GROUP MARGINALIZATION PROMOTES HOSTILE AFFECT, COGNITIONS, AND BEHAVIORS

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Group Marginalization Promotes Hostile Affect, Cognitions, and Behaviors

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ABSTRACT

The present research investigates relationships between group marginalization and hostility. In particular, I focus on the experiences of small, contained groups that are intentionally rejected by multiple out-group others. An integrative framework is proposed that attempts to explain how group processes influence (a) coping with threatened psychological needs following marginalization, (b) affective states, (c) cognitions regarding the marginalization and its source, and ultimately (d) hostile behavior. Study 1 describes a unique paradigm that effectively manipulates interpersonal rejection. Study 2 then implements this paradigm to empirically test relationships between the components of the integrative framework and examine differences among included and rejected individuals and groups. Results reveal partial support for the framework, particularly in regard to the impact of group marginalization on psychological needs and hostile affect, cognitions, and behaviors. Implications for natural groups such as terrorist cells, school cliques, and gangs are considered.

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INTRODUCTION

In 2007, The Federal Bureau of Investigation unraveled a terror plot targeted at U.S. military personnel. The suspects consisted of six men who together "collected handguns, shot guns and semiautomatic assault rifles, engaged in firearms training in the Pocono Mountains, undertook surveillance of several U.S. military facilities and openly talked among themselves about how to carry off multiple spectacular attacks against U.S. military personnel" (Isikoff, 2007). These talks included plans of firing rocket-propelled grenades at soldiers stationed at Fort Dix in New Jersey and timing an attack on a nearby Philadelphia naval base just before an Army-Navy football game. Perhaps most interesting about the terror plot is that it involved just six men whose only connection to a larger terrorist organization was al Qaeda recruitment videos and similar propaganda downloaded from the Internet. The six men had otherwise acted alone.

When events like this occur, questions arise as to the factors that established the environment in which the incident arose. How did this small group of men arrive at a point in which planning to kill American soldiers seemed laudable? More generally, what factors set the stage for any small group to engage in hostile behavior? Numerous conceptual frameworks have been developed to identify factors that promote such behavior. Noricks et al. (2009) found that precursors to terrorism include a belief by the acting group that violence is legitimate, motivation on the part of the acting group, and the presence of social structures that permit terrorist acts. These researchers also hinted at other contributing factors such as feelings of isolation. Bartlett, Birdwell, and King (2010) found that those drawn to some forms of violent radicalism tend to have a shallower understanding of religious tenets than those radicals who do not engage in violence. Bartelett et al. argued

that understanding this distinction is vital because targeting the wrong people can breed alienation and resentment, an ostensibly negative outcome. Although these examples concern terrorism, a wide range of similar factors are known to contribute to hostile acts perpetrated by other small groups such as juvenile gangs (Goldstein & Soriano, 1994), religious sects (McDaniel, 2007), and school cliques (Miller, Holcomb, & Kraus, 2008). The violent actions of terrorist cells as emphasized here merely represent extreme reactions that exist on a continuum of hostility.

Although certain factors considered contributory to hostile behavior among groups vary based on discipline and authorship, a number of factors appear consistently throughout relevant literatures. One such factor is the experience of shared rejection. Bartlett et al. (2010) argued that nearly all terrorists and radicals experience some degree of societal exclusion. Noricks et al. (2009) and McCauley and Moskalenko (2011) emphasized that feelings of isolation among recruits and members of terror groups can contribute to the effectiveness of radicalization efforts. The six men in the terror plot described above likely felt rejected within Western society. Members of gangs often feel disconnected from the communities in which they reside as well (Goldstein & Soriano, 1994). Many of the conceptual models seeking to explain hostile behavior among groups depict rejection as contributory despite limited empirical evidence and understanding of this relationship. The present research seeks to provide empirical support for the potent and perhaps understated impact of shared rejection experiences on hostile behavior among small groups.

In an effort to understand hostile reactions to group marginalization, I propose an integrative framework. My framework explains how group processes influence (a) coping with threatened psychological needs following marginalization, (b) affective states, (c)

cognitions regarding the marginalization and its source, and ultimately (d) hostile behavior. The present work outlines and empirically examines relationships between the components within this integrative framework. Additionally, this work articulates ways in which included (i.e., accepted) and rejected individuals and groups might react differently. Generally, I describe how rejection might promote more hostile affect, cognitions, and behaviors than inclusion. I also describe how rejection might promote more hostile affect, cognitions, and behaviors for groups and their members than for individuals. These predictions are consistent with the behavior of many naturally occurring groups. Terrorist cells and gangs serve as just two examples of groups whose antisocial behavior may be influenced by their marginalization from mainstream society.

Terms and Definitions

The present work is multidisciplinary in nature. As a result, multiple terms are used in the literature to refer to similar or identical constructs. Smart Richman and Leary (2009) pointed out that similar work "…appears under the guise of a variety of different phenomena such as ostracism, exclusion, rejection, discrimination, stigmatization, prejudice, betrayal, unrequited love, peer rejection, bullying, neglect, loneliness, homesickness, and humiliation" (p. 365). Adding to this list, Noricks et al. (2009) referred to "feelings of isolation" and Bartlett et al. (2010) referred to "societal exclusion." To be precise, these varied terms are retained as originally used by their authors and adherents along with their original meaning. On a broader level, however, many of these terms reflect forms of interpersonal rejection. Consistent with this broader perspective, my discussion about the meaning of research findings from these varied content areas includes just two important terms: interpersonal rejection and group marginalization.

Interpersonal rejection is a broad term characterized by exceptionally low levels of relational evaluation. Relational evaluation refers to degree to which an individual perceives that others view their relationship with him or her as important or close (Leary, 2001; Leary, Twenge, & Quinlivan, 2006). This broad definition incorporates the defining features of many commonly used terms as discussed above. Ostracism and discrimination, for example, both involve interpersonal rejection to the degree that some party perceives low relational evaluation from others. This is true despite ostracism (acts of excluding and ignoring someone; Williams, 2001) and discrimination (unjustified negative behavior toward a group or its members; Myers, 2010) being relatively unique constructs.

Group marginalization applies specifically to groups and is defined as the intentional rejection of a group by multiple out-group others. Moreover, the groups examined in this work are small and contained. In contrast to uncontained groups based on characteristics such as race or gender where all members cannot possibly know all other members, members of small, contained groups are familiar with one another. Examples of such groups include the six men involved in the terror plot described above, as well as many juvenile gangs and high school cliques. These examples fit Myers' (2010) definition of a group as "two or more people who, for longer than a few moments, interact with and influence one another and perceive one another as 'us.'" To some extent, readers might find that my analysis applies to larger, uncontained groups such as those defined by race or gender as well, but this is not my focus and thus identical processes and outcomes should not necessarily be expected. For stylistic reasons, I retain the term interpersonal rejection for referring to individuals and groups at the same time.

Before moving forward, it is hoped that readers will recognize the emotional, aversive, and real experiences that these terms reflect. Interpersonal rejection and group marginalization can be devastating experiences which sometimes result in dire consequences. Like the six men in the foiled terrorist plot described above, individuals and groups are believed to have initiated violent conflicts and taken other drastic actions all in hopes of recognition from or vengeance toward sources of rejection. Moreover, understanding links between group marginalization and hostile behavior may lead to the generation of solutions for resolving conflict. The importance of understanding these phenomena should not be understated.

Understanding Hostile Reactions to Group Marginalization

Figure 1 portrays my integrative framework for understanding hostile reactions to group marginalization. Generally, the framework depicts processes spurred by group marginalization and ending in, broadly speaking, hostile behavior toward the source. In the following sections, I identify a number of hypotheses derived from the framework and articulate the theoretical basis for each. Before going further, it should be noted that although the outcome of interest involves groups, a number of the hypotheses derived concern the reactions of members that make up these groups. It is these group members, along with their affect and cognitions, which are believed to drive group behaviors. Moreover, included groups as well as included and rejected individuals are often considered as a baseline for comparison. Although little research has examined the reactions of marginalized groups and their members, an extensive literature has examined the reactions of similarly treated individuals (e.g., Gerber & Wheeler, 2009; Williams,

2007) and this work is of value for drawing appropriate hypotheses regarding rejection-based hostility.

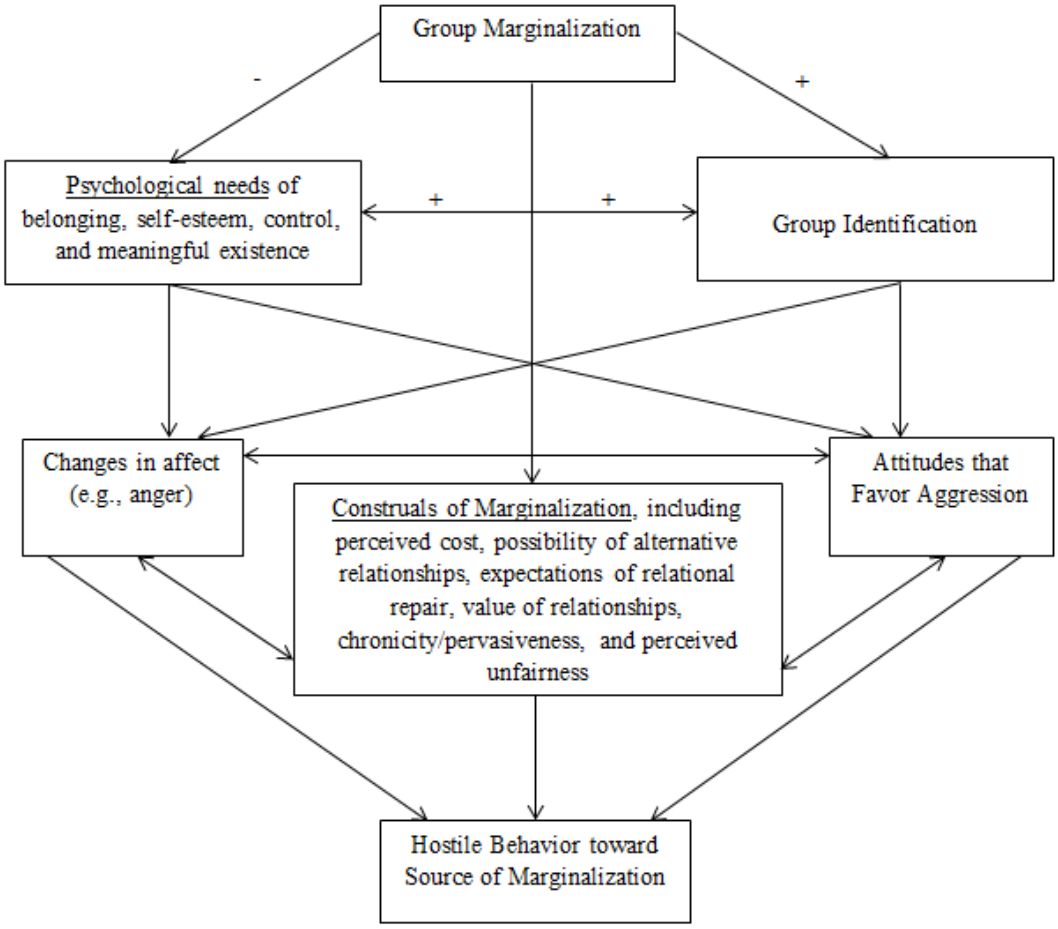

Figure 1. An integrative framework for understanding hostile reactions to group marginalization.

Group Marginalization Threatens Psychological Needs

A central component in the integrative framework is Williams' (2001, 2009) need-threat model of social ostracism. Williams (2001, 2009) proposed this model as a general framework for understanding the effects of social ostracism on individuals. This model is also useful for understanding psychological threats faced by members of marginalized

groups. The full model of ostracism encapsulates taxonomic dimensions, antecedents, mediators, moderators, threatened needs, and reactions to ostracism. In this paper, however, I focus on the effects of group marginalization and accordingly limit my discussion to the latter parts of this model concerning threatened psychological needs and reactions to these threats. These threatened psychological needs include belonging (Baumeister & Leary, 1995), self-esteem (Bandura, 1997), control (Burger, 1992; Seligman, 1975), and meaningful existence (Greenberg, Pyszczynski, & Solomon, 1986).

Perhaps most clearly, the need for belonging is threatened by ostracism. Baumeister and Leary (1995) argued that the need for belonging developed evolutionarily when reliance on others was essential for survival in terms of acquiring food, water, and other resources. Today, modern conveniences like grocery stores and motor vehicles make it possible for many of us to survive on our own, but not without physical and psychological consequences. Baumeister and Leary (1995) described the need for belonging as a "pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (p. 497). By definition, ostracism acts as a direct threat to such relationships. Group members should similarly perceive that the marginalized group in which they are a part does not belong among the larger population that rejects it.

Ostracism is also known to impact the self-esteem needs of targets. Arguments for the importance of self-esteem have been put forth by a number of theorists. Self-esteem has been linked to self-efficacy and mental health (Bandura, 1997), as well as initiative, resilience, and pleasant feelings (Baumeister, Campbell, Krueger, & Vohs, 2003). According to Williams (2001), a link between ostracism and self-esteem can be found in

the implicit accusation that the target has done something wrong. Ostracism suggests that the target is bad or unwanted, which directly links to one's sense of self-worth. Presumably, members of marginalized groups experience threats to their self-esteem as well. Just as ostracism carries an implicit accusation that an individual has done something wrong, group marginalization suggests that a target group and its members have done something wrong.

Williams (2001) provided evidence that the need for control is also threatened by ostracism. The importance of control needs have been demonstrated by numerous researchers (e.g., Burger, 1992; Seligman, 1975). Williams and Govan (2005) argued that targets of rejection sometimes seek to restore their need for control through aggressive retaliation. Ostracism impacts control needs of the target through diminished interactions with the source. In contrast to a verbal argument whereby each individual's actions impact the other's actions, socially ostracized individuals have no control over the direction of events. Moreover, the source of the ostracism can control the causal clarity of his or her actions (Williams, 2001). The source may leave the target unaware as to why the ostracism is occurring, or even as to whether it is occurring. Similarly, members of marginalized groups are expected to experience a threat to their sense of control as they and their group experience diminished interactions with the source.

Finally, social ostracism affects one's sense of meaningful existence (Williams, 2001). Greenberg et al. (1986) argued that the fear of our own mortality combined with the perception that our existence may be meaningless is anxiety provoking. Thus, maintaining belief in a meaningful existence is comforting, and perhaps need fulfilling. James (1890), Williams (2001), and others have suggested that ostracism serves as a metaphor for what

life would be like if we did not exist. Reminiscent of Charles Dickens' *A Christmas Carol*, ostracized individuals observe others act without privy to the interaction themselves (Williams, 2001). By observing these interactions without direct participation, ostracized individuals become aware that life for others continues without his or her contributions. The same phenomenon can be anticipated among members of marginalized groups. Just as individuals desire to experience a sense of meaningful existence, so should group members.

In sum, *rejection experiences are hypothesized to threaten and thus lower the psychological need states of H_{1A}) belonging, H_{1B}) self-esteem, H_{1C}) control, and H_{1D}) meaningful existence.* These predictions have received much support in regard to rejected individuals, but have not yet been examined among members of marginalized groups. Next, I examine how group identification processes might impact reactions to these psychological threats among members of marginalized groups relative to similarly treated individuals.

Group Marginalization, Group Identification, and Psychological Well-being

Although individuals and group members are assumed to experience similar threats to their psychological need states, differences might be expected in how they respond to these threats. Whereas rejected individuals face their experience alone or at least in a disconnected fashion from potentially supportive others, members of marginalized groups experience threats alongside similarly treated co-actors who may provide support. Branscombe, Schmitt, and Harvey (1999) developed a rejection-identification model for which the notion of co-actor support is a central component. These researchers recognized that perceived prejudice acts as a direct and negative threat to psychological well-being, and yet many members of minority groups who experience prejudice do not exhibit psychological maladjustment. Seeking to understand these seemingly irreconcilable

findings, they proposed and tested a rejection-identification model whereby willingness to make attributions to prejudice (i.e., perceived rejection) was predicted to promote solidarity among members of minority groups (i.e., group identification), which in turn was predicted to restore much of the negative consequences associated with being a victim of prejudice. Branscombe et al. (1999) and Jetten, Branscombe, Schmitt, and Spears (2001) have provided data supportive of this model using responses from African Americans and persons with body piercings, respectively.

My integrative framework for understanding hostile reactions to group marginalization incorporates and expands upon elements of the rejection-identification model within small, contained groups. Specifically, the framework specifies four need states that are threatened by group marginalization and buffered through group identification. If one's belonging, self-esteem, control, and meaningful existence are threatened by the marginalization of one's group, and these needs can be fulfilled by the group in which that person is a member, then members of targeted groups might increase their identification with their marginalized group as a coping mechanism. Members of small groups often develop attraction to one another and pride in the group itself (Gastil, 2010). This is especially true within homogenous groups whose members are similar on important features. One can imagine that marginalized groups whose members share strong religious or political ideologies may become quite cohesive after these views are threatened by sources of marginalization. Thus, *H_2) marginalization is expected to promote identification with co-actors.* In turn, increased identification with co-actors might help to maintain the same psychological needs that were threatened by marginalization. Thus, *members of marginalized groups are expected to exhibit higher levels of H_{3A}) belonging,*

H_{3B}) self-esteem, H_{3C}) control, and H_{3D}) meaningful existence than rejected individuals. Encapsulating $H_{1A\text{-}D}$, H_2, and $H_{3A\text{-}D}$ more broadly, I am expecting that group identification will partially mediate the relationship between group marginalization and psychological need states as illustrated in Figure 1.

Reactions to Group Marginalization

Next, my integrative framework suggests that a hostile psychological state will develop among members of marginalized groups. Whereas group marginalization sends a message that is critical of targeted groups and their members, co-actors often support one another's common feelings, beliefs, and actions. This discrepancy between messages provided by sources of marginalization and co-actors might encourage members of marginalized groups to defensively dismiss any justification for their marginalization, and reassert the legitimacy of their own feelings, beliefs, and actions. In particular, the combination of group identification plus maintained psychological needs is predicted to promote hostile affect and cognitions toward the source of the marginalization. Additionally, the manner in which groups react to their marginalization might be influenced by more generalized group processes as well. I explore these patterns of relationships below.

Affect and Hostile Behavior. Williams' (2001, 2009) need-threat model suggests that immediate reactions to ostracism are relatively cognition-free, and may involve hurt feelings, anger, damaged mood, and physiological arousal. Similarly, Leary (2001) suggested that low perceived relational evaluation is virtually always accompanied by emotional distress. My integrative framework predicts that the combination of group identification and maintained psychological needs combine to promote hostility. A large

part of this hostility is affective, and this affect might directly promote hostile behavior toward the source of marginalization.

