can also keep 0p. leaving 400p to the receiver. The decider can keep any amount between 0 and 400p, and the remainder will be given to the receiver.

The receiver can only accept the division that the decider chooses.

Importantly, if you are chosen as the giver, your identities will never be disclosed to receivers. Because your decision are anonymously coded, researchers will never identify how much money you take. Any information about yourself, e.g., your group membership of artistic preference and artistic value orientation, will never be known by others. Therefore, your identities are completely anonymous.

If you are chosen as the receiver, you will be notified how much the paired decider has left to you, and you will never know who the decider is.

At the end of the instructions, it was emphasized that one participant would be chosen to receive the actual payment of money that he/she earns in the scenarios and, therefore, participants were encouraged to engage in those seriously.

The post-experiment questionnaire included measurements of evaluation, in-group identification, and expectation about reciprocity regarding the four targets with whom they played the economic decision making games: the in-group, out-group, partial out-group, and double out-group member.

Intergroup evaluation was measured with a seven-point scale asking how much the participant wished to be a partner for a cooperative task with each target (adapted from Urada, Stenstrom, & Miller, 2007). The instruction read "Imagine you would cooperate to come to a consensus on solutions to different problems with another participant, for extra Qualtrics bonuses. No special knowledge or skills are needed to solve those problems. It is only necessary that you two will be able to work carefully together." Participants then indicated their evaluation by a 7 point scale.

Expectation about reciprocity was measured with either two or four 7-point scaled items depending on whether a target had one or two social identities. For targets with a single social identity, namely the in-group and the out-group targets, there were two items designed to measure expectation about direct reciprocity and indirect reciprocity. For targets with two social identities, the partial out-group and double out-group target, one item for direct reciprocity and three for indirect reciprocity were administered. These three items varied in from which group of people they would expect to receive reciprocity: from members of one group, the other group, and both groups. As an example, three items for the partial out-group target included expected reciprocity from people who shared only the in-group membership, the out-group membership, and both of them.

In-group identification of the target was measured with four items addressing membership, commonality, closeness, and liking (adapted from Yamagishi & Kiyonari, 2000), which was more elaborate than the one used in Study 1. They were measured by 7 point polar scales. In addition, trust towards those targets was measured with two 7 point scaled items.

As a manipulation check for the minimal group induction, participants were asked to indicate to what extent they thought they belonged to four different minimal groups by a 7 point polar scale. After completing the post-experiment questionnaire, participants were presented open end questions for suspicious probe and then debriefed.

Results

Twelve participants who failed to identify themselves as assigned groups were removed using manipulation check items, leaving the final sample of 109.

Preliminary analyses. Two items were collapsed into expectation about reciprocity index for the targets with single social identity (for the in-group target: Cronbach's α = .87; for the out-group target: Cronbach's α = .72), and four items were collapsed for the targets with two social identity (for the partial out-group: Cronbach's α = .82; index for the double out-group target: Cronbach's α = .87). Similarly, in-group identification indices were created using four items (for the in-group target: Cronbach's α = .89; for the out-group target: Cronbach's α = .80; for the partial out-group target: Cronbach's α = .83; for the double out-group target: Cronbach's α = .77). Two items measuring trust were also merged (for the in-group target: Cronbach's α = .88; for the out-group target: Cronbach's α = .89; for the partial out-group target: Cronbach's α = .91; for the double out-group target: Cronbach's α = .81).

Expectation about reciprocity. A one way repeated measure ANOVA on expectation about the indices of reciprocity comparing four different targets of different social identities was conducted, and it yielded a significant main effect of social identity, F (2.65, 286.03) = 41.34 (Mauchly's test: $\chi 2$ (5) = 19.32, p = .002, Greenhouse-Geisser corrected degree of

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freedoms adapted), $p < .001$, $\eta^2 = .28$ (Table 5). The pairwise comparison revealed that

expectations toward the four targets were significantly different from one another, $ps < 0.002$.

