"BEST BUDDY TAKING ON BIG DADDY":

FACTORS AFFECTING COALITION FORMATION

BETWEEN IN- & OUT-GROUP MEMBERS

BY

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FACTORS AFFECTING COALITION FORMATION

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Abstract

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Coalition formation research has to date not incorporated intergroup dynamics. For this reason, the present study examined the factors that affect people's coalition preferences when members of ingroups and outgroups negotiate to form coalitions. Using a minimal group paradigm and a game metaphor, 200 introductory psychology students at Washington State University completed several questionnaires and carried out a coalition formation task. Results suggest that the resources that an individual brings to the coalition negotiation table are most helpful in having this individual be included in the formed coalition, independent of whether this individual is an ingroup our outgroup member of a person choosing his or her coalition preference. These findings may extend Social Identity Theory by indicating that resource *criticality* may override a person's innate preference for their ingroup members in certain circumstances. Additional findings suggest that in order to influence individuals to include both ingroup and outgroup members in a formed coalition, certain procedural steps in the coalition formation process may be effective. Avenues for future research and potential implications for practitioners are discussed.

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"To behave socially is a complex business" – Henri Tajfel

1 Introduction

A coalition is an alliance, or a marriage of convenience. Similarly to today's average marriages, coalitions tend to be (sadly, say some) temporary in nature, on the one hand because individuals or groups coalesce to achieve an immediate, short-term oriented aim, and on the other because it is not uncommon for parties with different values to coalesce (Gamson, 1961). Yet unlike most legal marriages today, each coalition negotiator can enter into an agreement with more than one person; hence coalition research is concerned with multi-person bargaining (Komorita & Parks, 1995). It is noteworthy that coalition formation research has declined since the 1970s (Komorita & Parks, 1995), although there is arguably a great deal of real-life (political, economic etc.) bargaining situations where 3 or more parties are involved. As a consequence, more recent findings in social psychology research have not been added to the body of knowledge on coalition formation (Van Beest, 2005).

In particular, coalition research has so far not included an ingroup/outgroup dimension although it appears that whenever a real-life coalition is formed, it is composed to a greater or lesser degree of members that differ with regards to their social identity. Social identity factors are hence likely to contribute to coalition choice and to the stability of a formed coalition.

Hence coalition research is an interesting area for social psychology research, with the potential for fruitful application and cross-fertilisation with other disciplines, e.g. economics, politics and organisational behaviour (e.g. Bazerman et al, 1991).

2   Theoretical background and research questions

2.1   Coalitions

Thibaut and Kelley (1959) defined a coalition as a group of people from two or more parties who decide to cooperate so as to reach a mutually desired goal. Of course, real-life coalitions are not necessarily truly cooperative; one needs only to think of the political coalition of Fascists and Communists in Germany's Weimar Republic, yet at the point of coalescing, both parties involved had a shared goal, i.e. to bring down the government in force.

Researchers typically study coalition formation using game theory principles. Hence in this study, a coalition game metaphor called 'the landscape paradigm' developed by Van Beest (2001) is used.

2.1.1 The landscape paradigm

For my experiment, I slightly adapted Van Beest's (2001) landscape paradigm, which consists of a written scenario presented to each participant at the beginning of a coalition negotiation. As will be outlined in further detail later, all three experimental variables were manipulated by slightly changing specific details in this text.

In this written scenario, each player is told they own a particular land plot, alongside the two other players who also own land parcels. All three landowners have been approached by a property developer who intends to buy their land for a lucrative price. Neither of the landowners can sell their parcel individually, as the developer intends to buy at least two, or even all three land plots at the same time, hence the landowners need to form a coalition in order to sell their land. However, the property developer is not willing to pay more for three land parcels than for two plots. This means that if a landowner sells their land plot with only one other landowner (in a small coalition), they will make a larger profit than if they sell their land with both other landowners, since the sale price paid by the property developer will be divided amongst two, rather than three individuals. Yet if all three landowners sell their land (in a grand coalition), none

of the players is left without making any profit. The player is hence faced with the dilemma of choosing between a proself coalition (i.e. a small coalition with only one other landowner, which maximises his or her individual profit) and a prosocial one (i.e. a grand coalition where everybody makes some, albeit smaller, profit).

The incentive structure in this landowner paradigm is such that the most economically sensible strategy for the sellers is to create a small coalition that provides just the minimally acceptable amount of acreage. Therefore, the game design is a simple majority game with 3 participants, using the notation 2 (1, 1, 1), which in this scenario means that 2 landowners are sufficient for the coalition to be successful, and each of the 3 landowners that take part in the game have a land parcel equal in size.

2.1.2 Minimum Resource and Minimum Power Theory

In coalition negotiations, people generally argue over the distribution of rewards that will accrue to each coalition member once this coalition is formed. This reward or gain associated with coalition formation is called the *payoff* (Gamson, 1961). It is a well-established principle of coalition research that people aim to maximise their own payoff (Komorita & Parks, 1995). During a coalition negotiation, this means that any coalition negotiator tries to minimise the final coalition size, so as to share the coalition's payoff or reward with as few other people (or negotiation parties) as possible. Using Van Beest's landowner paradigm as illustration, this would mean that each landowner would strive to coalesce with only one other landowner, as this one landowner is sufficient to ensure the sale of the property to the property developer. William Gamson formulated the underlying assumption for this in his Minimum Resource Theory (Gamson, 1961). Consequently, it has consistently been shown experimentally that coalition negotiators tend to exclude 'unnecessary' coalition partners from any formed coalition (e.g. Gamson, 1961, 1964; Van Beest, Wilke & Van Dijk, 2003; Van Beest, Van Dijk & Wilke, 2004a, 2004b).

What is more, every party in a coalition negotiation assesses the others in terms of how '*necessary*' or *critical* they are for a successfully formed coalition. Gamson called this the Pivotal Power, i.e., the relative likelihood of each coalition partner to turn a losing coalition into a winning one, and he formulated the underlying principle into his Minimum Power Theory, indicating that the coalition that has the smallest amount of Pivotal Power sufficient for a successful coalition is most likely to be formed (Gamson, 1964). Interestingly, a person or party's level of power or *criticality* does not only refer to their amount of resources, but rather it represents their strategic position that is likely to contribute to a successful coalition. Hence, certain resource units can be more pivotal than others (Gamson, 1961), such as for example the water well in the above paradigm.

In this way, Minimum Resource Theory and Minimum Power Theory jointly contribute to people's preferences with regards to which coalition partner to select. In Van Beest's (2001) landscape paradigm, this would mean that a coalition negotiator who possesses a water well would likely be included in the final coalition, as this person would be *critical* to the success of the formed coalition.

2.2 Motivations in coalition formation: self-interest and fairness

Komorita (1984) categorised coalition theories according to the underlying motives that group members hold before deciding on a particular coalition strategy. As mentioned above, a coalition negotiator's Pivotal Power is a strategic function of his or her resources, which he or she brings to the negotiation table (Van Beest, 2001). In this sense, the more (or the more important) of these resources a person or party possesses, the more this coalition partner is able to satisfy his or her *self-interest*, by being able to choose the coalition that best serves his or her own interests.

Yet this is not the only motivation that affects a negotiator's coalition choice; two-party bargaining research has shown that negotiators are motivated by a combination of concern for self and concern for the other party involved in the negotiation (e.g. De Dreu & Carnevale,

2003). This view is in line with the argument made by Guth (1988) who concluded after reviewing a number of bargaining studies that beyond rational choice, fairness norms such as distributive justice are important determinants of bargaining choice. Van Beest, in his (2001) review of coalition research over the last 5 decades, summed it all up by stating that the psychological factors influencing coalition choice can be subdivided into two overarching motivations; *self-interest* and *fairness*.

2.2.1 What exactly is "fairness" in coalition negotiations?

As outlined above, beyond self-interest, distributive fairness is an important factor in determining the coalition that will be formed. Generally, two types of distributive fairness are distinguished--fairness as mechanism to help decide what coalition to form (Van Beest et al., 2004a, 2004b), and fairness as a concern for others (Van Beest et al., 2003). In the landowner paradigm, including a landowner into a formed coalition who possesses a water well would be an example of the former incarnation of fairness, i.e. a mechanism to assist with choosing a particular coalition, whilst including all three landowners into the coalition sale, independent of whether or not all bring a critical element like a water well to the negotiation table, could be deemed in line with a certain moral standard.

What exactly does it mean to be *fair* in distributing payoff in coalitions? Harris and Joyce asked students to allocate outcomes after a group effort as fairly as possible, and found that the actual distribution strategies depended on how the experimenters had formulated their allocation request. As a result, their answer to the question "what is fair" was: "it depends on how you phrase the question" (Harris & Joyce, 1980).

Common synonyms of the word *fair* are *just*, *even* or *equitable*. John Adams' (1963) Equity Theory consists of the notion that in every group interaction, everyone seeks to achieve a fair balance between their own input and what they receive as output. Hence fairness in the sense of *equity* means that every group member should receive exactly that reward that is consistent with his or her individual contribution. However, it is noteworthy that this is far from

the universal definition of what it means to be fair, especially when people belonging to multiple groups negotiate with each other. What is *just* in one situation may not be *fair and square* in another, even if the same person makes the fairness assessment.

2.2.2 Fairness in intergroup situations

What happens to *fairness* and *self-interest* in intergroup settings, where not individuals *per se*, but members of distinct groups negotiate with each other? As soon as members from different groups are involved, the fairness construct becomes even more complex, not least because people in intergroup negotiations behave no longer 'merely' as individuals, but also as representatives of their respective groups (Manstead, 1990).

Henry Tajfel, when reporting on a series of experiments where students were asked to allocate rewards between their own group and members of a different group (Tajfel, 1970), used the word *fairness* in the sense of *equality* or *parity* when describing motivations for resource allocations in intergroup situations. Otten and colleagues conducted a related study on intergroup discrimination using the same *meaning* of fairness (Otten et al., 2001). This is notably different to Van Beest et al.'s interpretation of fairness motivations in their (2004a) article, "The interplay of self-interest and *equity* [emphasis added] in coalition formation".

More pertinently to the present study, however, Tajfel coined the term "groupness" to describe a particular motivation for intergroup reward allocation (Tajfel, 1970, p. 187). With this term he illustrates why people tend to allocate more rewards to their own group than to members of another, independent of contributions made, which is in contravention of Equity Theory. He juxtaposes "groupness" with "fairness", and suggests that people generally strive to reach a balance between "groupness" and "fairness" in such situations. According to Tajfel, this is because of our socialisation as members of groups "is powerful and unavoidable" and "outgroup discrimination is extraordinarily easy to trigger off" (1970, pp. 186-187).

After all, is it possible to equitably protect the interests of one's ingroup whilst at the same time being fair towards one's outgroup?

2.3 Social Identity Concepts: Minimal Groups and intergroup discrimination

It seems that what is fair to a person's ingroup is not equal to being fair to an outgroup member. Why this is the case is best explained using Social Identity Theory.

According to Social Identity Theory (Tajfel & Turner, 1979, 1986), individuals have a fundamental desire to positively evaluate themselves to maintain or heighten their self-esteem. This need can be satisfied by either enhancing the image of their ingroup (e.g. Turner, 1975) and/or by degrading the image of their outgroup (e.g. Abrams & Hogg, 1990). This mental shortcut not only simplifies our worldview, but it also brings with itself the heightened potential for intergroup discrimination. Why do people discriminate against outgroups? It seems that in intergroup situations, people tend to consider their ingroup's interests and their own personal self-interest as being inextricably linked (Brewer & Kramer, 1986).

What is most interesting in this context is that people display discriminatory intergroup behaviour even in so-called Minimal Groups, in which people are classified into different groups on the basis of criteria that are unimportant and completely irrelevant to the task at hand. Tajfel and his colleagues illustrated this phenomenon by randomly classifying 14 and 15-year-old schoolboys in an experiment series into "overestimators" and "underestimators" after a fake visual estimation task. They found that the pupils consistently discriminated against their respective outgroups when asked to allocate resources between their ingroup and their outgroup members, even though the individuals involved were not engaged in any actual or perceived conflict, nor did they have any past history of hostility (Tajfel, 1970).

2.4 Research Questions

2.4.1 First research question: resource criticality vs. group identity

The above concepts are relevant for the present study because from the standpoint of Gamson's research, as long as a coalition negotiator brings critical resources to the negotiation table (such as a water well in my adapted Landscape Paradigm), this person should then be included in the formed coalition, independent of their group status in relation to the other negotiators, and 'unnecessary' negotiators should be left out, also irrespective of whether they have a similar or different social identity from the remainder of the negotiation panel. Social Identity theorists, on the other hand, would argue that people would discriminate against outgroup members in their coalition preference (and coalesce exclusively with landowners from their own ingroup in the coalition game). In other words, the first question that my research attempts to answer refers to a potential coalition partner's *a priori* criticality, i.e. his or her level of resources without which the coalition will fail. Specifically, it will be examined whether it is this level of criticality, or his or her status as a member of the participant's ingroup or outgroup, that is more predictive of a participant's coalition preference.

