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Humans cooperate on a large scale with unrelated individuals. Past research on biology, psychology and economics proposes that direct and indirect reciprocity are powerful explanations for why individuals cooperate with their fellow group members and also with non-genetically related individuals (Cosmides & Tooby, 2005). Although extensive amount of empirical research supported the power of reciprocity to promote human cooperation (Balliet & Van Lange, 2013), alternative relevant theories have proposed different psychological processes that may explain cooperation with ingroup members and strangers, such as conformity and social identity (Richerson et al., 2016; Tajfel & Turner, 1986). Furthermore, other researchers have theorized that the power of indirect reciprocity to promote cooperation is restricted to interactions with ingroup members, but not with outgroup members (Yamagishi, Jin & Kiyonari, 1999).

The present dissertation contributes to fill these two issues in the literature across three empirical chapters. In Chapter 2, we compare the predictive power of reciprocity against an alternative process, conformity, to predict human cooperation. In Chapter 3, we examine whether individuals tend to be more cooperative when their reputation is spread to potential partners, regardless of the membership of these partners, i.e., unbounded indirect reciprocity hypothesis. In Chapter 4, we test the unbounded indirect reciprocity hypothesis across 17 countries, along with several predictions from prominent theories about individual differences and cultural variation of ingroup favoritism in cooperation.

In Chapter 2, we tested predictions from two evolutionary perspectives on human cooperation, reciprocity and cultural group selection (Cosmides & Tooby, 2005; Richerson et al., 2016). According to a reciprocity perspective, individuals evolved a psychology to cooperate when they expect their partner will cooperate, and to withdraw from cooperation when they expect their partner will defect (Van Lange & Kuhlman, 1994). Alternatively, cultural group selection proposes that individuals imitate their group members, so that they will cooperate when they perceive a cooperative group norm to conform with and defect when they perceive that the group norm is to defect (Henrich, 2004; Henrich & Boyd, 1998). These two processes are not mutually exclusive,
but no research has been conducted to test the predictive power of these processes to promote cooperation, especially in situations where they would promote a different behavior. To do so, we employed a revisited version of the Asch conformity paradigm where participants could learn whether their group was cooperative or not on several previous trials (conformity pull), and also whether their future partner was cooperative or not on several previous trials (reciprocity pull).

Across three studies, our results suggest that when individuals observe information about their partner’s and group’s behavior, they will cooperate more according to their partner expected cooperation rather than conform to the group. Moreover, we found that the conformity behavior observed in our studies could be explained by a concern for reputation, a process related to an indirect reciprocity perspective. Altogether, these results suggest that reciprocity, a more ancient evolutionary process acting on genes, outperforms conformity to promote cooperation. Thus, reciprocity can be a necessary and sufficient explanation for why humans cooperate with unrelated individuals.

In Chapter 3, we investigated whether individuals cooperate with others when their reputation is at stake, independently from group membership. We tested this hypothesis, unbounded indirect reciprocity, along with predictions from prominent theories on ingroup favoritism, bounded generalized reciprocity (BGR, Yamagishi, Jin & Kiyonari, 1999) and social identity theory (SIT, Tajfel & Turner, 1986). BGR proposes that people favor their ingroup members because group membership functions as a heuristic of being reciprocated by other group members in the future. Therefore, BGR predicts that reputation is bounded and people will cooperate with ingroup members when their reputation is at stake. SIT predicts that people favor their group members because groups are part of their identity and cooperating with ingroup members results in a boost for their self-esteem. In Study 3.1 and 3.2, we manipulated reputation, social identification and group membership. In Study 3.3 to 3.5, we further tested BGR against the unbounded indirect reciprocity perspective with a different manipulation of reputation: gossip. Moreover, we tested whether reputational concern was a psychological mechanism mediating the relation between gossip and cooperation with both ingroup and outgroup members.
The results of the present chapter suggest that individuals cooperate more when their reputation is spread to potential future partners, both in interactions with ingroup and outgroup members. This effect was mediated by a concern for reputation, a psychological process that was operating with both ingroup and outgroup members. We did not find support for the SIT hypothesis that individuals cooperate more with their group members when they highly identify with their groups. Importantly, we did not find support for the BGR hypothesis that individuals are more cooperative with their group members only when their reputation was at stake. These results were consistent across different operationalization of reputation (public monitoring, gossip), different types of economic games (dictator games, public goods games, prisoner’s dilemma), and different groups (minimal vs natural).