One way ANOVAs were carried out to test whether the decision making setting

manipulation induced different levels of expected reciprocity in each social identity

condition, and they revealed that there was not a statistically significant difference in

expectation about reciprocity between those in the private condition and the public condition,

$ps > .08$. Therefore, the manipulation might not have worked.

Table 5. Means and SDs of expectation about
reciprocity

	M (*SD*)
In-group	5.49[a] (1.18)
Out-group	4.60[c] (1.27)
Partial out-group	4.95[b] (1.02)
Double out-group	4.21[d] (1.27)

Note: superscript letters indicate the result of post hoc
test, where conditions with different letters are
significantly different.

In-group identification. Similarly, a one way repeated measure ANOVA was carried out,

and it found that there was a significant main effect of social identity of the target, F (2.43,

261.94) = 69.64 (Mauchly's test: $\chi2$ (5) = 19.32, $p = .002$, Greenhouse-Geisser corrected

degree of freedoms adapted), $p < .001$, $\eta^2 = .39$. The pairwise comparison revealed all

comparisons, except one between the out-group and double out-group target, were

statistically significant. Participants identified the in-group target the most, the partial out-

group the second most, and the out-group target and double out-group target the least (Table

6). The manipulation of group identity was successfully done.

Table 6. Means and SDs of in-group
identification

	M (SD)
In-group	5.16[a] (1.03)
Out-group	3.35[c] (1.05)
Partial out-group	4.25[b] (0.98)
Double out-group	3.66[c] (1.08)

Note: superscript letters indicate the result of post hoc
test, where conditions with different letters are
significantly different.

Trust. A repeated measure ANOVA on trust indices found that the main effect of social

identity was significant, F (2.40, 258.74) = 19.34 (Mauchly's test: $\chi2$ (5) = 39.16, $p < .001$,

Greenhouse-Geisser corrected degree of freedoms adapted), $p < .001$, $\eta^2 = .15$. Pairwise

comparison revealed the same pattern as in-group identification (Table 7).

Table 7. Means and SDs of trust

	M (SD)
In-group	4.90[a] (1.20)
Out-group	4.06[c] (1.23)
Partial out-group	4.41[b] (1.13)
Double out-group	4.11[c] (1.16)

Note: superscript letters indicate the result of post hoc
test, where conditions with different letters are
significantly different.

Evaluation. A repeated measure ANOVA on evaluation was conducted, and it was found

that evaluations towards four different targets were significantly different from one another,

F (2.13, 223.51) = 64.49 (Mauchly's test: $\chi2$ (5) = 58.74, $p < .001$, Greenhouse-Geisser

corrected degree of freedoms adapted), $p < .001$, $\eta^2 = .21$ (in-group: $M = 5.42$, $SD = 1.43$;

out-group: $M = 4.27$, $SD = 1.50$; partial out-group: $M = 4.83$, $SD = 1.43$; double out-group: M

$= 3.92$, $SD = 1.65$).

Table 8. Means and SDs of evaluation

	M (*SD*)
In-group	5.42[a] (1.43)
Out-group	4.27[c] (1.50)
Partial out-group	4.83[b] (1.43)
Double out-group	3.92[d] (1.65)

Note: superscript letters indicate the result of post hoc test, where conditions with different letters are significantly different.

Dictator game. A 4 (group identity: in-group vs. out-group vs. partial out-group vs. double out-group) x 2 (decision setting: private vs. public) mixed design ANOVA on the endowment in the DG was conducted. Greenhouse-Geisser corrected degrees of freedom was adapted for group identity (Mauchly's test: $\chi2$ (5) = 17.13, p = .004). The main effects of group identity and decision setting were not statistically significant; group identity: F (2.73, 289.68) = .70, p = .54, η^2 = .007; decision setting: F (1, 106) = .22, p = .64, η^2 = .002. Neither was the interaction between them significant, F (2.73, 289.68) = .23, p = .86, η^2 = .002. Cell means are summarized in Table 9.