Two opposing lines of argument present themselves. Arguing from a Gamson-inspired perspective, if his (1964) Minimum power theory applies in an ingroup/outgroup scenario, then there should be a main effect of resource criticality. This would mean that in all conditions in which there were one and only one critical coalition co-negotiator, participants should prefer to coalesce exclusively with that co-negotiator, independent of this co-player's social identity. Further, in all conditions where both co-negotiators are critical for a successful sale of the property plots, the proportion of preferred small (i.e., exclusive) landowner coalitions with a critical ingroup member would be equivalent to those with a critical outgroup member. Finally, in conditions where neither co-negotiators would be critical for a successful property sale, the proportion of preferred small (i.e. exclusive) landowner coalitions with an ingroup member would

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be equivalent to those with an outgroup member. This would be a reflection of a player's *pivotal power* overriding any innate preferences for ingroup members (CT[1]-H1).

Coming from a social identity theory perspective, there would be a main effect of the chosen coalition partner's status as an ingroup member vis-à-vis the experiment participants. This means that in all cells there would be a majority of preferred small coalitions with ingroup members, more so than all other coalition types, independent of the participants' co-negotiators' other 'qualities' or 'endowments'. If social identity theory applied, there would also be a significant interaction between coalition partner's group status and the criticality manipulation, in that there would be a great deal more small proposed coalitions with a critical ingroup member than small proposed coalitions with a critical outgroup member (SI[2]-H1).

2.4.2 Second research question: payoff valence affecting intergroup coalitions?

Although Social Identity Theory can serve to explain ingroup bias, it does not always lead to intergroup discrimination. In specific intergroup scenarios, discrimination towards outgroup members is suppressed and outgroup members may even be favoured over fellow ingroup members (Otten et al., 2001). Of particular relevance to the present study are Baron's (1993) "Do-No-Harm principle" and Otten et al.'s (2001) observed effect of stimulus valence in intergroup negotiations.

Baron asserted that people tend to avoid excluding others from a given group if they are aware that these others will be harmed, even if this reduces their own payoff (Baron, 1993). Mummendey et al. (1992) conducted a series of intergroup discrimination experiments similar to Tajfel's Minimal Group experiments outlined above, and found that participants did not discriminate against outgroup members when allocating *negative* stimuli (e.g., unpleasant

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[1] 'CT' refers to 'Coalition Theory' and thus indicates that this hypothesis is in line with traditional coalition research.
[2] 'SI' refers to 'Social Identity' and thus indicates that this hypothesis is in accordance with existing Social Identity theories.

tasks), whilst displaying the more typical ingroup bias when negotiating about positive stimuli. They hence discovered a distinguishable moderating effect of stimulus *valence* during an intergroup negotiation, at least when group members' social identity was not under threat.

Even more relevant to the present study are Van Beest's recent experimental findings whereby a person's willingness to exclude another during coalition formation depends partially on the perceived harm that is inflicted upon this excluded negotiator, and is lessened when the excluded faces a loss as a result of being left out from a formed coalition (Van Beest, 2003, 2005). This asymmetry of choices can be explained using Prospect theory (Kahneman & Tversky, 1979), which states that people's attitudes towards risk concerning gains are not symmetrical to their attitudes towards risking a loss. People tend to attach greater value to potential losses than to potential gains, and hence are comparatively more motivated to avoid future losses. However, Prospect Theory is concerned with *individual* and *personal* decision-making, which means it is uncertain to what extent the theory applies when more than two individuals are involved, and the "Do-No-Harm principle" was established after people distributed resources (or lack thereof) between two other groups with no personal involvement in either of these (Van Beest, 2005). In the landscape paradigm, it is hence unclear to what extent an excluded coalition negotiator's loss (to the value of their property) that results in a gain for a player (since the proceeds from the land sale will then be distributed amongst fewer parties) moderates this player's coalition preference, especially if the two players belong to different groups.

As Mummendey et al (1992) state, there is a lack of current research in intergroup discrimination when losses are involved. For this reason, the present research attempts to experimentally apply to an ingroup/outgroup scenario van Beest's (2003) finding that people tend to prefer entering into grand coalitions if excluding a potential partner would have negative consequences for the excluded. My second research question is hence whether a co-negotiator's potential loss as a result of exclusion determines a participant's preference for a

grand (socially inclusive) coalition, or whether his or her social identity is more relevant for the participant's preferred coalition.

If Baron's (1993) "Do-No-Harm principle" applies in intergroup coalition negotiations, then a loss threatening a potentially excluded player determines participants' coalition preference, in that there is a main effect of 'loss'. This would mean that independent of the excluded player's group status, people would propose grand coalitions in all 'loss' conditions (CT-H2). If Social Identity Theory were to be more deterministic of coalition preference, then the 'loss' manipulation should interact with group status of the person who risks being excluded. An ingroup member should logically be most at risk of being excluded if an outgroup member is critical for the success of the coalition. Hence if a participant is concerned about the fate of their ingroup members, then a participant should opt to include their ingroup member *in particular* when it is likely that the outgroup member will be part of the formed coalition. This would mean that there would be a significantly larger proportion of proposed grand coalitions in the 'loss' conditions if an outgroup member were to be critical (SI-H2).

2.4.3 Third research question: When do people change their minds?

Beyond the cognitive processes involved in coalition formation, Komorita and Parks (1995) suggest that procedural elements of coalition processes are an important factor in coalition formation, yet to my knowledge, researchers have to date not been able to generate theories that produce solid predictions. Hence I have attempted to determine whether certain structural elements of the coalition formation process significantly interact with the above-mentioned psychological factors, which in turn likely affect coalition behaviour.

Being excluded is known to be associated with negative feelings, and can even lead to sensations of physical pain (Eisenberger et al., 2003). This means that social exclusion is a state that we naturally try to avoid and counteract in our interpersonal dealings, either from the perspective of someone who is about to be excluded or from the perspective of a person who may make a decision that ultimately excludes another. It is therefore conceivable that in an

experiment where someone is about to exclude a co-negotiator, a procedural step could be added, reminding the participant of this imminent act of exclusion, thereby making the social exclusion comparatively more salient. The question here is to what extent such a procedural effect moderates coalition preference, and whether or not social identity considerations also play a role. Abrams et al. have found that in intergroup settings, people are more influenced by their own ingroup members than by outgroup members (Abrams et al., 1990).

If a procedural step during the coalition process in itself were to be effective (such as a written appeal to someone about to exclude another, from the co-player facing the threat of being excluded), then in all cases where participants have expressed a preference for a small coalition, a majority of these participants will change their coalition choice to a grand, socially inclusive coalition. Arguing from a Gamson-inspired perspective, this appeal to social inclusion would be particularly effective if it were to come from an excluded 'critical' co-negotiator. Hence if traditional coalition theories prevail, then 'criticality' would interact with the inclusion appeal, and comparatively more participants would change their choice to a grand coalition if it means including a 'critical' partner. By the same token, if traditional coalition research holds true in an intergroup setting, then the potential loss to an excluded player should also enhance the effect of the social inclusion appeal (CT-H3).

If on the other hand, Social Identity concerns play a larger role, then any effect of making social exclusion salient would be moderated by the group status of the person launching the inclusion appeal. Hence the co-negotiator's group status as an ingroup member would result in a larger proportion of changed choices towards grand coalitions This means that participants would be most likely to change their coalition choice from 'small' to 'grand in the second round of negotiation if an ingroup member requests this. In particular, if an ingroup member were to be critical and/or risk losing money from being excluded after the first round of negotiation, then it would be more effective if this ingroup member were to launch an appeal to social inclusion, and there would be a interaction with ingroup status. (SI-H3).

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2.4.4 Fourth research question: Does Social Value Orientation moderate the effects?

When relating his (2003) study on the excluded player in coalition formation, Van Beest found that not everyone was affected similarly by the excluded player's payoff. He referred to research on Social Value Orientation (SVO), and in particular Messick and McClintock's (1968) finding that people tend to generally make stable and consistent social decisions with regards to own-other payoffs. People with a prosocial orientation tend to maximise the gains for self and other, and minimise the difference between the gains for themselves as opposed to other people's gains. Proselfs, on the other hand, tend to maximise their own gains, either in absolute terms, or in relation to the gains obtained by others. Van Beest successfully used this distinction and corroborated the predictive power of a person's SVO in predicting coalition choices, leading to a moderating effect of SVO on people's coalition preference when excluded players face a loss.

Van Beest's findings are likely related to a prosocial person's tendency to think about *fairness* in the sense of *moral obligation,* or *morality.* Van Lange & Kuhlman discovered that prosocials consider social decision-making in terms of *morality*, whilst proselfs are mainly concerned with preserving or gaining power, or *might* (Van Lange & Kuhlman, 1994). What is more, Joireman et al. (2003) found that people view behaviour that is associated with an intention to harm others as immoral, and especially prosocial individuals consider interpersonal decisions rather in terms of morality, whilst proself individuals assess situations where they may either behave in a cooperative vs. a competitive manner more in terms of power.

This brings up the interesting question of whether Van Beest's (2003) results can be applied to our intergroup domain where individuals with different resource or power levels negotiate and where arguably excessive self-interest leads to a moral dilemma. The question here is whether a prosocial SVO moderates coalition preference and final choice due to a morality focus in social decision-making. If Van Beest's findings can be replicated in an ingroup/outgroup coalition

negotiation, then firstly prosocials would tend to prefer grand coalitions more often than proselfs in those conditions where an excluded player faces a loss, as this would be equated with a more moral course of action. Secondly, if a prosocial person were to receive an appeal to social inclusion (after initially opting to enter into a small landowner coalition), this person would be comparatively more likely to change their final coalition choice to be socially inclusive (and sell their land plot with both co-negotiators), especially in 'loss' conditions (CT-H4).

This effect may interact with Social Identity concerns, and hence the prediction here would be that prosocials would change their final coalition choice to be socially inclusive comparatively more often if the appeal for inclusion were to come from an excluded ingroup member (SI-H4).

In sum, the theoretical domains of coalition formation, Social Identity Theory and Social Value Orientation have been linked, in order to help advance our understanding of the factors necessary to make a real-life coalition work where individuals with different social identities are collaborating.

3 The present study

3.1 Participants & design

200 psychology students from WSU took part in the experiment in partial fulfilment of a course requirement. The experimental design was a 2 (Ingroup Criticality: Critical, Not critical) by 2 (Outgroup Criticality: Critical, Not critical) by 2 (Exclusion Valence: Loss, No loss) between-participants design.

Using a Minimal Groups paradigm exercise modelled on Tajfel's fake visual estimation tasks (Tajfel, 1970), students were all (covertly) assigned to the same group, the "overestimators", which served as the ingroup for the experiment. As outlined above, a slightly adapted version of Van Beest's (2001) Landscape Paradigm was used for the coalition negotiation and handed to the students at the beginning of the coalition negotiation.

Each participant was led to believe they were negotiating with a member of their ingroup (Player R, another "overestimator") and a member of their outgroup (Player M from the "underestimators"). Criticality was manipulated by indicating that a player possessed a water well that was deemed very important to the property developer, and hence critical for the participants in making the sale. The combination of levels of the Ingroup and Outgroup Criticality variables determined who was indicated as having a well. If both were to be critical, both were revealed to have wells; if neither was to be critical, neither was shown to have a well; and if one was to be critical and the other not, just the critical player was shown to have a well. Exclusion Valence was manipulated by stating that an excluded landowner's plot would either lose all value, or completely retain its value.

Dependent measures were the participants' proposed and final coalition choices (small coalition with ingroup member vs. small coalition with outgroup member vs. grand coalition). In addition, participants were asked to provide ratings on an intergroup resource distribution task modelled on Tajfel's (1970) resource distribution exercise, in order to assess their Social Value Orientation in the intergroup domain by clustering individuals with similar propensities together,

following a method proposed by Knight & Dubro (1984). Students also filled in a brief questionnaire assessing the aversiveness of the exclusion valence manipulation, and a motivation and suspicion measure.

3.2 Procedure

Groups of three or six participants took part in the experiment. Three trained female experimenters conducted the experiments. Upon entering the experimental laboratory, the participants were seated in cubicles separated by partition walls (to avoid any face-to-face interaction). They were told at the beginning of the experiment that they were going to engage in several unrelated tasks.