Rejection, regardless of whether the target is an individual or group, should promote negative affect because of the threat that it poses to psychological needs. Thus *H_{4A}) rejection should promote greater negative affect than inclusion.* It may also be the case that specific affective states are especially likely to emerge among rejected parties. McCauley and Moskalenko (2011) illustrated that anger is a common emotion following the perception that one has been wronged. Members of marginalized groups may be likely to feel that they have been wronged given that they are not alone in their feelings, beliefs, and actions. Individuals may similarly feel that their rejection is unjust. Thus *H_{4B}) rejection is expected to promote greater anger and agitation than inclusion.* Moreover, group marginalization might exacerbate negative affect relative to rejected individuals if group members commiserate about their experiences or even simply perceive their treatment as somehow worse than individuals. Involvement in social movements is typically motivated by the shared perception of a problem among a group of people (Simon et al., 1998). Members of social movements feel rejected both as an individual and as a member of a group and this feeling can promote commiseration about shared rejection experiences (Foster & Matheson, 1995). Thus *H_{4C}) rejection is expected to result in greater negative affect among members of marginalized groups than among rejected individuals.*

Given that generalized or specific forms of negative affect emerge following rejection, this affect may in turn directly promote hostile behavior toward the source. An extensive research literature identifies links between specific affective states like anger and aggression (e.g., Averill, 1983; Berkowitz, 1993). More generally, the frustration-

aggression hypothesis contends that any type of frustration can increase the probability of an aggressive response (Dollard, Doob, Miller, Mowrer, & Sears, 1939). Interpersonal rejection is certainly frustrating in and of itself given that one desires to be included. If members of marginalized groups and rejected individuals feel that their goals are impeded by the source of rejection (i.e., frustration), a negative affective state might drive them to retaliate (i.e., aggression). Thus *H_{4D}) negative affect is expected to promote hostile behavior toward the source of rejection.* This hypothesis is expected to hold true for marginalized groups and rejected individuals. Moreover, given that members of marginalized groups are expected to exhibit more negative affect than rejected individuals as specified by H_{4C}, I am also expecting that *H_{4E}) negative affect will promote more hostile behavior among members of marginalized groups than among rejected individuals.*

Attitudes and Hostile Behavior. My integrative framework indicates that additional hostility toward sources of marginalization may be reflected in the attitudes of rejected group members. These attitudes may be exclusively hostile, or alternatively, dual attitudes may exist whereby implicit attitudes favor aggression and explicit attitudes favor ingratiation. As will become evident, the former possibility makes sense given conditions in which group members are unconcerned with social norms that discourage aggression. The latter possibility makes sense given conditions in which aggressive behavior is discouraged by social norms or when the perceived importance of maintaining relationships with the source is considered. I consider both these different possibilities for implicit and explicit attitudes below.

Wilson, Lindsey, and Schooler (2000) were among the first to argue that we can exhibit more than one evaluation toward a particular attitude object. Dual attitudes, one

explicit and one implicit, may operate simultaneously with the latter being more automatic or reflexive. These researchers argued that whether one attitude or the other is expressed depends on current levels of cognitive capacity. High levels of cognitive capacity allow one to override implicit attitudes in favor of explicit attitudes. Williams and Govan (2005) applied these notions to targets of ostracism by suggesting that they may exhibit disparate implicit and explicit attitudes toward the source. They reasoned that individuals might have an implicit attitude that favors retaliation and an explicit attitude that favors ingratiation. Moreover, the attitude that is reflected in the ostracized individual's behavior depends on current levels of cognitive capacity. Implicit attitudes are expected to lead to aggressive reactions unless the rejected individual has the cognitive capacity to override this default reaction.

Given that groups and individuals are fundamentally different in a variety of ways, predictions can be drawn regarding the differential likelihood of an implicit or explicit attitude surfacing among rejected individuals and members of marginalized groups. For example, if group members exhibit less cognitive capacity than similarly treated individuals, they may respond more aggressively toward sources of rejection as a result. Extensive research confirms that group members often do exhibit less cognitive capacity than individuals (Rajaram, 2011; Wittenbaum, 2003). For example, collaborative groups tend to remember less unique information than the same number of individuals working alone (Betts & Hinsz, 2010). Process-loss features like the one in this example result because group situations place additional demands on their members as they perform tasks (Hinsz, Tindale, & Vollrath, 1997; Steiner, 1972). For instance, whereas individuals may

be able to focus exclusively on a given task, group members must divide their attention between the task and group-related concerns.

To be clear, members of marginalized groups are not *necessarily* expected to exhibit greater implicit attitudes to aggress than rejected individuals – though, like my predictions for negative affect, we should not be surprised if they do. Rather, all targets of rejection are more likely to react in accordance with their implicit attitude favoring aggression when cognitive capacity is low. Because group members often exhibit less cognitive capacity than individuals, their implicit attitudes favoring aggression should be more strongly associated with their aggressive behavior. From this perspective, I would first expect that *H_{5A}) rejection will result in greater implicit attitudes favoring aggression than inclusion.* This hypothesis is expected to hold true for both individuals and group members. Additionally, I predict that *H_{5B}) implicit attitudes favoring aggression should better predict hostile behavior among marginalized groups than among rejected individuals.*

Of course, members of marginalized groups might also exhibit hostile explicit attitudes favoring aggression against the source. Members of marginalized groups may feel little explicit desire to ingratiate given that threats to their psychological needs remain satisfied through membership with their rejected group. Additionally, the importance of external social norms and other concerns may be reduced among group members given that one's personal and collective identity with the group is threatened. Similar patterns of relationships may emerge for individuals as well, but I would not expect them to be as strong given that only personal identity (not collective) is threatened. From this perspective, I would first expect that *H_{5C}) rejection will result in greater explicit attitudes*

favoring aggression than inclusion, and *H_{5D}) explicit attitudes favoring aggression will better predict hostile behavior among marginalized groups than among rejected individuals.*

Regardless of whether attitudes are exclusively hostile or dual attitudes operate in unison, these attitudes are expected to be associated with affect. This association is expected to result because in many ways, affect and attitudes are similar. For example, if one experiences anger (an affective state), he or she might also desire to strike out or destroy something (attitudes related to anger). These associations are expected to emerge for both rejected individuals and group members. Thus *H_{5E}) hostile attitudes among rejected persons will be associated with hostile affect.* This relationship is specified by bidirectional arrows within the integrative framework in Figure 1.

Construals and Hostile Behavior. My integrative framework also accounts for how group members construe features of their rejection differently from individuals. Smart Richman and Leary (2009) developed a multimotive model which identifies six construals that a target of rejection will make. These construals concern the possibility of alternative relationships, perceived cost or rejection, expectations of relational repair, value of relationships, perceived unfairness of the rejection, and chronicity/pervasiveness of the rejection. Smart Richman and Leary (2009) further suggested that targets of rejection exhibit multiple motives, including a desire for social connections, urges to defend oneself or to hurt those who have rejected him or her, and desires to avoid further rejection. The overall manner in which the rejection episode is construed determines which of these motives becomes dominant, and more practically, the resulting behavior. Rejected individuals and members of marginalized groups both construe rejection experiences and

may do so differently from one another. The hypotheses outlined here concern included and rejected individuals and group members and together suggest that the reactions of marginalized groups and their members will be the most hostile.

The possibility of alternative relationships should be considered first as it is believed to influence each of the remaining construals. Smart Richman and Leary (2009) suggested that when alternative relationships are available, targets of rejection will be less likely to perceive incentives for responding prosocially toward sources. Inherently, the possibility of alternative relationships is greater for members of marginalized group members relative to rejected individuals. Whereas rejected individuals face their experience alone or in a disconnected fashion from potentially supportive others, members of marginalized groups may receive immediate support from their co-actors. Consequently *H_{6A}) members of marginalized groups are expected to more readily perceive alternative relationships to be available than do rejected individuals.*

Smart Richman and Leary (2009) argued that prosocial reactions may emerge when the perceived cost of rejection is high. Relative to rejected individuals, the perceived cost of rejection for members of marginalized groups may be lower on average if costs associated with exclusion are offset by inclusion and interaction with the marginalized group. Whether these costs concern the loss of tangible resources such as goods or capital, or intangible resources such as feelings of belonging, group membership should reduce threats posed by sources of marginalization. Thus *H_{6B}) members of marginalized groups are expected to perceive the cost of rejection to be lower than similarly treated individuals.*

Smart Richman and Leary (2009) suggested that high expectations for relational repair may lead to prosocial reactions and low expectations for relational repair may lead to

antisocial or avoidant reactions. Group members and individuals may exhibit different expectations for relational repair with the source of their rejection. Hoyle, Pinkley, and Insko (1989) provided evidence that participants anticipating interaction with a group expected more hostility than participants anticipating interaction with an individual. Other research finds an interindividual-intergroup discontinuity whereby intergroup interactions tend to be more competitive (Wildschut, Pinter, Vevea, Insko, & Schopler, 2003) and aggressive (Meier & Hinsz, 2004) than interindividual interactions. Interactions between groups and individuals also tend to be more competitive and aggressive than interactions among individuals alone (Meier & Hinsz, 2004; Morgan & Tindale, 2002). If intergroup interactions tend to promote expectations for hostility and in fact tend to be more hostile, then it should not be surprising that members of marginalized groups would perceive the likelihood of relational repair with sources of their rejection to be less than similarly treated individuals. Thus *H_{6C}) members of marginalized groups are expected to perceive the likelihood of relational repair with the rejecting party to be lower than will similarly treated individuals.*

The multimotive model (Smart Richman & Leary, 2009) indicates that greater value placed on the relationship may lead to more prosocial reactions. In contrast to individuals, group members may tend to place less value on relationships with sources of rejection because needs threatened by these sources are at least partially maintained by existing supportive relationships within the marginalized group. And if group members place less value on relationships with sources of rejection, they should be less likely to respond to rejection prosocially. Antisocial or avoidant reactions should be more likely. *H_{6D}) members*

of marginalized groups will place less value on relationships with sources of rejection than similarly treated individuals.

Another construal identified by Smart Richman and Leary (2009) suggests that aggressive reactions may be likely when exclusionary episodes are perceived as unfair. Recall that Williams (2001) suggested that ostracism threatens self-esteem through its implicit accusation that the target has done something wrong. This should be true for marginalized groups as well. Yet membership within a marginalized group suggests that members are not alone in their feelings, beliefs, and actions. Given that support from co-members is available, it seems that members of marginalized groups would be likely to challenge the justness and fairness of their marginalization. As a result, hostile reactions may be more likely among members of marginalized groups than among rejected individuals. *H_{6E}) members of marginalized groups will perceive their rejection as more unfair than similarly treated individuals.*

Finally, the multimotive model (Smart Richman & Leary, 2009) indicates that chronic or pervasive exclusion will lead to avoidant reactions. It seems likely that members of marginalized groups and rejected individuals might differ in how they construe the chronicity and pervasiveness of exclusion. For example, the presence of co-actors may lead members of marginalized groups to commiserate about their shared rejection, and thus promote perceptions that rejection is particularly chronic and pervasive (Zadro, Boland, & Richardson, 2006). *H_{6F}) members of marginalized groups will be more likely than similarly treated individuals to perceive their rejection as chronic and pervasive.*

It is important to note that not all construals will lead marginalized groups to react with hostility toward the source. Some construals merely reduce the likelihood of a

prosocial reaction or increase the likelihood of an avoidant reaction. If members of marginalized groups tend to perceive a lower cost of rejection than rejected individuals, for example, an antisocial reaction should not be expected. Rather, avoidant reactions are more likely because the marginalization becomes less threatening. Yet, other construals do lead to antisocial reactions. If group members are more likely than individuals to perceive their rejection as unfair, for example, they should also be expected to react more aggressively than individuals toward sources in defense of this perception. My prediction that marginalized groups will be more likely than rejected individuals to react with hostility follows from an expectation about the combined influence of the various construals that follow marginalization. Some construals reduce the likelihood of prosocial reactions among groups relative to individuals. Other construals increase the likelihood of avoidant reactions among groups relative to individuals. Still other construals increase the likelihood of antisocial reactions among groups relative to individuals. Thus *H_{6G}) the combination of construals made by members of marginalized groups is expected to promote more hostile reactions than do the combination of construals made by similarly treated individuals.*

The integrative framework also specifies bidirectional arrows between construals and hostile affect as well as hostile attitudes. Indeed *H_{6H}) construals are expected to be associated with both negative affect and attitudes to aggress.* If members of marginalized groups perceive their rejection as unfair, for example, it seems likely that they would become angry and exhibit hostile attitudes toward the source of their marginalization. This notion is supported by equity theory, which contends that individuals hold perceptions about their personal contributions, the contributions of similar others, and the relative outcomes of themselves and these others (Pinder, 1984). Given similar contributions

between self and others coupled with unequal outcomes that favor others, equity theory predicts that frustration and anger will result. We can therefore expect that negative affect, attitudes to aggress, and construals will be associated with one another.

Generalized Group Processes and Hostile Behavior. The preceding sections illustrate that rejection should promote greater hostile affect, cognitions, and behavior among groups and their members than among similarly treated individuals. These expectations are consistent with a larger social psychological literature that reveals provoked groups to respond with greater hostility than individuals across a variety of situations. It is important to at least briefly consider this larger literature because beyond the integrative framework I seek to test, this larger literature may be informative for understanding why groups might generally react with greater hostility than individuals when provoked. Meier, Hinsz, and Heimerdinger (2007) provided an in-depth analysis of the literature on group-based aggression and so this section summarizes their primary conclusions.

Meier et al. (2007) relied largely on the general aggression model to provide explanation for why aggressive behavior may occur in groups. The general aggression model suggests that situational variables (e.g., provocation) and person variables (i.e., stable characteristics of a person associated with aggression) interact with one another to influence affective, cognitive, and arousal states of the individual. In turn, these variables are believed to impact appraisal and decision processes of the individual and ultimately his or her aggressive behavior (DeWall, Anderson, & Bushman, 2011). From the general aggression model, Meier et al. (2007) identified hostile cognitions and negative affect, arousal, and individual difference variables as important for understanding group-based

aggression. Notably, these constructs are highly similar to the precipitating factors identified in this paper for hostility among marginalized groups.

Further, Meier et al. (2007) stress the importance of group processes that might accentuate individual-level variables such as hostile cognitions. Group polarization, for example, suggests that group situations enhance members' preexisting response tendencies (Myers & Lamm, 1975). If group polarization occurs within rejection scenarios, any hostile responses occurring among rejected individuals might be amplified within group settings. Relatedly, an interindividual-integroup discontinuity refers to the tendency for intergroup interactions to be more competitive and less cooperative than interindividual interactions (Wildschut et al., 2003). Meier et al. (2007) adopted this notion to suggest that hostile cognitions, negative affect, and arousal within the general aggression model might be more intense among group members than among individuals. Finally, these researchers suggested that group members may feel less identifiable within their group settings and thus be more willing to engage in hostile behavior.

The analysis provided by Meier et al. (2007) concerns generalized individual and group aggression rather than aggression resulting specifically from rejection. Yet, the variables these researchers identify as contributing to aggression in groups are similar to those identified in this paper. Given the assumptions that a) rejected individuals tend to react with hostility, and b) group processes such as polarization are present within rejection scenarios, we can expect rejected groups and their members to react with more hostility than similarly treated individuals. There is significant evidence to support the notion that rejected individuals sometimes become aggressive in response to rejection. Warburton, Williams, and Cairns (2006), for example, demonstrated that feelings of control deprivation

can moderate the effects of rejection-based aggression (also see Williams & Govan, 2005). Other research finds that rejection can diminish prosocial behavior (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Moreover, group processes such as polarization occur with striking regularity across various situations and types of groups. For example, such processes have been identified among both terrorist cells (McCauley & Moskalenko, 2011) and intelligence analyst teams (Hackman, 2011) in the battle for national security.

Given arguments put forth throughout this paper, it should come as no surprise that *H_{7A}) rejected parties are expected to engage in more hostile behavior than included parties regardless of individual or group status.* Moreover *H_{7B}) I predict that group responses to rejection will be more hostile than that of individuals.* These hypotheses are important because they suggest that hostility that follows rejection or marginalization is not simply a feeling or a set of cognitions, but often is behavioral. Other researchers have validated links between rejection and behavioral aggression among individuals (DeWall, Twenge, Gitter, & Baumeister, 2009; Warburton et al., 2006). The current research extends this investigation to the group level where much greater hostility may be observed.

Summary. The integrative framework summarized in Figure 1 depicts a process spurred by group marginalization. Marginalization threatens the psychological needs of belonging, self-esteem, control, and meaningful existence among group members. Yet, group members receive support from their similarly treated co-actors and increased group identification among members results (Branscombe et al., 1999). This increased group identification helps to maintain the same psychological needs that were threatened by the marginalization. The members of marginalized groups are then able to defensively dismiss

the actions of the sources of marginalization, and reassert the legitimacy of their own values, beliefs, and actions.

Psychological needs maintained through group identification then promote negative (and likely hostile) affect and hostile attitudes toward the source of marginalization. Additionally, group processes are expected to lead members of marginalized groups to more easily perceive the possibility of alternative relationships, reduce the perceived cost of marginalization, reduce expectations for relational repair with the source, decrease the value of relationships with the source, perceive the marginalization as unfair, and to perceive the marginalization as chronic and pervasive. Together, these construals may promote hostile behavior toward the source of marginalization. Moreover, affect and cognitions might reciprocally influence one another to enhance or diminish hostile actions toward others.

The result of these processes on reactions to group marginalization may be substantial. Group processes are expected to promote hostile affect and cognitions, which in turn, are expected to promote hostile behavior toward the source of marginalization. Moreover, this hostility should be greater than that observed among similarly treated individuals. As can be gathered from discussions throughout this paper, hostile reactions to group marginalization might involve minor altercations, or may contribute to the violent and deadly actions associated with terrorist cells and gangs. Next, I present an experimental paradigm for testing the hypotheses put forth throughout this paper.

The In Game, Modified

Pratto, Pearson, Lee, and Saguy (2008) developed the In Game to study the use of power within dynamic interpersonal situations. Consistent with its title, the object of the

game is simply to remain in the game. Players are allocated four colored tokens to begin, each of which represents a different social construct relevant to power. Green tokens represent resources, red tokens represents force that might be exercised to acquire rewards, yellow tokens represent obligations that we hold for others, and blue tokens represent legitimacy such as when lower status individuals pay tribute to higher status individuals. Play progresses in the In Game when a player turns over an event card on their turn and responds, or initiates an action such as making an exchange of tokens or agreement with another player. Play ends when an event card is turned over that requires the player to have at least three green tokens and the player does not have three. From the perspective of power, research using this paradigm demonstrates that dynamic interpersonal situations often sway initially equal distributions to favor some individuals over others.

My specific interest in the In Game concerns its use as a tool to promote the marginalization of one party by others within a dynamic interpersonal situation. To meet this objective, I modified materials for the In Game to encourage the development of coalitions. This modified version of the In Game is designed to be played by either dyads in ostensible competition with other dyads or individuals in ostensible competition with other individuals. Participants are informed that the (modified) In Game represents competitive situations in which rewards are limited and that success largely depends on the player's ability to form a coalition with another party. Moreover, event cards drawn by participants are set up such that it is in the best interest of Party 1 and 2 to form a coalition and to reject offers of collaboration from Party 3. Party 1 and 2 draw cards that allow them to communicate openly, take additional actions, and generally bind them to one another. Elements of the game reinforce the experience of rejection for targets through rules that

forbid talking with parties that hold higher status at certain points in the game. All other aspects of the modified In Game are consistent with the original In Game as described above.

Many real-life situations involve the exchange of resources or use of power, legitimacy, and obligation, whereby some parties are included and others are marginalized. The modified In Game accounts for these elements of social life. Moreover, rejection experiences during the modified In Game are believed to be more extensive than rejection in other paradigms. The Cyberball paradigm is admittedly a relatively weak rejection manipulation; the developers of this paradigm claim to have sought out the minimal possible conditions under which ostracism would be perceived as a threat (Williams & Jarvis, 2006). Not surprisingly then, effects from the modified In Game are expected to threaten involved parties to a greater degree. The combination of these factors speaks to the value of the modified In Game as a manipulation for group marginalization.