Table 9. Cell means and standard deviations of prosocial endowment

	Private	Public
	M (*SD*)	*M* (*SD*)
In-group	150.25 (86.00)	157.33 (93.47)
Out-group	137.60 (85.83)	153.62 (95.28)
Partial out-group	155.57 (82.25)	155.20 (86.58)
Double out-group	141.52 (96.91)	148.47 (96.72)

Correlational analyses. Correlation coefficients among the variables across four group identity conditions are summarized in Table 10 to 13. Overall, Patterns of significant correlations in the correlation matrices across four conditions slightly varied, but, overall, correlations between in-group identification and reciprocity, trust, and evaluation provided support for results of ANOVAS in previous sections. Additionally, it was found that evaluation was correlated with reciprocity and trust to small to medium extent. However, unexpectedly, prosocial behaviour was not correlated with anything in all conditions.

Table 10. Correlation among the variables for the in-group target

	Reciprocity	Identification	Trust	Evaluation	Dictator giving
Reciprocity	.	.24*	.12	.28*	-.007
Identification	.24*	.	.69*	.15	-.03
Trust	.12	.69*	.	.19*	-.04
Evaluation	.28*	.15	.19*	.	.11
Dictator giving	-.007	-.03	-.04	.11	.

Note: * correlation is significant at the 0.05 level (2-tailed)

Table 11. Correlation among the variables for the out-group target

	Reciprocity	Identification	Trust	Evaluation	Dictator giving
Reciprocity	.	.20*	.20*	.40*	.03
Identification	.20*	.	.63*	.19*	.16
Trust	.20*	.63*	.	.20*	.09
Evaluation	.40*	.19*	.20*	.	.02
Dictator giving	.03	.16	.09	.02	.

Note: * correlation is significant at the 0.05 level (2-tailed)

Table 12. Correlation among the variables for the partial out-group target

	Reciprocity	Identification	Trust	Evaluation	Dictator giving
Reciprocity	.	.21*	.10	.31*	-.04
Identification	.21*	.	.55*	.21*	-.04
Trust	.10	.55*	.	.29*	-.02
Evaluation	.31*	.21*	.29*	.	-.50
Dictator giving	-.04	-.04	-.02	-.50	.

Note: * correlation is significant at the 0.05 level (2-tailed)

Table 13. Correlation among the variables for the double out-group target

	Reciprocity	Identification	Trust	Evaluation	Dictator giving
Reciprocity	.	.22*	.36*	.38*	.02
Identification	.22*	.	.54*	.13	.17
Trust	.36*	.54*	.	.22*	.07
Evaluation	.38*	.13	.22*	.	.007
Dictator giving	.02	.17	.07	.007	.

Note: * correlation is significant at the 0.05 level (2-tailed)

Discussion

The present study aimed to replicate the findings in Study 1 and further look at the mechanism with additional variables: expectation about reciprocity, trust, and evaluation. It did not replicate the findings that group identity of the target and the decision making setting predicted the extent to which people would display prosocial behaviour; any variables measured in the present study predicted prosociality. However, the results were consistent with the finding from Study 1 that group membership did not have a significant effect in the DG where prosocial behaviour cost benefactors.

The decision making manipulation did not change how much individuals expected reciprocity when completing the DG, but they expected different levels of reciprocity from others of different group membership from the in-group, partial out-group, out-group, and double out-group target in descending order. Interestingly, they expected reciprocity even from the out and double out-group targets, providing evidence against BGR. BGR posits that people assume the system of generalized exchange, where people give a favour with the expectation that someday he/she will receive a favour from someone in the system, only among in-group members (Yamagishi et al., 1999; Yamagishi & Mifune, 2008). Thus, according to this perspective, individuals do not expect others who do not belong to the same group at all. The result is rather consistent with the unbounded generalized reciprocity perspective (Romano et al., 2017), which argues that reputation-based cooperation occurs regardless of the group membership of others around. Overall, the result suggests that people expect reciprocity when interacting with others, and that perceived in-group-ness increased the extent of expectation about reciprocity, and supported the unbounded generalized reciprocity perspective.