The first task was the visual estimation task, based on Tajfel's (1970) Minimal Group model. In this task, the experimenter showed an overhead slide projected onto the laboratory wall for five seconds. On the slide were 220 black dots. Subsequently, participants were asked to provide an estimate on a sheet of paper of how many dots they had seen (they were told the number would be somewhere between 100 and 300). The experimenter apparently 'scored' their estimates at her desk. Participants saw on a feedback sheet that everyone could be classified as an "overestimator," underestimator," or "spot on", though in fact all people were told they had overestimated. On this feedback sheet, it was explained to the participants that there would be more estimation tasks later during the experiment, hence the exact number of dots could not be revealed at this point.

The experimenter then explained the second task. This was a questionnaire based on Knight & Dubro's (1984) technique whereby fictitious resources were distributed between different groups so as to determine an individual's general propensities regarding social decision-making. Each participant had to individually rate the attractiveness on a scale from 1 (not at all attractive) to 9 (very attractive) of 49 pairs of resource units, distributed between a group that the participant belonged to, and another group with which the participant had no involvement. Each pair contained an allocation of from 0 to 6 units to own group, and from 0 to 6

to the other group. For example, the pair (2,6) means that 2 units of resources would be allocated to the participant's own group, and 6 units would be allocated to the other group. The 49 combinations of resource distributions from 0 to 6 were listed in random order.

After all participants had finished, the experimenter moved on to the coalition game, and started by explaining that three people would be involved in each coalition negotiation 'round', and nobody's identity would be revealed. However, participants would be told to which 'visual estimation' group their co-negotiators belonged (every participant was assigned to negotiate with another "overestimator" and with an "underestimator"). It was explained that good negotiators would win cash prizes, yet the prize award would be allocated to one of the three 'visual estimation' groups once the whole study was completed. Then the experimenter handed out the landscape scenario, which also contained the participant's player assignment (every participant was assigned the player name "P"). At the same time, participants were handed a brief questionnaire assessing their understanding of the rules and asked to fill it in once they had read through the scenario.

Once everyone had successfully completed the rules questionnaire, the experimenter handed out the form that participants would use to record their coalition choices. On this form, the 'visual estimation' group assignment of each participant's co-negotiator was marked. The experimenter explained the negotiation procedure, slightly adapted from Van Beest's (2003) coalition procedure based on Kahan & Helwig (1971). There would be several rounds (in fact there were only ever two). In the first round, each player was to state his or her preliminary coalition preference on the coalition form. The experimenter would collect the forms, collate everyone's choices and hand the form back. Then each participant would be asked to write a brief task-specific message to both co-negotiators, which would be distributed by the experimenter. Subsequently, each participant would state his second coalition choice. At this point, this choice was binding and if at least two negotiators agreed, then this would mark the end of the game.

Subsequently, participants were asked to record their initial coalition choice. The experimenter collected all forms, and at her desk apparently collated everyone's choices. In fact, the experimenter recorded which participant had opted for what type of coalition (small or grand) and with whom ("overestimator" Player R or "underestimator" Player M). She then prepared the supposed choices of the other negotiators. In all cases, the participant's preliminary coalition choice would be matched by at least one other player. If the participant chose a grand coalition, then both other players would make the same choice. If the participant chose a small coalition, then the selected coalition partner would be shown to also desire this coalition, while the excluded player would be shown to favour the grand coalition.

The experimenter then handed back the coalition forms, so that the participants could read the outcome of the first negotiation round, and then asked the participants to write two messages about the negotiation, one to each of their co-negotiators. All messages were collected by the experimenter, and whilst the experimenter apparently collated these messages, the participants were asked to fill in a brief questionnaire where they had to rate, on a scale from 1 (not at all unpleasant) to 7 (very unpleasant), how unpleasant it would be for them if the others formed a small coalition that excluded them, and how unpleasant it would be for another player to be excluded from the coalition. During this time, the experimenter substituted the messages written by the participants with previously created hand-written messages, purportedly from the other players. If the participant had expressed an initial preference for a grand coalition, two neutral messages were given.[3] If the participant had opted for a small coalition, they received a neutral message from the selected partner, and an appeal for inclusion from the excluded player.[4] In all cases, players received gender-appropriate handwriting styles in the same colour pen as was used by the participants.

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[3] In this case, the messages were "Good choice!" and "I wonder how many rounds there will be".
[4] The message content here was "I wonder how many rounds there will be" from the apparent coalition partner, and "Hey, if you include me too then we will all benefit!" from the player whom they had excluded.

The experimenter then handed out the pre-written messages. After each participant had read their messages, they were asked to record their second coalition choice, and these second coalition forms were collected. While the experimenter apparently collated the outcome of the second negotiation round, participants were asked several motivation questions about the experiment, a suspicion question, as well as an open-ended question on why they made the coalition choice that they did.

Once all participants had filled in the above-mentioned questionnaire, the experimenter stopped the experiment, and thoroughly debriefed the participants. Any additional questions from the participants were answered then, and it was also explained that all participants would be entered into a prize drawing, rather than distributing the game prizes according to group membership. Following this, the students were thanked and dismissed.

The content of the 'appeal for inclusion' message has been verified as being realistic, since about two thirds of participants in a pilot study expressed similar appeals to inclusion and cooperation.

4 Data analysis

4.1 Summary of hypotheses

Below is a summary of my hypotheses. Since it was not possible to create clear predictions using existing theories, I have created alternative hypotheses for the two main research 'camps', i.e. based on traditional coalition theory on the one hand (all hypotheses starting with 'CT', for 'Coalition Theory', belong in this camp), and the Social Identity research model on the other (all hypotheses marked as 'SI', for 'Social Identity', fall into this category).

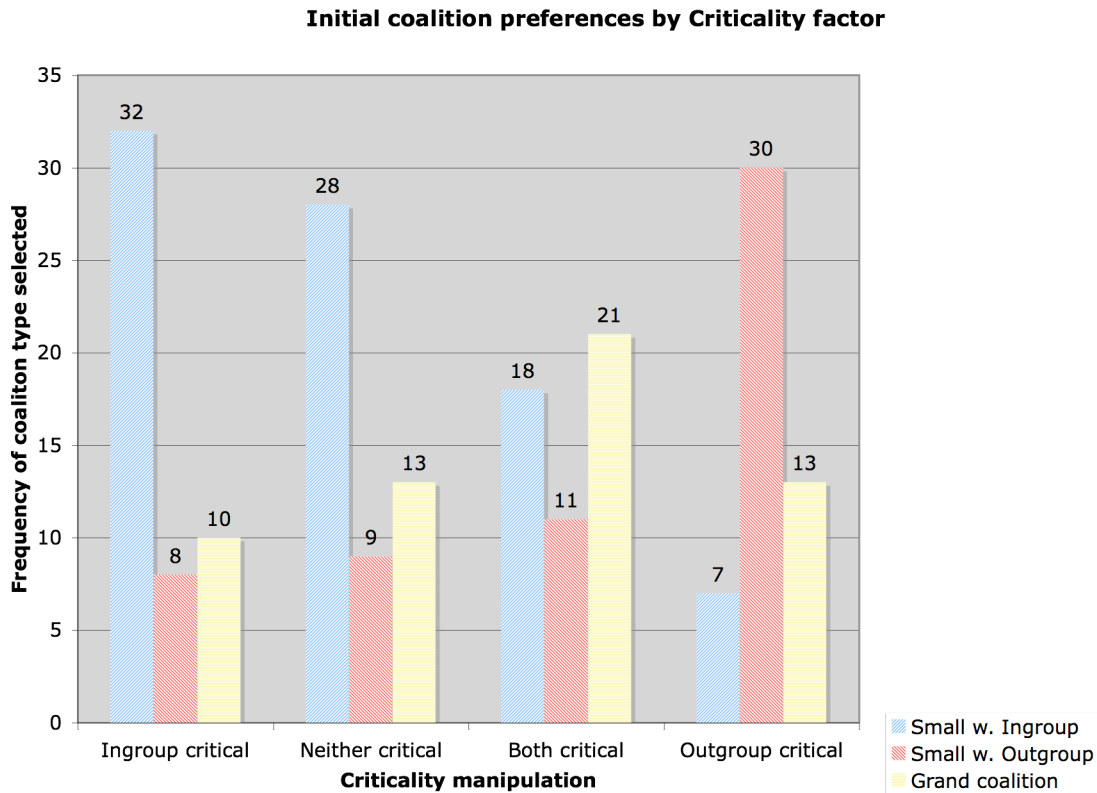|	
CT-H1	i. There will be a majority of proposed small coalitions with a critical coalition partner. ii. If both or neither co-negotiators are critical, then there will be an equivalent proportion of proposed small coalitions with an ingroup member as small coalitions with an outgroup member.
SI-H1	i. There will be a majority of proposed small coalitions with ingroup members. ii. There will be more proposed small coalitions with critical ingroup members than with critical outgroup members.
CT-H2	There will be a majority of proposed grand coalitions if the excluded player were to face a loss.
SI-H2	There will be a majority of proposed grand coalitions in the 'loss' condition if the outgroup member is critical (and hence the ingroup member risks being excluded).
CT-H3	i. There will be a majority of people who will change their proposed coalition choice from 'small' to 'grand' when recording their final coalition choice if presented with an appeal for social inclusion. ii. There will be a majority of changed coalitions from 'small' to 'grand' if participants receive an appeal from a 'critical' excluded player. iii There will be a majority of changed coalitions from 'small' to 'grand' if the excluded player were to risk a financial loss.
SI-H3	i. There will be a larger proportion of changed coalitions from 'small' to 'grand' if an inclusion appeal is launched by an ingroup member. ii. There will be a larger proportion of changed coalition choices from 'small' to 'grand' if an ingroup member were critical. iii. There will be a larger proportion of changed coalitions from 'small' to 'grand' if participants receive an appeal for social inclusion from an ingroup member who were to risk losing payoff from being excluded.
CT-H4	i. Prosocial individuals will choose grand coalitions more often than Proselfs if the excluded player faces a loss. ii. Prosocials will display a larger proportion of changed coalitions from 'small' to 'grand' if they receive an appeal for social inclusion from any excluded player. iii. Prosocials will display a larger proportion of changed coalitions from 'small' to 'grand' if they receive an appeal for social inclusion from any excluded player facing a loss.
SI-H4	Prosocials will display a larger proportion of changed coalitions from 'small' to 'grand' if they receive an appeal for social inclusion from an ingroup member that faces a loss.

4.2 Data Analysis

Below are the findings from my data analysis, in their relation to the hypotheses. For most analyses, I have used the raw data results to create data charts and graphs, so as to highlight the pertinent data items. All raw data outputs are included in the Appendix.

4.2.1 Resource criticality vs. group identity

In this analysis, I focused on participants' choices regarding their proposed coalition (i.e., the choices made during the first round of negotiations), as opposed to the coalition choices made during the second negotiation round. This is similar to the analysis technique used by Van Beest (2003), who suggested that a participant's second coalition choice is likely to be influenced by an interaction with co-negotiators, which may confound the results. In my experiment, participants did not genuinely interact with any others, but the sham messages may still have influenced second choices. Hence, I focus on just initial preferences.

In order to determine whether resource criticality or group identity were more deterministic of people's initial coalition choice, a Crosstabs frequencies analysis was run, with Criticality as predictor and 'First Choice' as criterion. The Pearson Chi-Square for the 'Criticality' analysis was significant with c^2 (6, N=200) = 44.733, p < .000. On the next page is a graph illustrating the breakdown of initial coalition preferences in the respective criticality conditions.

Figure 1: Initial coalition preference by criticality

Initial coalition preferences by Criticality factor

CT-H1-i: There will be a majority of proposed small coalitions with a critical coalition partner.

The initial frequency distribution in the graph shows that in both conditions where only one of the two potential coalition partners was critical for the success of the coalition, this person was chosen in the majority of cases. In the scenario where an ingroup member was critical, 32 out of 50 opted to coalesce with this person, and in the case where an outgroup member was critical, 30 out of 50 (i.e., only two less) chose this partner. This provides initial support for Hypothesis CT-H1-i, suggesting that resource criticality is a major determinant of people's coalition preference.

