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Mobilizing Collective Identity: Frames & Rational Individuals

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ABSTRACT

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by

Christy Annie Aroopala

Who wins and loses in politics often depends on the relative strengths of competing groups. To increase their strengths and prevalence, groups often engage in mobilization efforts. How and when these attempts work is the topic of my dissertation. I take a micro approach by exploring the specific ways that varying rhetorical strategies enhance the likelihood of successful mobilization. Specifically, I combine rational choice and psychological theories to generate hypotheses concerning the role of thresholds (rules that determine how far the group is from its goal), the stakes involved in the decision, and source credibility in moderating the success of frames in increasing group participation. I then test these predictions in a series of three experiments -- a voting game laboratory experiment, a mobilization survey-experiment, and a public goods laboratory experiment. I find evidence that group-based mobilization is most successful when moderators reinforce the mobilization messages, suggesting that identity-based politics have a greater underlying rational (i.e., instrumental) component than previously thought. The findings of this project have significant implications for the role of mobilization and identity in politics.

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I dedicate this dissertation to my family: my parents, Very Rev. Gheevarghis Aroopala Cor-Episcopa and Molly Aroopala, and my sister, Amy Aroopala Thomas, without whom I would never have managed anything.

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CHAPTER 1: Introduction

Who wins and loses in politics often depends on the relative strengths of various groups. This is evident in competition between coalitions of voters, policy coalitions, interest groups, and parties (Riker 1962; Truman 1951; Downs 1957). To increase their strengths and prevalence, groups often engage in mobilization efforts. Mobilization induces individuals to identify with and act on behalf of a given group and often involves the targeting of individuals' identities, such as gender, race, or class. Social movements, like the civil rights movement and the women's liberation movement of the 1960s and 1970s, illustrate the large role that group mobilization plays in politics. The goal of group mobilization then is to induce citizens to take action for these identity-based groups.

Many have studied mobilization and isolated critical determinants of success, including identification with the group, rational calculations, and rhetorical efforts. However how and when mobilization works remains contested. The gap in our understanding of group-based mobilization stems from a divide in the field between rational models of behavior and group-based models of behavior (Elster 1989). Group-based models rely on psychological explanations of attachment to group and overlook individual agency in choosing to take costly action for the group in some circumstances while abstaining in other situations, whereas rational models render group-based behavior "irrational" and thus do not seek to explain such behavior. Accordingly, the predictive aspect of rational models of behavior is absent from group-based models of behavior, and

we are left with the unsatisfactory outcome that behavior based on group identity is outside the realm of what social science theory can explain or predict¹.

In this dissertation I bring together disparate literatures to put forth a theory that pinpoints conditions under which mobilization will be more or less successful. By pulling together insights from the different literatures on group-based models, the rational choice model, and framing effects, this dissertation provides a theoretical model that accounts for the dual roles of group identity and rationality in individual decision-making, which have previously been studied in isolation from one another. This theoretical model yields testable predictions which I test with a set of experimental studies. In the rest of this chapter, I explore how and when mobilization works by merging three schools of thought: work on group identity, collective action, and framing. I then review my theory and hypotheses before providing an overview of the three chapters in this dissertation and concluding with a discussion of the dissertation's central contributions and broader impacts. The three chapters are presented as distinct papers and thus there is some overlap in the theory and literature review presented in each chapter.

I. Explaining Group Mobilization

In this section, I discuss three of the major literatures on when mobilization works, identifying gaps in each. This serves as a basis for my theory which integrates parts of these theories.

¹ For exceptions, see Chong (2000) and Chai (2001) for rational explanations of the origins and maintenance of group identity, which is very different from the focus here on mobilization influences on moderate identifiers.

A. Group-Based Models

Group identity plays a clear role in group-based mobilization. Essentially, individuals who feel close to their ingroup are more likely to engage in costly behavior on behalf of their ingroup. For example, if individuals are attached to their neighborhood identity, they are then more likely to participate in time-consuming and costly events that will help improve the neighborhood. Psychological explanations for the source of this ingroup bias vary.²

However, most of the work in this area neglects to incorporate the influence of group mobilization or the content of such mobilization due to the underlying assumption that group membership alone mandates a strong attachment to group. In other words, variance in group identity strength is overlooked in addition to any factors, such as mobilization, that may influence the strength of group identity.

For example, scholars have looked at whether ingroup bias leads to increased support for same-race candidates or racial issues, and group-based mobilization is often assumed. In other words, ingroup bias alone, rather than campaign effects, is predicted to drive turnout and participation. Accordingly, while the general expectation is that voters of a particular race are expected to be more likely to support candidates of the same race (Canon 1999, Bullock & Campbell 1984; Hero 1992, Lublin 1997, Terkildsen 1993, McDermott 1998, Barreto et al. 2005; Henig 1993; Graves 2000) the mobilization efforts that these voters receive in order to *induce a heightened sense of racial group identity*, over other influences on the vote, are not explored. As such, accounting for mobilization may help explain some of the mixed findings in this research area.

²See Hutchings & Valentino (2004); Segura (2006) for excellent reviews. These explanations include Social Identity Theory (Tajfel & Turner 1984), Empowerment theory (Bobo & Gilliam 1990), norms (Elster 1989) and early childhood socialization (Shapiro 2004)

As Huddy (2003), and much of the work using thermometer measures of feelings of closeness to group reveal (Conover 1984), group identity varies in strength.

Accordingly, it is important to incorporate the effect of differences in group identity strength as well as to assess the effect of campaign strategies that target groups to induce a heightened sense of group identity or a constructed group identity.

There are two areas of literature that do account for variances in group identity strength and support the notion that mobilization efforts can directly influence group-based behavior. First, according to the mobilization model of participation, mobilization is most effective with individuals with moderate or ambivalent feelings (Rosenstone & Hansen 1993; Zaller 1992; Huckfeldt & Sprague 1992). As such, it makes sense to generate different predictions for different strengths of identity (i.e. weak, moderate, strong), with the understanding that moderate-strength identifiers will be most likely to respond to mobilization attempts.

Second, the ethnic conflict literature on identity also supports the notion that mobilization can influence group identity strength and behavior. In the instrumental and constructivist approaches to identity, individuals are more likely to take action based on group identity when they perceive benefits associated with the identity and when they receive targeted mobilization from elites geared towards enhancing group-based feelings and behavior for political gain (Green & Seher 2003; Chai 2003; Brass 2003).³

Combining the mobilization model and the ethnic conflict identity literature help account for the observed variance in strength of group identity (Huddy 2003) as well as

³ Accordingly, we can account for mobilization of pre-existing identities, such as race/ethnicity, as well as those identities created by social movements, parties, or issue publics that are based on the generation of feelings of common beliefs or values with other group members (Klandermans 2003; Polletta 2006; Snow & Benford 1988).

for mobilization influences on identity strength and behavior. Doing so allows an investigation of how mobilization persuades individuals with moderate levels of group identity to take costly action for the group and still allows a large role for individual agency in choosing whether to act on group identity. Accordingly, this project focuses on moderate-level group identifiers. However, I also explore how weak and strong identities respond to similar factors since these factors might still have an effect on weak and strong identities.

However, since these approaches do not offer explanations of how or when group-based mobilization strategies succeed in increasing participation, below I consider how features of the rational choice approach and the framing effects literature can fill in this gap.

B. Rational Models

In contrast to group-based explanations that claim that individuals will naturally take action in their collective interest, rational choice theory suggests that individuals have an incentive to refrain from contributing, even if they stand to benefit from the collective good. The collective action problem finds that individuals have no incentive to contribute because they can free ride and enjoy benefits without contributing (Olson 1965). Since the cost/benefit analysis of cooperation must be at the individual level rather than the group level, acting on behalf of group interests is inherently irrational, and what is good for the group is not good for the individual (Chong 2000). This tension between individual and group interests has led to the conclusion that these two approaches are irreconcilable, leaving predictions for successful group-based mobilization and an understanding of the strategies involved unexplained.

Group-based approaches to the rational choice model of turnout do not overcome these weaknesses. Morton (1987) and Uhlaner (1989) argue that group leaders may increase the costs of not voting for group members as well as promise benefits to members that do vote. A *follow-the-leader* model by Shachar & Nalebuff (1999) argues that in close elections or elections with high stakes, leaders increase mobilization efforts, which increases turnout. A second category of group-based models focuses on either group coordination on who should and should not vote, known as the *ethical voter* approach (Coate & Conlin 2004; Feddersen & Sandroni 2002), or on altruism and individual utility functions that incorporate group members' interests (Fowler & Kam 2007; Edlin et al. 2007).

These group-based approaches, however, fail to predict the success of mobilization and to identify successful mobilization strategies. Namely, the leader approaches fail to explain how leaders successfully mobilize group members, and the group-based approaches overlook mobilization effects and fail to predict which individuals will and will not gain utility from the group. Therefore, they can explain the behavior of only strong identifiers and cannot explain moderate identifiers, who are known to be most susceptible to mobilization attempts and to call elections (Rosenstone & Hansen 1993; Huckfeldt & Sprague 1992).

However, scholars working in the general rational choice framework highlight concepts useful for generating predictions, and these concepts may be useful in predicting the success of group-based mobilization as well. Namely, self-interest in the form of stakes is expected to increase support for policies (Chong 2001) and participation in public goods games (Ledyard, 1995). Further, nearness to a threshold induces a feeling

of being pivotal, which increases participation (Klandermans 2003; Levine & Palfrey 2007; Suleiman & Rapaport 1992). I discuss these concepts in greater detail below. The remaining gap in understanding group-based mobilization, once these rational considerations are accounted for, concerns how and why it works (i.e. the content of messages in frames).