The results showed that people evaluated others based on their group membership, but the correlational analyses revealed that evaluation was rather correlated with trust and expected reciprocity. This implies that social identity of others has an effect on evaluation through trust and expected reciprocity. Because group identity manipulation was a within-subject designed, it did not allow mediation analyses, but it would be desirable that future studies will look into the relationship among those variables.

With respect to prosocial behaviour, although the present study aimed to replicate the findings in Study 1, the results demonstrated that neither of group identity and the decision making condition significantly influenced prosocial behaviour. In addition, the effect sizes of those were much smaller than those in the previous study. In sum, Study 2 did not provide

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supports for any hypotheses concerning in-group favouritism and partial out-group prosocial behaviour, but it found that out-group derogation pattern was not discovered, supporting H5.

This pattern, however, is consistent with the implication of Study 1 that which group membership did not significantly shape prosociality in the DG. In the present research, two studies have consistently demonstrated that there is no SIT-driven in-group favouritism. In fact, Balliet et al. (2014) found that in-group favouritism in DGs is smaller ($d = 0.19$) than in other games with outcome interdependence ($d = 0.47$). A priori power analyses for Study 1 and Study 2 were based on the assumption of the effect size of in-group favouritism being medium, and this might have led to the failure to detect the significant in-group favouring behaviour. Therefore, future studies with bigger sample size would be desirable. In addition, the previous literature might suffer from the publication bias, providing the relatively smaller effect size in the DG. Thus, a meta-analysis calling for unpublished data will potentially provide the absence of in-group favouritism.

Regarding the decision setting manipulation, it was suggested that the decision setting manipulation did not work out as it did not significantly affect participants' expectation about reciprocity. In Study 1, it was a within-subject factor, but it was a between-subject factor in the present study. This change was made to reduce confusion and cognitive load for participants, but this might have acted to reduce the salience of the group decision making manipulation.

In summary, Study 2 did not find any evidence for existing theories accounting for parochial prosocial behaviour, while social identity was found to shape trust and evaluation and affect expected indirect reciprocity. This suggests that patterns of intergroup behaviour do not always correspond with biases that are not explicitly expressed, consistent with Dovidio et al. (1996) pointing out the potential discrepancy between discrimination and attitudes.

Ch. 3 General discussion

This thesis investigated the mechanism of prosocial behaviour and intergroup prosocial behaviour in a multiple group category context. The pilot study was to provide initial evidence that people would treat partial out-group members more favourably than out-group members. Study 1 aimed to replicate the findings from the pilot study with more elaborated methodology, and it also examined the mechanism of in-group favouring behaviour, using decision setting manipulation (Everett et al., 2015b; Romano et al., 2017). Study 2 attempted to further replicate previous findings and look into it with additional variables: trust, evaluation, and expectation about reciprocity.

3-1. Pilot Study: Aims, key findings, and implications

The pilot study employed a simple dictator game where participants played it once with one of these receivers: an in-group, out-group, or partial out-group member. Two difference minimal groups were induced prior to the game. It was hypothesized that they would favour the partial out-group target more than the out-group target, as a result of the added in-group membership.

As expected, they were significantly more generous towards the partial out-group member, compared to the out-group member. In addition, they did not discriminate between the in-group and the partial out-group members, suggesting that when one realizes that an out-group member has an in-group membership of another domain, he/she would display the extended level of prosociality.

This finding introduced a practical social categorization manipulation that can potentially intervene to intergroup discrimination in prosocial behaviour. As discussed earlier, past research developed various categorization techniques such as recategorization and cross

categorization, but those were not of practical use. Although previous studies on intergroup biases and evaluations already demonstrated that just adding an in-group identity to out-group members would not reduce biases, the pilot study revealed that this simple procedure would sufficiently promote individuals to extend their in-group favouring behaviour towards initial out-group members.