Overview of Research

A number of incidents involving aggression appear to stem from group marginalization. From extreme violence initiated by terrorist cells and gangs to less deadly acts of aggression such as those initiated by school cliques, the effects of group marginalization on hostile affect, cognitions, and behavior are apparent. The proposed research seeks to empirically examine these effects using a novel paradigm, namely a modified version of the In Game. This work also empirically tests relationships between components of the integrative framework for understanding hostile reactions to group marginalization and draws interesting comparisons between included and rejected individuals and group members. Study 1 tests a unique paradigm that effectively

manipulates interpersonal rejection. Study 2 then implements this paradigm to examine relationships between components of the integrative framework and examine differences between included and rejected individuals and group members.

STUDY ONE

Study 1 involved a pilot test of the modified In Game. For expediency, this pilot test involved individuals working in three-person groups only. A primary goal of this study was to determine if the modified In Game reliably produced coalitions whereby two parties were included and one party was rejected. I also sought to determine whether the modified In Game reliably lowers psychological need states and affect among targets of rejection relative to participants who successfully formed a coalition. Finally, I hoped to find that participants were sufficiently engaged by the elements of the modified In Game.

Method

Participants

Participants were 105 undergraduate students drawn from lower level psychology courses at North Dakota State University. A coalition failed to form in three sessions and these were dropped from analyses. The remaining 32 three-person groups allowed me to compare participants playing the modified In Game under conditions of inclusion (n = 64) and rejection (n = 32) on a series of measures assessing psychological needs and mood states. Participants received course credit in exchange for their participation. Experimenters were upper-level undergraduate students trained to conscientiously follow a script.

Materials and Measures

Modified In Game. As detailed in my introduction, the modified In Game required a number of materials including tokens, rule cards, player placards, and event cards. Green, blue, red, and yellow bingo chips served as tokens representing different forms of social power. Rule cards for each player were created to simplify descriptions by the experimenter about how each colored token could be used as well as outcomes associated

with each. Rule cards were glued to construction paper consistent in color with the appropriate token and laminated. Player placards were created from folded white note cards and simply indicated player number. Event cards were constructed on notecards. Instructions for the modified In Game were read from a script to ensure consistency between sessions. Select materials for the modified In Game are included in Appendix A.

Manipulation Check. Participants were asked to indicate if a coalition developed between them and another player and whether the other players developed a coalition without the participant. They were also asked to indicate whether their personal actions influenced any coalition that may have developed. Responses to these items confirm or disconfirm whether a coalition actually developed, and between which two players a coalition was or was not maintained. These items were responded to on a 1 (strongly disagree) to 7 (strongly agree) scale. Responses to this survey and all others in this study were indicated on the computers using MediaLab© (Jarvis, 2006).

Fundamental Psychological Needs and Affect. Participants completed twenty items assessing the impact of the modified In Game on the fundamental psychological needs of belonging (e.g., "I feel like an outsider"), self-esteem (e.g., "I feel good about myself"), control (e.g., "I feel I had the ability to significantly alter events"), and meaningful existence (e.g., "I feel non-existent). Items were derived from measures developed in previous work and modified to reflect present tense (cf., Williams, 2009). Participants responded to these items on a 1 (very slightly or not at all) to 5 (extremely) scale in regard to how they felt at the present moment. The Positive and Negative Affect Schedule (PANAS-X; Watson & Clark, 1994) was used to assess affective mood states among participants. For each affective state (e.g., angry), participants were asked to

"Indicate to what extent you feel this way right now, that is, at the present moment." This survey consisted of 48 items measured on a 1 (very slightly or not at all) to 5 (extremely) scale.

Post-session Questionnaire. Following all other tasks, participants responded to a post-session questionnaire designed to assess feelings about the experiment in general, suspicions about the true purpose of the experiment, and demographic information. Eight items in this questionnaire were responded to on seven point semantic differential response scales involving related antonyms: satisfying/unsatisfying, worthless/valuable, pleasant/unpleasant, boring/interesting, I liked/ I disliked, unfavorable/favorable, meaningful/meaningless, and distasteful/enjoyable. Thus, for example, participants could indicate the degree to which they felt the experiment was (1) satisfying to (7) unsatisfying. Participants were also asked to write a brief narrative of their overall impression of the game, and to guess the hypotheses and important variables in the study. Demographic information including age and sex were also collected.

Procedure

Upon arrival to the laboratory, participants were randomly assigned as Party 1, 2, or 3 for the interaction. All participants were seated in a single room and asked to read and sign a form giving their informed consent. To facilitate interactions, players were next asked to introduce themselves to one another and to state one or two interesting things about themselves. The experimenter then gave detailed instructions about how to play the modified In Game, answered questions, and began. As stated above, play ended when an event card was turned over that required the player to have at least three green tokens and the player did not have three. Depending on the course of the game, a player could be

eliminated on card number 19, 39, 40, 47, 51, 52, 59, or 61, and an approximately equal number of participants were eliminated on each of these cards. Once a target was eliminated and the game was over, participants completed surveys on the computers assessing fundamental psychological needs and affect, as well as the manipulation check and post-session questionnaire. Each session concluded with a thorough debriefing.

Results

Preliminary Analyses

Items were reverse-scored when appropriate such that higher scores indicated elevated levels of the variable under examination. Composite scores for the psychological needs and affect were created by averaging items assessing the same construct. The internal consistency for constructs were good to very good for belonging ($\alpha = .89$), self-esteem ($\alpha = .86$), control ($\alpha = .86$), meaningful existence ($\alpha = .84$), positive affect ($\alpha = .94$), and negative affect ($\alpha = .79$). An overall measure of psychological needs was also created based on mean values for the four specific psychological needs ($\alpha = .92$). Preliminary analyses by inclusion or rejection condition revealed normal distributions for these composite scores with low levels of skewness and kurtosis. Manipulation check items were examined independently and as anticipated, were not normally distributed. Consistent with inclusion or rejection condition (hereafter referred to as inclusionary condition), certain participants strongly agreed that they were part of a coalition and other participants strongly agreed that they were not part of a coalition. Levene's test for equality of variances revealed that the variances in the rejected condition were higher than those for included conditions in the participants' sense of belonging ($F = 12.59$, $p < .05$), self-esteem ($F = 6.87$, $p < .05$), and meaningful existence ($F = 24.46$, $p < .05$), but not for control ($F = 2.72$, $p > .05$), positive

affect (F = .07, p > .05), or negative affect (F = 1.66, p > .05). Welch's t-tests are thus used in cases where variances are not equal, and independent samples t-tests are used in cases where variances are statistically equal.

Because participants in this study worked as part of a group, their responses may violate assumptions of statistical independence. To investigate this concern, intraclass correlations (r_I) were determined for each variable (Griffin & Gonzalez, 1995; Shrout & Fleiss, 1979). These intraclass correlation values were nonsignificant for overall psychological needs (r_I = -.31, p > .25), negative affect (r_I = .18, p > .25), and positive affect (r_I = -.13, p > .25) even at a very liberal significance value. Negative intraclass correlations for psychological needs and positive affect suggest that social comparison processes may have exerted a limited effect on the results – that is, positive feelings about forming a successful coalition among some participants might be associated with negative feelings about not forming a successful coalition among other participants (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002). Nonetheless, nonsignificant intraclass correlation values indicate that statistical dependence among participants working in the same group should not be of major concern. Additional analyses were run accounting for experimenter by each condition and variable and no significant differences were found.

Primary Analyses

As anticipated, included participants tended to agree that a coalition developed between them and another player (M = 5.95, SD = 1.74) and to disagree that a coalition had developed between other players in the game without them (M = 1.48, SD = 1.13). In contrast, rejected participants disagreed that a coalition developed between them and another player (M = 1.78, SD = 1.41) and agreed that a coalition developed between the

other players without them (M = 6.00, SD = 1.92). As is apparent from these mean and standard deviation values, rejected participants were much less likely than included participants to feel that a coalition developed between them and another player, $t(94) = 11.76$, $p < .05$. Likewise, rejected participants were more likely than included participants to feel that the other players developed a coalition without them, $t(94) = 14.52$, $p < .05$. It is evident that the modified In Game effectively produced coalitions such that two players were included and one was rejected.

Review of narrative responses to the post-session questionnaire revealed no evidence that any participants suspected the game to be rigged. One participant stated, "I thought the game was very well organized and set up. It was easy to understand yet advanced enough to make players think about their actions." Another participant stated, "[The game] was set up very well so that two players would have to gang up on another to become successful in not being eliminated." The perceived legitimacy of the game is further supported by responses to items assessing whether one's personal actions were responsible for the way the game progressed. Included participants (M = 5.48, SD = 1.77) felt strongly that their personal actions influenced the course of the game. Rejected participants (M = 2.84, SD = 1.85) tended to disagree that their personal actions influenced the course of the game. However, this disagreement among rejected participants likely emerged because rejection thwarted their sense of control. It is quite clear that the apparent legitimacy of the game was fully accepted by participants.

Differences between included and rejected participants on the psychological need states were examined next. Overall, rejected participants (M = 2.73, SD = .76) exhibited a lowered state of psychological needs relative to included participants, (M = 4.17, SD = .47),

$t(43.20) = 9.84$, $p < .001$. Similar patterns were revealed for each particular psychological need. Rejected participants ($M = 2.68$, $SD = .81$) exhibited a lower sense of belonging than included participants ($M = 4.33$, $SD = .48$), $t(42.22) = 10.61$, $p < .001$. Rejected participants ($M = 2.88$, $SD = 1.01$) also exhibited a lower sense of self-esteem relative to included participants ($M = 3.92$, $SD = .74$), $t(47.93) = 5.17$, $p < .001$. Similarly, rejection ($M = 2.06$, $SD = .89$) resulted in a lower sense of control relative to inclusion ($M = 4.03$, $SD = .70$), $t(94) = 11.82$, $p < .001$. Finally, rejection ($M = 3.29$, $SD = .88$) resulted in a lower sense of meaningful existence relative to inclusion ($M = 4.42$, $SD = .38$), $t(36.95) = 6.91$, $p < .001$.

Small affective differences between included and rejected participants were also observed. Rejected participants ($M = 2.36$, $SD = .92$) reported reduced positive affect relative to included participants ($M = 3.32$, $SD = .87$), $t(94) = 5.05$, $p < .001$. Rejected participants ($M = 1.59$, $SD = .49$) also reported greater negative affect than included participants ($M = 1.41$, $SD = .45$), $t(94) = 1.77$, $p < .05$ (one-tailed). The effect may not have been as strong for negative affect because of the floor (equal to 1) effect among the responses in this sample to the negative affective items.

These statistical findings for psychological needs and affect are further supported by participant narratives to the post-session questionnaire. For example, one included participant stated, "…coalitions can make you feel good and positive about yourself." In contrast, one rejected participant stated, "feeling of powerless [sic] extended throughout the game." Differences between included and rejected participants were also observed in responses to the evaluative semantic differential items in the post-session questionnaire. For example, relative to rejected participants ($M = 3.75$, $SD = 1.39$), included participants ($M = 2.20$, $SD = 1.25$) indicated that the experiment was more satisfying, $t(94) = 5.51$, $p <$

.001. Included participants (M = 2.39, SD = 1.36) also rated their experiences in the study as less unpleasant than rejected participants (M = 4.03, SD = 1.28), $t(94) = 5.67$, $p < .001$. These patterns of responses were consistent for all post-questionnaire items, with included participants generally rating their experiences in the study more positively.

Discussion

Study 1 validates the effectiveness of a unique paradigm for examining interpersonal rejection. Involvement in a coalition in the modified In Game fortified one's fundamental psychological needs and mood states whereas rejection from such coalitions thwarted these needs and mood states. Moreover, participants perceived the modified In Game to be engaging and no participants suspected the game to be rigged. This study examined included and rejected individuals, and thus does not provide concrete evidence that the modified In Game will serve as an effective tool for studying group marginalization. Nonetheless, there is little reason to expect that it would not be effective. The modified In Game was set up in a way so that it could be played by either dyads or individuals – the technique remains the same. Moreover, this paradigm presents a more ecologically valid way to study interpersonal rejection by incorporating features common to life outside the laboratory such as resources, power, obligation, and legitimacy.

STUDY TWO

Study 1 validated the effectiveness of the modified In Game for promoting interpersonal rejection and associated psychological states. Using this experimental paradigm, Study 2 sought to examine the specific hypotheses outlined throughout this paper concerning included and rejected individuals and groups. Additionally, I examine relationships between the components of my integrative framework for understanding hostile reactions to group marginalization as summarized in Figure 1.

Method

Participants

Participants were 288 undergraduate students drawn from lower level psychology courses at North Dakota State University. A coalition failed to form in five sessions (two group sessions, three individual sessions) and these were dropped from analyses. Sixty-two sessions remained from which 35 involved individuals and 27 involved dyads. These data allowed me to adequately compare members of dyads (n = 108) and individuals (n = 70) under conditions of inclusion with members of dyads (n = 54) and individuals (n = 35) under conditions of rejection across the series of dependent measures. Participants received course credit in exchange for their participation. Experimenters were upper-level undergraduate students trained to conscientiously follow a script.

Materials and Measures

Modified In Game and Manipulation Check. The modified In Game required the same materials and procedures as those specified for Study 1 (see Appendix A). Additionally, participants completed the same manipulation check items as in Study 1

using MediaLab (Jarvis, 2006). The manipulation check items and all other dependent measures are included in Appendix B.

Fundamental Psychological Needs and Affect. Participants completed the same items assessing fundamental psychological needs and affect as in Study 1 with minor modifications to both instructions and items. Instructions were modified to indicate past tense. That is, participants were asked to indicate how they felt "during the game" rather than "at the present moment" as in Study 1. This modification is consistent with most previous assessments of psychological need states in the literature (e.g., Williams, 2009). Additionally, items assessing different psychological needs were interspersed with one another so that response biases would be less likely to influence results.

Group Identification. Assessing group identification within ad hoc groups poses difficulty due to the limited exposure members have to one another relative to groups that have more established and enduring interactions (Henry, Arrow, & Carini, 1999). Nonetheless, members of dyads in the present research gained some exposure to each other during the modified In Game, and thus may develop some limited identification with their partner in the dyad. Ten items from a tripartite model of identification with a group (Henry et al., 1999) were modified for members of ad hoc teams acting within the constraints of the current study. Items from this scale assess affective, cognitive, and behavioral facets of group identification. Sample items include "I would prefer to have been on a different team" and "I enjoyed interacting with my partner." Responses were made with a 1 (strongly disagree) to 7 (strongly agree) response scale using MediaLab. Individuals did not complete these items.

Construals. Participants were asked several questions related to their construals of their interaction experiences be they inclusion or rejection. From Smart Richman and Leary's (2009) multimotive model, participants were asked to evaluate the possibility of alternative relationships, perceived cost of rejection, expectations of relational repair, value of relationships, perceived unfairness, and chronicity/pervasiveness. Items assessing perceived unfairness were derived from the Objective Injustice Belief Scale (Smith, Parrott, Ozer, & Moniz, 1994) and modified slightly to fit the constraints of the current research. All other items for the different construals were created by me in accordance with theoretical work by Smart Richman and Leary (2009). Sample items include "I played the In Game more fairly than the other players" and "I felt completely alone during the In Game." Responses were made on a 1 (strongly disagree) to 7 (strongly agree) scale using MediaLab. Both individuals and group members responded to these items alone.

Hostile Attitudes. Both implicit and explicit attitudes favoring aggression were assessed. Implicit attitudes toward aggression were assessed using portions of an established word completion task (Anderson et al., 2004). A total of 60 word fragments were presented, each of which has several possible correct completions. Thirty-three of these word fragments yield words that are clearly aggression-related. Participants were given three minutes to complete as many word completions as they could on a printed sheet of paper. Requiring participants to respond to these items on paper rather than on computers allowed them to skip between items of their choosing. Both individuals and group members responded to these items individually. Responses were later scored as aggressive, neutral, ambiguous, and non-words using scoring recommendations from Anderson et al. (2004).

I created an explicit measure of attitudes that assesses aggression more directly. Eight potential words that could be formed from the word completion task were used to form direct questions for the explicit measure. For instance, the potential word completion "strike" was restructured into the statement "I feel like striking out." Additionally, a ninth item asked participants to indicate if they felt aggressive. In efforts to prevent arousing socially desirable responses or suspicion about the true purpose of the experiment, a number of items from the word completion task were not included in this explicit measure. For example, the potential word "kill" was not included. Participants are asked to respond to these items on a 1 (strongly disagree) to 7 (strongly agree) scale using MediaLab. Both individuals and group members responded to these items alone.

Hostile Behavior. As an ostensibly unrelated task, participants were informed that we were also examining taste and auditory sensitivity to unpleasant stimuli. Participants were to be randomly assigned to anonymously allocate hot sauce and sound blasts for other participants in the current session to evaluate. In fact, the degree to which participants allocated these stimuli to the others served as behavioral measures of hostility and no "victims" were actually involved. This technique is based on similar procedures found to be effective in other research assessing aggression (e.g., Warburton et al., 2006). Dyads were asked to allocate these stimuli to other dyads in their session, and individuals were asked to allocate these stimuli to other individuals in their session. Dyads were asked to reach consensus before indicating their responses.

Before allocating each stimulus to the others, participants sampled the stimulus and were told that most people find it to be quite unpleasant. They were additionally told that once they had indicated their allocation preferences on the computers for "record keeping"

purposes, they would be asked to physically assist the experimenter in allocating these stimuli to the others in the session. For hot sauce, participants sampled approximately ¼ tsp. of extremely spicy hot sauce (El Yucateco Salsa Picante de Chile Habanero) using a sampling spoon and then were given an opportunity to drink water and eat saltine crackers afterwards. Participants were then given a few minutes to think over the number of ¼ tsp. spoonfuls they wished to allocate to each of the other parties in the session. Allocations to dyads were per player. For sound blasts, participants sampled various intensities and lengths of a sound blast (Warning Alarm Siren downloaded from iTunes) via headphones. They were then given a few minutes to think over the degree of intensity (1-100% of possible volume or approximately 10 dB to 120 dB) and length (seconds) that they preferred to allocate to the other parties in the session before indicating their preferences on the computers. Allocations to dyads were again made explicitly clear that they were per player.

Post-session Questionnaire. Following all other tasks, participants responded to the same brief post-session questionnaire administered in Study 1, which was designed to assess feelings about the experiment in general, suspicions about the true purpose of the experiment, and demographic information including age and sex.

Procedure

Participants were randomly assigned to work either alone or with one other person in ostensible competition with two other individuals or dyads. Individuals were asked to play the modified In Game with individuals, and dyads were asked to play the modified In Game with dyads. Participants were also randomly assigned as Party number 1, 2, or 3. All participants were seated in a single room and asked to read and sign a form giving their

informed consent (see Appendix C). Players were then asked to introduce themselves to one another and to say one or two interesting thing about themselves to facilitate interactions. Members of dyads were additionally informed that they would be working with their partner throughout the game and that they should feel comfortable interacting with one another at any time unless instructed otherwise. The experimenter next gave detailed instructions about how to play the modified In Game, answered questions, and began. Similar to Study 1, play ended when an event card was turned over that required the player to have at least three green tokens and the player did not have three. Once a target was eliminated and the game was over, all parties were escorted to separate rooms. Placing participants in separate rooms allowed dyads to freely discuss their marginalization experience in later parts of the study.