Figure 2: Initial coalition preference – Totals

Totals of initial coalition preferences
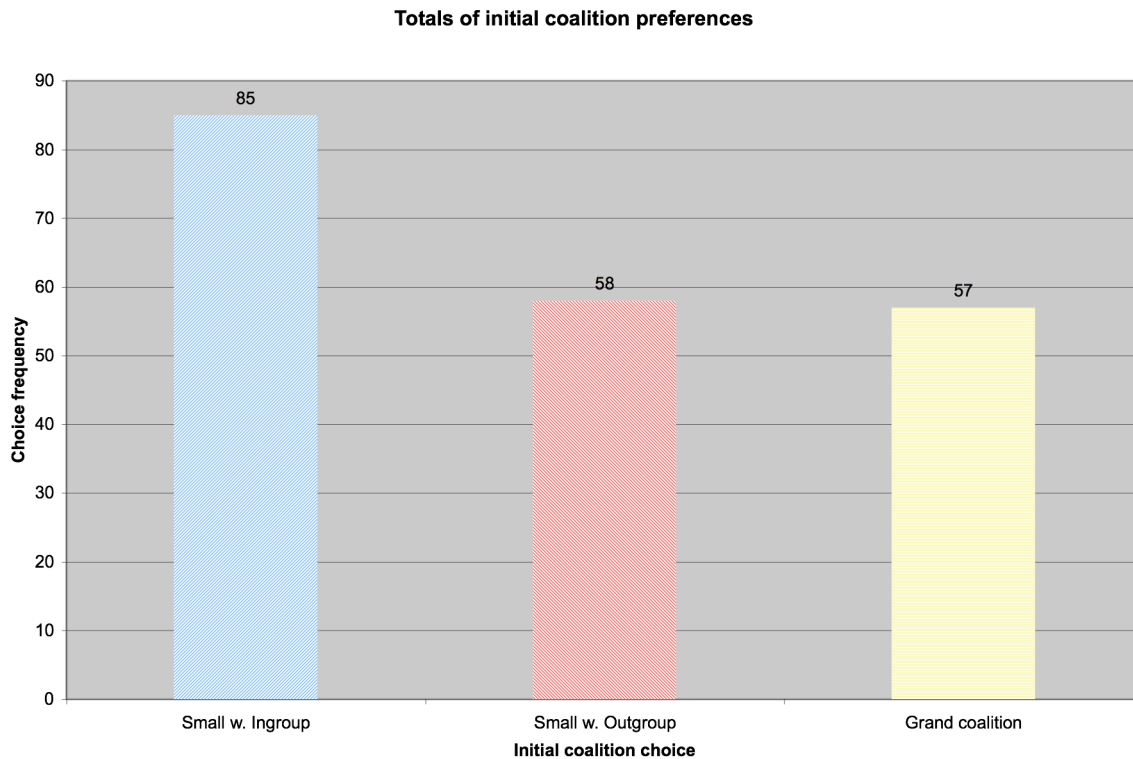
SI-H1-i: There will be a majority of proposed small coalitions with ingroup members.

The totals of all initial frequency distributions above illustrate that 42.5% of participants overall preferred to coalesce exclusively with their ingroup member (i.e. 85 individuals). The proportion of participants opting to team up with either their outgroup member or choosing a grand coalition is smaller, i.e. around 29% (with 58 and 57 individuals, respectively). There is hence initial support for SI-H1-i also, in that participants overall prefer to team up exclusively with a person's ingroup member.

These two hypotheses are not necessarily at odds with each other, however it is necessary to gain a better understanding of how a person's ingroup preference interact with the relative criticality of co-negotiators. What is more important in determining a person's coalition preference, criticality or group status?

In order to answer this question, the above data output was reorganised into two different matrices, showing the likelihood for a small coalition with an ingroup, or with an outgroup member to be selected, depending on the criticality manipulations. This was done in order to be able to directly compare classical coalition theories with Social Identity theory in their effect on preferred coalition choice in my experiment. The two resulting tables, as well as a graph illustrating the results, are shown on the next page.

Figure 3: Preference to coalesce exclusively with ingroup or outgroup, respectively
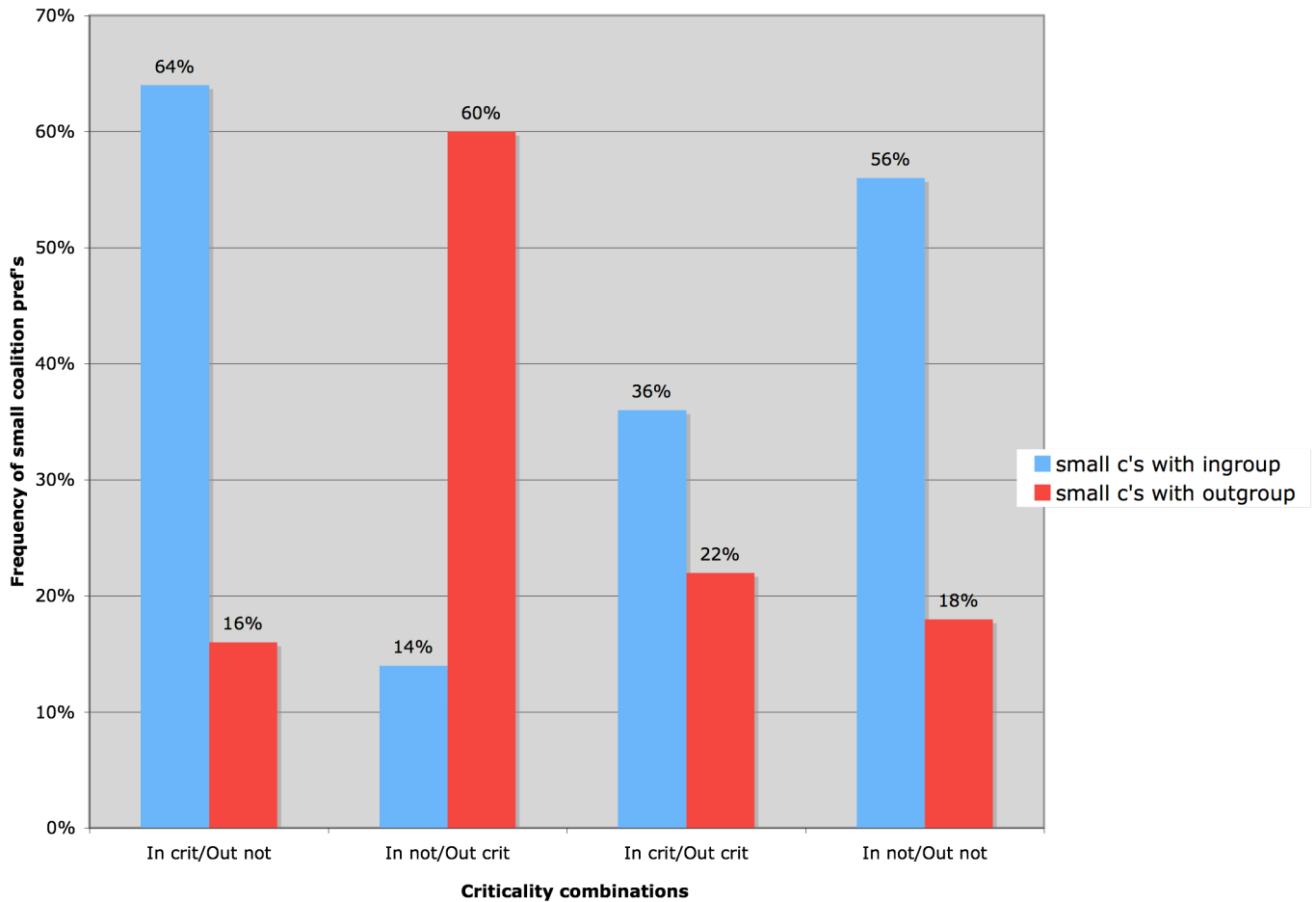
Proportion of small proposed coalitions with ingroup member

	Ingroup critical	Ingroup **not** critical	*Marginal mean*
Outgroup critical	36%	14%	*75%*
Outgroup **not** critical	64%	56%	*40%*
Marginal mean	*50%*	*35%*	

Proportion of small proposed coalitions with outgroup member

	Outgroup critical	Outgroup **not** critical	*Marginal mean*
Ingroup critical	22%	16%	*81%*
Ingroup **not** critical	60%	18%	*61%*
Marginal mean	*41%*	*17%*	

Comparison of:
CT-H1-ii. If both or neither co-negotiators are critical, then there will be an equivalent proportion of proposed small coalitions with an ingroup member as small coalitions with an outgroup member.
SI-H1-ii. There will be more proposed small coalitions with critical ingroup members than with critical outgroup members.

The following three main themes were identified. Firstly, when examining the marginal means for the two tables, we see that 50% of participants opted exclusively for the ingroup member when this member was critical for the coalition whereas only 35% made the same choice when this member was not critical. By the same token, 41% out of all students chose to team up with a critical outgroup member but only 17% indicated this choice when their coalition partner was not critical. This provides further support for hypothesis CT-H1-i and thus for Gamson's (1964) Minimum Power Theory, indicating that in the case where a player can choose one and only one coalition partner who has the power to turn the alliance into a successful one, then this partner is likely to be chosen. This effect seems all the more dominant as according to Social Identity Theory, people should overall prefer to team up with members of their own social group, which would mean that the proportion of small coalitions with an ingroup member in the 'ingroup only critical' condition should be much closer to 100%.

Secondly and in the same vein of argument, about the same proportion of people prefer to coalesce exclusively with a critical ingroup member versus with a critical outgroup member. 64% of participants opted for a small coalition with a critical ingroup member and 60% chose a critical outgroup member. In the condition in which both coalition partners were critical, 36% opted to team up exclusively with an ingroup member, and when neither was critical, 56% preferred a small ingroup coalition. Since the social identity of the coalition partners is the only distinguishing factor between co-negotiators in these two conditions, classical Social Identity Theory would suggest that the aforementioned proportions should also be much higher and more clearly favour the ingroup member. The data hence suggest that hypothesis SI-H1-ii is only supported if criticality is not a determining factor.

However, this does not automatically mean that hypothesis CT-H1-ii is supported. In fact, the third discernible trend is that there are a higher proportion of participants who prefer their ingroup member when both co-negotiators are critical (36% vs. 22%). Even more tellingly, when neither co-negotiator is critical, 56% prefer to team up with their ingroup member, and only 18% teamed up exclusively with their outgroup member. Hence hypothesis CT-H1-ii is not supported.

What does this mean? Taken together, the data suggest that resource criticality is a clear determinant of people's coalition preference, independent of other factors. There is additionally some preference for ingroup members when criticality is not a differentiator. The clearest evidence for this is the scenario where *both* coalition partners are critical for a successful coalition. According to Gamson's Minimum Power Theory, this should have resulted in a 50/50 split – the same number of people should have opted to coalesce with an ingroup member as outgroup member. However, the actual split was 36/22.

4.2.2 Payoff valence vs. group status

Similarly to the previous section, this set of analyses focuses on participants' choices regarding their proposed coalition, in order to avoid any confound due to participant interaction.

CT-H2: There will be a majority of proposed grand coalitions if the excluded player were to face a loss

In order to check the effectiveness of the loss manipulation, a two-item questionnaire assessing harm to other and harm to self in case of exclusion was administered during the experiment. This manipulation check was identical to the exclusion aversiveness check administered by Van Beest (2003). Participants confirmed that exclusion from a formed coalition is aversive, indicating in all conditions that being excluded was deemed rather unpleasant, and on average selected values of 5 or 6 (from a range of 1 = not at all unpleasant, to 7 = extremely unpleasant; M = 5.28, SD = 1.74 for exclusion aversiveness to self, M = 5.50, SD = 1.58 for exclusion aversiveness to other).

I combined the two questions into an overall aversiveness index (Cronbach's α = .62). Interestingly, the internal consistency of these same two questions was lower in my study than what Van Beest had found (α = .81). Possible reasons for this are discussed in the paragraph below.

Leading on from there, I assessed how aversive exclusion was deemed to be in the 'loss' condition, as opposed to the 'no loss' condition, by calculating a one-way analysis of variance. Overall, the results were just significant, with $F(1, 198) = 3.846$, $p = .051$, using a total aversiveness score (i.e. the ratings of harm to other and harm to self combined). When calculating the one-way analysis of variance with both aversiveness scores separately, this analysis uncovered a marginally significant effect of loss on harm to other, $F(1, 198) = 3.373$, $p = .068$, which was similar to Van Beest's (2003) findings. However, the loss manipulation did not have any significant effect on participants' perception of harm for self, $F(1, 198) = 2.399$, $p = .123$. This discrepancy seems reasonable as in my experiment the manipulation check questionnaire was administered *after* the participants had found out that they had been included in the initial coalition constellation. Hence it makes sense that the threat of being excluded *one-self* was less salient to the participants, and consequently the perceived harm associated with this may appear comparatively less than the (projected) harm for any excluded other participant. This may also explain why I found less internal consistency between the two exclusion aversiveness questions than Van Beest, and have hence a lower Cronbach's α.