Overall, the key finding was that individuals treat partial out-group members, who have both in-group and out-group memberships, more favourably than out-group members. This pattern of intergroup prosocial behaviour is not consistent with the most common pattern of intergroup bias observed in a cross categorization context. Therefore, the study confirmed the argument that behavioural discrimination and intergroup biases are not necessarily consistent (e.g., Gaertner & Dovidio, 2005; Oswald et al., 2013) Its practical implication is that individuals can easily present themselves to out-group members in the way they can elicit prosocial behaviour as if they were in-group members.

3-2. Study 1: Aims, key findings, and implications

Study 1 was designed to replicate the key finding from the pilot study with a more elaborated research design that allows to eliminate an alternative explanation for the previous finding. Additionally, it tested different theories accounting for in-group favouring behaviour against one another.

Study 1 had four different conditions varying in social identity of a recipient of prosocial behaviour. In addition to the partial out-group used in the pilot study, it had the double out-group member condition, which would eliminate the alternative interpretation that the increased prosociality towards the partial out-group member was due to individuation caused by the added group membership. The study revealed that individuals were more prosocial towards partial out-group members than out-group members, but they did not discrimination

between in-group and partial out-group members, replicating the pilot study. However, they did not display a significantly larger extent of prosociality to partial out-group members, compared to double out-group members. Despite this, it can be concluded that increased prosociality is due to the added in-group membership, as out-group members and double out-group members were treated in a similar manner. In sum, Study 1, again, demonstrated that people favour partial out-group members over out-group members in spite of their out-group membership.

As discussed in Ch1, the empirical literature has been dominated by two theories: SIT (Tajfel & Turner, 1979) and BGR (Yamagishi et al., 1999; Yamagishi & Mifune, 2008). In addition, UGR (Romano et al., 2017) and group neutral increased prosociality (Everett et al., 2015b) patterns have been observed. Study 1 tested those by employing the decision making setting manipulation (Everett et al., 2015b). The study found support for the group neutral increased prosociality accounts, and did not detect patterns suiting BGR and UGR; participants are more prosocial when their prosocial behaviour is public, and they always favour in-group members regardless of the publicity of their act.

In summary, Study 1 and the pilot study together demonstrated that individuals extend in-group favouring behaviour towards partial out-group members. In other words, once realizing that an out-group member has an in-group membership of another domain, people would treat him/her in a more favourable manner, suggesting that presenting one shared identity to out-group members would sufficiently elicit prosocial behaviour. Regarding the mechanism of prosocial behaviour, it was revealed that social identity, reputation, and cost independently predicted prosocial behaviour.

3-3. Study 2: Aims, key findings, and implications

Study 2 was conducted to replicate Study 1 with additional variables that help understand intergroup prosociality. Surprisingly, neither did social identity nor decision making settings significantly predict the pattern of intergroup prosocial behaviour; it provided conflicting evidence against the four theories. Thus, it did not replicate the findings from Study 1.

However, group identity of the target significantly influenced intergroup trust, expectation about reciprocity, and evaluation, while it did not affect prosocial behaviour. Consistently with Dovidio et al. (1996), this simply suggests that others' group membership shapes attitudes, including trust, expectation about their behaviour, and evaluation, differently as it does prosocial behaviour. In fact, none of those attitudinal variables was related to prosocial behaviour in Study 2. Previous studies that attempted to reduce intergroup biases by social categorization manipulations focused mostly on non-behavioural discrimination. Therefore, this finding calls for research testing the generalizability of those manipulation to behavioural discrimination, such as parochial prosocial behaviour.

In Study 2, group identity-based favouritism and reputation-based favouritism were not detected at all, although in-group favouring behaviour has been consistently found across diverse studies. However, intergroup biases in a one-shot dictator game was found to be small compared to other games involving coordination between two players. However, the priori power analyses assumed to find a medium size effect size, and it could result in not revealing the in-group favouring tendency. The method and procedures were almost identical to those of Study 1, and there was only one difference: the decision setting was a between-subject factor in Study 2, whereas it was a within-subject factor in Study 1. This might skewed the results, and it is discussed later.