Participants were next given three minutes to write down their thoughts about any coalition that may have developed during the game, their feelings about this coalition, and how they reacted in the game after the coalition formed. Dyads worked together on this task and individuals worked alone. It is believed that this brief period gave participants an opportunity to form attributions and ruminate about their experiences (Swim & Williams, 2008; Williams, 2009). For example, rejected individuals may ruminate about their rejection and dyads may begin to commiserate about their marginalization. Participants then completed the implicit attitudes measure. Both dyad members and individuals worked alone and were given just three minutes to complete as many word fragmentations as they could. Participants then responded individually to the abovementioned self-report measures assessing psychological needs, group identification (dyad members only), affect, and

cognitions. Items assessing need satisfaction, affect, explicit attitudes, and construals were interspersed for participants to reduce the development of response biases.

Participants responded to the behavioral measures next. They sampled the hot sauce first and indicated their allocation preference for the number of spoonfuls the others would have to consume on the computer. They then repeated this procedure to indicate the intensity and duration of the sound blasts the participants would be exposed to. Dyads formed a consensus and individuals worked alone to determine allocation preferences for each of the other parties. Immediately after indicating their allocation preferences, participants completed the post-session questionnaire alone. Each session concluded with a thorough debriefing. The full script for this study is included in Appendix D and the debriefing form is included in Appendix E.

Results

Preliminary Analyses

As in Study 1, items were reverse-scored when appropriate and new variables were created by averaging items assessing the same construct. Variables were created for each psychological need state including belonging ($\alpha = .89$), self-esteem ($\alpha = .86$), control ($\alpha = .92$), and meaningful existence ($\alpha = .79$), as well as an overall measure of psychological need states ($\alpha = .93$), positive affect ($\alpha = .93$), and negative affect ($\alpha = .79$). Not surprisingly, reliability coefficients for these variables are very similar to those observed in Study 1. Variables were also created for group identification ($\alpha = .72$), explicit attitudes to aggress ($\alpha = .76$), and each of the construal measures (see Table 3 for α values). The implicit attitude measure was scored by computing the proportion of aggressive word completions out of the total number of words completed. For sound blasts, a new variable

was created by multiplying the length of the sound blast in seconds by the intensity in percentage of possible volume allocated. For hot sauce and sound blast allocation measures, scores were created reflecting allocation to the party or parties in the opposite condition – that is, the rejected party's averaged allocation to the two included parties and the included party members' average allocation to the rejected party.

Data screening procedures were undertaken for these new variables as well as single items of relevance. Separated by both individual or group condition and inclusionary condition, these procedures revealed normal distributions with low levels of skewness and kurtosis for most variables. As in Study 1, distributions for the two manipulation check items were skewed. Consistent with their inclusionary condition, included participants strongly agreed that they were part of a coalition and rejected participants strongly agreed that they were not part of a coalition.

Values for the behavioral measures of hot sauce and sound blast allocation included numerous outliers and skewed distributions. Given that these outliers contain important information as a measure of aggression, the original values could be retained and nonparametric statistics adopted to investigate patterns of relationships concerning them. Alternatively, outliers could be deleted and distributions transformed and normalized so that parametric statistics could be employed. Indeed, both sets of analyses were conducted and highly similar results emerged. All analyses reported involve standard parametric statistics.

Participants in both the individual and group conditions worked as part of a larger group and members of groups also worked alongside a partner. Thus, participant responses may violate assumptions of statistical independence at one or both of these group or dyad-

within-group levels of analyses. Intraclass correlations (r_I) were determined for each variable at each level of analysis to investigate this concern (Griffin & Gonzalez, 1995; Shrout & Fleiss, 1979). At the broad group level of analysis, intraclass correlation values were nonsignificant for all variables among participants in the individual (e.g., overall psychological needs r_I = -.39, p > .25) and group conditions (e.g., overall psychological needs r_I = -.14, p > .25) even at very liberal values of significance. These exclusively nonsignificant values suggest that concerns regarding statistical dependence are not warranted at the broad group level of analysis. As in Study 1, negative intraclass correlations suggest that positive feelings about forming a successful coalition among some participants might be associated with negative feelings about not forming a successful coalition among other participants (Kenny et al., 2002).

Similar patterns of results emerged for some of the measures among members of dyads within the group condition. For example, nonsignificant intraclass correlation values were observed in reference to expectations for relational repair (r_I = .004, p > .25) and perceived value of relationships (r_I = .03, p > .25). However, other intraclass correlation values did emerge as significant at this dyad-within-group level. For example, negative affect (r_I = .29, p < .05) and psychological need ratings (r_I = .77, p < .05) both produced significant intraclass correlation values. Significant intraclass correlations values that emerged for members of dyads within groups suggest that some concern may be warranted at this level of analysis. To address this concern, scores for partners (dyads) were averaged and importantly, this affected portions of the results.

Primary Analyses

Hostile Behavior Measures. I next sought to determine whether group marginalization does in fact promote hostile behavior relative to inclusion (H_{7A}) and whether any hostile behavior among marginalized groups was greater than that observed among rejected individuals (H_{7B}). The sound blast and hot sauce behavioral measures were examined independently for this purpose. Notably, however, these measures were near perfectly correlated ($r = .98$, $p < .01$; original untransformed data) and so I have confidence that they were measuring the same underlying construct of hostile behavior.

The sound blast allocation measure was normalized by condition using square root transformations and outliers as detected by visual inspection of box plots and large z-scores were deleted. This measure was then subjected to a two-way analysis of variance including as independent variables individual or group condition and inclusionary condition. Individual or group condition produced a significant main effect such that groups ($M = 5.45$, $SE = .36$) tended to allocate a greater increment of sound blasts than individuals ($M = 3.24$, $SE = .32$), $F(1, 173) = 20.74$, $p < .001$, $\eta^2 = .11$. A main effect was also observed for inclusionary status such that rejected parties ($M = 5.23$, $SE = .40$) allocated a greater increment of sound blasts than included parties ($M = 3.45$, $SE = .28$), $F(1, 173) = 13.57$, $p < .001$, $\eta^2 = .07$.

A significant interaction between individual or group condition and inclusionary condition was also observed for the sound blasts allocated, $F(1, 173) = 6.82$, $p < .01$, $\eta^2 = .04$. As can be seen in Figure 2, marginalized groups ($M = 6.97$, $SD = 5.38$) allocated significantly more sound blasts than included groups ($M = 3.92$, $SD = 2.37$), $t(30.12) = 2.76$, $p = .01$, while rejected ($M = 3.50$, $SD = 2.66$) and included individuals ($M = 2.97$, SD

= 2.15) tended to allocate similar amounts of sound blasts, $t(95) = 1.04$, $p > .05$. Interestingly, it was also the case that included groups ($M = 3.92$, $SD = 2.37$) allocated a greater increment of sound blasts than included individuals ($M = 2.97$, $SD = 2.15$), $t(113) = 2.23$, $p = .03$. Still, as Figure 1 makes apparent, marginalized groups ($M = 6.97$, $SD = 5.38$) allocated a significantly greater increment of sound blasts than rejected individuals ($M = 3.50$, $SD = 2.66$), $t(34.83) = 3.01$, $p < .01$. These findings lend support to H_{7A} and $H_{7B.}$

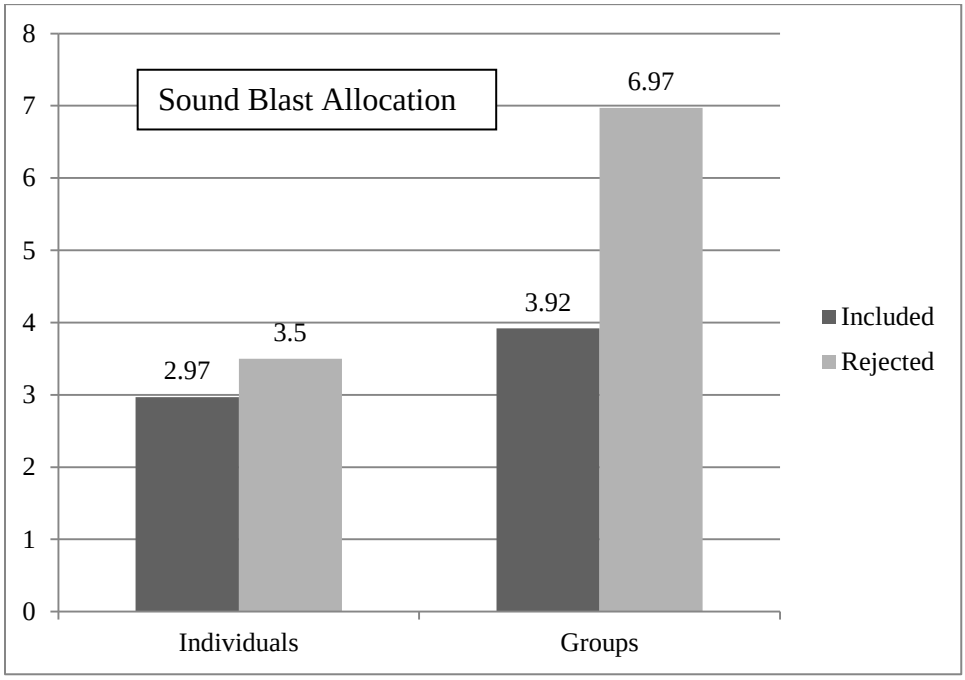

Figure 2. Sound blast allocations among included and rejected individuals and groups.

A similar pattern of results emerged for the hot sauce allocation measure. Outliers detected by visual inspection of box plots and large z-scores were deleted, but no data transformations were necessary. The hot sauce allocation measure was subjected to a two-way analysis of variance with individual or group condition and inclusionary status as independent variables. Individual or group condition produced a significant main effect

such that groups (M = 2.04, SE = .13) tended to allocate more spoonfuls of hot sauce than individuals (M = 1.35, SE = .11), $F(1, 171) = 15.72$, $p < .001$, $\eta^2 = .09$. A significant main effect was also observed for inclusionary status such that rejected parties (M = 2.02, SE = .14) allocated more spoonfuls of hot sauce than included parties (M = 1.37, SE = .10), $F(1, 171) = 14.33$, $p < .001$, $\eta^2 = .08$. Although these data allude to a potential interaction like that observed for the sound blast measure, the interaction was not statistically significant, $F(1, 171) = 1.76$, $p = .19$, $\eta^2 = .01$. Still, marginalized groups (M = 2.48, SD = 1.42) allocated more hot sauce than included groups (M = 1.59, SD = 1.16) $t(71) = 2.87$, $p < .01$, and additionally, marginalized groups (M = 2.48, SD = 1.42) also allocated more hot sauce than rejected individuals (M = 1.56, SD = 1.08) $t(43.62) = 2.69$, $p = .01$. These findings lend additional support to H_{7A} and H_{7B}. Patterns of results for the hot sauce allocation measure are summarized in Figure 3.

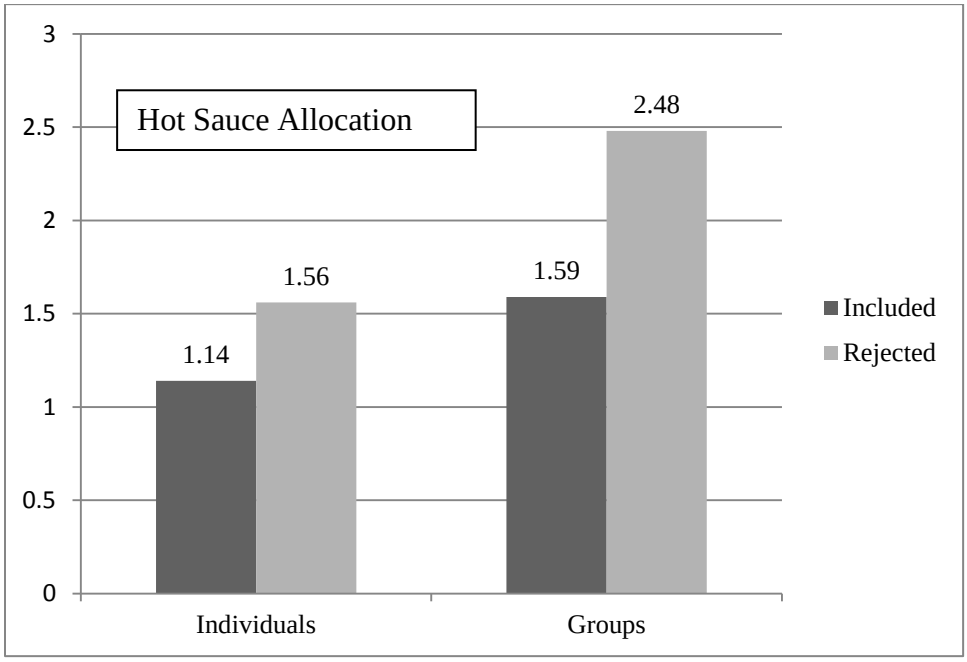

Figure 3. Hot sauce allocations among included and rejected individuals and groups.

Figures 2 and 3 depict very similar patterns of results for the two behavioral measures of hostility. Notably, the interaction between individual or group condition and inclusionary condition was significant for the sound blast measure, but not for the hot sauce measure. This difference may be due to the practical significance of each consumed spoonful of hot sauce. The hot sauce was extremely hot, and indeed, each spoonful allocated would likely be perceived as largely more painful. Thus, despite the strong correlation between the sound blast and hot sauce measures of hostility, it appears worthwhile to have collected data using both measures.

Process Measures. The above results confirm expected differences in hostile behavior between included and rejected individuals and groups. Marginalized groups exhibited greater hostile behavior than included groups, and of greater interest, marginalized groups also exhibited greater hostile behavior than rejected individuals. Next, I sought to determine the underlying processes through which these patterns of results emerged. I examine relationships between components of my integrative framework as well as the specific hypotheses outlined throughout this paper.

Early elements of the integrative framework for understanding hostile reactions to group marginalization suggest that group-based rejection threatens and thus lowers the psychological needs of H_{1A}) belonging, H_{1B}) self-esteem, H_{1C}) control, and H_{1D}) meaningful existence. Additionally, H_2) group marginalization is expected to promote identification with co-actors, which in turn, might help buffer threats to H_{3A}) belonging, H_{3B}) self-esteem, H_{3C}) control, and H_{3D}) meaningful existence among members of marginalized groups.

Consistent with $H_{1A\text{-}D}$, members of marginalized groups and rejected individuals did in fact exhibit lower psychological need states than included persons. Overall, members of marginalized groups (M = 2.46, SD = .50) exhibited lower psychological need states than members of included groups (M = 4.06, SD = .46) $t(80) = 14.37$, $p < .001$. Likewise, rejected individuals (M = 2.60, SD = .80) exhibited lower psychological need states than included individuals (M = 4.11, SD = .53), $t(49.74) = 10.06$, $p < .001$.

Table 1

Psychological Need States among Included and Rejected Individuals and Group Members

Psychological Need	**Included**		**Rejected**		***t***	***df***
	M	***SD***	***M***	***SD***		
Belonging						
Individual	4.28	.52	2.61	.93	9.88	45.28
Group member	4.30	.43	2.60	.69	11.77	36.37
Self-esteem						
Individual	3.79	.66	2.65	.92	6.51	52.74
Group member	3.81	.54	2.49	.58	10.10	80
Control						
Individual	4.06	.82	1.99	.96	11.42	101
Group member	3.95	.68	1.78	.62	13.85	80
Meaningful existence						
Individual	4.30	.52	3.15	.93	6.82	43.53
Group member	4.20	.48	2.98	.64	8.77	40.61

Note. All t-tests significant at $p < .001$. Welch's t-test used in cases where variances are not equal.

As can be seen in Table 1, these patterns of relationships remained for each specific psychological need including belonging, self-esteem, control, and meaningful existence

among both individuals and group members. Inconsistent with $H_{3A\text{-}D}$, however, differences in overall psychological need states were not observed between members of marginalized groups and rejected individuals, $t(57.56) = .82$, $p > .05$. Nor were differences in overall psychological need states detected between members of included groups and included individuals, $t(121) = .48$, $p > .05$.

Next, I sought to more closely assess differences between members of included and marginalized groups in their level of identification with co-actors. Members of included groups ($M = 5.24$, $SD = .65$) exhibited somewhat higher levels of identification than members of marginalized groups ($M = 4.95$, $SD = .79$), $t(80) = 1.79$, $p = .08$, although not significantly so. This finding does not lend support for the hypothesis that group marginalization promotes identification with co-actors, at least relative to inclusion. In retrospect, however, this finding might have been anticipated as success in forming a coalition might promote positive feelings about one's group and inclusion within it (Gastil, 2010). A better test of this hypothesis would compare members of marginalized groups with group members in a neutral state not involving active inclusion, but unfortunately, data were not collected to test this hypothesis here. Additionally, identification with co-actors was found to be associated with overall psychological need states among members of included groups, $R = .60$, $F(1,54) = 29.93$, $p < .001$, but not among members of marginalized groups, $R = .11$, $F(1,26) = .29$, $p > .05$. These findings imply that the identification included members felt with their partner was related to the (positive) levels of the psychological need states, however, the identification among members of marginalized groups was unrelated to the level of psychological need states they experienced.

Still, mediation analysis was used to determine whether the effect of inclusionary condition on overall psychological needs was mediated by level of group identification as hypothesized. Criteria set forth by Baron and Kenny (1986) were adopted for these analyses and all other mediation analyses reported. First, a regression analysis with inclusionary condition as the predictor and overall psychological needs as the criterion revealed a significant regression coefficient, $\beta = -.85$, $t(81) = -14.37$, $p < .001$. Next, a significant effect of group identification on overall psychological needs was detected, $\beta = .34$, $t(81) = 3.20$, $p < .01$. Finally, inclusionary condition and group identification were simultaneously used as predictors for overall psychological needs. The overall regression was significant, $R^2 = .75$, $F(2,81) = 118.88$, $p < .001$, as were the standardized regression coefficients for both inclusionary condition, $\beta = -.81$, $t(81) = -14.21$, $p < .001$, and group identification, $\beta = .18$, $t(81) = 3.08$, $p < .01$. The fact that when controlling for group identification, inclusionary condition continued to predict psychological needs indicates that mediation is unlikely to have occurred. Contrary to expectations, there is no evidence from this sample that group identification mediates the relationship between inclusionary condition and overall psychological need states.

Thus far, group marginalization appears to threaten psychological need states, but results do not implicate a link between group marginalization and group identification or between group identification and psychological needs. Given lack of evidence for a link between group identification and these variables in this study, remaining analyses are conducted without incorporating group identification. The next portion of the integrative framework concerns the influence of group marginalization on hostile affect and cognitions, the relationships between hostile affect and cognitions, and their impact on

hostile behavior. Analyses examine differences in these variables between included and rejected individuals and group members, and additionally, the utility of psychological need states in predicting hostile affect, cognitions, and behaviors of rejected parties are considered.

Table 2

Affective States among Included and Rejected Individuals and Group Members

Affective State	**Included**		**Rejected**		***t***	***df***
	M	***SD***	***M***	***SD***		
Negative Affect						
Individual	1.51	.36	1.69	.36	1.70	43.97
Group member	1.40	.29	1.74	.58	3.61*	32.56
Positive Affect						
Individual	3.32	.74	2.29	.74	6.74**	101
Group member	3.45	.67	2.34	.55	7.47**	80
Angry						
Individual	1.09	.41	1.69	.93	3.61**	41.03
Group member	1.31	.47	1.54	.84	1.31	34.04
Agitated						
Individual	1.25	.58	1.97	1.18	3.42**	42.80
Group member	1.45	.69	1.70	.70	1.59	80

Note. * $p < .01$, ** $p < .001$. Included and rejected conditions for "angry" and "agitated" among group members differ at $p < .10$. Welch's t-test used in cases where variances are not equal.