C. Framing Effects Literature

Frames are interpretations of events or issues that are provided to individuals that then affects their opinion on the issue (Chong & Druckman 2007a; 2007b; 2007c). Framing theory elaborates on how framing effects occur (Chong & Druckman 2007a). When individuals are asked their opinion on a survey, their response reflects the fact that they have drawn on information that is easily accessible, including the frames to which they were recently exposed (Zaller 1992). Frames, then, come to influence attitudes by affecting the relative salience given to attributes of the object of the frame.

Many areas of research suggest that frames that target group identity can mobilize supporters to take action. Social movement research gives a large role to frames in group mobilization (Gamson 1992; Polletta and Ho 2006; Klandermans 2003; Snow and Benford 1988; McCarthy and Zald 1996), and recent exciting work using field experiments directly tests the effects of targeted mobilization on participation based on group identity (Trivedi 2005; Ramirez 2005; Wong 2005; Michelson 2005) or partisanship (Nickerson 2005; McNulty 2005; Cardy 2005). These works complement the research on the effects of group-targeted frames on public opinion towards group-oriented policies (Kravitz and Platonina 1993; Kinder and Sanders 1996; Nelson and Kinder 1996; Jacoby 2000; Transue 2007).

With group-targeted frames, the expectation, based primarily on Social Identity Theory (Tajfel & Turner 1979), is that salience of group identity heightens ingroup bias and induces increased support for group-targeted policies (Transue 2007). In this view, the frame makes group identity more easily accessible to the individual, greater salience and weight are given to the attribute of the frame specifying the ingroup as the recipient of benefits, which then results in a shift in opinion or decision choice.

As such, this work on group-targeted frames provides the causal mechanisms for how group frames work, which is what is missing from the group identity literature reviewed earlier. However, the framing literature still cannot address when group frames are most likely to be successful in mobilizing people. For example, mixed findings on the success of group-targeted frames in increasing support of in-group members for group beneficial policies suggests that a more nuanced explanation of frame effectiveness is warranted.⁴

In other words, a critical weakness in this literature on group-targeted frames is the failure to properly specify when these group identities matter and when they do not. The expectation, derived from Social Identity Theory, that group frames will work simply because they make identity salient is based on the weak assumption that identities do not vary in strength. However, as we know from the standard thermometer questions in the

⁴ There have been several positive findings of a relationship between group identity and responsiveness to frames (Jacoby 2000; Iyengar 1991; Nelson & Kinder 1996) as well as some negative findings. For example, in their discussion of race-targeted frames in *Divided By Color*, Kinder & Sanders (1996) fail to find a relationship between Hispanic group membership and attitudes towards affirmative action for African-Americans and other minorities. Similarly, Erbring et al (1980) fail to find support for the hypothesis that in-groups are more responsive to group-targeted frames. While some scholars, such as Iyengar (1991), contend that the potential problem in this area concerns failing to properly specify the target group in the frame, these mixed findings actually seem to be symptomatic of a larger problem in this literature relating to the conceptualization of group identity as fixed rather than fluid and variant dependent upon other factors.

NES (Conover 1984) and identity scholars such as Huddy (2003), group identity does vary in strength. Not all members of a group have an automatically strong sense of group identity that comes purely from group membership. Therefore, if a weak group identity is made salient for an individual by a group-frame, is it reasonable to expect an equivalent framing effect when an individual with a strong identity receives a frame? It seems unlikely and highlights the need for a more nuanced understanding of identity as it relates to politics.

As such, while these research areas help establish that frames that target group identity serve to reinforce collective identity which then has the *potential* to affect public opinion and/or group behavior, they do not provide causal explanations for *why* or *how* this potential for group mobilization is actually met.⁵ In other words, there is little work that provides empirically testable hypotheses for *when* we can expect a group-targeted frame to successfully mobilize groups. To generate such predictions, I draw on instrumental factors from the rational choice approach and account for differences in identity strength. I detail this theoretical model next.

II. Theory & Hypotheses

The central argument in this dissertation is that in light of observed variances in group identity strength (Huddy 2003), focusing attention on the behavior of individuals with identities of different strength is important. Further, combining this group-based approach with the rational choice model of behavior yields predictions for when group-

⁵ The social movement literature does provide important concepts for understanding mobilization, such as preconditions to framing movements in the form of political opportunity structures (Diani 1996; Polletta and Ho 2006; McCarthy and Zald 1996). However, the theoretical causal mechanisms have yet to be fully explored or empirically tested.

based mobilization is likely to be successful. Work on framing effects suggests that an underlying rationality determines whether individuals with *moderate* predispositions will accept or reject frames (i.e. interpretations of events that, when presented to individuals, changes their opinion or behavior). In particular, the work on moderators or limits to frames suggests that particular factors help us *predict* whether individuals will accept or reject frames (Druckman 2001a). As such, a consideration of mobilization *in the form of group-targeted frames and potential moderators* may help us predict whether individuals with identities of different strengths will accept or reject these mobilization efforts.

This project does not seek to explain the origins of group identity, which is likely the product of group norms and other psychological processes, but instead focuses on *what factors make group identifiers susceptible to group-based mobilization attempts*. Given that frames have been shown to be most effective on moderate-strength identifiers, I draw on both the framing effects literature and the rational choice model to generate a theoretical model that provides testable predictions and accounts for the dual role of group identity and rationality in successful group mobilization. Specifically, in addition to using the literature on group frames, I also draw on the rational choice model to derive instrumental factors that have been shown to affect behavior and, as such, are likely to moderate behavioral response to group frames. I also explore how these instrumental factors affect individuals with strong identities. Overall, I argue that successful group-based mobilization efforts consists of group frames that are reinforced by the moderators of *thresholds, the stakes involved, credible sources, and the interactions between these moderators*.

A. Moderators of Framing Effects

Successful group mobilization requires identification with the group and a willingness to take action on behalf of the group. The argument put forward here is that testable hypotheses concerning the effectiveness of group mobilization can be derived by drawing on the work on *moderators, or factors that limit framing effects*. The work on moderators of framing effects stems from the understanding that frames often fail. As Druckman (2001b) argues, frames are not the powerful and persuasive tools that can be freely used by elites to manipulate the public according to whim. Rather, the minimal effects hypothesis largely holds. However, we can isolate the specific cases in which we can expect individuals to respond to frames. There are known differences in terms of respondents' level of education, political knowledge/awareness, and predispositions that correspond with differences in when frames work, however this work has focused on public opinion, not behavior. These moderators imply an inherent underlying *rationality in responses to frames* and help us generate predictions for when individuals are likely to respond to frames.

In this dissertation, my central focus is on the role of additional moderators that might help increase *behavioral* responses to frames, meaning shifting costly decision choices in response to a frame. Much of the work on framing effects has primarily focused on *public opinion* rather than *behavior*. Since the focus of this project is on group-based mobilization and increasing group-based behavior in response to group-targeted frames, it is reasonable to use the rational choice participation model as the basis for individual motivation when trying to understand when group-targeted mobilization attempts work best.

If we return to the assumption that a rational individual makes decisions on the basis of maximizing utility, then it is reasonable that successful mobilization attempts are the result of individuals taking action under the perception that they are acting in their best interests. In particular, I argue that external reinforcement for messages in the frame, in the form of (nearness to thresholds that induce pivotality or higher stakes decisions, can increase framing effects. I discuss each of these instrumental moderators of framing effects in turn.

B. Threshold Effects as a Moderator

In this dissertation, I focus on *threshold effects*, as an unexplored potential moderator of behavioral responses to frames. In keeping with previous literature, I expect that being near a threshold will increase participation relative to being far from a threshold. The concept of threshold effects comes from a variety of different literatures related to participation. Experimental economics literature reveals the significant role of threshold effects in voting game experiments where individuals in groups of equal size participate more than those in groups of unequal size (Levine and Palfrey 2007). Further, in threshold public goods games, Suleiman & Rapoport (1992) find that individuals are more likely to contribute to a public good with a lower, more easily overcome threshold relative to a larger threshold.

Similar findings exist outside the experimental laboratory. Hajnal (2007) in his study of turnout in mayoral races finds that individuals in a context of parity, meaning their group size makes up 45-55% of the city, are more likely to turnout to vote. Additionally, Klandermans (2003) discusses the impact of thresholds on turnout at rallies and other social movements, such as the greater ease in recruiting volunteers when the

last of fifteen volunteers are needed versus the first of fifteen volunteers are needed. A similar concept is invoked in the 'close turnout' mobilization message used in field experiments by Gerber & Green (2000) which increase participation due to voter feelings of being pivotal.

The underlying logic of this threshold effects concept is that individuals are more likely to participate if they feel pivotal in that their contribution/ participation matters to the final outcome. Accordingly, I expect that parity of group size (nearness to a threshold under plurality rule) should increase the likelihood of engaging in costly behavior on behalf of the group (*H1*) (*H1 in Ch.2*).

The main hypothesis of interest in this project concerns whether the effect of a group-targeted frame is increased when individuals are near a threshold. As noted above, group-targeted frames increase group members' willingness to engage in costly behavior on behalf of their group (Nelson and Kinder 1996; Jacoby 2000; Iyengar 1991), and moderators have the potential to limit these framing effects on some individuals and enhance them in other individuals. As such, while there may or may not be an overall main effect for the frame, I expect a positive increase in participation in response to the frame when we account for the effect of moderators. Specifically, I expect a greater response to group-targeted frames (i.e. greater turnout) in cases in which groups are approaching a threshold (*H2*) (*H2 in Ch.2*). This hypothesis is in keeping with the underlying rationality in responses to frames, which are captured in the work on moderators of framing effects (Druckman 2001b). The frame should have a greater effect on participation when it is in keeping with the individuals' perception of their

interests. The literature on thresholds indicates that nearness to thresholds increases the feeling of being pivotal, which increases an individual's willingness to take costly action.