The more important question here, however, is whether the loss manipulation had any effect on actual coalition *behaviour*, independent of any attitudes expressed during the experiment.

A Crosstabs frequencies analysis was run to test this. The 'loss' condition and information on who is critical for the coalition were crossed with participants' first coalition choice, in order to test whether there was indeed a majority of proposed grand coalitions if the excluded participant were to be at a loss (CT-H2). The Pearson Chi-Square for the 'Loss'

condition analysis was not significant, with c^2 (2, *N*=200) = .264, *p* > .05. The chart on the next page illustrates the results of this analysis.

Figure 4: Grand coalition preference by Loss manipulation
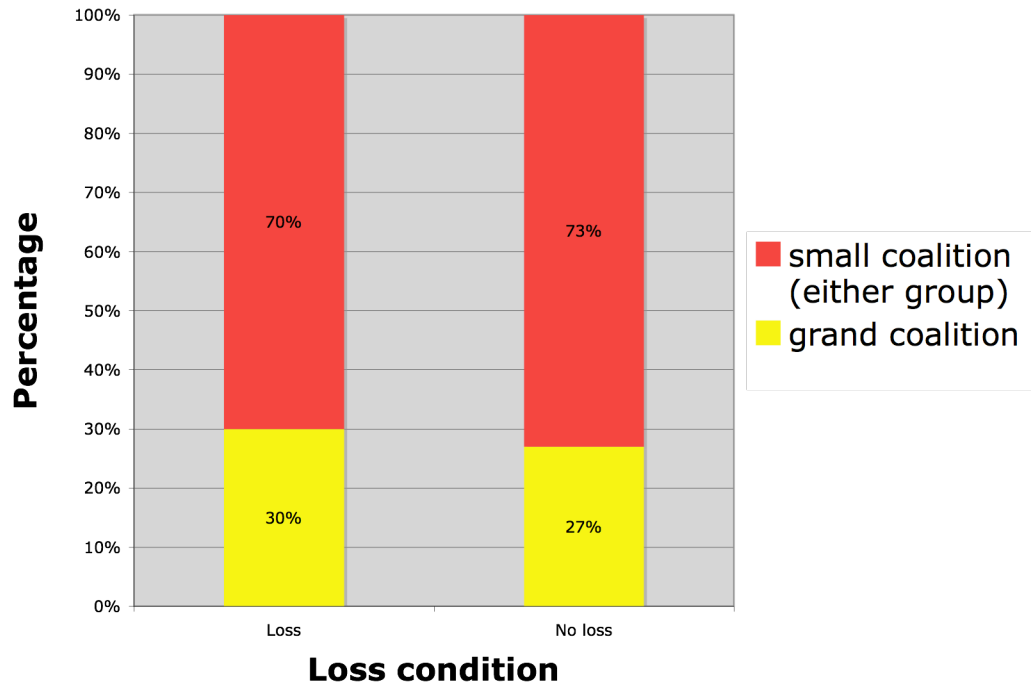
As the above graph shows, the proportion of proposed grand coalitions in the 'loss' condition (30%) and 'no loss' condition (27%) were very similar; hence hypothesis CT-H2 is not supported.

SI-H2: There will be a majority of proposed grand coalitions in the 'loss' condition if the outgroup member is critical (and hence the ingroup member risks being excluded).

When testing the Social-Identity-inspired hypothesis indicating that participants would prefer grand coalitions if the outgroup member were critical (and participants would see a stronger need to be 'protectionist' or 'group-conscious' of their fellow ingroup members), the following results were found.

Figure 5: Grand coalition preference if outgroup critical
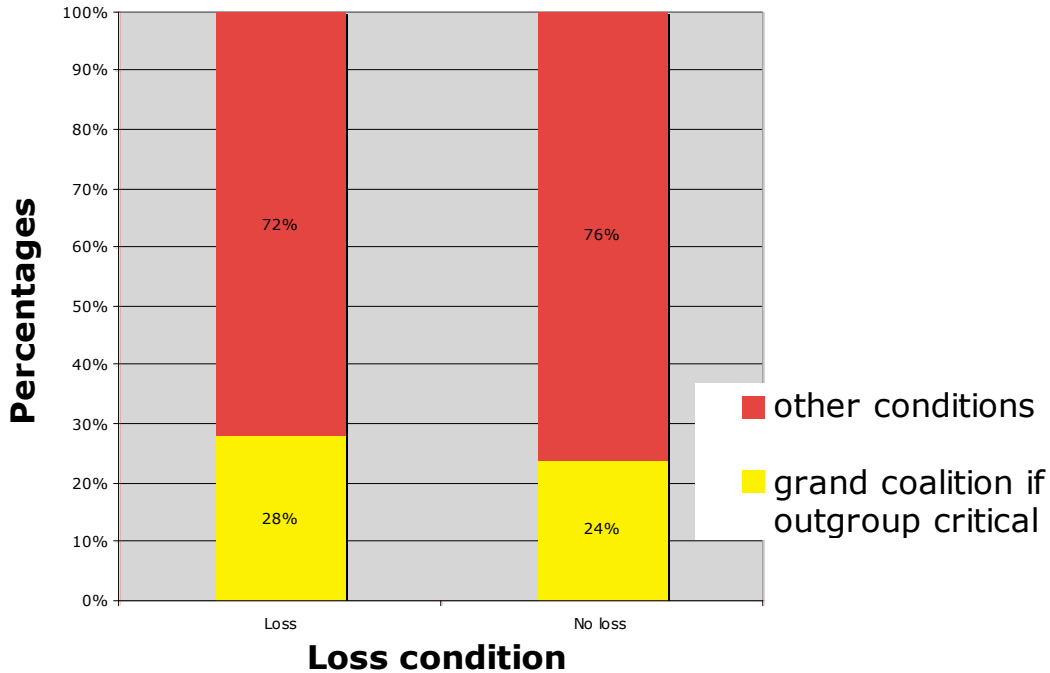
The chart shows that there were 28% of preferred grand coalitions with a critical outgroup member in the loss conditions, whereas 24% preferred a grand coalition in the 'no loss' condition. Thus, hypothesis SI-H2 is not supported either.

4.2.3 Experimental variables and change in coalition choice

CT-H3-i: There will be a majority of people who will change their proposed coalition choice from 'small' to 'grand' when recording their final coalition choice if presented with an appeal for social inclusion.

The first question here was to determine how many participants did in fact change their coalition choice from 'small' to a 'grand' coalition, thus opting for the more socially inclusive choice after they read the appeal from the (simulated) player about to be excluded from the property sale. A frequency analysis was conducted, with information on which participants changed their coalition choice from 'small' in the first round of negotiations to 'grand' in the second negotiation round. The following charts show the results.

Figure 6: Initial coalition choices and choice change to 'grand' coalition
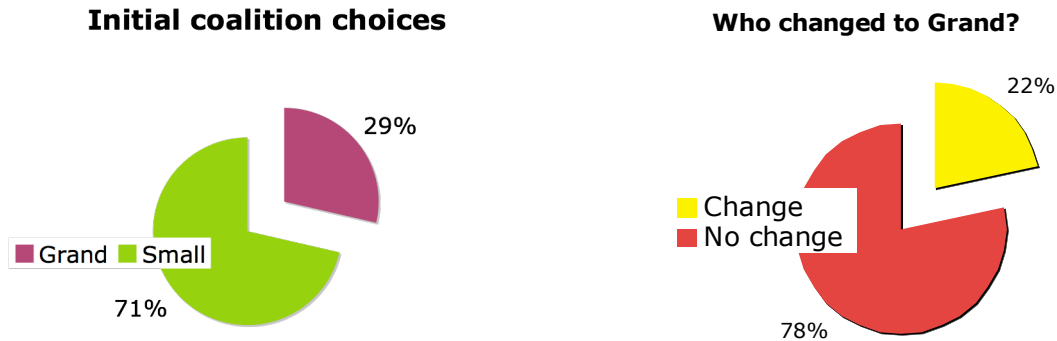
As can be seen in the pie-charts above, it was found that 57 individuals (29%) had initially opted for a grand coalition. Further, 31 participants out of 143 (22%) who had initially opted to either coalesce with an ingroup or an outgroup member changed to a grand coalition choice. Clearly, hypothesis CT-H3-i did not find any support.

What is more, since this was the only such study run, it was not possible to determine to what extent the proportion of participants who changed their mind in this study differed from a default rate of change that would 'naturally' occur when people were to be asked to make a preliminary and then a final choice. Only when such a default change rate is known can a binominal test be conducted, comparing the observed change rate to a hypothetical change rate. This would be a useful task for a follow-up study.

However, in the absence of a base rate of changed choices, these 31 out of 143 participants were taken as the basis for my examination of the conditions that contributed to a change towards a more socially inclusive coalition choice.

SI-H3-i: There will be a larger proportion of changed coalitions from 'small' to 'grand' if an inclusion appeal is launched by an ingroup member.

As illustrated in the chart on the next page, 18 out of 143 participants (13%) changed their minds from a small coalition with an ingroup member to a grand coalition. By the same token, 13 participants (9%) had initially opted for a small coalition with an outgroup member but

chose a grand coalition during the second round of negotiations.[5] Since these two proportions are rather similar, hypothesis SI-H3-i does not find any support either.

Figure 7: Effect of group status on conversion to 'grand' coalition
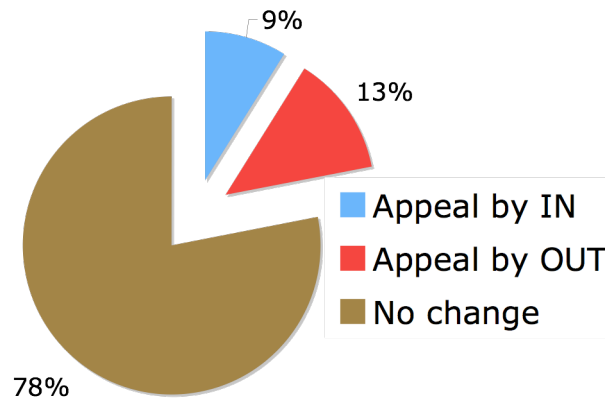
In view of these initial findings in opposition to the hypotheses, what were the factors that contributed to their change of heart?

When examining the experimental variables that contributed to a change in coalition preference into a more socially inclusive choice, it seemed that both criticality and loss appeared to somewhat play a part, albeit no clear trends could be distinguished. A logistic regression analysis was conducted, with 'Criticality' and 'Loss' as factors and 'Change to grand coalition' as dichotomous dependent variable. The results were not significant, with Wald's χ^2 (3, N=200) = .418, $p >$ .05 for 'Criticality' and Wald's χ^2 (1, N=200) = .038, $p >$ .05 for 'Loss'.

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[5] The slightly higher proportion of participants who had initially opted for an exclusive coalition with an ingroup member (i.e. 13% as opposed to 9%) is likely to be attributable to the discernible 'base-rate' preference for ingroup members, as manifested by the fact that most participants overall initially opted to exclusively coalesce with their ingroup member (42.5%), independent of any other factors.

Comparison of:
CT-H3-ii. There will be a majority of changed coalitions from 'small' to 'grand' if participants
receive an appeal from a 'critical' excluded player.
SI-H3-ii. There will be a larger proportion of changed coalition choices from 'small' to 'grand' if an
ingroup member were critical.

With regards to the 'Criticality' factor, out of all the participants who changed their

coalition preference from 'small' to 'grand', 38% of participants who had opted for an ingroup

member only changed their minds after an appeal from a critical outgroup member. A slightly

higher proportion (46%) changed their choice from an exclusive coalition with an outgroup

member when a critical ingroup member launched the appeal. This seems to suggest that SI-

H3-ii is more likely supported than CT-H3-ii, which is in line with the above argument that

criticality *plus* ingroup status is most likely to result in inclusion during coalition negotiation. The

chart below illustrates this finding.