3-4. Limitations and future research

The mechanism of in-group of favouritism

The mechanism of parochial prosociality has earned attention from many researchers of different discipline such as social and evolutionary psychology, and they have nurtured a very rich empirical body. However, four different theories concerning intergroup prosocial behaviour still solidly exist, and it is not known yet why people favour in-group members over out-group members. The present research attempted to provide additional empirical evidence, but it found two conflicting results between Study 1 and Study 2. I shall discuss two key issues that will potentially solve inconsistent results in the thesis and the empirical literature.

Between vs. within-subject design. The choice of experimental design, between-, within-, or mixed design, each has pros and cons, and the debate over the choice has a long history (e.g., Greenwald, 1976; Grice, 1966; Poulton, 1973). Charness, Gneezy, and Kuhn (2012) in their review paper showcased cases where between and within-subject designs resulted in different results and those where they resulted in the same result, but when the choice of research design substantially affects results apparently varied depending on dependent variables and types of tasks.

However, in terms of in-group favouritism, experimental designs may play a role. In Study 1, the decision making setting was a within-subject factor, and the group neutral increased prosociality pattern was found. In fact, two studies where Everett and his colleagues found this pattern also had the factor as a within-subject pattern. In those studies, many private and public decisions were executed in a relatively short period of time, and, therefore, participants would have paid much attention to it; otherwise they failed attention checks. By contrast, it was a between-subject factor in Study 2, and previous studies supporting UGR employed it (Romano et al., 2017; Study 1 and 2). In those studies, anonymity or publicity of participants' decision is clearly expressed in each decision making trial, and participants might have paid less attention, compared to when it is within-subject design. Although the manipulation

worked in Romano's studies, it might have not in Study 2 as, in fact, the level of expected

reciprocity did not vary depending on anonymity. The inconsistent findings cannot be

completely, nor confidently, attributed to differences in research design, but this might be one

of the factors shaping the literature with mixed results.

Various research paradigms. There have been various reputational cues, such as

membership knowledge manipulation (Yamagishi et al., 1999; Yamagishi & Kiyonari, 2000;

Yamagishi & Mifune, 2008), decision making setting (Everett et al., 2015b; Romano et al.,

2017), gossip (Romano et al., 2017; Wu et al., 2015a; 2015b; 2016a; 2016b), images of eyes

(Mifune, Hashimoto, & Yamagishi, 2010), audience and mirror (e.g., Froming, Walker, and

Lopyan, 1982). In the present research, the decision making setting was manipulated to

differentiate anonymity of prosocial decisions. This was used in, for example, Everett et al.

(2015b) and Romano et al. (2017). On the other hand, studies supporting BGR mostly relied

on group membership knowledge manipulation in which whether the partner knows group

membership of subjects was manipulated (Yamagishi et al., 1999; Yamagishi & Mifune,

2008, Yamagishi et al., 2008). The situations where participants make economic decisions

created by the two methods are basically identical, but their wordings are, of course,

different. Whereas the former informs that their group membership and decision *will* be

disclosed to the partner, the latter reads that the partner *knows* your group identity. Although

the difference is very slight, the latter may induce the salience of the publicity more, as the

former uses a future tense and the decision is not public yet at the very moment when

participants make it. This does not help understand why different results were observed in

Study 1 and Study 2, but this should be considered in future research.

In summary, I shall recommend that researchers be careful about deciding on the

experimental design and phrasing vignette. In addition, it would be desirable to review

previous studies with different results in relation to methodological features, rather than

adding further evidence, in order to disentangle the conflicting results that the empirical literature suffers from. Slight differences in design, game structures, and instructions should be carefully considered in future studies.