The discussion so far has applied to moderate-strength identifiers, who are most likely to be susceptible to mobilization attempts and frames (Rosenstone & Hansen 1993; Huckfeldt & Sprague 1992). However, as discussed earlier, individuals vary with regard to the strength of their identity. So how do strong-identifiers and weak-identifiers respond to group frames and thresholds? With regard to strong-identifiers, there is some theoretical guidance on expectations regarding responses to thresholds. In the voting game study by Levine & Palfrey (2007), they find an 'underdog effect' in which candidates perceived to be less popular actually receive more votes than candidates perceived to be more popular.

In keeping with this logic, a large literature in social psychology on the effects of group size on ingroup bias indicates that being in the minority leads to increased ingroup bias (Bettencourt et al. 1997; Brewer et al. 1993; Leonardelli & Brewer 2001; Sachdev & Bourhis 1984; 1991; Bettencourt et al. 1996; Mullen et al. 1992; Gerard & Hoyt 1974). Therefore, there is clear evidence of a relationship between minority status and strong ingroup identification. According to Levine & Palfrey (2007), individuals feel their group is unpopular when their group is in the minority relative to another group in the majority, and this feeling triggers the underdog effect. If individuals in a minority context are more likely to feel ingroup bias, we can expect that a group frame given in a minority context will only increase ingroup bias, particularly among strong-identifiers. Accordingly, individuals with strong group identity are more likely to respond to a frame by participating when in the minority than when in parity or majority (*H3*) (*H1 in Ch.3*).

In other words, being in the minority makes strong-identifiers feel they are the underdogs and increases their participation.

With regard to weak-identifiers' response to frames and thresholds, there is much less theoretical guidance for expectations. It is likely that weak-identifiers will not respond to frames or thresholds at all. It is equally likely that individuals will participate when they are clearly over the threshold due to a bandwagon effect in which individuals have the confidence to participate because a majority of other group members are (Simon 1954; Straffin 1977; Henshel & Johnston 1987; Marsh 1985). These competing hypotheses are explored in Chapter 2.

Taken together, these findings suggest that thresholds are a moderator of framing effects. Specifically, by varying the threshold and the frame, we will be able to see how individuals with identities of different strengths respond to different threshold contexts and to different frames.

C. Stakes of the Decision as a Moderator

Previous literature shows that the *stakes of the decision* can influence policy preferences, with higher support for policies coming from individuals who perceive greater benefits from the policy (Chong 2001). For example, there is evidence that parents with school-aged children have greater support for school funding proposals relative to adults without school-aged children (Rosenstone & Hansen 1993; Jennings 1979). Again, the underlying notion here is that individual self-interest is at work when individuals have policy preferences based on the perception of greater benefits.

There is also evidence of behavioral responses to stakes in the experimental economics literature. Shifts in the stakes of the participation decision (how beneficial it

is to participate) or MPCR (marginal per capita rate of return) cause shifts in behavior, with higher stakes leading to higher participation rates than lower stakes (Ledyard 1995). Accordingly, I expect that high stakes decisions should increase the likelihood of engaging in costly behavior on behalf of the group (**H4**) (*H1 in Ch.4*).

Given the evidence that higher stakes leads to greater participation rates, it is reasonable to consider whether the stakes of the decision are an important moderator of group-based mobilization strategies. Specifically, given that the stakes of the decision have an impact on behavior, it is reasonable to expect that group-based behavior in response to mobilization strategies will also likely be affected by stakes. In terms of framing effects, I expect that higher stakes decisions will increase the effect of a frame (**H5**) (*H2 in Ch.3*).

D. Source Effects as a Moderator

This dissertation also explores how a well-documented moderator of framing effects, source credibility (Druckman 2001a), interacts with the instrumental moderator of behavior, stakes of the decision. A significant amount of literature has sought to address the extent to which the credibility of the source affects message reception by the public. Page & Shapiro (1987) find that news anchormen and popular presidents are trusted the most by the public and that they have the greatest ability to sway public opinion. Other scholars have also emphasized the key role played by the source of the message in structuring public opinion (Zaller 1992; Druckman 2001a; Druckman & Lupia 2000; Graber 2004; Mondak 1993a; 1993b). Specifically, source 'cues' are extremely significant in influencing how the message is perceived and in opinion direction (Mondak 1993a; 1993b). Cognitively-limited individuals use heuristic short-

cuts to process information and make decisions. Source cues are utilized as a means of determining whether a given message is in keeping with the values and preferences of the individual.

In terms of source credibility and framing effects, Druckman (2001a) builds off of Lupia & McCubbins' (1998) criteria of expertise and trustworthiness in credible sources to find that credible sources are more likely to influence subsequent opinion of subjects. Of particular interest to this project, the work on *same-group source credibility* shows that group sources are more credible to group members than non-group sources (Kuklinski & Hurley 1994).

There are many reasons why we might expect same-group sources to be perceived as highly credible as a function of their ingroup bias. Previous research shows that the *perceived in-group bias of same-group candidates* affects voting choices and evaluation of candidate positions by both in-group and out-group members (Conover & Feldman 1989; McDermott 1998; Terkildesen 1993; Sigelman et al. 1995; Reeves 1997; Citrin et al. 1990; Hutchings & Valentino 2004). Further, a key argument for descriptive representation is that candidates of the same racial group know what it is like to be a group member, and therefore share common interests with the group (Canon 1999; Lublin 1997). As such, sources who share group membership with voters are perceived as having in-group bias themselves that affects their choices, including their message choices, by causing them to promote group interests.

In keeping with this approach, some scholars have studied how messages from group sources are interpreted by in-group and out-group members. In their influential article, Kuklinski & Hurley (1994) conduct an experiment in which subjects are asked to

rate the credibility of various sources of information: Anglo Liberal Ted Kennedy, African-American Liberal Jesse Jackson, Anglo Conservative George Bush, and African-American Conservative Clarence Thomas. The African-Americans in the study were more willing to validate information given by African-American elites than that given by Anglo elites. More recently, Nelson et al (2007) show that respondents use racial cues of the source in assessing the validity of the source's claims of racism in describing the event of a police shooting as racist.⁶

However, it is still not clear what circumstances make group sources more or less likely to be influential. For example, Nelson et al. (2007) demonstrate that same-group sources are not always influential in that partisan cues also moderate the influence of same-group sources. Further, Sears & Whitney (1973) and McGuire (1973) discuss circumstances in which sources with clear bias, such as ingroup bias, may actually be perceived as highly non-credible as a function of their bias. In other words, individuals are often more likely to discount the messages from sources with clear interests relative to sources that appear neutral and/or disinterested in the outcome. Given these contrasting approaches to the credibility of group sources, we are then left with the question, when can we expect group sources to successfully mobilize group behavior and when can we expect them to fail? In this project, I draw on both contrasting theoretical approaches to generate predictions for when we can expect a group source to be non-credible and when we can expect them to be equally credible relative to a neutral source.

⁶ The work on source credibility reviewed here focuses on public opinion. But support for the effects of source credibility on behavior comes from recent work by Boudreau (forthcoming) which investigates the effect of source credibility on individual behavior but not group behavior. In terms of group-based behavior and source credibility, work in experimental economics shows that cheap talk between leaders and group members increases coordination (Wilson & Rhodes 1997) and that high status individuals can affect coordination (Bala & Goyal 1998). Taken together, this work suggests that source credibility likely affects group-based behavior.

I argue that instrumental moderators of framing effects can help us answer this question by allowing us to test how rationality interacts with framing effects and source effects. Specifically, I expect that group sources that give a message encouraging group members to participate are less likely to be successful in increasing participation in a context when there is the perception that group participation and self-interest are in conflict. In this view, in low stakes decisions in which individuals' self-interest will make them uninterested to participate, group sources will not successfully mobilize participation (*H6*) (*H2a & H2b in Ch.4*). In other words, encouraging participation when stakes are low undermines credibility.

As such, by pulling together insights from the different literatures on group-based models, the rational choice model, and framing effects, this dissertation provides a theoretical model that accounts for the dual roles of group identity and rationality in individual decision-making, which have previously been studied in isolation from one another. By accounting for the effects of both group identity and rationality, this dissertation contributes to previous literature by providing a theoretical model that yields testable predictions of successful mobilization and provides a fuller account of the causal mechanisms associated with participation decisions. Below I provide an overview of the three chapters in this dissertation before concluding with a discussion of the dissertation's central contributions and broader impacts.

III. Overview of Research Design

In the three empirical chapters of this dissertation, I assess the impact of group-based mobilization on participation and policy preferences based on common group

identity. First, with a voting game experiment, I reinforce previous findings that being near a threshold increases participation (H1) (H1 in Ch. 2). Further, I establish that group identity construction for moderate-strength identifiers is more likely to be successful when (a) group-targeted mobilization entails decision-task frames that highlight ingroup benefits and (b) group size approaches a threshold for feeling pivotal under the institutional arrangements (H2) (H2 in Ch. 2). And finally, I explore how weak-identifiers respond to thresholds and frames in order to better understand the effects of variance in identity strength.

Second, employing survey-experiment methodology, I assess whether a similar relationship holds between group-based mobilization frames and intended contributions towards mobilizing support for a school bond on the ballot when thresholds and stakes are taken into account. The survey design tests whether frames are more likely to work in high stakes situations relative to low stakes situations (H5) (H2 in Ch.3). Further, this chapter explores how strong-identifiers respond to threshold effects and whether or not an 'underdog effect' occurs (H3) (H1 in Ch.3).

Finally, with a public goods game experiment, I reinforce previous findings that being in high stakes situations increases participation (H4) (H1 in Ch.4). Further, I investigate whether this relationship between group-based mobilization and group-based behavior holds when different types of credible sources are employed to give the message in the frame. Specifically, I investigate the difference in group-based behavior when a message to participate in group-based behavior is given by a credible source that shares their group identity or is neutral. In particular, I explore whether the stakes involved alter

the persuasiveness of these two types of credible sources for group-based behavior (H6) (H2a & H2b in Ch.4).