Figure 8: Conversion from 'small' to 'grand' coalition by criticality factor
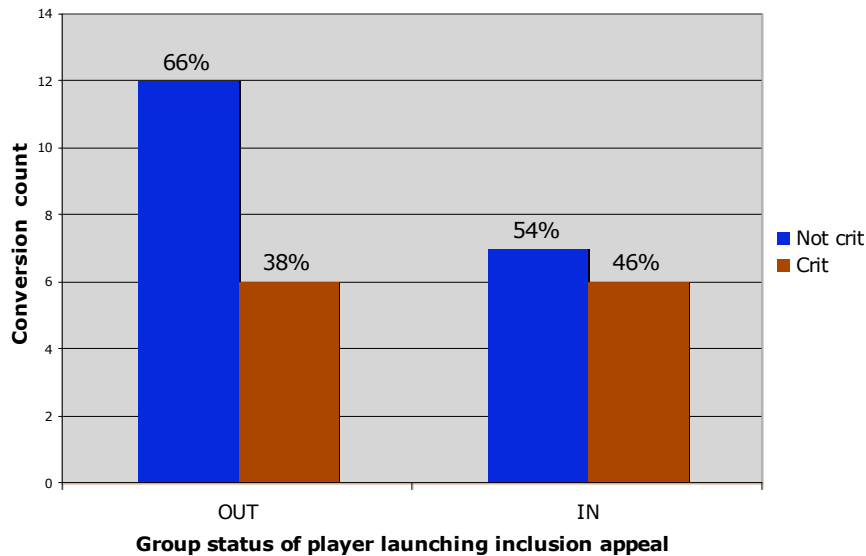
CT-H3-iii: There will be a majority of changed coalitions from 'small' to 'grand' if the excluded player were to risk a financial loss.
SI-H3-iii: There will be a larger proportion of changed coalitions from 'small' to 'grand' if participants receive an appeal for social inclusion from an ingroup member who were to risk losing payoff from being excluded.

Compared to the above conversion rates, a slightly higher rate of participants (44%) became more socially inclusive in their coalition choice when a outgroup co-player appealed for inclusion who risked financial loss. Even more tellingly, 54% who had initially teamed up with an outgroup member reacted to an appeal from their own ingroup member for whom exclusion would mean financial loss. The data seem to suggest further support for the Social Identity-inspired hypothesis SI-H3-iii, rather than CT-H3-iii. This is because participants seem to react to their own ingroup members' appeals slightly more than to appeals launched by outgroup members who are risking financial loss. The chart below is a graphical representation of these results.

Figure 9: Conversion to 'grand' coalition by 'loss' condition
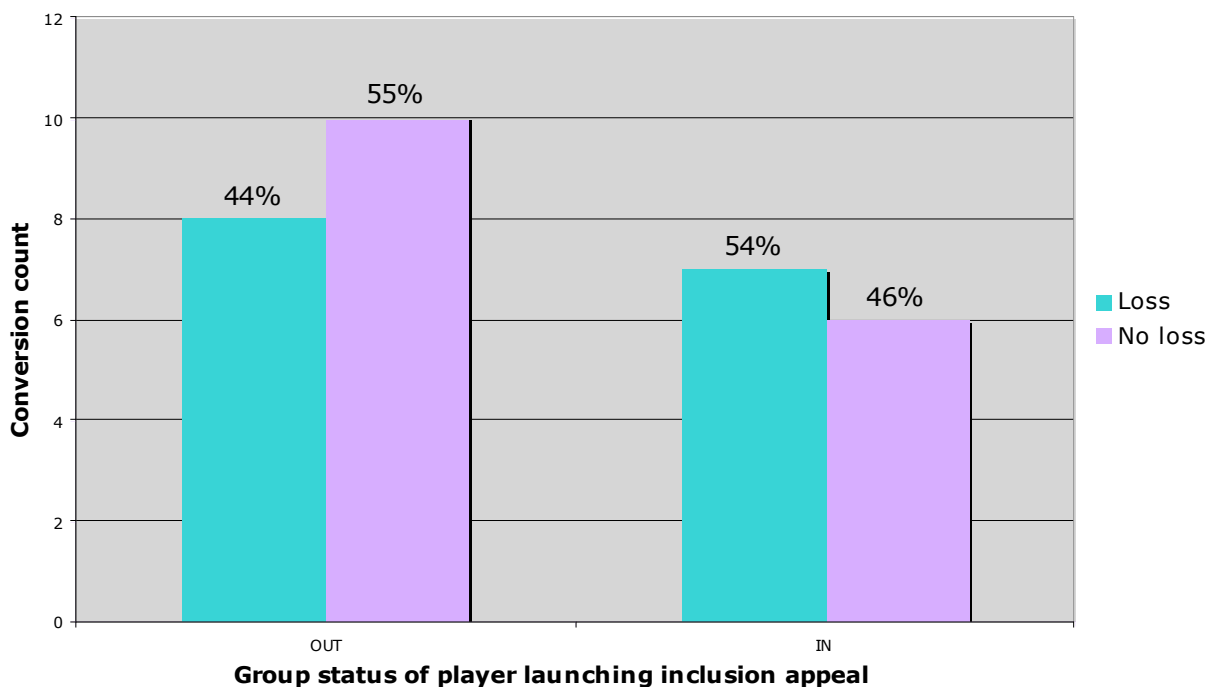
4.2.4 Effects of Social Value Orientation

In order to determine participants' general propensities regarding social decision-making, I carried out a cluster analysis of the resource distribution task administered before the coalition game.

Cluster Analysis

After creating several different cluster distributions with five, and subsequently with three clusters, I finally clustered the participants into four distinct groups.

The table on the next page shows the cluster groups and number of participants per cluster.

Figure 10: Cluster membership

Cluster		
	1	33.000
	2	47.000
	3	65.000
	4	55.000

Cluster 1: "Equality-focused prosocials"

Members of this cluster tended to provide the highest ratings when their own group and the other group received equal amounts of resources, and rated any unequal distributions least favourably. For this reason, participants in cluster 1 can be classified as prototypical prosocials following Van Lange's (1999) definition of people looking to make social decisions which maximise joint gain and minimise the differences between gains for their own group and for the other.

Cluster 2: "Individualistic prosocials"

Here, cluster members consistently strived to maximise joint gain whilst trying to minimise own loss. Therefore, I also classified this group into the prosocial camp.

Cluster 3: "Proself competitors"

The response pattern within this cluster showed highest ratings for resource distributions that not only maximised his/her own group's gain, but also maximised the difference in resource allocation between the two groups (e.g., 6 units for own group, 0 units for other group). Based on Van Lange's definition of proself individuals, this pattern fits into a social value orientation of maximising own gain not only in absolute, but also in relative terms with regards to another group.

Cluster 4: "Proself individualists"

Participants in this cluster aimed at maximising their own gains, with little concern for members of the other group. Distributions 6/0 and 6/1 were rated as highly as distributions 6/6 and 6/5. On the other hand, the lowest ratings were for distributions 0/0 and 0/6. Using Van Lange's terminology, such participants can be termed 'individualists', as their focus is on themselves, irrespective of the circumstances of other people.

Overall, I placed cluster 1 and 2 into the general categories of prosocials, whilst placing cluster 3 and 4 into the proself camp, similarly to Van Beest (2003) who placed both individualists and competitors into the same proself group.

CT-H4-i: Prosocial individuals will choose grand coalitions more often than Proselfs if the excluded player faces a loss.

An initial Crosstab analysis was conducted, linking participants' first coalition choice and the two 'loss' conditions with the cluster information. The Pearson Chi-Square analysis for the four clusters was not significant, with c^2 (6, N=200) = .6.095, p > .05.

The following graph lists the proportion of grand coalitions chosen for the different cluster groups.

Figure 11: Proportion of initial grand coalitions by SVO cluster
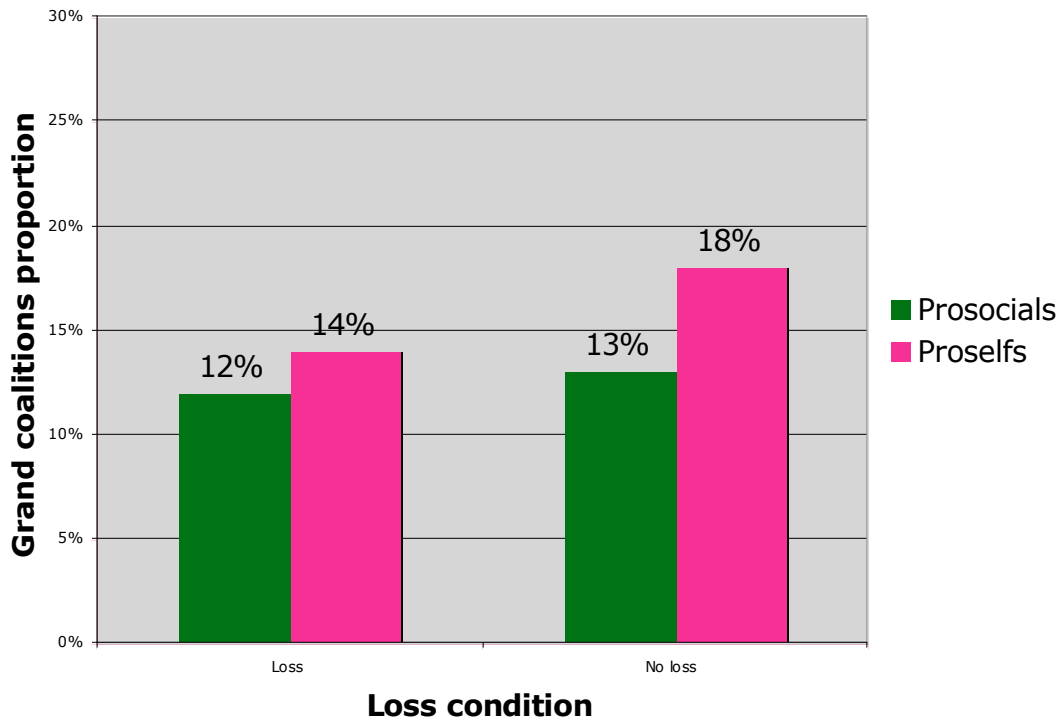
As the bar chart shows, this analysis provided no evidence for hypothesis CT-H4-I, which had suggested that prosocials would opt for grand coalitions in the 'loss' conditions comparatively more often. Overall, the prosocial group preferred a grand coalition in 12% of cases where the excluded player faced a loss, and in 13% of cases in the 'no loss' conditions. The equivalent proportion for the proself group is 14% in 'loss' conditions and 18% in 'no loss' conditions. Hence hypothesis CT-H4-i does not find any support.

CT-H4-ii: Prosocials will display a larger proportion of changed coalitions from 'small' to 'grand' if they receive an appeal for social inclusion from any excluded player.

In order to understand to what extent SVO and/or other factors contributed to the rate of change from a small coalition preference to a socially inclusive second coalition choice, I conducted a logistic regression analysis, with the four clusters and 'Loss' as factors and 'Change to grand coalition' as dichotomous dependent variable. The results were not significant, with

Wald's χ^2 (3, N=200) = 1.713, p > .05 for the four clusters and Wald's χ^2 (1, N=200) = .050, p > .05 for 'Loss'.

I then used the same 31 participants for my further analyses that I had used previously during my examination of the experimental factors affecting this change of heart. The table below provides the basis of my analysis.

Figure 12: Conversion from 'small' to 'grand' coalition broken down by participants' SVO
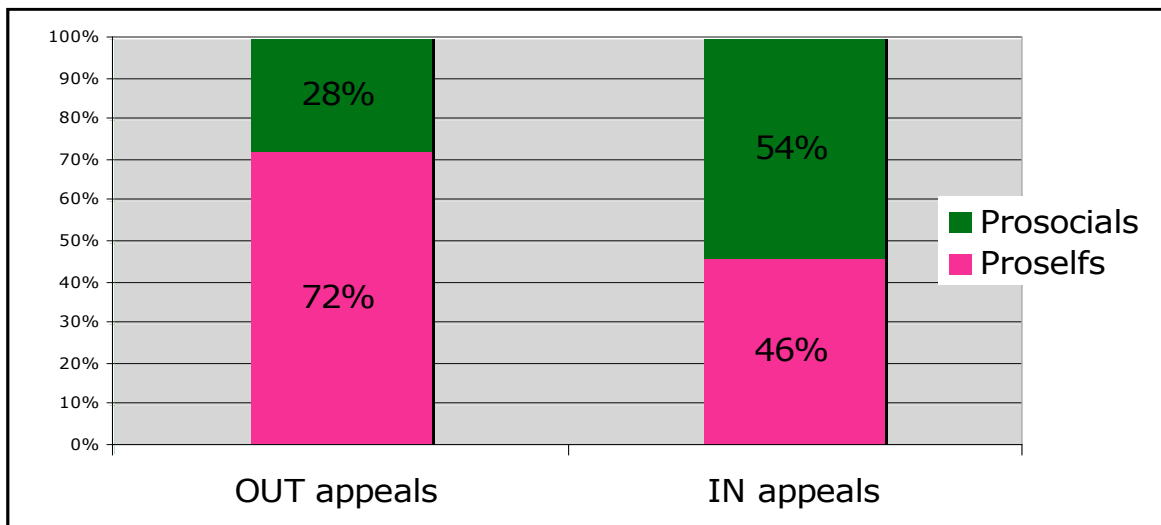
Interestingly, the highest proportion of changed coalition preference towards a more prosocial choice could be seen in the proself group, with 72% of participants who had initially opted for an exclusive alliance with an ingroup member changing their coalition choice to 'grand' in the second negotiation round. Amongst these participants, individualists showed the greatest rate of conversion, with 50% amending their choice to include the third player.