Prosocial behaviour towards partial out-group members

The present research has provided initial evidence that individuals treat partial out-group members more favourably than out-group members, although the mechanism of in-group favouring behaviour is not clearly understood, it is also not clear when they extend generosity towards partial out-group members. As discussed before, this finding suggests that one can elicit generosity from out-group members when he/she points out one shared identity. It is not difficult to do so, because people live with the countless number of social identities. In other words, how one presents him/herself (i.e., self-introduction) apparently determines how much prosociality he/she deserve from out-group members in certain situations. Future research should further investigate when individuals favour partial out-group members over out-group members (i.e., why in-group favouritism emerges) and use longitudinal studies rigorously investigate the causal relationship between the added in-group membership and increased prosociality.

Discrepancy between attitudes and deliberate behaviour

Study 2 demonstrated that intergroup prosocial behaviour and intergroup biases are not identical. This finding has an important implication for social categorization research designed to figure out how to reduce intergroup biases. Social categorization intervention, such as recategorizaton and decategorization, have been examined in a number of studies, but their focus has been on intergroup evaluations, namely to what extent individuals would like to work with the target. Thus, this calls for future research testing the generalizability of the effect of past social categorization manipulation on bias reduction to prosocial behaviour.

3-5. Conclusion

The research aimed to elucidate the mechanism of in-group favouritism and investigate whether individuals would extend it to partial out-group members. It provided more evidence in favour of group neutral increased prosociality, yet it did not find a consistent result regarding the mechanism of in-group favouring behaviour. Similarly, it demonstrated in the pilot study and Study 1 that individuals extend in-group favouritism towards partial out-group members, but Study 2 garnered a conflicting result.

However, the mixed results contributed to identifying possible factors in research methods that may shape prosocial behaviour, and suggested future directions to understand in-group favouritism. Furthermore, partial out-group favouring behaviour observed in two studies can be of practical importance, given it is easy to implement and utilize the finding in our daily life, and individuals can receive favourable treatment from out-group members. Overall, the research offered implications for future research in in-group favouritism and a new social categorization intervention to reduce intergroup discrimination in prosocial behaviour.

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Footnotes

[1]The meta-analysis did not include some studies that had been previously conducted and detected in-group favouritism even when reputation and indirect reciprocity did not matter (Güth et al., 2009; Rand et al., 2009). Hence, one cannot confidently conclude just from the meta-analysis that BGR mechanism, not SIT, explains intergroup prosocial behaviour.

[2]Three difference theories have been proposed, yet study designs that found different patterns substantially varied. Thus, patterns of reputation-based intergroup prosocial behaviour may be conditional to some elements in those designs. Future research should look into it and attempt to explain those conflicting findings.

[3]SIT and the group neutral increased prosociality are originally not mutually exclusive. SIT simply assumes the main effect of group identity, while the latter expects the main effects of both group identity and anonymity of prosocial behaviour. However, to make clear distinctions of four different predictions from previous studies, SIT in this research was defined as predicting only the main effect of group membership.

Appendices

Appendix A. The picture used for the perceptual preference task in the pilot study

Allan Gilbert, All is Vanity

Retrieved from https://commons.wikimedia.org/wiki/File:Allisvanity.jpg

Appendix B. Items used in Study 2 (examples for in-group condition)

Reciprocity

(1) When you have helped or cooperated with a person who is a member of Artistic Preference Group A, how likely do you think that this person would behave in the same manner towards you?

(2) When you have helped or cooperated with a person who is a member of Artistic Preference Group A, how likely do you think that another member of Group A who knows you have helped or cooperated with the person would behave in the same manner towards you?

In-group identification

(1) I perceive people who are members of Artistic Preference Group A as members of the same group.

(2) I believe that I share features and attributes with members of Artistic Preference Group A.

(3) I feel close toward members of Artistic Preference Group A.

(4) I feel favorably toward members of Artistic Preference Group A.

Trust

(1) I think that members of Artistic Preference Group A are trustworthy.

(2) I am able to trust members of Artistic Preference Group A.