I review the design and findings of all three chapters in detail below before discussing the central contributions of this dissertation.

IV. Preview of Chapters

In Chapter 2, I use a laboratory experiment with a voting game design to test how thresholds (rules that determine how far the group is from their goal) affect responses to frames. Threshold effects have been well-documented in previous work on voting behavior and public goods contributions in that nearness to a threshold increases participation due to a feeling of being 'pivotal' (Levine & Palfrey 2007; Suleiman & Rapaport 1992). I use this concept of thresholds to test whether frames have a greater effect when individuals are part of a group that is near a threshold (i.e. near 50% under majority rule) rather than far from a threshold.

In this experiment, individuals are given task-based group identities and asked to make a decision about whether or not to participate in group behavior (a costly decision). However, threshold effects are induced by varying group size randomly each round under a majority rule system and a framing effect is induced by giving participants a frame that reinforces their group identity and highlights the benefits that are possible for their group. I find support for a strong interaction effect between thresholds and group frames in that a group frame is most likely to increase group behavior when groups are near a threshold rather than far from a threshold. Further, I find that weak-identifiers in fact respond very differently to frames and thresholds than moderate-identifiers. Specifically, weak-

identifiers are more likely to respond to group frames by participating in majority contexts, providing further support for the need to account for variance in identity strength. These findings suggest that identity psychology can be combined with cost-benefit rationality in explaining group behavior.

In Chapter 3, I test the interaction of frames and thresholds, as well as stakes of the decision, in a survey-experiment. This survey-experiment assesses the impact of a group frame on willingness to contribute money to mobilize support for a proposed school bond. This issue of school bonds is particularly amenable to group identity framing by explicitly listing which group will benefit from the school bond (i.e. the neighborhood group identity). In this survey-experiment, I invoke a group frame aimed at members of the school district who vary on whether they have kids in the schools (i.e. the stakes). The frame is coupled with messages that vary threshold (e.g., polls suggestive of the amount of support). This survey-experimental design allows an exploration of whether successful identity frames depend on thresholds and stakes in the real world.

I find that individuals with strong identities respond very differently to thresholds than moderate-identifiers or weak-identifiers, further reinforcing the need to account for variance in identity strength. Specifically, strong-identifiers participate more in minority cases rather than in parity or majority cases, suggesting an “underdog effect.” I also find that stakes moderate framing effects in that frames work moderately better in high stakes decisions relative to low stakes decisions. As such, further evidence is found for the notion that there is an underlying rationality in responses to group mobilization efforts.

In the final chapter, I use a second laboratory experiment with a public goods game design to assess the influence of group frames on contributions to the group when we account for the effects of the moderators: (1) credible sources and (2) stakes of the decision. Credible sources of a framed message have been shown to increase responses to frames (Druckman 2001a), particularly when the source of the message shares a group identity with the respondent (Kuklinski & Hurley 1994; Nelson et al 2007). Further, high stakes decisions have been shown to increase support for policies (Chong 2001) and contributions to the public good (Ledyard 1995). I combine these two moderators to identify the conditions in which group sources fail to successfully increase contributions to the group.

Specifically, individuals are given task-based group identities, and as before, are given a frame that reinforces their group identity and reminds them of potential group benefits. They are then asked to make an allocation decision between their individual interests and the group interests. Stakes of the decision are manipulated by changing the rate of return for contributions to the group (high and low). The findings suggest a strong interaction effect between stakes and source credibility in that stakes determine whether or not a same-group source is viewed as credible and has the accompanying ability to increase contributions to the group using a group frame. As such, these findings indicate that rational calculations have the capacity to influence identity-based behavior.

Taken together, this dissertation provides evidence that group-based frames successfully mobilize groups only when certain conditions are met. Specifically, these findings suggest that successful group mobilization using group frames depends upon thresholds, stakes, and source credibility. In sum, the dissertation combines group-based

expectations with expectations derived from the rational choice framework in order to identify conditions for successful group mobilization and to assess the extent to which these two branches of work can be combined to explain the role of group identity in behavior.

V. Central Contributions & Broader Impacts

The central argument in this dissertation is that an understanding of the success of group-based mobilization efforts requires an understanding of the successful construction of identities. Accordingly, merging the group-based models with the predictive capabilities of the rational choice model and the causal mechanisms provided by the framing effects literature provides a better account of *when* and *how* group-based mobilization is successful. In particular, the predictions of successful group-based mobilization strategies can be increased by a consideration of how frames and source credibility interact with the instrumental moderators of (1) threshold effects that induce feelings of being ‘pivotal’ and (2) the stakes involved.

This project also helps us understand the role of group identity in politics, and this is important to understand for three key reasons. First, this project helps us understand which types of mobilization strategies increase participation in general as well as of underrepresented groups, such as minorities and females. In this view, an understanding of how to maximize turnout and participation in different contexts can aid in increasing participation in general. But it can also help to increase the participation of groups that tend to have low participation rates and may benefit from receiving targeted mobilization specifically geared towards mobilizing their group to turnout.

Secondly, the findings of this project suggest that mobilization strategies do not have to include content that increases intergroup tensions. In other words, this project highlights that group strategies can increase participation of group members without also increasing intergroup tensions. Specifically, the group frames used in the survey-experiment in Chapter 3 and in the public goods game experiment in Chapter 4 successfully increase group participation without also increasing intergroup tensions. The success of these frames suggest that group mobilizers need not engage in tactics that disparage other groups in their attempt to increase group solidarity and participation. Rather, a more positive in-group-focused message can also successfully increase participation.

Finally, this project opens the door for future explorations of strategies for *diffusing* intergroup tensions, particularly in situations where these tensions are high and could involve violence or conflict. Since group mobilization has the unwanted and often unforeseen consequence of potentially increasing intergroup tensions, it is important to begin explorations of how to diffuse group tensions in such situations. The strengthening of group identity as a result of mobilization that is displayed in this dissertation suggests that similar tactics can help weaken group identity in cases of high group tension. In other words, the findings in this dissertation suggest that similar methods may work for demobilizing groups when conflict occurs as a result of mobilization. As such, the aim of this dissertation is not only to understand mobilization but also to open the door for explorations of mobilization after-effects and potential demobilizing factors.

CHAPTER 2: Mobilizing Collective Identity: Frames & Rational Individuals*

Abstract

Mobilization of collective identities is a common tool in election campaigns and policy debates. Frames that target group identity can mobilize groups; however it is unclear *when* these group frames are likely to be successful. This project seeks to fill this gap by assessing whether *moderators*, or factors that limit framing effects, can help predict whether individuals will respond to group mobilization attempts. Drawing on the rational choice approach, I assess whether the presence of thresholds (i.e. rules that determines how far the group is from attaining its goal) works as a moderator of framing effects since it is an instrumental factor that affects behavior. Using a voting game laboratory experiment, I assess the impact of group frames when distance from a fixed threshold varies. The evidence here suggests that group frames are more likely to increase participation when groups are near thresholds, indicating an underlying rationality to group mobilization.

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Introduction

Democracy is often about group competition. Who wins and loses in politics often depends on the relative strengths of competing groups. To increase their strengths and prevalence, groups often engage in mobilization efforts. Social movements, like the civil rights movement and the women's liberation movement of the 1960s and 1970s, illustrate the large role that group mobilization plays in politics. One of the key mobilization tactics involves political elites and campaigns targeting the group identities of potential group members. However, while group-based mobilization is clearly widespread in politics, social science theories have little to say about *which* group-based mobilization strategies are likely to work and *under what circumstances*. This gap stems from a divide between *rational models* that render group-based behavior "irrational" and *group-based models* that rely on psychological explanations of attachment to group (Elster 1989).

In contrast to group-based explanations that claim that individuals will naturally take action in their collective interest, rational choice theory suggests that individuals have an incentive to refrain from contributing, even if they stand to benefit from the collective good (Olson 1965). Since the cost/benefit analysis of cooperation is at the individual level, what is good for the group is not good for the individual (Chong 2000). This tension between individual and group interests has led to the conclusion that these two approaches are irreconcilable, leaving predictions for successful group-based mobilization and an understanding of the strategies involved unexplained.

This project provides an empirically testable theory of *when* and *how* group-based mobilization efforts increase participation by using framing effects to merge group-based

and rational choice models. Since strong group identifiers are likely to mobilize regardless of mobilization efforts, the more interesting case involves people with low to moderate group attachments.⁷ The key question is: *what factors make moderate strength group identifiers susceptible to group-based mobilization strategies?* Frames in political communication (i.e. persuasive messages containing interpretations of events) have been shown to change individuals' opinions or behavior and can be used to mobilize groups if the frame targets group identity (Iyengar 1991; Gamson 1992; Polletta and Ho 2006). However, *moderators*, or factors that limit framing effects, can help us predict whether individuals will accept or reject frames (Druckman 2001a, 2001b).

Drawing on the rational choice approach, this project focuses on *threshold effects* as a potential moderator of framing effects on group behavior. Previous literature shows that nearness to a threshold (i.e. rules that determine how far the group is from attaining its goal) induces a feeling of making a difference, which increases participation (Suleiman and Rapoport 1992; Klandermans 2003; Levine and Palfrey 2007). For example, under majority rule, members of groups that are approaching 50% of the electorate are liable to feel that their participation is pivotal in helping their group to win benefits (Suleiman and Rapoport 1992; Klandermans 2003; Levine and Palfrey 2007; Hajnal 2007).