When comparing this response pattern to the prosocial camp, it becomes clear that the rate of conversion is comparatively lower. The only spike in conversion that can be distinguished was when an ingroup member launched an appeal for inclusion, which prompted 54% of prosocial individuals to include this ingroup member when finalising their coalition choice.

These results are in opposite direction to my hypothesis and would mean that CT-H4-ii is not supported, and may even suggest that prosocials are more prosocial or 'moral' towards their ingroup, rather than being socially inclusive to just anyone.

It was examined to what extent participants' SVO interacted with the 'loss' manipulation. As per previous data analyses, the rate of conversion in the 'loss' conditions was equivalent to the 'no loss' conditions, i.e., 15 participants changed their minds when an excluded player faced a loss, and 16 did when no financial loss was at stake.

What is more, proself individuals reacted comparatively more to an appeal launched in the conditions where financial loss was at stake, i.e. two thirds of all individuals who changed their minds in these conditions could be classified as proselfs. Hence Van Beest's (2003) finding that prosocial individuals tend to eschew social exclusion when the excluded risks being harmed could not be applied to this study on intergroup coalition formation, and CT-H4-iii was not supported. The following chart illustrates this point.

Figure 13: Conversion from 'small' to 'grand' coalition by SVO at different 'loss' levels
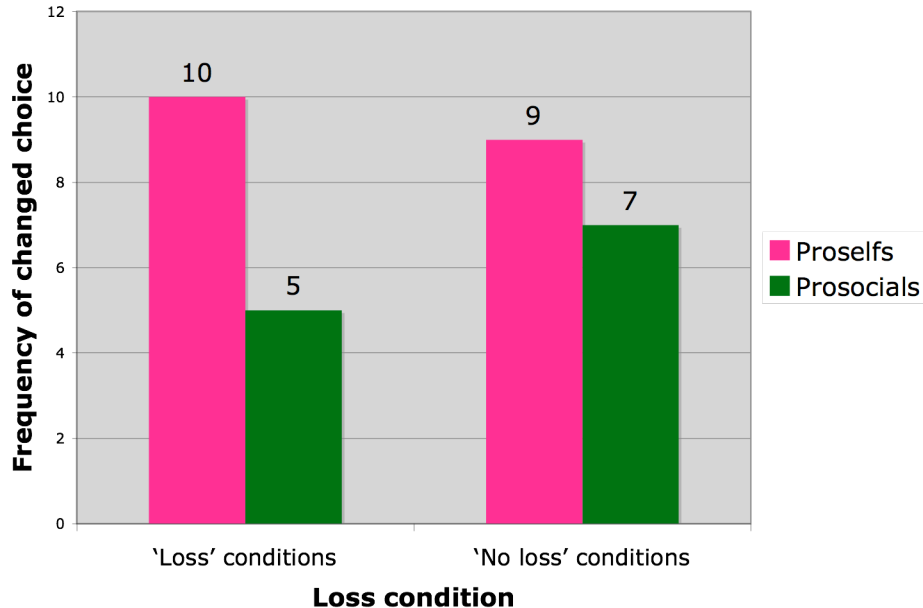
Finally, an analysis was run to determine whether there was a difference in conversion rates by SVO when an ingroup member launched an appeal for social inclusion, as opposed to an outgroup member appealing to be included in the formed coalition. Although the cell count of this analysis was low, the data suggests a trend that does not support the hypothesis. As the table below shows, the highest conversion rate overall was by proself individuals who reacted to an appeal from an outgroup member, i.e. 6 individuals in the 'loss' condition, and 7 individuals even in the 'no loss' condition. This was higher than the conversion rate displayed by prosocial individuals. Hence SI-H4 does not seem to find any support.

Figure 14: Conversion of choice by appealer's group status at different 'loss' levels

	'Loss' conditions	'No loss' conditions
Proselfs		
Ingroup excluded	4	2
Outgroup excluded	6	7
Prosocials		
Ingroup excluded	3	4
Outgroup excluded	2	3
TOTAL	**15**	**16**

5 Discussion

In this section, a discussion follows of the trends that could be distinguished during the data analysis of my experiment. The first trend relates to the relative importance of resources and power in intergroup coalition formation, manipulated in my experiment by changing the levels of criticality of ingroup and outgroup members, respectively.

5.1 Intergroup dynamics and the power/criticality dimension

The experiment confirmed that people have a natural 'knee-jerk' preference for their ingroup members, as illustrated by the fact that 42.5% of participants, the largest group overall, initially preferred to coalesce exclusively with an ingroup member.

However, as soon as any potential coalition partner had powerful resources that were critical for the success of a formed coalition, participants' ingroup preference was dramatically reduced. A clear main effect of criticality could be identified, in that 50% of participants opted exclusively for the ingroup member when this member was critical for the coalition whereas only 35% made the same choice when this member was not critical. It follows from here that the present experiment represents a partial qualification of Social Identity Theory due to the moderating effect of criticality on people's coalition preference.

5.1.1 Criticality is more important for outgroup members

Interestingly, the interaction of criticality with group status was especially pronounced when an outgroup member had more powerful resources, because the marginal mean for 'ingroup critical' was 50% whereas the marginal mean for 'outgroup critical' was 75%. Hence if an outgroup member was critical for the success of the coalition, three quarters of participants expressed a preference to coalesce with this outgroup member, whilst in the corresponding 'ingroup critical' conditions, only half of all participants made the same choice. Neither traditional

coalition research can explain this (since the power of a potential coalition partner should outweigh other considerations), nor can classical Social Identity Theory, because at the very least, a critical ingroup member should be picked more often than a critical outgroup member.

In order to understand these counter-intuitive findings, I would first like to invoke research on reverse discrimination and outgroup bias. This is because choosing a critical outgroup member more frequently than a critical ingroup member for a coalition can be seen as a particular type of outgroup bias. In her review of research on outgroup bias, Marilynn Brewer (2003) notes that outgroup bias is displayed most frequently by members of low-status groups, or those who are at a comparative disadvantage. Rather than being genuinely biased in their choices, ingroup members who favour higher-status outgroup members merely acknowledge and react to the power differential that exists between the groups. Hence in intergroup settings, the degree of "social power" (Brewer, 2003, p. 57) or fate-control that members of one group hold over members of other groups largely determines intergroup decision-making. In my experiment, social power can be equated with having a well on one's land plot, hence making this parcel critical for a successful property sale.

However, this can only help explain that outgroup members were chosen as coalition partners in the first place, and not that critical outgroup members were even more likely to be chosen than critical ingroup members. More research is needed to understand this, yet a possible avenue for future follow-up studies to explore this finding further is to apply the model of subjective group dynamics (Abrams et al., 2000). According to this model, people evaluate other ingroup members who are comparatively more aligned with the group norm (and are hence positively deviant) as more positive, whilst evaluating outgroup members who are positively deviant as more negative. Conversely, negative ingroup deviants are judged negatively, whereas negative outgroup deviants are evaluated comparatively more positively. This is because an outgroup member who is less prototypical than a normative outgroup member may

actually have more in common with an ingroup member than with his or her fellow outgroup members. Hence the direction of group deviance contributes to intergroup evaluations.

The reason why this is relevant to the present study is that it is conceivable that an outgroup member who is critical for a participant's success may be seen as 'atypical', and negatively deviant with regards to the outgroup in general. This is because in intergroup settings, people tend to distrust outgroup members and perceive them as less cooperative (e.g., Brewer, 2003). Furthermore, the positive distinctiveness of being critical for the coalition's success could be more salient when it is an attribute of an outgroup member, which may explain why such an outgroup member was chosen comparatively more frequently in my experiment.

A follow-up study could be conducted to test this, whereby the subjective group status of ingroup and outgroup members would be manipulated alongside their respective criticality for the success of the coalition.

5.1.2 Fair, or rather fair enough?

When the ingroup member was alone in being critical for a successful coalition, 64% of participants preferred coalescing exclusively with this critical ingroup member whilst 36% of all participants opted *not* to coalesce with this person. This indicates that maximising gain for self was not the main concern for about a third of these people, which would be the prediction made by classical coalition theories. 20% chose to lose out on an extra $4,000 dollar gain by preferring a grand coalition, and 16% opted to coalesce with an outgroup member over the critical ingroup member, hence forsaking the near-guarantee of a successful property sale and a workable coalition. Why was that?

A fifth of the participants, i.e. 20%, preferred to enter into a grand coalition. Clearly, this preference was not related to participants' SVO, because prosocial individuals were not comparatively more likely to opt for a socially inclusive coalition than proselfs (and in fact made this choice even less frequently than participants in the proself camp).

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Hence another line of argument is needed here. It is conceivable that these people engaged in "satisficing", a term coined by Herbert Simon in 1947, indicating that people do not always seek to maximise their own reward, but rather strive to obtain an outcome that is good enough (Simon, 1997). A similar notion was presented by McKelvey and Palfrey (1995) who introduced the term Quantal Response Equilibrium (QRE), which in the authors' view "replaces the perfectly rational expectations equilibrium embodied in Nash equilibrium with an imperfect, or noisy, rational expectations equilibrium" (McKelvey & Palfrey, 1995, p. 7). The authors observe that "better responses" in economic choice games (in terms of their prospective payoff for the player) are more likely than "worse responses", yet report that "best responses" (in the sense of maximising own payoff) are not always chosen (McKelvey & Palfrey, 1995, p. 7-8).

McKelvey and Palfrey use the term *quantal* response equilibrium to explain decision-making in game theory settings precisely because an individual's particular choices cannot always be perceived or easily classified by the experimenter or the data analyst. Such motivations would especially make sense for someone concerned with 'good enough' outcomes for *all* players in the game. Clearly, more research is needed to understand the precise motivations at play for these individuals, but an initial content analysis of the coalition messages written by participants who opted for a grand coalition in the conditions where the ingroup member only was critical for a successful property sale revealed that 50% (5 out of the 10 individuals in this cell) indicated that they wanted "all to cooperate" and/or that "everyone should gain" from the sale.

Let's now consider the 16% of participants who expressed a preference for a small coalition with the non-critical outgroup member. These participants made a choice that is not easily understood using traditional coalition or Social Identity theories, because neither did they strive to obtain a better payoff for themselves, nor did they choose the co-negotiator that shares their social identity. In this context, a new study by Michel Handgraaf et al. (in press) may be applicable. Handgraaf and his fellow researchers found that when dealing with co-players who

were totally powerless, people behave in ways that can only classified as altruism, and protect these powerless co-players. Interestingly, as soon as such a low-status player acquires even a small amount of power, this effect is eradicated and altruistic behaviour no longer applies.

For the purpose of my research, a follow-up study could investigate if such an effect could be replicated in the context of intergroup coalition formation. The criticality manipulation could be amended, so that the perceived powerlessness of coalition partners is either made differentially salient, or changed during an experiment. In this way, it could be indicated initially to the participants that a fellow coalition negotiator has no essential resource to bring to the coalition table, and subsequently this information could be revised, so that this non-critical player would then be seen to have an element of power or criticality. It could be measured to what extent this were to change people's coalition preferences.

5.1.3 Grand coalitions shaping new identities?

Overall, participants preferred grand coalitions most when both co-players were critical for a successful coalition (42%). This is interesting because it is not in line with classical coalition theory – after all, one of these two critical coalition partners would have not only been sufficient for a successful result, but also resulted in a higher gain for our players. The results suggest that participants may have felt a certain obligation towards these powerful coalition partners, in line with Andeweg's (2002) observation that political parties occasionally coalesce in excessively large and cumbersome governments. More research is needed here to test this idea, and in this context it would also be useful to examine to what extent the group identity changes of members of a newly formed grand coalition that transcends group boundaries. The experimental findings of Esther van Leeuwen et al. (2003) suggest that following a merger (which is effectively what a grand coalition is), people tend to identify with this a new, super-ordinate identity.

In my experiment, it was very interesting to find in a handful of written messages by participants who had opted for a grand coalition with both critical partners the mention of 'complementary group membership'. This means that these participants explained (or

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rationalised) their decision to enter into a relationship with an outgroup member by saying that 'overestimators' and 'underestimators' would complement each other in future visual estimation tasks. A follow-up study could be designed where the salience or meaning of group membership could be varied experimentally.

