

Commentary on Glowacki (forthcoming). The evolution of peace.

*Behavioral and Brain Sciences*

**Experimental evidence suggests intergroup relations are, by default, neutral  
rather aggressive**

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This research is supported by JSPS KAKENHI Grant Number 21H00934

### **Abstract**

The target article offers a game-theoretical analysis of primitive intergroup aggression (i.e., raiding) and discusses difficulties in achieving peace. We argue the analysis does not capture the actual strategy space, missing out “do-nothing”. Experimental evidence robustly showed people prefer doing nothing against out-group members over cooperating with/attacking them. Thus, the target article overestimates the likelihood of intergroup aggression.

### **Main Text**

In the target article, Glowacki offers the game-theoretical analysis of war and peace. Glowacki further argues that each member of groups face a social dilemma in which they have to make a choice between intergroup cooperation (cooperation) and conflict (defection), and, all members of both groups must choose intergroup cooperation to establish peace (Figure 1 in the target article). Referencing anthropological and archaeological evidence, Glowacki pointed out that social structures were necessary for people to coordinate individuals’ behaviour so that they could establish peace.

We would like to first point out that Glowacki’s game-theoretical analysis fails to represent the true strategy space; more specifically, Glowacki rules out the strategy of “doing nothing” and assumes that people either cooperated or attacked an out-group member (see Figure A). We argue that the lack of the strategy in Glowacki’s discussion leads to an overestimation of the likelihood of people initiating intergroup conflict and an overstatement of the role of social structures in helping people avoid intergroup conflict and promoting peace.

Intergroup cooperation and conflicts have been extensively studied in the experimental literature in psychology (Balliet et al., 2014; Everett et al., 2015), economics (Charness & Chen, 2020), and evolutionary biology (Rusch, 2014; Rusch & Gavrillets, 2020).

Regarding intergroup cooperation, previous studies have documented in-group favouritism, using a variety of economic games such as prisoner's dilemma, dictator, trust, and public goods games, and they have robustly shown that it is increased in-group cooperation, rather than reduced out-group cooperation that explains in-group favouritism (Aaldering et al., 2018; Balliet et al., 2014). That is, people do not discriminate between out-group members and strangers whose group membership is unknown, suggesting that the do-nothing strategy may dominate cooperation.

Regarding intergroup aggression, Mifune and colleagues developed the preemptive strike game in which two players choose between preemptively attacking against their partner and doing nothing till the end of the game (Mifune et al., 2016, 2017; Simunovic et al., 2013). Using the game and focusing on arbitrarily created experimental groups (i.e., minimal groups: Tajfel et al., 1971), they have consistently found that people are *not* more likely to preemptively attack an out-group partner than an in-group partner. In other words, when people are presented with a choice between the intergroup aggression and do-nothing strategies, the latter dominates the former. Importantly, previous studies using the preemptive strike game also revealed that people by default do not hold the expectation that out-group members are aggressive towards in-group members. This suggests that people expect out-group members to choose do-nothing rather than aggression. This is in stark contrast to Glowacki's argument that people originally lack the expectation that out-group members are not aggressive.

Nevertheless, while out-group membership per se does not lead people to believe that out-group members would attack them, some concrete out-group memberships such as certain nationalities may elicit such a belief (Jing et al., 2017; Romano et al., 2022). Jing et al. (2017) let participants play the preemptive strike game using national intergroup contexts rather than minimal group contexts. They found that Japanese participants were more likely to preemptively strike their partner when the partner is American or Chinese, compared to when their partner was Japanese. Similarly, Chinese participants also displayed the increased tendency to preemptively attack others when their partner was Japanese or American as compared to when their partner was Chinese. Yet, Americans did not show such a tendency, replicating the studies using the minimal group contexts. More recently, Romano et al. (2022) revealed that people expect others from certain nations to be more aggressive and competitive than they actually are. The comparisons of the findings from minimal vs. actual intergroup contexts suggest that there are situations and intergroup contexts that mirror the Glowacki's view that intergroup conflicts are inevitable without social structures. In other words, there are some contexts in which intergroup aggression dominates do-nothing and individuals need social structures to get out of intergroup conflicts.

Empirical support for the absence of the tendency to attack out-group members also comes from studies using intergroup prisoner's dilemma-maximizing difference game (IPD-MD: Halevy et al., 2008) and its variants (Aaldering & Böhm, 2019; Wit & Kerr, 2002). In IPD-MD, for instance, participants can choose between selfish, weak parochial cooperation (in-group cooperation + do-nothing to out-group members), and

strong parochial cooperation (i.e., in-group cooperation with out-group aggression).

Previous studies have demonstrated that people have a strong preference to weak over strong parochial cooperation (Mifune, 2022; Weisel & Zultan, 2021; Yamagishi & Mifune, 2016).

In summary, the series of the experimental evidence suggest that the do-nothing strategy is dominant when people could choose between cooperation, aggression, and do-nothing. Similarly, people would expect out-group members to prefer the do-nothing strategy. As such, we argue that Glowacki overestimated the tendency of people to initiate intergroup aggression without social structures. Starting from the overestimated tendency to instigate intergroup aggression and the likelihood of intergroup conflict, Glowacki discusses the role of social structures (i.e., hierarchies and leadership) in coordinating people's interests and argues that they either *enables and facilitates* mutual cooperation or *exacerbates* intergroup conflicts. As such, Glowacki does not discuss how social structures *instigate people to initiate intergroup conflicts*. In light of the experimental evidence, we argue that it is fruitful to revisit the roles that institutions and leadership played in steering intergroup relations. Namely, it is of vital importance to elucidate how social structures help people move from the mutual do-nothing towards peace and war (Figure B).

Figure A. Peace as an Elaborated Prisoner's Dilemma

	Cooperation	Do Nothing	Aggression
Cooperation	Cooperation		Conflict
Do Nothing			Conflict
Aggression	Conflict	Conflict	Conflict

Figure B. The Revised Role of Social Structures in Coordinating People in the Dilemma

	Cooperation	Do Nothing	Aggression
Cooperation			
Do Nothing			
Aggression			

Social Structure

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