I argue that the interaction between perceptions of benefits and group-based rhetoric provides a theoretical model that generates empirically testable hypotheses. The expectation here is that group frames in conjunction with this threshold-induced feeling

⁷ See Chong (2000) and Chai (2001) for rational explanations of the origins and maintenance of group identity, which is very different from the focus here on mobilization influences on moderate identifiers.

of being pivotal will more likely *increase* group-based participation relative to group frames alone. I test this expectation in the context of a voting game laboratory experiment in which frames are presented to individuals and threshold effects are induced by varying group size under majority rule. I find evidence that frames that target group identity are more likely to enhance mobilization if groups are near a threshold rather than far from a threshold. The findings of this project suggest that group-based mobilization has a greater underlying rational component than previously thought and has serious implications for our understanding of political campaigning and mobilization based on group identity.

Literature Review

I. Psychological & Rational Choice Approaches to Group Identity

Much of the work using group-based models of opinion or behavior relies on psychological explanations of attachment to groups in the form of ingroup/outgroup bias⁸. The explanations for the source of this ingroup bias vary and include Social Identity Theory (Tajfel & Turner, 1979), Empowerment theory (Bobo and Gilliam 1990), norms (Elster 1989) and early childhood socialization (Sapiro 2004)⁹. However, most of the work based on psychological models of group attachment overlooks the variance in group identity strength as well as the effect of mobilization on group identity strength. While group-based models based on the rational choice approach do not suffer from these

⁸See Hutchings & Valentino (2004) and Segura & Rodriguez (2006) for excellent reviews.

⁹ The focus in this project is on increasing ingroup bias without incorporating outgroup bias, but see these cites for more discussion of outgroup bias: Realistic Group Conflict theory (Bobo & Hutchings 1996), Social Dominance Theory (Sidanius & Pratto 1999), Racial-Threat hypothesis (Giles & Buckner 1993, Glaser 1994), Racial Resentment/ Subtle Racism (Kinder & Sanders, 1996).

weaknesses, they do not adequately explain how or why mobilization efforts succeed, which is the central question in this project. Below I review these areas of research before discussing how the work on framing effects helps us better understand mobilization based on group identity.

Psychological models of group attachment have yielded mixed findings, with some scholars finding that group identity has a significant effect on behavior and/or attitudes (Canon 1999; Lublin 1997; Terkildsen 1993; Barreto 2007) and others finding that group identity has little to no impact (Sniderman and Carmines 1997; Voss 1996; Cain & Kiewiet 1984). As Huddy (2003) points out, variance in group identity strength is often overlooked in this work due to the implicit assumption that group membership alone leads to strong group identity and ingroup bias. However, group identity does in fact vary in strength, as revealed by the work using thermometer measures of feelings of closeness to group (Conover 1984), and this ought to be accounted for in our expectations of group-based behavior. In effect, individuals with weak or moderate levels of identity may not participate as much as those with strong levels of group identity. Neglecting to account for these differences in group identity strength can result in seemingly mixed findings.

Further, the influence of mobilization efforts that potentially *amplify* group identity strength and increase group-based behavior are also overlooked in this area of work. For example, many scholars have studied whether ingroup bias leads to increased support for same-race candidates (Canon 1999; Lublin 1997; Terkildsen 1993; Barreto 2007). However, in most cases, group-based mobilization is often assumed but not explicitly accounted for. Instead, ingroup bias alone, rather than campaign effects, is

predicted to drive turnout and participation. Therefore, the findings are likely mixed primarily because little attention is paid to mobilization messages.

Unlike these psychological explanations of group attachment in politics, rational choice approaches to group identity and behavior overcome some of the weaknesses discussed above, but still do not adequately account for *how* or *why* mobilization influences group identity strength.

One approach focuses on differences in attachment to groups based on other-regarding preferences, such as levels of altruism or group utility (Fowler and Kam 2007; Edlin 2007) or on group coordination, known as the *ethical voter* approach (Coate and Conlin 2004; Feddersen and Sandroni 2002). However, these approaches not only overlook mobilization effects, but also fail to predict which individuals will gain utility from the group. Therefore, they explain only the behavior of strong identifiers – the very same people who are most likely to mobilize regardless of the circumstances.

A second rational choice approach to group identity does account for mobilization influences on behavior by focusing on the role of group leaders. One variation argues that group leaders increase the costs for not participating as well as promising benefits to those who participate (Morton 1987; Uhlaner 1989) while another variation argues that leaders increase mobilization efforts in close elections or elections with high stakes, which increases turnout (Shachar and Nalebuff 1999). However, these approaches fail to explain *how* leaders successfully mobilize group members or increase costs for not participating.¹⁰ In other words, we still cannot answer questions related to how or why

¹⁰ In keeping with these rational choice approaches, the ethnic conflict literature on identity suggests that individuals are more likely to take action based on group identity when they perceive benefits associated with their identity and when they receive targeted mobilization from elites geared towards enhancing group-based behavior for political gain (Chai 2001; Brass 2003;

certain mobilization strategies are successful sometimes and yet fail in other circumstances.

In sum, while a large body of work explores the effects of group identity on group-oriented attitudes and/or behavior, we are still left with lingering questions concerning how or why mobilization efforts succeed. Psychological models of group-based behavior fail to account for differences in group identity strength as well as mobilization influences on group identity strength, whereas rational choice models do account for these factors, but ultimately fail to explain how or why mobilization efforts are successful. I turn next to the literature on mobilization and framing effects to find potential resolutions to these issues.

II. Mobilization, Framing Effects, and Group Identity

I argue that frames that target group identity play a key role in mobilization based on group identity, and that framing theory can help us understand how frames result in shifts of opinion and/or behavior (Chong and Druckman 2007a). Frames are interpretations of events or issues that are provided to individuals that then affects their opinion on the issue (Chong and Druckman 2007b, 2007c, 2007a). Framing theory elaborates on how framing effects occur (Chong and Druckman 2007b). When individuals are asked their opinion on a survey, their response reflects the fact that they have drawn on information that is easily accessible, including the frames to which they were recently exposed (Zaller 1992). Frames, then, come to influence attitudes by affecting the relative salience given to attributes of the object of the frame (Chong and Druckman 2007b).

Green and Seher 2003). However, to my knowledge, no one has yet empirically explored how these strategies actually succeed.

Many areas of research suggest that frames that target group identity can mobilize supporters to take action. Social movement research gives a large role to frames in group mobilization (Gamson 1992; Polletta and Ho 2006; Klandermans 2003; Snow and Benford 1988; McCarthy and Zald 1996), and recent exciting work using field experiments directly tests the effects of targeted mobilization on participation based on group identity (Trivedi 2005; Ramirez 2005; Wong 2005; Michelson 2005) or partisanship (Nickerson 2005; McNulty 2005; Cardy 2005). These works complement the research on the effects of group-targeted frames on public opinion towards group-oriented policies (Kravitz and Platonina 1993; Kinder and Sanders 1996; Nelson and Kinder 1996; Jacoby 2000; Transue 2007). Drawing primarily on Social Identity Theory (Tajfel & Turner 1979) scholars of group-targeted frames expect that salience of group identity heightens ingroup bias and induces increased support for group-targeted policies (Transue 2007). In this view, the frame makes group identity more easily accessible to the individual, greater salience and weight are given to the attribute of the frame specifying the ingroup as the recipient of benefits, which then results in a shift in opinion or decision choice.

However, while these research areas help establish that frames that target group identity serve to reinforce collective identity which then has the *potential* to affect public opinion and/or group behavior, they do not provide causal explanations for *why* or *how* this potential for group mobilization is actually met.¹¹ In other words, there is little work

¹¹ The social movement literature does provide important concepts for understanding mobilization, such as preconditions to framing movements in the form of political opportunity structures (Diani 1996; Polletta and Ho 2006; McCarthy and Zald 1996). However, the theoretical causal mechanisms have yet to be fully explored or empirically tested.

that provides empirically testable hypotheses for *when* we can expect a group-targeted frame to successfully mobilize groups.

Theoretical Hypotheses

The argument put forward here is that testable hypotheses can be derived by drawing on the branch of research on framing effects on public opinion that pays particular attention to the role of *moderators, or factors that limit framing effects*. The work on moderators of framing effects stems from the understanding that frames often fail. As Druckman (2001b) argues, frames are not the powerful and persuasive tools that can be freely used by elites to manipulate the public according to whim. Rather, the minimal effects hypothesis largely holds. However, we can isolate the specific cases in which we can expect individuals to respond to frames. There are known differences in terms of respondents' level of education, political knowledge/awareness, and predispositions that correspond with differences in when frames work. These moderators imply an inherent underlying *rationality in responses to frames* and help us generate predictions for when individuals are likely to respond to frames.

I. Threshold Effects

In this project, I focus on *threshold effects*, as an unexplored potential moderator of behavioral responses to frames. In keeping with previous literature, I expect that being near a threshold will increase participation relative to being far from a threshold. The concept of threshold effects comes from a variety of different literatures related to participation. Experimental economics literature reveals the significant role of threshold effects in voting game experiments where individuals in groups of equal size participate more than those in groups of unequal size (Levine and Palfrey 2007). Further, in

threshold public goods games, Suleiman & Rapoport (1992) find that individuals are more likely to contribute to a public good with a lower, more easily overcome threshold relative to a larger threshold.

Similar findings exist outside the experimental laboratory. Hajnal (2007) in his study of turnout in mayoral races finds that individuals in a context of parity, meaning their group size makes up 45-55% of the city, are more likely to turnout to vote. Additionally, Klandermans (2003) discusses the impact of thresholds on turnout at rallies and other social movements, such as the greater ease in recruiting volunteers when the last of fifteen is needed versus the first of fifteen is needed. A similar concept is invoked in the 'close turnout' mobilization message used in field experiments by Gerber & Green (2000) which increase participation due to voter feelings of being pivotal.

The underlying logic of this threshold effects concept is that individuals are more likely to participate if they feel pivotal in that their contribution/ participation matters to the final outcome. Accordingly, I expect that parity of group size (nearness to a threshold under plurality rule) should increase the likelihood of engaging in costly behavior on behalf of the group, regardless of which frame is given.