Consistent with H_{4A}, rejected participants ($M = 1.71$, $SD = .64$) reported greater negative affect than included participants ($M = 1.46$, $SD = .34$), $F(1, 184) = 12.99$, $p < .001$, $\eta^2 = .07$. Similarly, rejected participants ($M = 2.31$, $SD = .66$) exhibited significantly less

positive affect than included participants (M = 3.38, SD = .71), $F(1, 184) = 97.32$, $p < .001$, $\eta^2 = .35$. Inconsistent with H_{4C}, no significant interactions or main effects for group versus individual condition were detected by these analyses. As can be seen in Table 2, most main effects retained significance when analyses were split by individual or group condition. Moreover, this table summarizes additional differences that were observed for the specific affective states of anger and agitation. Consistent with H_{4B}, hostile emotional states did emerge among members of marginalized groups; however, these states were not stronger among groups than among individuals. Given that rejection promoted hostile behavior among both individuals and groups, it is noteworthy that rejection promoted greater hostile emotional states (anger and agitation) than inclusion only among individuals.

Given that group identification did not affect group members in the manner anticipated, it is reasonable to consider potential direct or mediated associations between group marginalization, psychological need states, and negative affect among members of marginalized groups. As illustrated in Figure 1, I sought to determine whether psychological needs mediated the relationship between group marginalization and negative affect. First, a regression analysis with inclusionary condition as the predictor and negative affect as the criterion revealed a significant standardized regression coefficient, $\beta = .37$, $t(81) = 3.61$, $p = .001$. Next, a significant effect of overall psychological needs on negative affect was detected, $\beta = -.36$, $t(81) = -3.44$, $p = .001$. Finally, inclusionary condition and psychological needs were simultaneously used as predictors for negative affect. The overall regression model was significant, $R^2 = .15$, $F(2,81) = 6.75$, $p < .01$; however, neither the standardized regression coefficient for psychological needs, $\beta = -.15$, $t(81) = -.76$, $p > .05$, or inclusionary condition, $\beta = .25$, $t(81) = 1.26$, $p > .05$, retained significance. Therefore,

evidence for a relationship between inclusionary condition and negative affect mediated by psychological needs is not forthcoming. It is worthwhile to note, however, that when this same analysis is conducted with individual dyad member scores (recall that these scores were averaged to address concerns about statistical dependence), a significant mediation relationship emerges. It should therefore prove worthwhile for researchers conducting similar research to reexamine this question with a larger sample size and perhaps more precise measures of the affective states of interest.

I also sought to determine potential direct or mediated associations between group marginalization, psychological need states, and *positive* affect among members of marginalized groups. Positive affect is not part of the integrative framework, nor were hypotheses drawn regarding its impact within group marginalization scenarios; however, data are available and so it is worthwhile to investigate observed patterns involving this construct. First, a regression analysis with inclusionary condition as the predictor and positive affect as the criterion revealed a significant standardized regression coefficient, $\beta = -.64$, $t(81) = 7.47$, $p < .001$. Next, a significant effect of overall psychological needs on positive affect was detected, $\beta = .85$, $t(81) = 14.49$, $p < .001$. Finally, inclusionary condition and psychological needs were simultaneously used as predictors for positive affect. The overall regression model was significant, $R^2 = .75$, $F(2,81) = 117.12$, $p < .001$, as were the standardized regression coefficients for psychological needs, $\beta = 1.10$, $t(81) = 10.27$, $p < .001$, and inclusionary condition, $\beta = .29$, $t(81) = 2.72$, $p < .01$. These findings indicate that although inclusionary condition predicts positive affect as one might expect, psychological needs do not mediate the relationship between inclusionary condition and psychological affect.

Implicit and explicit attitudes to aggress were examined next. Importantly, no significant differences were detected among individuals for the measures of implicit and explicit attitudes. Inconsistent with H_{5A}, the proportion of word completions coded as aggressive were approximately equal among members of marginalized (M = .19, SD = .04) and included groups (M = .18, SD = .06), t(80) = .28, p > .05. Lending qualified support to H_{5C}, members of marginalized groups (M = 1.72, SD = .56) tended to report greater explicit attitudes favoring aggression than members of included groups (M = 1.55, SD = .38), t(38.14) = 1.42, p = .06 (one-tailed). Support for H_{5C} is said to be qualified because a) this finding did not reach traditional levels of significance, and b) mean values approach the low response anchor of 1.0 which indicates disagreement with the items in the explicit attitude of aggression measure. These results reveal a potential for members of marginalized groups to exhibit outwardly aggressive attitudes relative to members of included groups, however, in general participants did not explicitly express aggressive attitudes toward the other players in the game. Given the general lack of significant effects for hostile attitudes, potential direct or mediated patterns of relationships such as those that were examined for affect were not examined for attitudes.

I next examined construals among included and rejected individuals and group members. A number of differences were observed among these conditions, and importantly, the levels of statistical significance for some of these differences were influenced by the analytic strategy used to reduce concerns about statistical dependence. H_{6A} predicts that members of marginalized groups will more readily perceive alternative relationships to be available than rejected individuals. Group members (M = 5.66, SD = .84) tended to rate the availability of alternative relationships as higher than individuals (M

= 5.43, *SD* = 1.32), $F(1, 1844) = 8.35$, $p < .01$, $\eta^2 = .04$. Included parties (*M* = 6.09, *SD* = .68) also tended to rate the availability of alternative relationships as higher than rejected parties (*M* = 4.43, *SD* = .09), $F(1, 184) = 165.11$, $p < .001$, $\eta^2 = .48$. The interaction was also significant, $F(1, 184) = 13.41$, $p < .001$, $\eta^2 = .07$. As illustrated in Figure 4, this pattern of results indicates that although members of included groups (*M* = 6.04, *SD* = .55) and individuals (*M* = 6.13, *SD* = .78) rated the availability of alternative relationships as approximately equal, $t(121) = .77$, $p > .05$, members of marginalized groups (*M* = 4.89, *SD* = .82) rated the availability of these relationships as significantly higher than rejected individuals (*M* = 4.08, *SD* = 1.07), $t(60) = 3.27$, $p < .01$. Indeed, this pattern of results was expected (H_{6A}) given that members of dyads worked with a teammate with whom they might perceive the potential of an alternative relationship.

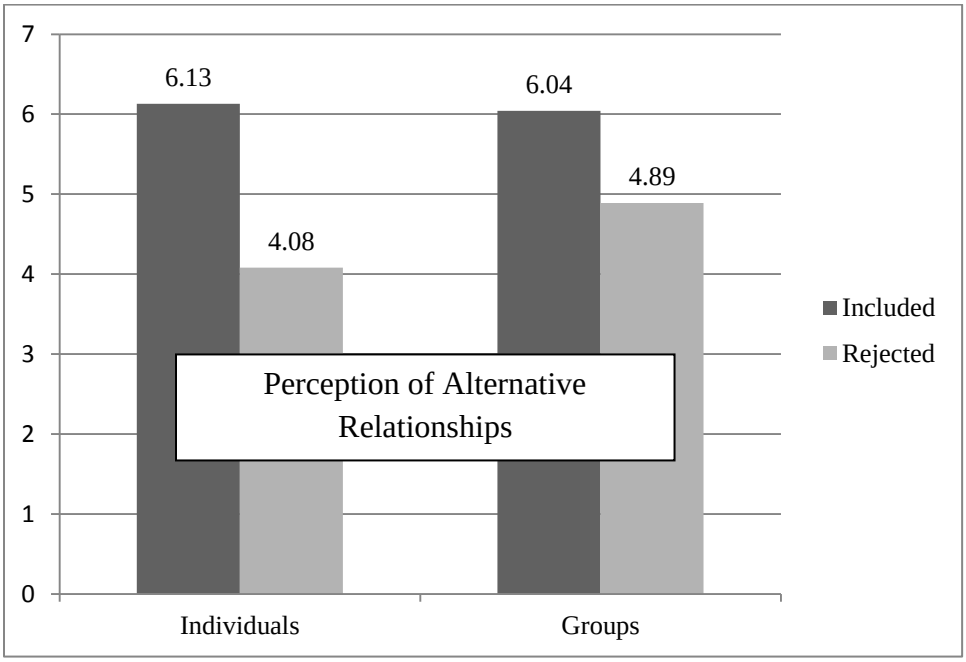

Figure 4. Perception of alternative relationships among included and rejected individuals and group members.

H_{6B} predicted that members of marginalized groups would perceive the cost of rejection to be lower than similarly treated individuals. A main effect was observed such that rejected parties (M = 3.21, SD = 1.14) rated their experiences in the game as more costly than included parties (M = 2.15, SD = .76), $F(1, 184) = 58.89$, $p < .001$, $\eta^2 = .25$. Inconsistent with H_{6B}, however, significant differences were not observed for the individual (M = 2.52, SD = 1.16) versus group condition (M = 2.48, SD = .86), $F(1, 184) = .08$, $p > .05$, or for the interaction, $F(1, 184) = 2.32$, $p > .05$.

H_{6C} predicted that members of marginalized groups would perceive the likelihood of relational repair with the rejecting party to be lower than would similarly treated individuals. A main effect was observed for inclusionary condition. Rejected parties (M = 4.86, SD = .84) rated their expectations of relational repair as less than included parties (M = 5.17, SD = .90), $F(1, 184) = 4.60$, $p < .05$, $\eta^2 = .03$. Inconsistent with H_{6C}, however, significant effects were not observed for group (M = 5.03, SD = .76) verses individual condition (M = 5.09, SD = .99), $F(1, 184) = .07$, $p > .05$, or the interaction, $F(1, 184) = .36$, $p > .05$.

H_{6D} predicted that members of marginalized groups would place less value on relationships with sources of rejection than similarly treated individuals. Again, a main effect was observed for inclusionary condition, but not for individual or group condition or the interaction. Rejected parties valued their relationships with included parties (M = 4.07, SD = .99) less than included parties valued their relationship with rejected parties (M = 4.59, SD = 1.01), $F(1, 184) = 10.95$, $p = .001$, $\eta^2 = .06$. No significant effects were observed for group (M = 4.48, SD = .86) verses individual condition (M = 4.35, SD = 1.15), $F(1, 184) = .47$, $p > .05$, or the interaction, $F(1, 184) = .10$, $p > .05$.

H_{6E} predicted that members of marginalized groups would perceive their rejection as more unfair than similarly treated individuals. Group members (M = 3.19, SD = .94) rated the unfairness of the game as higher than individuals (M = 2.83, SD = .98), $F(1, 184) = 11.11$, $p = .001$, $\eta^2 = .06$. Rejected parties (M = 3.28, SD = 1.11) also tended to rate the unfairness of the game as higher than included parties (M = 2.84, SD = .87), $F(1, 184) = 11.68$, $p = .001$, $\eta^2 = .06$. The interaction was also significant, $F(1, 184) = 5.97$, $p < .05$, $\eta^2 = .03$. As illustrated in Figure 5, this pattern of results signifies that although members of included groups (M = 2.91, SD = .75) and individuals (M = 2.78, SD = .95) rated the unfairness of the game as approximately equal, $t(121) = .82$, $p > .05$, members of marginalized groups (M = 3.76, SD = 1.04) rated the unfairness as much higher than rejected individuals (M = 2.92, SD = 1.04), $t(60) = 3.17$, $p < .01$. These findings lend support to H_{6E}.

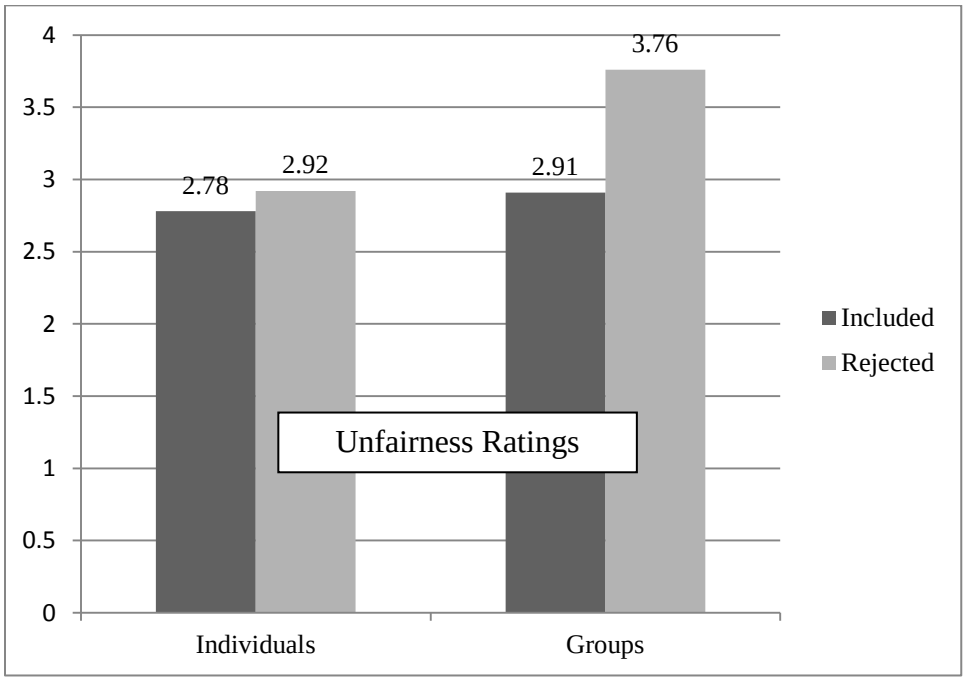

Figure 5. Unfairness ratings among included and rejected individuals and group members.

H_{6F} predicted that members of marginalized groups would be more likely than similarly treated individuals to perceive their rejection as chronic and pervasive. Group members (M = 2.64, SD = .92) rated unpleasant aspects of the game as more chronic and pervasive than did individuals (M = 2.40, SD = 1.11), $F(1, 184) = 5.82$, $p < .05$, $\eta^2 = .03$. Rejected parties (M = 3.22, SD = 1.07) rated unpleasant characteristics of the game as more chronic and pervasive than did included parties (M = 2.15, SD = .81), $F(1, 184) = 61.89$, $p < .001$, $\eta^2 = .26$. The interaction was significant as well, $F(1, 184) = 3.79$, $p = .05$, $\eta^2 = .02$. As illustrated in Figure 6, this pattern of results signifies that although members of included groups (M = 2.19, SD = .64) and individuals (M = 2.12, SD = .93) rated unpleasant characteristics of the game as about equally chronic and pervasive, $t(118.47) = .46$, $p > .05$, members of marginalized groups (M = 3.56, SD = .99) rated the chronicity and pervasiveness of these parts of the game higher than rejected individuals (M = 2.95, SD = 1.23), $t(55.45) = 2.46$, $p < .05$. These findings lend support to $H_{6F.}$

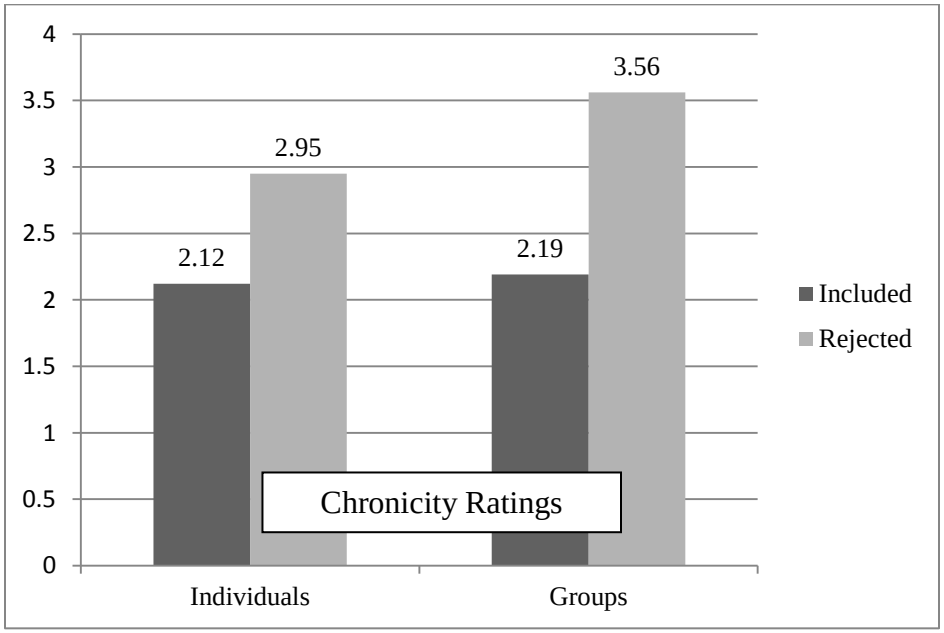

Figure 6. Chronicity/pervasiveness ratings among included and rejected individuals and group members.

Given that group identification did not affect group members in the manner anticipated, it is reasonable to additionally consider potentially direct and mediated associations between group marginalization, psychological need states, and construals among members of marginalized groups. As illustrated in Figure 1, psychological need states might mediate the relationship between group marginalization and the six construals. The first step for this procedure requires that group marginalization successfully predict the construal in question. This step was unsuccessful for relational repair ($\beta = -.13$, $t(81) = -1.20$, $p > .05$) and therefore this construal is not considered in further mediation analyses. This step was successful for alternative relationships ($\beta = -.64$, $t(81) = -7.48$, $p < .001$), perceived cost ($\beta = .72$, $t(81) = 9.91$, $p < .001$), value of relationships ($\beta = -.32$, $t(81) = -2.97$, $p < .01$), perceived unfairness ($\beta = .43$, $t(81) = 4.24$, $p < .001$), and perceived chronicity/ pervasiveness ($\beta = .70$, $t(81) = 8.85$, $p < .001$).

The second step for this procedure requires that psychological needs predict the construal in question. This step was successful for all remaining construals, including alternative relationships ($\beta = .69$, $t(81) = 8.43$, $p < .001$), perceived cost ($\beta = -.72$, $t(81) = -9.20$, $p < .001$), value of relationships ($\beta = .41$, $t(81) = 4.05$, $p < .001$), perceived unfairness ($\beta = -.36$, $t(81) = -3.43$, $p = .001$), and perceived chronicity/ pervasiveness ($\beta = -.69$, $t(81) = -8.44$, $p < .001$). Finally, group marginalization and psychological needs must be entered together as predictors of the construal in question, and for mediation to be evident, only psychological needs should retain statistical significance.