5.2 Loss and helplessness

A second main trend that could be uncovered in my data analysis related to the 'loss' manipulation, i.e. the effect of a potential negative payoff for a coalition negotiator who risks being excluded from the formed coalition. No independent effects of loss on coalition preference could be found. This was despite the fact that in the loss conditions, gain to self and loss to other were equivalent (i.e. $6,000), hence participants were not able to 'rationalise away' that their personal gain was too good to pass up, compared to the harm inflicted upon the excluded player. What is more, participants generally deemed financial loss and exclusion from a formed coalition to be harmful for the excluded individual.

Neither harm per se to an excluded coalition partner, nor the social identity of this excluded landowner, moderated participants' coalition preference. Although my 'loss' manipulation was comparable to the one used in Van Beest's (2003) study, where a main effect of loss on negotiators' coalition preference was found, there are two important differences between these two studies; the resource power/criticality and group status manipulations that were added to the present study. As there is a clearly discernible effect when a potential co-negotiator is critical for the success of the land sale, especially in the case of outgroup players, it is reasonable to assume that these two factors are in fact more deterministic for coalition formation; or in other words, they may dwarf any possible effect of payoff valence to the excluded in an intergroup coalition setting.

Overall, the findings indicate that people approach intergroup coalition negotiations differently from our traditional understanding of coalition formation theories. Further evidence for this line of argument is the fact that in this intergroup setting, prosocial individuals do not at all

react similarly to a payoff valence or 'loss' manipulation as they did in Van Beest's (2003) same-group coalition experiment.

However, those participants who changed their coalition choice from 'small' to 'grand' were most likely to do so when they received an appeal from a non-critical (or powerless) person who risked a financial loss as a result of being excluded. This indicates that the 'loss' manipulation may have contributed to the excluded player's image of being helpless and hence worthy of prosocial or charitable actions.

It would therefore be useful to focus on this aspect of any future payoff manipulations in intergroup coalition experiments, to determine to what extent the risk of being excluded (and suffering financial loss as a consequence) can foster a participant's image of complete helplessness. In connection with Handgraaf's (in press) study on the effect of powerlessness on social behaviour outlined in the previous section, it could be assessed directly during an experiment what people's perceptions are of powerless ingroup vs. outgroup members at different levels of a 'loss' manipulation, by asking participants to rate the degree of helplessness of excluded players. Such a follow-up study may fruitfully advance our understanding of any specific effect of payoff valence on intergroup coalition preference.

Another reason for follow-up studies is that the cell count in the situations where participants change their coalition choice is very low and uneven. This is a limitation of the study, and future experiments focusing on behaviour change and its underlying mechanisms would reduce this problem.

5.3 Prosocials are more prosocial towards ingroup members

The third trend identified during my data analysis was that prosocials in my intergroup coalition study did not show the same level of prosocial behaviour as observed by Van Beest in his (2003) 'loss' manipulation, and seemed to react most strongly to an appeal for inclusion from an ingroup member (54% of participants who made their second coalition choice more socially inclusive did so in response to an ingroup member's appeal).

This could either mean that the prosocials in my study were not genuinely prosocial in a global sense of the word. However, the resource distribution task administered during the experiment very closely replicated Tajfel's (1970) minimal group intergroup resource distributions that have come to be known as "Tajfel matrices" (Otten et al., 2001, p. 190) and are hence a tried and tested mechanism to assess intergroup cooperative behaviour. It is more likely that people focused comparatively more on their group identity, and consequently behaved more in line with motivations that stressed (and protected) their own "groupness" (Tajfel, 1970).

More research is needed here as well, testing this hypothesis and focusing on a potential boundary effect of the moral obligation that a prosocial person feels in intergroup settings. Such an effect would then lead to a protectionist stance towards one's own group. It would be useful to create experimental situations focusing on the motivations underlying prosocials' behaviour in these intergroup situations. This is because their behaviour in my experiment, by displaying less socially inclusive tendencies than the proself group, is opposite to existing coalition research. Such follow-up studies may also help with the issue of very low cell counts in these observed conditions, and have the potential to explain why in my experiment, prosocials seem to react comparatively less favourably to an appeal for inclusion from their own ingroup member facing loss – in sum, it is difficult (if not dangerous) to draw conclusions from experimental cells with 2 or 3 participants in them.

5.4 Procedure and intervention

Finally, the present experiment has shown that a change in coalition choice from exclusive and self-oriented to socially inclusive was rather unlikely to be attributable to a priori predictors such as criticality or a 'loss' manipulation. It is more likely that the (fabricated) interaction with co-players who issued an appeal for social inclusion in itself had an impact on people's coalition choice. This is because neither of the experimental factors clearly helped in persuading participants to become more socially inclusive during the second round of negotiations. What is more, almost a quarter of all participants, i.e. 22%, could be persuaded to change their coalition

choice from small and exclusive to grand and socially inclusive, ostensibly as a result of a procedural intervention whereby their imminent act of exclusion became comparatively more salient to them.

The implications of this for practitioners are likely to be two-fold: clear behavioural predictions for situations where personality, interpersonal and intergroup factors are at play or interact may be difficult to obtain. Secondly, if practitioners want to bring about more socially inclusive working relationships and coalitions, they may need to focus on the procedural elements of an intergroup coalition negotiation. Active mediation could most likely result in the desired results here. This may relate back to the underlying mechanisms at play in McKelvey & Palfrey's (1995) quantal response equilibrium, since people's motivations in complex decision-making situations can often not clearly be predicted before the situation occurs. It may be most profitable for policy-makers aiming to produce a desired effect to initiate procedural steps that allow parties to consider (or re-consider) the consequences of their (imminent) decisions before these decisions are made.

It represents a limitation of this study that no default base rate of change was available beforehand, against which the experimental findings could have been compared. A useful follow-up test would therefore be to determine the natural base rate of change that can occur without any outside intervention, by asking people to spend some time deliberating between their initial and then final coalition choice. Only then can it be determined if the 22% rate of conversion observed in the present study is high or low, and future studies can be planned accordingly.

Overall, I am left with more questions than answers. Identity concerns clearly play a part in coalition formation. As mentioned previously, everyday alliances in the economic and political domain tend to be formed by people or parties who differ with regards to their social identity. Hence it will be useful to conduct further studies on how exactly existing coalition theory has to be extended in order to accommodate the intergroup face of today's coalition realities.

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6 Conclusion

In this study, existing coalition formation theories and Social Identity Theory were integrated so as to understand the specific factors that contribute to a person's coalition preference in an intergroup setting.

Overall, the study provides support for the argument that people approach intergroup coalition negotiations rather differently than when they engage in coalition negotiations with only ingroup members. In this way, the experiment expanded our traditional understanding of coalition formation theories. What is more, results suggest that ingroup bias and favouritism may not apply in certain coalition negotiation scenarios, which would represent an extension of Social Identity Theory.

The following findings were reported. Firstly, the resource power or criticality that a coalition negotiation partner brings to the negotiation table seems to be most deterministic of participants' coalition preference. 'Big Daddy' seems to be someone that everyone wants to have in his or her coalition, and this notion seems to aptly represent Gamson's (1964) Minimum Power Theory, one of the foundations of modern coalition research, which would mean that criticality moderates our innate ingroup bias in certain circumstances. In the absence of such a differentiator, participants preferred to coalesce with their ingroup members. People hence fall back on their 'Best Buddy' in those times when 'Big Daddy' is not around. Secondly, no independent effects of exclusion valence could be detected, and in particular a financial loss associated with being excluded from a coalition did not seem to directly affect participants' coalition choice. This was unlike earlier coalition research (Van Beest, 2003, 2005) where loss to a potentially excluded player did result in more socially inclusive coalition behaviour. However, if participants were faced with co-negotiators who seemed completely power-less, the loss condition may have helped create an image of utter helplessness that in turn enhanced these co-negotiators' potential to be part of the final coalition. Further, participants' SVO did not follow the pattern of coalition behaviour established by prior coalition studies (Van Beest, 2003), as prosocial

individuals were comparatively less, not more, socially inclusive in their coalition choices than proself participants. This suggests a potential boundary effect on a prosocial person's tendency to view social decisions in terms of moral obligations when dealing with intergroup situations, by behaving in a manner that protects the interests of the ingroup first and foremost. Finally, certain procedural steps were identified that may foster enhanced social inclusion during coalition negotiations. Several possible avenues for follow-up studies were discussed, as well as implications for practitioners advising coalition parties engaged in complex intergroup negotiations.

7 Appendix

7.1 Materials

7.1.1 The landscape paradigm

Imagine that you are landowner P, one of 3 landowners R [*the participant's ingroup member*], M [*the participant's outgroup* member] and P.

All of you own a parcel of land. Each parcel is the same size, and they are all worth $6,000 each.
Recently, a project developer with an attractive proposal has approached the three of you. He wants to buy a minimum of 2 parcels for $24,000. He is willing to buy all 3 land parcels, but he will not pay more than $24,000 in total. Put another way, the developer will pay the same amount for 2 land parcels as he does for 3 land parcels, and the same amount, i.e. $24,000 to three sellers as he will pay to two sellers. Since nobody possesses enough land to accept this proposal by him or herself, you will need to join forces if you want to make a sale.

For this, you need to form a coalition with at least one other landowner in order to profit from this proposal. This means that you yourself can either form a small coalition, for example with M, or with R exclusively, or you can form a grand coalition, consisting of yourself with both M and R together. It is of course also possible that the 2 other landowners in your negotiation panel could form a coalition without you. Your potential gain in joining a small coalition (i.e. with only one other coalition partner) will be $6,000, resulting in a sale price for your plot of land of $12,000, and your gain in joining a grand coalition (i.e. all three of you together) is $2,000, which means that your plot value will be $8,000. The moment two landowners form a coalition; the other landowner is left with his or her parcel of land.

The value of this parcel will then be $0. The value of an unsold land parcel will therefore decrease by 100%. [*This sentence depended on the experimental condition 'loss to excluded player'; the other option was "*The value of this parcel will then be $6000. The value of an unsold land parcel will therefore remain the same.*"*]

In addition to this, landowner R possesses a water well that the property developer considers critical for the success of the planned building project. Independently of the size of the coalition to be formed, it appears that without this critical coalition member, the property sale might not take place, which could be detrimental to the property value for all landowners.

[*This last paragraph depended on the experimental conditions 'ingroup and outgroup criticality'; in the other 3 options, either M or both co-players owned a water well, or neither did, and this paragraph was omitted.*]

7.2 SPSS Data Output

7.2.1 Initial coalition preference by criticality factor

who is critical * 1st choice Crosstabulation

Count

		1st choice			
		small with Ingroup	small with Outgroup	grand coalition	Total
who is critical	Ingroup critical	32	8	10	50
	Both critical	18	11	21	50
	Neither critical	28	9	13	50
	Outgroup critical	7	30	13	50
Total		85	58	57	200

7.2.2 Exclusion aversiveness calculations

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Exclusion aversiveness to self	Between Groups	7.149	1	7.149	2.399	.123
	Within Groups	587.092	197	2.980		
	Total	594.241	198			
Exclusion aversiveness to other	Between Groups	8.244	1	8.244	3.373	.068
	Within Groups	481.505	197	2.444		
	Total	489.749	198			

Dependent Variable: QAandQB

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	30.286(b)	1	30.286	3.846	.051
Intercept	23002.125	1	23002.125	2921.141	.000
Loss	30.286	1	30.286	3.846	.051
Error	1543.375	196	7.874		
Total	24595.000	198			
Corrected Total	1573.662	197			

a Computed using alpha = .05

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7.2.3 Loss manipulation effect

who is critical * 1st choice * Loss manipulation Crosstabulation

Count

Loss manipulation			1st choice			Total
			small with Ingroup	small with Outgroup	grand coalition	
No loss	Who is critical	Ingroup critical	18	3	4	25
		both critical	7	6	12	25
		neither critical	15	5	5	25
		outgroup critical	4	15	6	25
	Total		44	29	27	100
Loss	Who is critical	Ingroup critical	14	5	6	25
		both critical	11	5	9	25
		neither critical	13	4	8	25
		outgroup critical	3	15	7	25
	Total		41	29	30	100

7.2.4 Cluster and initial preference crossed

Cluster Number of Case * 1st choice * Loss manipulation Crosstabulation

Count

Loss manipulation			1st choice			Total
			small with Ingroup	small with Outgroup	grand coalition	
No loss	Cluster Number of Case	Prosocial (equality freak)	8	5	6	19
		Prosocial (streetwise)	10	6	7	23
		Proself (competitor)	15	12	4	31
		Proself (individualist)	11	6	10	27
	Total		44	29	27	100
Loss	Cluster Number of Case	Prosocial (equality freak)	4	3	7	14
		Prosocial (streetwise)	11	8	5	24
		Proself (competitor)	12	12	10	34
		Proself (individualist)	14	6	8	28
	Total		41	29	30	100

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