H1: Participation is greater when near a threshold than when far from a threshold

II. Thresholds as a Moderator of Framing Effects

The main hypothesis of interest in this project concerns whether the effect of a group-targeted frame is increased when individuals are near a threshold. As noted above, group-targeted frames increase group members' willingness to engage in costly behavior on behalf of their group (Nelson and Kinder 1996; Jacoby 2000; Iyengar 1991), and

moderators have the potential to limit these framing effects on some individuals and enhance them in other individuals. As such, while there may or may not be an overall main effect for the frame, I expect a positive increase in participation in response to the frame when we account for the effect of moderators. Specifically, I expect greater support (i.e. greater turnout) for group-targeted frames in cases in which groups are approaching a threshold. This hypothesis is in keeping with the underlying rationality in responses to frames, which are captured in the work on moderators of framing effects (Druckman 2001b). The frame should have a greater effect on participation when it is in keeping with the individuals' perception of their interests. The literature on thresholds indicates that nearness to thresholds increases the feeling of being pivotal, which increases an individual's willingness to take costly action. Taken together, these findings suggest that thresholds are a moderator of framing effects.

As such, I expect that when groups are approaching a threshold, they will be more responsive to a group-targeted frame relative to a neutral frame, i.e. a frame that does not emphasize ingroup benefits at the cost of other groups' benefits. Specifically, by varying the threshold and the frame, we will be able to see how individuals in a particular threshold context respond to different frames.

H2: The effect of a frame on participation is greater when near a threshold than when far from a threshold

Research Design

Group Frames, Thresholds & Participation in a Voting Game

These hypotheses are tested with an experimental design assigning individuals identities, pitting groups against one another, and manipulating the relative distance from

a threshold. Individuals face a collective action problem in which they must decide whether or not to vote (voting is costly). The experiment consists of three main components: (1) two group tasks by which individuals were assigned to groups, (2) a voting game, and (3) responses to a survey of attitudes and demographic information. A total of 150 undergraduate subjects were recruited from dining halls at Rice University and participated in a total of 10 experimental sessions.¹² They were told to report to the laboratory at specific times. The number of subjects in a session was always 15. When subjects arrived at the lab, they were asked to sign a consent form and drew a card assigning them to a specific computer. Oral instructions were read to subjects at the onset and then subjects proceeded through self-paced, computerized instructions.

Group Identity Tasks

In the first part of the experiment, subjects participate in activities that determine their group identities for the duration of the experiment.¹³ As Huddy (2003) and Perreault & Bourhis (1999) discuss at length, the method of creating group identity in the lab significantly affects the strength of group identity and the willingness of subjects to take action for their group. Task-based or chosen identities have been shown to create *stronger* identities that are more likely to make subjects participate in group-based behavior (Leonardelli and Brewer 2001), whereas random assignment into groups has been shown to create *weaker* identities that make individuals less likely to participate in costly behavior for the group (Huddy 2003; Perreault and Bourhis 1999). As I discuss

¹² Extensive pre-tests were done during pilot studies in which participants were interviewed after the session to confirm that manipulations of group identity and thresholds were working as expected.

¹³ This identity assignment differs significantly from Levine & Palfrey (2007) who randomly switched subjects between ALPHA and BETA identities in each round. As such, their experimental design does not allow a real test of identity-based behavior, which is the primary focus of this project.

further below, I use both methods of inducing group identity to induce two group identities of different strengths.

Decision Task

The second part of the experiment is based on the voting game design of Levine & Palfrey (2007) and consists of 50 rounds of decision-making in which subjects are asked to choose between X and Y, choices for which they earn points.¹⁴ Choosing X is equivalent to the act of voting, and choosing Y is the equivalent of abstaining in order to avoid the costs of voting. However, the voting costs are transformed into an opportunity cost in the sense that choosing Y allows individuals to gain a "Y-Bonus" in addition to the points they earn from the outcome of the voting on X. The Y-Bonus is randomly drawn for each subject in each voting period from the interval (0, 55). In this sense the opportunity cost for voting varies to some degree for each individual and over every vote. By doing so, we can easily test for individual price sensitivity to provisioning a public good.

The voting rule is simple plurality. Whichever group chooses X more gets the higher payoff. Individuals choosing Y get the payoffs determined by their group members' decisions, as well as their Y-Bonus. If more of the subject's group chooses X than the other group, she gets a payoff of 105 points, and if not, she gets a payoff of 5 points. The same is true if she chooses Y, except she gets her Y-Bonus in addition to the points determined by the outcome of X voting by group members. Table A in Appendix A illustrates the payoffs to a subject who is in the Alpha group in the Neutral frame

¹⁴ Note, however, that Levine & Palfrey (2007) have two sessions with fifty rounds each, totaling 100 rounds.

condition¹⁵. Subjects make a single decision per period and are paid the show-up fee plus their payment based on the outcome of each period.

Attitudinal Survey

After the fifty rounds of decision tasks, subjects fill out an on-line survey of attitudes and demographic information while their payment based on the outcomes of each period is calculated. The survey includes items assessing individuals' altruism, trust, and social dominance as well as items assessing comprehension of the rules and clearness of the instructions. Demographic information is also collected. Some of the items are included in Appendix A.

Treatments

The experiment is a 3x2x2 incomplete factorial design made up of (1) nearness to a threshold (size of the individual's group) (2) the rivalry (group) frame and (3) group identity strength.

Threshold Treatments

For the threshold effects, group size was manipulated. Rather than telling subjects the raw numbers of group size (e.g. 4 out of 10), uncertainty about nearness to a threshold is induced. Group size is manipulated in terms of percentage of total electorate in order to induce feelings of clear minority, clear majority, or uncertainty about parity of groups. The size treatment is administered by randomly reassigning individuals to different treatments for each round¹⁶. In this experiment, all sessions consist of 15 total

¹⁵ The conversion rate was .37 cents for each point. This payoff Table is from the instructions for the Neutral condition. The Rivalry condition replaced group names with "Your Group..." and "Rival Group..." Similarly, the entire instructions set for the game were presented in either this Neutral or Rivalry language, dependent upon the frame treatment.

subjects. Treatments are designed such that in each round, subjects are either kept in one group of 15 or are divided into two subgroups that have independent and simultaneous periods. These subgroups are made up of either (1) 7 players and 8 players or (2) 9 players and 6 players. These subgroups are composed of different proportions of "Alpha" and "Beta" members and "Blue" and "Green" members, dependent upon the treatment.

In any given round subjects can be in any of three conditions for each of their two identities: *clear majority*, *parity*, *clear minority*. In order to have each subject make decisions in each of the size treatments (minority, parity, and majority), the computer randomly allocates subjects in each round to create one of these three treatments. Subjects are informed of the relative sizes of each group in each round on each Decision Screen. Please see Appendix B for sample Decision Screens. Group sizes are defined in the following way:

- **Majority** is classified as either 75%-85% or 70%-80% of the total participants in a round.
- **Parity** is classified as 45%-55% of the total participants in a round
- **Minority** is classified as 20%-30% or 15%-25% of the total participants in a round.

Frame Treatments

In this experiment, two frames are used, **Neutral** (baseline) and **Rivalry** (group-targeted frame). The frames are administered through the instructions of the game and

¹⁶ Note, the size treatments here differ from those in Levine & Palfrey (2007) in two important ways. First, each subject was in only one of two main treatments in which the size of both groups was fixed: landslide majority/minority difference or toss-up (small majority/minority difference). Further, within these treatments, each subject was randomly reassigned between minority and majority in each round, and real numbers were used instead of percentages (i.e. 4 Alpha and 5 Beta). Since my focus in this project is on the individual's perception of pivotality, which more closely approximates actual voter feelings in real elections, I use percentage of total electorate rather than raw numbers.

reinforced on each Decision Screen and summary screen. In the *Neutral* condition, the experiment is described with neutral language which states that the decision task is for groups “Green and Blue”. In the *Rivalry* condition, the entire game is described in terms of a competition using phrases like “Your Group Green” and “Rival Group Blue”. The *Neutral* and *Rival* frames are identical in terms of the payoffs and rules and the only modification is the use of competitive language. As in other group-targeted frames, the *Rivalry* frame highlights that the individual’s ingroup will receive the benefits and emphasizes that benefits could go to her ‘rival’ group that is competing with her group for benefits. Competition between groups has been shown to increase group identification, particularly between groups created in the lab environment (Huddy 2003). The central question here, therefore, is whether the temporary increase in group identification invoked by this group frame is actually moderated by nearness to a threshold (i.e. group size under plurality rule).

Group Identity Strength Treatments

In order to induce a moderate strength group identity, the first group identity is based on a group task taken from Leonardelli & Brewer (2001). All subjects are shown a screen filled with dots for 8 seconds, and they are then shown a second screen that asks them to select an estimation of how many dots had been on the previous screen. After all subjects make their choice, they are shown a screen that informs them of their first group identity based on similarity in making choices on the dot estimation task. This dot estimation task divides subjects into two groups, either “*Alpha*” or “*Beta*”.

In order to explore weaker strength identities, I also assign subjects a second weaker identity based on random assignment into one of two groups based on a card

draw, which has been shown to induce weaker strength identity (Huddy 2003; Perreault and Bourhis 1999). Subjects are shown a screen with 15 playing cards face down and asked to choose a card. After the selection, the card randomly turns either blue or green and is the basis for random assignment into two groups, "*Blue*" or "*Green*."¹⁷ In a control condition showing only group names on the screen, individuals were significantly less likely to participate on behalf of their weaker group identity (significant at the .01 level on a two-tailed test).¹⁸

Therefore, each subject had two group identities of different strengths based on his or her choices in the first and second tasks, which they maintained for the duration of the experiment. I focus, for now, on the moderate strength identity, but I will explore the weaker strength identity at the end of the chapter.