A complex pattern of results emerged with varied outcomes depending on the construal in question. Psychological needs mediated the relationship between group

marginalization and the perception of alternative relationships (overall model: R^2 = .48, F(2,81) = 36.92, p < .001; psychological needs: β = .51, t(81) = 3.31, p = .001; inclusionary condition: β = -.21, t(160) = -1.38, p > .05). Group marginalization and psychological needs both influenced perceived cost (overall model: R^2 = .56, F(2,81) = 49.44, p < .001; psychological needs: β = -.39, t(81) = -2.74, p < .01; inclusionary condition: β = .39, t(81) = 2.73, p < .01). Psychological needs mediated the relationship between group marginalization and perceived value of relationships (overall model: R^2 = .17, F(2,81) = 8.33, p = .001; psychological needs: β = .52, t(81) = 2.67, p < .01; inclusionary condition: β = .12, t(81) = .64, p > .05). Perceived unfairnesss did not mediate the relationship between group marginalization and psychological needs (overall model: R^2 = .18, F(2,81) = 8.91, p < .001; psychological needs: β = .02, t(81) = .12, p > .05; inclusionary condition: β = .45, t(81) = 2.33, p < .05). Group marginalization and psychological needs both influenced perceived chronicity and pervasiveness (overall model: R^2 = .52, F(2,81) = 43.36, p < .001; psychological needs: β = -.32, t(81) = -2.17, p < .05; inclusionary condition: β = .43, t(81) = 2.95, p < .01). Next, I consider the relationships between hostile affect, cognitions, and behaviors which arise on the lower portion of the conceptual framework in Figure 1.

I next sought to examine associations among hostile affect, cognitions, and behaviors among marginalized groups and their members. My integrative framework suggests that affect and cognitions might influence one another. For example, negative affect might be associated with hostile attitudes toward a source of marginalization (H_{5E}). Negative affect and hostile attitudes might also both be associated with construals of the marginalization episode (H_{6H}). Affect and cognitions are then expected to predict hostile

behavior among marginalized groups. Results revealed partial support for these expectations.

Table 3 summarizes intercorrelations between the affect and cognition measures. A particularly strong positive correlation was detected between negative affect and explicit hostile attitudes ($r = .82$, $p < .001$). Explicit and implicit attitudes to aggress were not significantly correlated. In fact, implicit attitudes to aggress were not correlated with any measure, which raises questions about the utility of this measure more broadly. Not surprisingly, many of the construals were associated with one another. For example, perceived chronicity and unfairness were highly correlated ($r = .60$, $p = .001$). Perceived value of relationships and alternative relationships were also highly correlated ($r = .64$, $p < .001$). As can be seen in Table 3, many other strong correlations were present as well. These findings support components of my integrative framework that suggest associations between affect and cognitions among members of marginalized groups.

The framework additionally suggests that hostile affect (H_{4D}) and cognitions ($H_{5B \& D}$, H_{6G}) might predict hostile behavior among marginalized groups. To test these hypotheses, multiple regression analyses were conducted with negative affect, explicit and implicit hostile attitudes, and the six construal measures as predictors with hostile behaviors as the criteria. Separate regression analyses were run for the sound blast and hot sauce allocation measures of behavior. In short, neither the regression model predicting hot sauce allocation ($R^2 = .43$, $F(9, 22) = 1.10$, $p > .05$) or the regression model predicting sound blast allocations ($R^2 = .35$, $F(9, 24) = .89$, $p > .05$) was supported at traditional levels of significance. Given the relatively small sample size for marginalized groups, however, multiple regression analyses might not be expected to detect significant effects unless such

effects were particularly large. In response, simple linear regression was conducted for each predictor on each behavioral measure. Still, no significant predictors emerged for these regression analyses for either the hot sauce or sound blast allocation measures.

Table 3

Correlations for Negative Affect and Hostile Cognition Measures among Members of Marginalized Groups

Measure	1	2	3	4	5	6	7	8	9
1. Negative affect	**.79**								
2. Aggressive attitudes (exp.)	.82*	**.76**							
3. Aggressive attitudes (imp.)	.21	.35	--						
4. Alternative relationships	-.40*	-.47*	-.16	**.70**					
5. Perceived cost	.57*	.58*	-.06	-.50*	**.71**				
6. Relational repair	-.31	-.36	-.02	.53*	-.39*	**.49**			
7. Value of relationships	.01	-.12	-.10	.64*	-.12	.38*	**.61**		
8. Unfairness	.37	.28	.13	-.30	.43*	-.25	-.04	**.58**	
9. Chronicity	.35	.31	-.18	-.26	.45*	-.37*	-.02	.60*	**.58**

Notes. $N = 54$. * indicates a significant correlation coefficient of at least $p < .05$. Alpha coefficients for variables except implicit attitudes are in bold along the diagonal.

Although I expected hostile affect and cognitions to predict hostile behavior, it may instead be the case that inclusionary condition predicts hostile behavior directly. Indeed, this should be true given results presented earlier in which marginalized groups were found to allocate more sound blasts and hot sauce to included groups than included groups allocated to marginalized groups. These expectations were confirmed by regression

analyses for both the sound blast measure, $R^2 = .14$, $F(1,75) = 11.83$, $p = .001$, and the hot sauce measure, $R^2 = .10$, $F(1,72) = 8.22$, $p < .01$. For individuals, inclusionary condition predicted hostility for the hot sauce measure, $R^2 = .05$, $F(1,97) = 4.97$, $p < .05$, but not for the sound blast measure, $R^2 = .01$, $F(1,96) = 1.07$, $p > .05$. Potential mediating relationships between inclusionary condition, psychological needs, and hostile behavior were examined, but none were observed for either groups or individuals on either measure of hostile behavior suggesting that there is a direct relationship between the inclusionary condition and the hostile actions of individuals and groups.

Discussion

Study 2 provides strong support for many of my hypotheses concerning differences between included and rejected individuals and groups. Of greatest importance, rejected parties were found to exhibit greater hostile affect, cognitions, and behaviors than included parties, and members of marginalized groups exhibited greater hostile cognitions and behaviors (but not affect) than rejected individuals. Significant effects were not detected for all measures, but the overall pattern of these results suggests strong differences between the four conditions examined. Certain elements of the integrative framework that I proposed were supported as well. Group marginalization threatened the psychological needs of affected group members, but generally, these needs did not mediate the relationship between group marginalization and hostile affect and cognitions. Expected patterns of results did not emerge for group identification or implicit attitudes either. These outcomes may be due to measurement issues or it may be that they simply do not contribute to the processes that promote hostile behavior.

GENERAL DISCUSSION

I introduced the apparent link between group marginalization and hostile behavior by summarizing a 2007 terrorist plot organized by just six men (Isikoff, 2007). The FBI foiled this plot and they should be commended for doing so. Yet, my results suggest that incidents like this might be much less likely to occur in the first place if people didn't feel rejected within the societies in which they reside. It is premature to begin constructing interventions based on this work, but targeting components of an integrative and empirically supported framework like the one I developed might allow for the effective reduction of rejection-based aggression. Regardless of whether such interventions are eventually realized, it is exciting to think about the findings presented here and their larger meaning.

Study 1 validated a unique paradigm for studying interpersonal rejection. Although this research was not designed to draw direct comparisons between the modified In Game and similar paradigms, it is interesting to think about the relative benefits and drawbacks of these varied techniques. The most popular paradigms involve ostracism, demarcated rejection, future rejection, and reliving rejection (Gerber & Wheeler, 2009). Arguably, Cyberball is most similar to the modified In Game in that it captures active rejection within an interpersonal situation (Williams & Jarvis, 2006). The other techniques involve different experiences such as reflecting on past rejection or anticipating rejection. Cyberball is also quite popular among researchers studying rejection. Thus, this is where comparisons might best be drawn.

Cyberball is a quicker way to manipulate rejection if expediency is an issue – approximately four minutes as described in Gonsalkorale and Williams (2007) relative to

about twenty minutes for the modified In Game. However, it is also important to consider the relative intensity of the rejection experience accounting for the time it is endured. Like many researchers employing Cyberball, I employed a five point response scale ranging from "not at all" to "very much" to assess levels of psychological needs among rejected individuals playing the modified In Game. Gonsalkorale and Williams (2007) find that those ostracized by ostensibly similar others in Cyberball report psychological scores in the mid-range of this scale. This was also the case in the present research. However, simple calculations reveal larger relative differences between included and rejected persons playing the modified In Game in the present research. Because these studies were not designed as a competitive test between paradigms, it is unclear whether these larger differences resulted from a more intense rejection experience or simply a longer rejection experience. Nonetheless, these differences in psychological needs as well as differences in in ecological validity and other factors are worth considering as research on interpersonal rejection and group marginalization moves forward.

Not only was the modified In Game effective for manipulating interpersonal rejection among individuals in Study 1, but Study 2 revealed its power for studying group marginalization as well. Like rejected individuals, members of marginalized groups playing the modified In Game reported threatened psychological needs as well as hostile affect, cognitions, and behaviors. The modified In Game is clearly an effective paradigm for studying group marginalization and it could potentially serve as a valuable tool for future research examining this phenomenon within laboratory settings.

Study 2 provided a thorough examination of relationships between the components of my integrative framework for understanding hostile reactions to group marginalization

using the modified In Game. Unfortunately, only the basic components of the integrative framework proved valuable in this study. Group identification was not particularly high among members of marginalized groups, nor did it relate to psychological needs in the ways expected. Implicit attitudes favoring aggression did not add utility to the framework either – members of included and rejected groups were approximately equal on this measure. Yet, other parts of the framework proved valuable in this research. Of greatest value, this research confirms that group marginalization promotes hostile affect, cognitions, and behavior. Process measures reveal that psychological needs are threatened by group marginalization and these needs appear to mediate the relationship between group marginalization and certain cognitive outcomes. Links between negative affect and behaviors as well as between hostile cognitions and behaviors were less clear, but nonetheless, independent analyses for these constructs show that they are each impacted by group marginalization.

It is worthwhile to give special attention to ineffectual components of the integrative framework because doing so may lead to improvements in our understanding of links between group marginalization and hostile reactions. Group identification is one construct that did not operate as expected in this research. Using the rejection-identification model (Branscombe et al., 1999) as a theoretical basis, I predicted that marginalization would promote group identification. Initially, I was surprised by the pattern of results showing that included groups exhibited greater levels of group identification than marginalized groups. In hindsight, however, it became clear that members of included groups might also experience enhanced group identification due to positive feelings derived from successfully forming a coalition within a competitive situation (Gastil, 2010).

Therefore, it may still be the case that group marginalization promotes identification with co-actors, but these effects may only be observable when an appropriate comparison condition not involving active inclusion or rejection is available. Relevant to this point, members of marginalized groups were more likely than rejected individuals to perceive alternative relationships to be available during their rejection experience. Although the perception of alternative relationships is not synonymous with group identification, the perception of supportive others highlights the distinctiveness of being rejected among others versus being rejected alone. Future research may allow for greater understanding of these patterns of results.

Also counter to predictions, group identification was not associated with psychological needs. This finding runs contrary to previous research utilizing the rejection-identification model as a theoretical basis (Branscombe et al., 1999). For example, it is known that some of the deleterious effects of racism are offset by identification with and support from other members of one's racial group (Branscombe et al., 1999). Reasons for the discrepancy between previous research and this research likely lie in the nature of groups studied. All group members in this research had or were believed to have had no history of interaction with their partner. Nor did they possess any differentiating characteristics from participants in other groups that might promote identification (e.g., race as studied by Branscombe et al., 1999). Experimenters had asked participants to say one or two interesting things about themselves in hopes of promoting bonds between group members, but otherwise, no pre-existing bond was present. Henry et al. (1999) warned that assessing group identification within ad hoc groups poses difficulty due to the limited exposure members have to one another relative to groups that have more established and

enduring interactions. Although this warning was considered early in the development of this research, it now appears clear that for group identification to have any significant impact, group members must exhibit at least some minimal preexisting bond with one another.

Also contrary to predictions, members of included and rejected groups did not differ in their implicit attitudes favoring aggression. Recall that these attitudes were assessed with a word completion task; participants had completed word fragmentations, many of which could be completed with hostile words (Anderson et al., 2004). It is difficult to determine why this validated implicit measure did not differentiate between rejected and included parties in this research. It may be that participants in the different conditions simply do not differ in their implicit attitudes favoring aggression. Or it may be that some other unknown confounding variable impacted the results. Participants in the Midwestern location in which this study took place may be especially likely to respond with socially desirable answers. For example, participants may have overridden their initial reaction to complete the word fragmentation "k i _ _" with "kill" and instead responded with "kite" or some other more neutral word. This explanation is just speculation, but it seems a worthwhile pursuit to understand this pattern of results because rejected participants did in fact tend to respond with greater hostile affect, cognitions, and behaviors than included participants.

It is also noteworthy that while rejected parties exhibited greater negative affect than included parties, members of marginalized groups did not exhibit greater negative affect than rejected individuals as predicted. Plausible explanations for this pattern of results may be similar to those mentioned above for implicit attitudes. Members of marginalized groups and rejected individuals may simply exhibit similar affective states

and intensities of such states following rejection; or it may be that participants are censoring themselves in their reports of affective states following rejection. Again, these explanations are speculation and future research is needed to understand this pattern of results more fully.

For future research, it would be interesting to consider why groups react with greater behavioral hostility than individuals despite similarities in negative affect and attitudes among these conditions. If members of marginalized groups and rejected individuals are experiencing similar levels of negative affect and attitudes, why would groups be more likely to lash out behaviorally? The answer to this question may lie in understanding general differences between individual and group behavior. Recall my earlier summary of research by Meier et al. (2007) which revealed provoked groups to respond with greater hostility than individuals across a variety of situations. Hostile responses occurring among rejected individuals may or may not be amplified within group settings depending on whether processes such as group polarization are present (Myers & Lamm, 1975). Therefore, different processes and patterns of results may emerge depending on whether affect, cognitions, or behavior are considered. The evidence from Study 2 suggests that it is fully possible for group members and individuals to evaluate sources of rejection similarly and yet for groups to be more likely than individuals to react with hostility upon these negative evaluations (Leary et al., 2006). These notions will most certainly be a fruitful area for future research.

The abovementioned concerns suggest that the integrative framework I proposed may require modification to account for the outcomes of this research. It might be reasonable to eliminate group identification and implicit attitudes. Direct links between

group marginalization and hostile affect, cognitions, and behavior could be incorporated. A link could also be drawn between group marginalization and psychological needs; however, given that this construct did not consistently mediate the relationships between group marginalization and the outcome measures, its addition would not add much to our understanding of hostile reactions to marginalization. A very basic, revised framework accounting for the outcomes in this research is depicted in Figure 7 below. Although developed post-hoc, the results of Study 2 are consistent with this revised framework and therefore, it may serve well as a basic framework for further investigation.

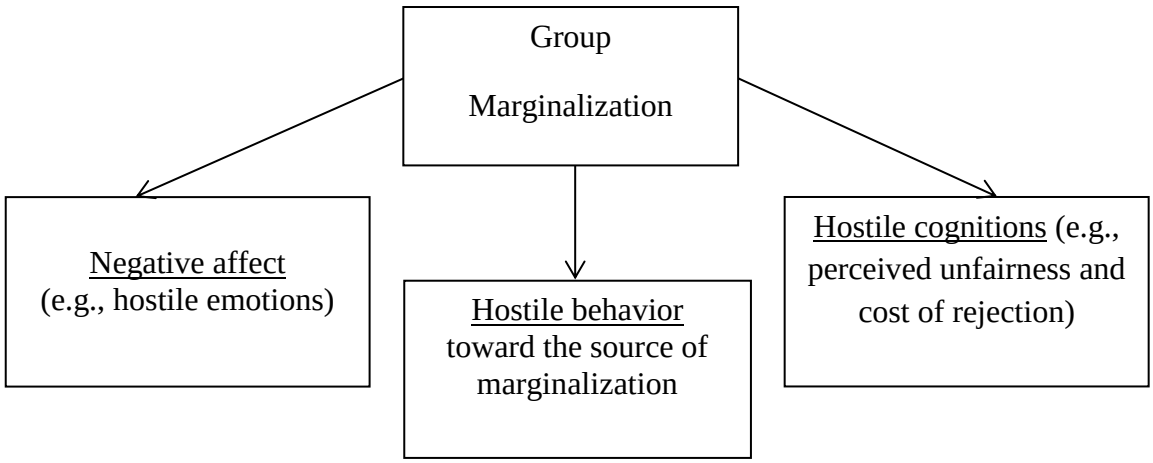

Figure 7. A revised integrative framework for understanding hostile reactions to group marginalization.

If supported, this revised framework would be important for understanding hostile reactions to group marginalization. The original framework as illustrated in Figure 1 suggested that hostile affect and hostile cognitions together would promote hostile behavior. The revised framework, in contrast, conceptualizes hostile affect, cognitions, and

behaviors as independent outcomes. Overall, this framework appears quite simplified relative to the original framework, but as much previous research in the social sciences has demonstrated, sometimes the most parsimonious model provides the best explanation.

Although this revised framework may most accurately reflect reactions to group marginalization, I still encourage researchers to conduct additional research on the framework as it was originally proposed. I included the group identification component largely because it has proven valuable in previous research assessing larger uncontained groups such as those characterized by race (Branscombe et al., 1999). The fact that group identification was not found to impact the psychological needs of group members in this study may be due to a number of factors, such as lack of time for group members to develop cohesion, measurement error, and limited sample size. Certainly, additional studies assessing the impact of group identification within small contained groups would be valuable. Likewise, implicit attitudes to aggress were incorporated into the proposed framework based on research inspired by the dual attitudes model (Wilson et al., 2000). Additional research examining implicit and explicit attitudes among members of marginalized groups would be valuable. It is essential that modifications to the integrative framework I proposed be grounded in empirical research.

Alternatively, researchers may wish to explain reactions to group marginalization through a much broader framework not specific to rejection experiences. In some ways, responses of participants in Study 2 are consistent with components of the general aggression model (DeWall et al., 2011). The general aggression model provides a framework designed to understand aggression stemming from a wider range of precursors than I specified in my integrative framework. DeWall et al. (2011) described how the

general aggression model "incorporates biological, personality development, social processes, basic cognitive processes (e.g., perception, priming), short-term and long-term processes, and decision processes into understanding aggression" (p. 246). Certainly, all these factors might have contributed to aggression among participants in this research. Both my integrative framework and the general aggression model account for affect and cognition. Unlike the general aggression model, however, my framework does not account for factors like biological and environmental modifiers or generalized arousal. It may be worthwhile for researchers to consider the reactions of marginalized groups from the perspective of the general aggression model.

Beyond the question of appropriate frameworks, Study 2 provides insight about important differences between included and rejected individuals and groups. An extensive research literature demonstrates that rejection can promote hostility (e.g., Leary et al., 2006). Therefore, comparisons between included and rejected persons in this research that reveal stark differences in hostility might be expected. More interesting, however, were the interaction effects revealed by this research. Statistical analyses reveal that relative to rejected individuals, members of marginalized groups tended toward exhibiting greater explicit attitudes favoring aggression, developed construals that favored hostility, and engaged in more hostile behavior. It is interesting to find that rejection promotes hostility; it is even more interesting to find that group-based rejection reliably amplifies this hostility.

It is not unusual for media reports to implicate rejection following individual acts of aggression. Such connections have been drawn in high profile cases such as the Fort Hood Shootings and the Virginia Tech massacre (Williams, 2007). The current research suggests that attention might be better directed toward instances in which groups are rejected, and

thus hostility is more likely to result. The Columbine High School shootings provide a popularized example. In the documentary "Columbine: Understanding Why," the A&E channel followed the Threat Assessment Group task force as they investigated precipitating factors behind Eric Harris and Dylan Klebold's deadly 1999 massacre at their Littleton, Colorado high school (Kurtis, 2007). Amid other factors, the task force emphasized how the two students reinforced one another's hostile attitudes toward peers who rejected them. Other violent groups are known for having experienced rejection as well. The ideology and mission of the terrorist group al Qaeda has faced broad criticism and rejection from much of the world, including regions in which the organization resides (Jamjoom, 2010). The gang MS-13 was started by Salvadoran immigrants in Los Angeles who felt threatened by other more established gangs of Mexicans and African Americans (Buckley, 2007). Certainly, the potential consequences of group marginalization deserve at least equal attention to that given to individual rejection.