The present findings have both theoretical and practical implications. First, these results provide support for the hypothesis that reputation is not bounded by group membership. This finding may help to understand contrasting findings of past research (Leonardelli & Brewer, 2001; Stroebe, Lodewijkx, & Spears, 2005; Velez, 2015), as well as challenges BGR as possible explanation for why individuals are more cooperative with ingroup members, compared to outgroup members. Also, we did not find support for the other prominent theory that has been proposed to explained ingroup favoritism, social identity theory. Therefore, these results warn us on the complexity of ingroup favoritism and demand future research to understand the multiple mechanisms that may explain why people treat more favorably their group members. Alternative explanations may be theories that propose groups as properties of social network (Levine & Kurzban, 2006), or theories that focus on other functions, such as safety (Boyer, Firat, & van Leeuwen, 2015). Second, our results suggest that indirect reciprocity can be an efficient tool to promote cooperation with both ingroup and outgroup members. This finding may help practitioners to reduce discrimination between organizations and countries, by focusing on public monitoring or gossip as possible viable solutions to promote cooperation.

In Chapter 4 we investigated across 17 societies whether the benefits of a reputation-based indirect reciprocity cooperation are restricted to ingroup members. Along with this hypothesis, we
tested several other hypotheses on individual differences in ingroup favoritism (SVO and gender) and on cultural factors that may explain variation of ingroup favoritism in cooperation. To do so, we conducted an online study where participants made several one-shot decisions in a trust game, either as trustor or trustee. Participants could be aware (or not) that their partner knew about their nationality (common knowledge vs unilateral knowledge). Then, they made decisions with ingroup members, outgroup members, and strangers. BGR predicts that individuals will favor their group members only in common knowledge situations, compared to unilateral knowledge situations. We also tested competing predictions on SVO, gender and culture. In particular, we investigated whether prosocials are parochial cooperators that favor their group members, or otherwise that they cooperate with both ingroup and outgroup members (de Dreu, 2010; Thielmann & Bohm, 2016). Then, we examined whether men, compared to women, cooperate more with ingroup, compared to outgroup members. Finally, we examined whether cultural factors such as the efficiency of institutions, religiosity and parasite stress, predict variation of ingroup favoritism across countries.

The results of the present chapter show that individuals cooperate more with ingroup compared to outgroup members, and that individuals tend to be more cooperative in common knowledge situations compared to unilateral knowledge situations, independently from group membership. Moreover, prosocials cooperate more than others with both ingroup and outgroup members, and men, compared to women, discriminate more in favor of their group members. Finally, none of the cross-cultural factors considered was able to predict variation of ingroup favoritism in cooperation across the 17 societies investigated.

These findings support across 17 countries the unbounded indirect reciprocity hypothesis that reputation is a powerful tool to promote cooperation with both ingroup and outgroup members (Romano, Balliet, & Wu, 2017). We also found that prosocials are not parochial but extend their cooperation also to outgroup members. This result is in contrast with previous theories on the evolution of prosociality (Choi & Bowles, 2007; de Dreu, 2010), and support recent empirical research that suggest prosocials as universal cooperators (Thielmann & Bohm, 2016). Importantly,
we found support for theories that propose the existence of individual differences between men and women in intergroup interactions (Hill et al. 2011; Van Vugt et al., 2007). Finally, the null effect of cross-societal variables in explaining ingroup favoritism suggest to switch the focus on universal factors rather than characteristics that are present in a specific societies when studying why people cooperate more with ingroup, compared to outgroup members.

To conclude, the present dissertation contributes to understanding the power of reciprocity to predict cooperation with ingroup members and strangers. The current findings suggest that the psychological mechanisms of direct and indirect reciprocity outperform the psychological mechanisms of imitation and conformity, especially in situations in which one process promote cooperation (defection), and the other defection (cooperation). Moreover, we found support for the hypothesis that the benefits of reputation-based indirect reciprocity cooperation are not restricted to interaction with ingroup members. These findings have been replicated across several games, groups, and importantly across 17 societies that differ for their cultural background. Altogether, these results stress the importance of reputation and reciprocity as exceptional tools to promote cooperation in large societies, and beyond group boundaries.