Decision Screens

In each round, the respective sizes of each group for both group identities are shown on the "Decision Screen" in percentage ranges. However, in each round, subjects are asked to vote on the behalf of only one of their two identities, which is indicated in the top left corner of the screen. The top right corner of the screen reminds subjects of which two groups they are members. The center of the screen shows them their individual Y-Bonus for that round, as well as the sizes of all the groups for that round, as

¹⁷ In addition to employing random assignment, the weaker identity task always occurred after the initial group task for the moderate strength identity and it was also listed second in the instruction set, on each decision screen (see Appendix B for examples), and on each summary of earnings screen.

¹⁸ See Table A5 in Appendix A: To test for significant differences between these identities, I conducted a control condition in which only group names are shown on the screen, which reveals differences in attachment to these identities.

described above. At the bottom of the screen, subjects can choose between X and Y.¹⁹

Sample screens are included in Appendix B.

Sessions

Table A.2 in Appendix A summarizes the session information. Three sessions are *Neutral with Size*, meaning that the Neutral frame is used, and information about the respective sizes of each group identity in that round is shown on the screen. In addition, there are three sessions that are *Rivalry with Size*, meaning that the Rivalry frame is used, and information about the respective sizes of each group identity in that round is shown on the screen.

Additionally, there are two control conditions using the Neutral frame. The first control condition, of which there are two sessions, does not show the sizes of the groups on the screen. This condition helps isolate whether there is some natural propensity for voting for X in the absence of size information as well as whether there is some natural affinity for the different group identity labels. In the second control session, only one group identity, in addition to the respective sizes of each of the two groups, is shown on the screen. In this way, I am able to isolate whether showing the sizes of both group identities on the screen (a total of four groups) has any effect on the likelihood of voting for X.

¹⁹ In the 1st, 20th, and 35th rounds, manipulation checks were given before subjects made their choice for that round asking subjects to indicate which groups they were in, which two groups determining earnings in that round, and what the relative sizes of each of the groups in that round were. The results indicate that subjects were attentive and comprehended the rules & instructions.

Results & Discussion

Aggregate-Level Analysis

I focus, for now, on the results for the moderate strength identity and explore identity strength differences at the end. The dependent variable is whether the subject chose to bear the cost of voting. The variable is coded as 1 if the subject picked X and 0 if the subject chose not to turnout (picked Y). The main independent variables of interest are *distance from threshold* (group size) and *frame*. The threshold effect is captured with a variable called *parity*, which differentiates between when subjects were in parity contexts (near the threshold) versus non-parity contexts (far from threshold), coded as parity=1 and non-parity= 0. Another variable called *size* differentiates between minority (coded as 1), parity (coded as 2), and majority contexts (coded as 3). The variable *rivalry frame* captures the frames, with rivalry frame=1 and neutral frame=0.

Table 2.1 shows the aggregate level distribution of votes by size and by frame for the Alpha/Beta identity which is the moderate strength identity. We see a clear threshold effect in that voting for X in parity, regardless of frame, is higher (47.98%) than in minority (41.54 %) or majority (38.02%) treatments, lending support for the threshold hypothesis (*H1*). A chi-squared test indicates that these differences are significant ($\chi^2=19.34$, $p<.000$). Using paired t-tests it is clear that participation is more likely in parity versus non-parity ($t=5.60$, $df=3698$, $p<.000$), lending further support to the threshold hypothesis (*H1*).

Table 2.1: Vote by Size by Frame – Alpha/Beta Identity (Moderate Strength)

	Vote		
	N	X	Y
BOTH FRAMES			
All Sizes	2225	42.52%	57.48%
Minority	325	41.54 %	58.46%
Parity	890	47.98%	52.02%
Majority	1010	38.02%	61.98%
$\chi^2 = 19.34 (p < .000)$			
NEUTRAL FRAME			
All Sizes	1125	40.80%	59.20%
Minority	165	41.82%	58.18%
Parity	450	43.78%	56.22%
Majority	510	37.84%	62.16%
$\chi^2 = 3.57 (p < .168)$			
RIVALRY FRAME			
All Sizes	1100	44.27%	55.73%
Minority	160	41.25 %	58.75%
Parity	440	52.27%	47.73%
Majority	500	38.20%	61.80%
$\chi^2 = 19.48 (p < .000)$			

The primary concern is with the interaction between threshold and frame ($H2$).

Breaking down the data by size treatment, there is an increase in turnout between the Neutral and Group Frame conditions by about 9% in parity (43.78% versus 52.27%), but only by 1% - 2% in the minority and majority cases. This lends strong support to the interaction hypothesis ($H2$). Further, using paired t-tests, I find that the difference in turnout between frame treatments is only significant in the parity condition (for parity: $t=2.54$, $df=888$, $p<.005$; for non-parity: $t=.05$, $df=1333$, $p<.48$), lending support to $H2$. I further divide non-parity conditions into minority and majority, and once again find that there is a significant difference in turnout between frame treatments only in the parity case (parity: $t=2.54$, $df=888$, $p<.005$; majority: $t=.12$, $df=1008$, $p<.454$; minority: $t=-.10$, $df=323$, $p<.54$), which matches expectations ($H2$).

Individual-Level Analysis

Since each subject makes a voting decision in each size treatment, I turn to individual-level analysis to estimate the effects of the frame treatments on turnout under different thresholds. While there are 2225 total observations, they are not independent since each subject makes multiple decisions. I use a logit model clustered by subject to predict when an individual will choose to vote. Descriptive statistics on the variables included in the multivariate analysis in the chapter as well as more detailed discussion of variable construction is presented in Table A3 in Appendix A.

The *Ybonus* variable captures the opportunity costs of voting. To control for learning effects, *period* is included which indicates the number of the round, ranging from 0 to 50.²⁰ *Sex* is included to account for gender effects (Eckel & Grossman, 1998) and *altruism* is included to account for the hypothesis that altruists are more likely to contribute to the public good than non-altruists (Ledyard, 1995). Question wording for survey responses to the questionnaire administered at the end of the experiment is included in Appendix A. Each of the four double-identity categories are specified to control for potential effects of particular pairings (Alpha-Blue, Alpha-Green, Beta-Blue, Beta-Green). Table 2 presents results from Model 1 that tests for the main effect of *Parity* (*H1*). Model 2 adds the interaction term *Frame X Parity* to directly test the interaction hypothesis (*H2*).

²⁰ A variety of diagnostics were performed to check for the proper modeling of learning effects, including whether learning took place initially and then dropped off. None of these alternative models gave support for these hypotheses, indicating that controlling for period sufficiently controls for learning effects. For ease of interpretation, the *period* variable is transformed to range from 1 to 5.

Table 2.2: Logistic Regression on Vote by Frame, clustered by Subject²¹

	<i>Moderate ID</i>	
	Model 1	Model 2
Rivalry Frame	.23 (.22)	.05 (.26)
Parity	.44*** (.14)	.21 (.23)
Rivalry Frame X Parity	--	.45* (.28)
Ybonus	-.90*** (.08)	-.91*** (.08)
Period	-.09** (.04)	-.09** (.04)
Sex	.19 (.23)	.19 (.24)
Altruism	.23 (.15)	.23 (.15)
Alpha/Blue	-.03 (.33)	-.03 (.33)
Alpha/Green	-.34 (.33)	-.33 (.32)
Beta/Blue	.13 (.31)	.14 (.31)
Constant	1.26** (.58)	1.34** (.59)
Log-Likelihood	-1122.03	-1119.75
χ^2	144.19***	158.49***
N	2225	2225
Obs. Per Subject	25	25
Subjects	89	89

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test.

Standard errors are in parentheses. The dependent variable is the vote choice, 0=Y 1=X.

As can be seen in Model 1 in Table 2.2, the *parity* coefficient is positive and significant, indicating that individuals near the threshold are more likely to participate, supporting *H1*. Interestingly, the coefficient on *rivalry frame* is not significant, indicating that the rivalry frame alone does not significantly increase voting. This finding is in

²¹ Analyses using random effects logistic models yield similar results for all models.

keeping with previous work in this area that fails to find that groups respond to group frames (Kinder and Sanders 1996; Erbring et al. 1980). As I discuss below, this finding that the frame alone does not increase participation is interesting in light of the interaction effect between frames and thresholds that is found in Model 2 below.

In terms of the control variables in Model 1, it is not surprising that the *Ybonus* is highly significant and negative. We would expect higher values of the *Ybonus* (i.e. higher costs of voting) to lead to a decrease in the likelihood of voting for X. The only other control variable that is highly statistically significant is the *period* variable that accounts for learning effects across rounds. We see that over the rounds, individuals are less likely to vote for X. While non-significant, the coefficients for *sex* and *altruism* are positive, indicating that females and altruists are more likely to vote for X.

The central concern in this project is the interaction between threshold and frame. In Model 2, an interaction term, *Rivalry Frame X Parity*, is added to explicitly test for the interaction effect predicted in *H2* for moderate identity strength. As expected, the interaction term is positive and significant at the .10 level on a two-tailed test, providing moderate support for *H2* that frames are more likely to increase participation when individuals are near the threshold than when far from the threshold. I further explore this interaction hypothesis in Table 2.3 below. However, it is important to note that the effect of the *rivalry frame* is masked in the main effects model, which fails to explicitly incorporate the interaction effect of frames and thresholds on participation. The effect of the *rivalry frame*, albeit a rather subtle frame in this experiment, only emerges as a positive and moderately significant influence on participation when the interaction effect between frames and thresholds is accounted for, further reinforcing the need to account

for moderating influences on framing effects. The control variables do not differ from Model 1.

In order to further investigate this interaction effect, I take a number of steps. In Table 2.3 below I divide the data into subsets based on threshold: below threshold (*minority*), near threshold (*parity*), and well over the threshold (*majority*). Doing so allows us to explore the effect of the rivalry frame in these different threshold contexts in order to clearly test and understand *H2*, which predicts differential effects of the frame dependent upon distance from a threshold. Table 2.3 below reports only the main variables of interest due to space limitations; however, the models include all the same controls as Model 1 in Table 2.2.