This research was conducted within a laboratory for the control these settings provide and so that conclusions could be drawn about causality. Yet, the inspiration for this research sprang from natural incidents. Whether in regard to deadly violence committed at the hands of terrorist cells and gangs, less dramatic incidents such as aggression among school cliques or organizational task forces, or simple laboratory groups, the conclusion is the same: group marginalization promotes hostile affect, cognitions, and behaviors. It is my hope that researchers will recognize the value of studying this unappreciated phenomenon, and ultimately, that research on this topic will begin to burgeon.

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APPENDIX A. IN GAME MATERIALS

Rule Cards

Green "Resource" Tokens	**Red "Force" Tokens**
Intermittent event cards specify that any party with fewer than 3 green resource tokens is out of the game. You can trade 1 red force token to the pool for 10 green resource tokens and vice versa.	**Show:** If you have 1 more red force token than another party, you may "show" that party your red force token(s) and receive 2 tokens. The other party chooses which tokens to give. **Use:** If you have 3 or more red force tokens than another party, you may take all of that party's tokens. Give one red token to the pool each time you do this.
Yellow "Obligation" Tokens	**Blue "Legitimacy" Tokens**
You can give your yellow obligation token to any party. You can trade your yellow obligation token to or from any party - both of you settle on the deal. You can only hold one other party's yellow obligation token at a time. If offered a second yellow token, you must either a) reject it, or b) accept it and return the first yellow token you received. You can only take your yellow obligation token back by making a deal with the party who holds it.	On each turn, parties can initiate one additional action for each blue legitimacy token they have, for up to 3 additional actions. If parties aside from a designated party agree, the pool will give him or her a blue legitimacy token or will remove a blue legitimacy token. This must be done on a nominator's turn. If you have no blue legitimacy tokens you can talk only with parties who also have no blue legitimacy tokens. If you have 1 blue legitimacy token you can talk with those who have 1 or zero blue legitimacy tokens. If you have 2 or more blue legitimacy tokens you can talk to any party.
Examples of "Additional Actions" 1. Give tokens to a coalitional partner. 2. Try to make a deal with another party. 3. Show or use red force tokens against another party. 4. Nominate a party to receive a blue legitimacy token or have one removed. Other actions are acceptable so long as they do not violate the rules. You may forgo additional actions if you wish.	

Event Cards

Notes. Event cards include 3 Demo cards and 61 playing cards. Numbers to the left indicate card number (although participant were led to believe they were ordered randomly). Numbers in parentheses indicate party number drawing that card.

Demo 1. Parties with fewer than 3 green tokens are out of the game.
Demo 2. Give 2 green tokens to the pool.
Demo 3. Receive 2 green tokens from the pool.

1. Receive 1 green token from the pool. (1)
2. Receive 2 green tokens from the pool. (2)
3. Give 1 blue token to the pool. (3)
4. Receive 2 green tokens from the pool. (1)
5. Parties with 2 or more blue tokens receive 1 green token from the pool. (2)
6. Receive 2 green tokens from the pool. (3)
7. Parties with no blue tokens must give 1 green token to each party with blue tokens. (1)
8. All parties receive 3 green tokens from the pool. (2)
9. Receive 1 green token from the pool. (3)
10. Receive 5 green tokens from the pool. (1)
11. Choose 1 of any color token from the pool. (2)
12. Receive 2 green tokens from the pool. (3)
13. Elect another party to receive or have removed a blue token. (1)
14. Receive 1 green token from the pool. (2)
15. Receive 2 green tokens from the pool. (3)
16. Elect another party to receive or have removed a blue token. (1)
17. Give 2 green tokens to the pool. (2)
18. Elect another party to receive or have removed a blue token. (3)
19. Any party with fewer than 3 green tokens is out of the game. (1)
20. Choose 1 of any color token from the pool. (2)
21. Give 1 green token to the pool. (3)
22. All parties give 1 green token to the pool. (1)
23. All parties receive 2 green tokens from the pool. (2)
24. Give 1 token of your choice to the pool. (3)
25. All parties give 2 green tokens to the pool. (1)
26. Choose 1 of any color token from the pool. (2)
27. Choose 1 of any color token from the pool. (3)
28. Receive 5 green tokens from the pool. (1)
29. Receive 2 green tokens from the pool. (2)
30. Parties with 2 or more blue tokens receive 2 green tokens from the pool. (3)
31. Choose 1 of any color token from the pool. (1)
32. Receive 1 green token from the pool. (2)
33. Choose 1 token of any color token from the pool. (3)
34. Receive 5 green tokens from the pool. (1)
35. Receive 5 green tokens from the pool. (2)
36. Each party with 2 or more blue tokens, give 1 green token to the pool. (3)

37. All parties receive 5 green tokens from the pool. (1)
38. All parties give 2 green tokens to the pool. (2)
39. Parties with fewer than 3 green tokens are out of the game. (3)
40. Parties with fewer than 3 green tokens are out of the game. (1)
41. Elect another party to receive or have removed a blue token. (2)
42. Receive 5 green tokens from the pool. (3)
43. Take another party's red token. (1)
44. Elect another party to receive or have removed a blue token. (2)
45. Receive 5 green tokens from the pool. (3)
46. Give 3 green tokens to the pool. (1)
47. Parties with fewer than 3 green tokens are out of the game. (2)
48. Parties with blue tokens must give 1 green token to each party with no blue tokens. (3)
49. Parties with 2 or more blue tokens give 2 green tokens to each party with 1 or fewer blue tokens. (1)
50. Receive 2 green tokens from the pool. (2)
51. Parties with fewer than 3 green tokens are out of the game. (3)
52. Parties with fewer than 3 green tokens are out of the game. (1)
53. Receive 3 green tokens from the pool. (2)
54. Give 4 green tokens to the pool. (3)
55. Receive 1 token of your choice from pool. (1)
56. Receive 1 token of your choice from pool. (2)
57. Give 1 token of your choice to the pool. (3)
58. All parties give 3 green tokens to the pool. (1)
59. Parties with fewer than 3 green tokens are out of the game. (2)
60. Give 5 green tokens to the pool (3)
61. Parties with fewer than 3 green tokens are out of the game. (1)

APPENDIX B. DEPENDENT MEASURES

Notes. Dependent measures are ordered below by the construct that they measured. In MediaLab, items assessing need satisfaction, mood states, explicit attitudes, and construals were interspersed for participants to prevent response bias. The Post "In Game" Worksheet and Post-session Questionnaire is condensed here for publication purposes.

Post "In Game" Worksheet

Please respond to the following items. You will only have about three minutes to complete this quick task, so it is acceptable to provide short, bulleted responses rather than complete sentences or paragraphs.

1. Describe any coalition that may have developed during the In Game.
2. What were your feelings about this coalition and the parties involved?
3. Behaviorally, how did you react after this coalition was formed?

Manipulation Check

For each question, please indicate the extent to which you agree or disagree in regard to your experiences during the In Game.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither	Slightly Agree	Agree	Strongly Agree

1. I feel that a coalition developed between another party and myself.
2. I feel that the other parties developed a coalition without me.
3. I feel that my actions were largely responsible for the development of any coalition that may have developed in the game.
4. The game evolved such that it was not possible for me to control whether I was or was not part of a coalition.

Assessment of Need Satisfaction

For each question, please indicate the number that best represents the feelings you were experiencing during the In Game.

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

Belonging

1. I felt "disconnected." (R)

2. I felt rejected. (R)
3. I felt like an outsider. (R)
4. I felt I belonged to the group.
5. I felt the other players interacted with me a lot.

Self-esteem

1. I felt good about myself.
2. My self-esteem was high.
3. I felt liked.
4. I felt insecure. (R)
5. I felt satisfied.

Control

1. I felt powerful.
2. I felt I had control over the course of the game.
3. I felt I had the ability to significantly alter events.
4. I felt I was unable to influence the action of others. (R)
5. I felt the other parties decided everything. (R)

Meaningful existence

1. I felt invisible. (R)
2. I felt meaningless. (R)
3. I felt nonexistent. (R)
4. I felt important.
5. I felt useful.

Assessment of Mood States

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then mark the appropriate answer in the space next to that word.

Indicate <u>to what extent you felt this way during the In Game</u>. Use the following scale to record your answers.

1 very slightly or not at all	2 a little	3 moderately	4 quite a bit	5 extremely
_____good	_____bad	_____friendly	_____unfriendly	
_____angry	_____pleasant	_____happy	_____sad	
_____hostile	_____calm	_____excited	_____inspired	
_____lively	_____powerful	_____irritable	_____distressed	

_____dull	_____active	_____anxious	_____fatigued
_____guilty	_____surprised	_____quiet	_____scared
_____enthusiastic	_____idle	_____ashamed	_____strong
_____sharp	_____alert	_____confident	_____drowsy
_____attentive	_____afraid	_____jittery	_____determined
_____upset	_____inactive	_____weary	_____aroused
_____nervous	_____vigorous	_____energetic	_____still
_____agitated	_____proud	_____sluggish	_____interested

Implicit Attitude Measure

Below is a list of words with letters missing. Your task is to fill in the blanks to complete words. Please attempt to complete as many word fragments as you can, as fast as you can. You will be given just 3 minutes to complete these word fragments, and then you will be asked to begin the next survey.

1 b _ h _ _ _
2 i n _ _ r e
3 e x _ e _ _
4 m u _ _ e r
5 p r _ _ e
6 s p e a _
7 f l i _ _ e r
8 e x p l _ _ e
9 w _ _ m
10 k i _ _
11 t _ p _
12 h _ r _
13 a _ t _ r
14 c h o _ e
15 s _ m p _ _
16 a t t _ c _
17 c _ m p _ _ t
31 b _ e
32 h _ t
33 g _ _ p e
34 s m _ c k
35 s m _ _ e
36 k n _ _ _
37 t _ n e
38 s _ _ b
39 s h _ r _
40 d r _ _ n
41 p _ _ n e
42 a n g _ _
43 f l _ _ t
44 f i _ _ t
45 p _ c k
46 h a _ e
47 a _ t

18 d e s _ _ _ _	48 c _ t
19 s h _ l _	49 w _ n
20 s h o _ t	50 a _ e
21 r _ p _ _ t	51 _ r y
22 s t r _ _ e	52 w a _
23 l _ _ e	53 f _ m _
24 b _ r n	54 s l _ p
25 s t _ r _ o	55 b _ _ k
26 p _ _ s o n	56 r _ p e
27 p _ s t _ r	57 f o _ e _
28 m _ _ g l e	58 o f f _ _ _
29 b l _ n d	59 l _ _ o n
30 s n _ r e	60 c r _ _ l

Explicit Attitude Measure

Please respond to the following questions in regard to your feelings during the In Game. Use the provided scale.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither	Slightly Agree	Agree	Strongly Agree

1. I felt aggressive.
2. I felt like striking out.
3. I felt like attacking someone.
4. I felt like destroying something.
5. I felt angry.
6. I felt hateful.
7. I felt forceful.
8. I felt enraged.
9. I felt like I was going to explode.

Assessment of Construals

Please take a moment to consider your interactions with the other parties as well as the In Game in general. Then respond to the items on the following scale.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither	Slightly Agree	Agree	Strongly Agree

Possibility of Alternative Relationships

1. Some of the players in the In Game acted friendly toward me.
2. I felt completely alone during the In Game. (R)
3. The In Game required me to interact with only unfriendly people. (R)
4. I relied on at least one other player for support during the In Game.

Perceived Cost of Rejection

1. I felt embarrassed by how the In Game progressed.
2. The reactions of the other parties in the In Game bothered me.
3. I am disappointed by interactions I had with some other parties in the In Game.
4. I enjoyed my interactions with other parties in the In Game. (R)

Expectations of Relational Repair

1. I would be pleased with an opportunity to improve my relationship with the winning or losing party of which I was not a part.
2. If given the opportunity, I could repair any conflict in my relationship with the winning or losing party of which I was not a part.
3. Any potential bond between the winning or losing party of which I was not a part and I has been irrevocably broken. (R)
4. I would make an effort to avoid the winning or losing party of which I was not a part if I saw them in the future. (R)

Value of Relationships

1. I do not care about my relationship with the winning or losing party of which I was not a part. (R)
2. I value my relationship with the winning or losing party of which I was not a part.
3. I could see myself forming a friendship with the winning or losing party of which I was not a part.
4. I am not interested in further interactions with the winning or losing party of which I was not a part. (R)

Perceived Unfairness

1. An objective judge who knows the facts would agree that any advantages obtained by the winning or losing party of which I was not a part were unfairly obtained.

2. Anyone would agree that the winning or losing party of which I was not a part did not deserve to succeed in this game.
3. Any advantage obtained over me in the In Game was achieved through undeniably unjust actions or unjust procedures.
4. I played the In Game more fairly than the other players.

Perceptions of Chronicity/Pervasiveness

1. The In Game seemed as if it were never-ending.
2. The other players seemed as if they were "out to get me" right from the beginning of the In Game.
3. Unpleasant characteristics of the In Game were widespread.
4. Unpleasant characteristics of the In Game were long-lasting.

Assessment of Group Identification

This section measures your feelings about your team as a whole. Take a minute or so to think about yourself and your partner. Think about the things you like (and don't like) about your team and how it functions. When you have formed an impression of your team as a whole, you may begin.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither	Slightly Agree	Agree	Strongly Agree

1. I would prefer to have been on a different team.
2. I liked my partner.
3. I enjoyed interacting with my partner.
4. It was not necessary for my partner and I to rely on one another. (R)
5. My partner and I both needed to contribute to achieve our goal.
6. Together, my partner and I accomplished things that we could not alone.
7. My partner and I did not need to cooperate to reach our goals. (R)
8. I identify with my partner.
9. I see myself as different from my partner. (R)

Post-session Questionnaire

Below, would you please respond indicating your reactions to this experiment.

MY PARTICIPATION IN THIS EXPERIMENT

SATISFYING	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**UNSATISFYING**
WORTHLESS	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**VALUABLE**
PLEASANT	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**UNPLEASANT**
BORING	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**INTERESTING**
I LIKED	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**I DISLIKED**
UNFAVORABLE	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**FAVORABLE**
MEANINGFUL	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**MEANINGLESS**
DISTASTEFUL	1 extremely	2 quite	3 slightly	4 equally	5 slightly	6 quite	7 extremely	**ENJOYABLE**

Please use this space to tell us what you think this experiment was about? What was the hypothesis being tested? What was/were the independent variable(s)?

Please use this space to tell us about your overall impression of the game and your experiences with us today.

APPENDIX C. INFORMED CONSENT

Consent to Participate in Research
The In Game

Invitation to Participate. You are invited to participate in a research study about coalitions that is conducted by Verlin B. Hinsz, Ph.D., Professor of Psychology and Kevin R. Betts, M.S., a North Dakota State University graduate student.

Basis for Selection. You have been selected because you are at least 18 years of age, are not allergic or overly sensitive to hot sauce or its ingredients, and you signed up for this experiment with the Department of Psychology SONA Systems experiment website.

Purpose of Study. This study examines the development of coalitions, or groupings of rival entities, within competitive situations. A dynamic interpersonal situation will be arranged in which participants are encouraged to form coalitions with another party. The way in which participants develop and sustain these coalitions as well as the outcomes of these coalitions will then be examined.

Explanation of Procedures. In this experiment, you will compete against two other parties in a game. Success in this game is partially based on your ability to form a coalition with one of these parties. Following the game, you will be asked to complete a number of surveys designed to assess your reactions to the game and demographics. You may also be asked to sample a small amount of hot sauce and sound blasts and to allocate these stimuli to other participants for purposes of assessing sensitivity to unpleasant stimuli. By request, you may view the ingredients of the hot sauce before sampling it. This experiment will be conducted in Minard 134B and should take about 90 minutes. A full debriefing will take place as soon as the experiment is finished.

Potential Risks and Discomforts. The competitive nature of the game and the possibility of sampling unpleasant stimuli may arouse feelings of discomfort for you. Although your reactions to various aspects of this study may be positive or negative, these reactions are likely to be temporary.

Potential Benefits. As a result of your participation, you may learn effective strategies for developing and sustaining coalitions. The results of the experiment will also help us learn about how coalitions are developed and sustained. These results may lead to methods for improving coalition strategies outside of the laboratory.

Alternatives to Participation. Your psychology instructor provides descriptions of alternative ways to earn course or extra credit.

Compensation for Participation. If you are eligible, you will receive one credit point for every fifteen minutes you participate in this study. Participation in studies is just one way to gain research credit and/or extra credit in your courses. See your course syllabus or instructor for descriptions of other ways of gaining research credit and/or extra credit. We

estimate that you will receive approximately 6 points worth of credit (for approximately 90 minutes total time) for your psychology course.

Assurance of Confidentiality. All of your responses in this study will remain confidential. This consent form will be used as the record by which you shall receive course or extra credit, and will be stored in Professor Hinsz's research laboratory. The data and records created by this project are the property of the University and the investigators. As a result of the measures in place for this research, confidentiality of responses is assured.

Voluntary Participation and Withdrawal from the Study. Your participation is voluntary. Your decision whether or not to participate will not affect your present or future relationship with North Dakota State University. If you decide to participate, you are free to withdraw your consent without penalty and to discontinue participation at any time. If you choose to withdraw from the study at any time, you will be compensated with at a rate of one credit per 15 minutes.

Offer to Answer Questions. You should feel free to ask questions now or at any time during the study. If you have questions that arise after this study, you can contact Kevin Betts in the Department of Psychology by visiting his office in 134B14 Minard or emailing him at Kevin.Betts@ndsu.edu. If you have questions about the rights of human research participants, or wish to report a research-related problem or injury, contact the NDSU IRB Office at (701) 231-8908 or ndsu.irb@ndsu.edu.

Consent Statement

By signing this form, you are stating that you have read and understand this form and the research project, and are freely agreeing to be a part of this study. If there are things you do not understand about the study, please ask the researchers before you sign the form. If you wish, you will be given a copy of the entire consent form to keep.

_____ _____
Signature of Participant Date

_____ _____ _____
ID number Class/Section Instructor

Please **PRINT** your name for credit purposes _____

_____ _____ _____
Signature of Principal Investigator Date Signature of Research Assistant

APPENDIX D. EXPERIMENTER INSTRUCTIONS

Experimenter Instructions: The In Game

Before participants arrive:

- Determine whether you are running group or individual condition.
- Turn computers on, prepare MediaLab surveys and sound blasts, and enter appropriate code numbers.
- Place on table in Lab B:
    - Informed consent sheet and writing utensil for every participant.
    - Tokens for pool and event card deck.
    - Sets of colored rule cards, party ID cards, and one of each color token for every party.
- Prepare
    - Hot sauce, sampling spoons, cups of water, saltine crackers, and napkins
    - Headphones and sound blasts
    - Implicit attitude measure sheets (write code no.)
    - Post In Game worksheets (write code no.)

When participants arrive:

- Introduce yourself and ask if participants are here for the "In Game" study. Ensure that participants are on sign up list and seat them in Lab B as party 1, 2, or 3.
- Ask participants to read over and sign the informed consent sheets, and then collect them. **Make sure that participants fill out all necessary fields.**
- Alert participants that you will be reading from a script so that we can ensure consistent rules are followed between sessions.

Begin experiment. All instructions at this point should be read as close to possible from this script. Present instructions at a reasonable pace. If participants have questions, answer them to the best of your ability. If any exceptional problems or difficulties arise, contact Kevin Betts at (616) 826-5658.

Welcome.

Hello, I'm *{name}* and I am the experimenter for the In Game. In this study we will have you play a new game with the other parties so that we can learn how people behave in dynamic situations. All your plays during the game and what you say will be kept confidential. Afterwards you will answer some questions related to the game and your reactions to it. We will be all done with the whole experiment within about an hour and a half, which will be worth 6 points.

Explaining the Game:

The In Game was designed to represent competitive situations common to social life in which some parties are able to obtain scarce rewards and others are left out. Examples of such situations include competition for business contracts or grant money. Because these rewards are limited, not all interested parties can obtain them. The result is direct competition between interested parties, and often the formation of coalitions. *{say coalitions with emphasis}.*

Parties in the In Game are initially granted tokens that represent elements of social life in these situations. Green tokens represent resources such as money, red tokens represent force that might

be exercised to acquire rewards, yellow tokens represent obligations that we hold for others, and blue tokens represent legitimacy such as when lower status individuals pay tribute to higher status individuals. Parties gain or lose these tokens based on actions that are taken during the game. I will be in charge of giving out and receiving tokens from the pool *{gesture to the pool}*. Basically, we play by taking turns, responding to event cards *{gesture to event cards}*, and deciding how to use tokens *{hold up some tokens}*.

Object of the Game:

Because the game represents competitive situations where rewards are limited, the game ends once the first party is eliminated. That is, the outcome of interest is sufficient for two parties, but not three. *{say with emphasis}*. Thus, the object of the game is to stay in the game in any manner possible that does not violate the rules. The game continues until one party is eliminated or the event card deck is exhausted. *{say with emphasis}*. If the event card deck is exhausted before a party is eliminated, I will choose a party to eliminate based on the distribution of tokens among you at that time. As a result, it is in your best interest to form a coalition, or team up, with another party. Working collaboratively with this other party, you can ensure that the both of you remain in the game. In a few minutes I'll explain how your party might go out of the game.

You will take turns in this game, starting with party 1, then 2, then 3, and back to 1 for many rounds. In front of you, there is a party ID card that indicates your party number. Note your party number as well as the numbers of the other parties. *{say with emphasis}*.

When it is your turn, you will act in response to an event card from the deck. The event card will either tell you something you must do with your tokens or give you a choice of what to do. What you can do in this game basically involves what to do with the colored tokens, and what you can do with the other parties.

Each color of token is useful or valuable, but you get each color of token in different ways. For each token, I'm going to tell you why you want it, what you can do with it, and how you can get it. There are rule cards in front of you that explain the purpose of each colored token. Please follow along on these while I tell you about each token. If you are not sure of anything, just ask me at any time.

Green "Resource" Tokens

Have a look at your green "resource" rule card first.

There are special event cards in the deck that require you to have at least three green tokens to remain in the game. *{show demonstration card.}* So, to be safe and stay in the game, you want to have at least 3 green tokens if possible. You can have fewer than 3 as long as that event card doesn't come up. But if it does, you're out of the game.

How do you get green resource tokens? Some event cards say that the pool is going to give you a certain number of green tokens. *{show demonstration card.}* But, there are other event cards that say you must give the pool a certain number of green tokens. *{show demonstration card.}* There are other event cards about green tokens also.

You can also get green tokens from other parties or get them from the pool in a variety of ways. You will see how when I tell you the rules for the other colors of tokens. Besides keeping you in the

game, green tokens have benefits to you because other parties also need them to stay in the game. And if you want to, you can trade 10 green resource tokens to the pool for 1 red force token and vice versa. You can do different things with red force tokens than with green tokens.

Red "Force" Tokens

Now look at your red "force" rule card.

Red force tokens are comparative: If you have 1 more red force token than another party, you can "show" it to that party, and then they must give you 2 tokens of any color. The other party picks the color. *{gesture showing}.* So you keep your red tokens and get 2 of another party's tokens if you "show" red tokens.

If you have 3 more red tokens than another party, you may "use" your red tokens against a particular other party, and then they must give you all of their tokens. That party is not out of the game unless the party doesn't get at least 3 green resource tokens before the event card requiring three green tokens comes up. If you use tokens in this way, you must pay the pool 1 red token each time.

So what you can do with red tokens is show them to get 2 other tokens from another party, or use them to take all of another party's tokens.

You can get red tokens by trading with another party for whatever you both agree on, trading 10 green resource tokens to the pool, using your red force tokens, or asking any party who has your yellow obligation token.

Yellow "Obligation" Tokens

Let's look at the yellow "obligation" rule card now.

You'll notice that the yellow obligation tokens have your own party numbers on them. Giving another party your yellow token indicates willingness to form a coalition, or team up with them. You only have one yellow token, and as a result, you can only team up with one other party. If a party offers you their yellow token when you already have one beside your own, you must choose between a) rejecting this second yellow token or b) accepting this second yellow token and returning the first yellow token you received.

Effective coalitions in this game engage in a variety of strategic behaviors. Examples include ensuring that the party you teamed up with has enough green tokens to remain in the game or enough blue tokens to communicate with you, or perhaps working collaboratively to eject the party who is not part of your coalition from the game.

I will ask you to offer your yellow token to another party on your second turn. Waiting until the second turn will allow you to get a feel for the game first. If the party rejects your offer, you should offer it to the other party. If both parties reject your offer, you will be on your own for the remainder of the game.

Blue "Legitimacy" Tokens

Now look at the blue "legitimacy" rule card.

If you have blue legitimacy tokens on your turn, you can initiate one action for each blue token you have. So if you have 1 blue token you can take one additional action, 2 blue tokens allows you to take 2 additional actions, up to 3 additional actions. Responding to an event card does not count as an action.

Some actions that you might engage in include the following: You could give tokens to a coalitional party, try to make a deal with another party, or show or use red force tokens. And as I'll explain in a moment, you can nominate a party to receive a blue legitimacy token or have one removed. Note the blue rule card in front of you titled, "Examples of 'Additional Actions'" for reminders of these options.

There is one other important rule about blue tokens and it has to do with speaking. *{say speaking with emphasis}*. If you have no blue tokens you can talk only with parties who also have no blue tokens. You can address the experimenter, such as to trade with the pool or ask a question, but you can't "cheat" and tell me something that you really want to tell another party. If you have 1 blue token you can talk with those who have 1 or zero blue tokens. You can respond if spoken to but not initiate a conversation with parties who have more blue tokens than you have. If you have 2 or more blue tokens, you can talk to any party. *{additionally alert partners in dyad condition that they may speak to their partner at any time}.*

You all start with one blue token. You can get more blue tokens if an event card requires that another party elect someone to receive a blue token from the pool and you are elected. Alternatively, you can receive a blue token from the pool if a party nominates you to receive one and the other party agrees. There are also event cards that might give you a blue token.

You can also lose a blue legitimacy token in the same way. You can lose blue tokens if an event card requires that another party elect someone to lose a blue token to the pool and you are elected. Alternatively, you can lose a blue token if a party nominates you to lose one to the pool and the other party agrees. There are also event cards that might require you to give a blue token to the pool.

Are there any questions about the purpose of each color token and how you might obtain them?

{Answer questions}

READY TO PLAY

So, those are all the rules about tokens and they are written on your colored cards if you need a reminder. Feel free to ask me about the rules as well. As we play through the first few event cards you will get a better feel for the game.

Remember, the game ends once the first party is eliminated. Thus, it is in your interest to develop and implement a strategy that keeps you in the game or eliminates another party from the game. Previous participants have found it effective to develop coalitions with one another and you are strongly encouraged to incorporate this tactic into your own strategy. The party with which you team up is up to you, and you will be asked to offer your yellow token to another party on your second turn for this purpose. Waiting until your second turn will allow you to see how the game progresses and which party might best improve your chances of remaining in the game.

Let's begin. We start by Party 1 taking a turn: read the event card out loud and respond. Then if you want, you have 1 blue legitimacy token so you can take another action on your turn. Of course, it is acceptable if you wish to forgo your additional action at this early stage in the game.

Going out:

When a party goes out of the game, say this: *"*OK, you are out of the game. Please come with me." {Escort party 3 to Lab C in a polite but assertive manner – do not apologize or make excuses for them. Then escort party 2 to Lab A and leave party 1 in Lab B}.

For remainder of instructions, be careful to differentiate between statements made to groups and individuals. Begin next task by handing participants the In Game worksheet.

GROUP CONDITION: I would like the two of you to spend the next few minutes discussing and jotting down notes on this worksheet about your experiences during the In Game. In particular, I would like you to think about coalitions that may have developed, how you reacted to these coalitions, and your feelings about these coalitions generally. You will only have about three minutes to complete this quick task, so it is acceptable to provide short, bulleted responses rather than complete sentences or paragraphs. Please keep your writing focused on these topics exclusively and I will be back in about three minutes.

Start timer, resume with "ALL CONDITIONS" after three minutes. Inform group members that they will be working alone on the remaining tasks until otherwise specified.

INDIVIDUAL CONDITION: I would like you to spend the next few minutes thinking about and jotting down notes on this worksheet about your experiences during the In Game. In particular, I would like you to think about coalitions that may have developed, how you reacted to these coalitions, and your feelings about these coalitions generally. You will only have about three minutes to complete this quick task, so it is acceptable to provide short, bulleted responses rather than complete sentences or paragraphs. Please keep your writing focused on these topics exclusively and I will be back in about three minutes.

Start timer, resume with "ALL CONDITIONS" after three minutes.

ALL CONDITIONS: I would now like you to complete another task. {Hand participants implicit attitude measure}. Please follow along with me as I read the instructions. "Below is a list of words with letters missing. Your task is to fill in the blanks to complete words. Please attempt to complete as many word fragments as you can, as fast as you can. You will be given just 3 minutes to complete these word fragments."

Are there any questions about this task before I start the timer?

{Pause}

Your three minutes starts now. Please begin.

Start timer and wait for participants to complete implicit attitude measure.

I would now like you to complete a set of surveys on the computer regarding the game and your reactions to it. Please work alone on these surveys. All of your responses to these surveys are

anonymous and confidential, so please answer accurately and honestly. I will leave the room while you complete these surveys. When you arrive at a screen with a password on it, please flip the laminated sheet of paper in front of you over so that the red side faces up. This alerts me that you are ready to continue. Please enter the password game, "G-A-M-E" to begin.

Wait for participants to complete surveys.

Please flip the laminated sheet of paper over so that the white side faces up.

{Pause}

Instructions from this point forward should be roughly memorized and not read from script.

You have now completed all tasks related to the In Game. There is some time left, so I would like you to complete one more task in exchange for the full credits.

We are interested in collecting unbiased assessments of sensitivity to unpleasant {say with emphasis} tastes and sounds. We are asking some participants to consume and evaluate various amounts of hot sauce as well as listen to and evaluate various intensities and lengths of sound blasts. However, to ensure that our assessments are unbiased, we are asking some of you to allocate these stimuli to other participants.

I see by your code number you were randomly assigned before the session to allocate the stimuli to the other participants.

OK, so for each stimulus, I would like you to first sample it. Then I will ask you to indicate the quantity or intensity you wish to allocate to the other two parties in the session using questions that will appear on the computer. Then later, I will ask you to help me pour the hot sauce into cups and distribute it to the other participants. Also, I will be asking you to help prepare the sound blasts so that they are presented in an unbiased fashion.

Refer to group or individual condition as appropriate.

GROUP CONDITION: I would like you to sample and allocate the hot sauce first. After you have sampled the hot sauce, I want the two of you to reach a consensus about how many of these small "spoonfulls" you wish to allocate to each of the members of the other parties to consume and evaluate.

Provide participants with hot sauce, napkin, sampling spoon, two saltine crackers, and a cup of water. Instruct participants to pour the hot sauce on to the sampling spoon with the napkin underneath and taste it. They do not have to consume the entire spoonfull. Comment on how hot the hot sauce is and mention that most people find it quite unpleasant.

Please enter the password hot, "H-O-T" into the computer to indicate your preferences for allocating this stimulus to the members of each of the other parties. I will leave the room for a few minutes and allow you and your partner to discuss this and indicate your agreed upon hot sauce allocation. Once you are finished, please flip the laminated sheet of paper over so that the red side faces up. This alerts me that you are ready to continue.

Wait for participants to indicate preferences and then continue with sound blast task.

I would like you to sample and allocate the sound blasts next. You should sample the sound blasts alone, and then again work with your partner to decide the length and intensity of sound blasts you prefer to allocate to the members of each of the other parties.

Provide participants with headphones and sound blast stimuli. Comment on how unpleasant these sound blasts are and mention that most people would prefer to avoid them.

Please enter the password loud, "L-O-U-D" into the computer to indicate your preferences for allocating this stimulus to members of each of the other parties. I will leave the room for a few minutes and allow you and your partner to discuss this and indicate your agreed upon sound blast allocation. Once you are finished, please flip the laminated sheet of paper over so that the red side faces up. This alerts me that you are ready to continue.

Continue with ALL CONDITIONS below.

INDIVIDUAL CONDITION: I would like you to sample and allocate the hot sauce first. After you have sampled the hot sauce, I want you to decide how many of these small "spoonfulls" you wish to allocate to each of the other parties to consume and evaluate.

Provide participants with hot sauce, napkin, sampling spoon, two saltine crackers, and a cup of water. Instruct participants to pour the hot sauce on to the sampling spoon with the napkin underneath and taste it. They do not have to consume the entire spoonfull. Comment on how hot the hot sauce is and mention that most people find it quite unpleasant.

Please enter the password hot, "H-O-T" into the computer to indicate your preferences for allocating this stimulus to each of the other participants. I will leave the room for a few minutes and allow you to think about this and indicate your decision. Once you are finished, please flip the laminated sheet of paper over so that the red side faces up. This alerts me that you are ready to continue.

Wait for participants to indicate preferences and then continue with sound blast task.

I would like you to sample and allocate the sound blasts next. You should sample the sound blasts first, and then decide the length and intensity of sound blasts you prefer to allocate to members of each of the other parties.

Provide participants with headphones and sound blast stimuli. Comment on how unpleasant these sound blasts are and mention that most people would prefer to avoid them.

Please enter the password loud, "L-O-U-D" into the computer to indicate your preferences for allocating this stimulus to each of the other participants. I will leave the room for a few minutes and allow you to think about this and indicate your decision. Once you are finished, please flip the laminated sheet of paper over so that the red side faces up. This alerts me that you are ready to continue.

Continue with ALL CONDITIONS below.

ALL CONDITIONS: Now that you have made your decisions, I would like you to complete just one more quick survey on the computer. Once you complete this survey, I will ask you to help me

pour the hot sauce into cups and distribute it to the other participants as well as prepare the sound blast materials. When you arrive at a screen with a password on it, please flip the laminated sheet of paper over so that the red side faces up. I will then return to provide you with more information about the study. Please enter the password blue, "B-L-U-E" to begin.

Wait for participants to finish surveys and then escort them to Lab B for debriefing.

Additional Notes for Experimenters

Ensuring that a coalition develops in the In Game requires that participants understand essential rules involved as well as options and constraints placed upon them. It is the responsibility of the experimenter to ensure that participants understand these features of the game. It is the responsibility of participants to decide how to act given full understanding of these features. Below are a few statements that experimenters should make ***during the game*** to solidify understanding of the In Game among participants. Experimenters can also make other similar statements when appropriate.

1. Third event card reads, "Give one blue token to the pool." Remind party 3 that because they now have fewer blue tokens than parties 1 and 2, they cannot speak unless spoken to. Remind parties 1 and 2 that they can speak to one another to form strategies or anything else they like without interference from party 3.

2. Require parties to offer yellow token to another party before they start their second turn. Alert them that they can only hold one other party's yellow token, so if they are offered a second one, they should either a) reject it, or b) accept it and return the first yellow token they received. Remind them that yellow tokens indicate a willingness to form a coalition or team up with that party to succeed in the game.

Other times reminders should be given:

3. Ensure that parties holding one another's yellow obligatory token work together and encourage them to do so if they are not.

4. If necessary, remind parties that they can take 1 additional action for each blue token they hold. Alert them that while this may not have been necessary earlier in the game, it may make sense to exercise this option now.

5. When one party gains more red force tokens than another, alert them that they can either "show" or "use" it as appropriate.

6. Remind participants that red tokens can be exchanged for green tokens and vice versa if necessary. 10 green tokens = 1 red token.

Because the game is dynamic, it is not always possible to predict what will happen. However, you should remain vigilant for instances in which reminders about essential rules are necessary. Be adaptive!

APPENDIX E. DEBRIEFING GUIDE

Please use this detailed debriefing form as a guide. The debriefing session is intended to be informal. Use your own words.

1) **Explain that the experiment is over and that you would now like to discuss the purpose and details of the experiment.**

2) **Ask participants what they think the study is about and what they think the hypotheses are.**

3) **Explain the hypothesis and make mention of the independent and dependent variables.**
    a. This study was designed to investigate whether involvement in a group impacts reactions to being included or left out of a coalition.
    b. Some of the hypotheses are as follows:
        i. Being left out of a coalition will promote more hostile attitudes, cognitions, and behaviors than being included
        ii. Group members excluded from coalition will exhibit more hostile attitudes, cognitions, and behaviors than similarly treated individuals
    c. Our independent variables are:
        i. Group versus individual
        ii. Exclusion versus inclusion in the coalition
    d. Our dependent variables are:
        i. Attitudes (implicit and explicit measures)
        ii. Cognitions (perceptions about the game and other players)
        iii. Behaviors (hot sauce and sound blasts)

4) **Explain use of deception**
    a. Alert participants that during the In Game, some participants started the game with a partner (group condition) and other participants started the game alone (individual condition)
    b. Remind participants that the game was set up in a way that led to one party being excluded and the others included, and alert them that any inclusion or exclusion that resulted had more to do with the nature of the game than the characteristics of the participants
    c. Explain that all participants, not just them, were asked to allocate unpleasant stimuli to all other participants
        i. Remind participants that we said allocating stimuli was an unrelated task, and explain that it was actually a measure of aggression
        ii. Explain that if participants were informed of the true purpose of this task, they might modify their behavior in a prosocial way

5) **Note how the task performed is relevant to real life experiences.**
    a. Base this discussion off of the task performed and our hypotheses:
        i. For example: hypothesis 2 states that, "Group members excluded from coalition will exhibit more hostile attitudes, cognitions, and behaviors than similarly treated individuals."
            1. There are a number of real life situations in which groups are excluded and may react with hostile attitudes, cognitions, and

behaviors (e.g., think of the Columbine shootings, how terrorist cells and gangs might develop)

ii. Experimenter can use other hypotheses to formulate other examples. Make sure examples are relevant to the tasks performed.

6) End debriefing by discussing the importance of <u>not disclosing the vital parts of this experiment.</u>

a. Participants will likely mention some parts of this study to friends and classmates that may participate in a later experiment.
b. Mention that to reduce error variance within this particular study, we are asking that participants do not disclose the <u>exclusion versus inclusion manipulation</u> or the <u>group versus individual manipulation.</u>

If any participants seem particularly upset after the debriefing session, bring them directly to me (Kevin) in Minard 134B12. If I am not in my office, call me immediately at (confidential phone number) and request that they wait for me in the lab.