Table 2.3: Logistic Regression on Vote by Size, clustered by Subject²²

	MODERATE STRENGTH ID		
	Model 3:	Model 4:	Model 5:
	<u>Minority</u>	<u>Parity</u>	<u>Majority</u>
Rivalry Frame	.14 (.35)	.52** (.26)	-.003 (.32)
Ybonus	-.82*** (.10)	-.92*** (.09)	-.93*** (.10)
Period	-.06 (.11)	-.08 (.05)	-.11 (.07)
Altruism	.39 (.27)	-.03 (.16)	.40* (.21)
Constant	.36 (1.02)	2.13*** (.62)	1.22 (.75)
Log-Likelihood	-170.47	-450.63	-489.67
χ^2	74.86***	123.39***	98.56***
N	325	890	1010
Obs. Per Subj.	4	10	11
Subjects	89	89	89

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test.

Standard errors are in parentheses. The dependent variable is the vote choice, 0=Y 1=X.

²² Due to space limitations, Table 2.3 reports only the main variables of interest; however, the models include all the same controls as previous models.

According to *H2*, I expect that a group-targeted frame will have a greater effect in a parity context as compared to its effect in a minority or majority context. Looking at Models 3-5, as expected, *Rivalry Frame* has a positive but non-significant effect on voting in minority and majority contexts, but it has a positive and significant effect on voting in parity contexts. This finding is significant at the .05 level for a two-tailed test. Further, the constant in the parity condition is positive and highly significant, indicating further support for the effect of thresholds on participation.

Taken together, these findings lend support for *H2* concerning the greater effect of group-targeted frames in parity (near threshold) relative to minority or majority contexts (far from threshold). The other controls do not differ from the earlier models; however, *Altruism* is positive and significant only in the majority condition, which matches expectations about the need for altruism to overcome freeriding.

To further explore the interaction effect in Model 2 in Table 2.2, predicted probabilities for the interaction model are calculated and illustrated in Figure 2.1 below. Given that these are maximum likelihood estimates, the best way to get a sense of the substantive impact of these findings is to calculate predicted probabilities and their differences for the cases of interest. Changes in the predicted probability of voting for X are calculated for the individual voter by holding the independent variables at their mean value and changing the *Rivalry Frame* variable value from 0 to 1. In doing so, we isolate the effect of the frame within a threshold context.

These changes in predicted probabilities for Model 2 are illustrated in Figure 2.1 below. As indicated by the solid line, it is clear that *parity* has the highest likelihood of turnout, regardless of frame (*H1*). For example, when we compare participation rates

across frames, we see that in the neutral condition, there is a 4% increase in participation between non-parity and parity, and in the rivalry frame condition, there is a 16% increase in participation between non-parity and parity contexts (*H1*).

Figure 2.1: Predicted Probability of Voting (X) by Size & Frame - Moderate ID

Further, the upward slope of the line in the parity case and the almost flat line in the non-parity case indicate that frames alone do not drive participation, or else these lines would be more parallel. Rather, as expected, the difference in the likelihood of participation between the Neutral and Frame conditions is greater in the parity condition (the steep solid line) than in the non-parity condition (the almost flat dotted line). In other words, the average individual in the sample increases participation by 13% when receiving a group-targeted frame in parity contexts, but increases participation by only 1% when receiving a frame in non-parity contexts (*H2*). This finding indicates that the effects of the frame are stronger when near a threshold than when far from a threshold,

lending support to the main hypothesis of interest, *H2*. As such, it appears that mobilization of group identity is more successful when individuals perceive that their participation is likely to matter, suggesting that group identity attachment is not completely irrational, but in fact has a strong underlying rationality.

Exploratory Analysis: Weak Strength Group-Identifiers

Variance in group identity strength is an important factor that is often overlooked in social science research. The discussion so far concerning frames and thresholds applies primarily to moderate strength group-identifiers, in keeping with previous literature demonstrating that moderate identifiers are most likely to be persuaded by mobilization (Rosenstone and Hansen 1993; Zaller 1992; Huckfeldt and Sprague 1992), and more likely than low identifiers to take action on behalf of their group (Huddy 2003; Perreault and Bourhis 1999). But what about individuals with weak levels of group identity? Is it still possible to motivate these individuals to participate in spite of their weak level of group identity? If so, do weak strength group identifiers respond to thresholds in the same way that moderate strength group identifiers do? Or does strength of group identity condition the interactive effects of thresholds and frames?

In order to take a first cut at answering these questions, I speculatively explore some observed differences in behavior due to differences in group identity strength. There is little previous work on weak group identifiers to draw upon to answer these questions. Accordingly, I tested many hypotheses about weak group identity, many of them competing, in order to further explore the impact of group identity *strength* on group behavior and responses to frames. These hypotheses provide a preliminary test for whether moderate strength group identifiers and weak strength group identifiers should

be treated similarly or should be separated in analyses and hypotheses concerning group identity. I present here the findings for the main question of interest: whether the interaction effect between frames and thresholds is the same for weak group identifiers as it is for moderate group identifiers.

Table 2.4: Logistic Regression on Vote by Size, clustered by Subject²³

	WEAK STRENGTH ID		
	Model 6: <u>Minority</u>	Model 7: <u>Parity</u>	Model 8: <u>Majority</u>
Rivalry Frame	.39 (.38)	.04 (.32)	.63** (.29)
Ybonus	-.80*** (.11)	-1.15*** (.11)	-.96*** (.10)
Period	.07 (.11)	-.04 (.07)	-.15*** (.06)
Altruism	.27 (.24)	.11 (.20)	.11 (.16)
Constant	.58 (1.14)	2.25*** (.75)	2.04*** (.63)
Log-Likelihood	-155.22	-395.13	-500.15
χ^2	57.56***	134.14***	131.76***
N	295	890	1040
Obs. Per Subj.	4	10	11
Subjects	89	89	89

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test.
Standard errors are in parentheses. The dependent variable is the vote choice, 0=Y 1=X.

Looking at Models 6-8 in Table 2.4 above, we see that *Rivalry Frame* has a positive but non-significant effect on voting in parity contexts, which is quite different from the moderate strength finding. When we unpack ‘non-parity’ into minority (below threshold) and majority (above threshold) the frame does not significantly increase participation in minority conditions whereas it does in majority conditions. This finding

²³ Due to space limitations, Table 2.4 reports only the main variables of interest; however, the models include all the same controls as all previous models in the project.

is significant at the .05 level for a two-tailed test. The other controls do not differ from the earlier models.

When predicted probabilities are calculated for Models 6-8, voting for X increases by 15% in majority contexts, but by only 1% in parity contexts and by 8% in minority contexts. These findings should be interpreted with caution given that only Model 8 (majority context) shows a significant effect for *rivalry frame*. However, these findings do suggest that weak group identifiers in fact respond very differently to the combination of thresholds and frames by responding to frames only when the group is clearly over the threshold. These findings suggest that moderate and weak strength identities are in fact different and merit separate analysis. However, future work will benefit from further exploring the relationship between group identity strength and group-based behavior.

Conclusion

This project provides an empirically testable theory of *when* and *how* group-based mobilization efforts are most likely to succeed. While group-based mobilization is frequently invoked in both mobilization and rational choice participation models, an empirically testable theory of mobilization has been elusive in the social sciences. This elusiveness is largely due to an inability to derive testable predictions about when these strategies are likely to be successful and a failure to account for what sorts of causal mechanisms make individuals respond to such efforts. This project provides such an account by using the framing effects literature to merge group-based models with the rational choice model.

In this project, the key concept of *thresholds* from the rational choice approach provides the basis for the argument here that this moderator of framing effects plays an

important role in whether group identities can be successfully mobilized. The framing effects literature provides the causal mechanisms by which the content of group-targeted frames successfully increases participation. It is the interactions between perceptions of benefits and group-based rhetoric that provides us with a theoretical model that generates empirically testable hypotheses.

When is the mobilization of collective identity successful? The findings in this project suggest that there are two critical factors: *thresholds* and *frames*. I find that members of groups that are near a threshold are more likely to participate than members of groups that are far from a threshold (*H1*). Further, I find that the most successful group-based mobilization efforts are those that combine thresholds and frames. I find evidence that individuals with moderate strength identity are more likely to respond to group-targeted frames by voting on behalf of their group in a context of parity (near the threshold under majority rule) rather than in minority or majority contexts (far from the threshold) (*H2*).

Turning to the exploratory analysis of weak strength identities, I find that these individuals can also be mobilized to turnout as a function of frames and thresholds. While their highest overall contribution occurs when near the threshold, individuals with weak strength identities are most responsive to the frame when they are well above the threshold rather than near it. This finding suggests that identity strength has an independent impact on framing effects and group-based behavior, and that future work should continue investigating the impact of different identity strengths.

Taken together, the findings in this project suggest that the tools of frames and thresholds can be used to effectively mobilize collective identities of varying strengths to

participate in group-based behavior. However, as Chong & Druckman (2007a; 2007b; 2007c) point out, political campaigns often employ multiple messages of different strengths which often compete with each other. As such, future research should continue to investigate the effectiveness of frames and thresholds in motivating participation in a competitive context of competing messages of different strengths.

CHAPTER 3:

Support for a School Bond in a Survey-Experiment *

Abstract

When is group-targeted mobilization successful? Work on social movements suggests that frames that target group identity can mobilize groups (Gamson 1992; Polletta & Ho 2006). However, this work does not address *when* group mobilization using frames is likely to be successful. Past work looks at how moderate-strength identities respond to frames, showing that thresholds and stakes of the decisions moderate appeals (Aroopala 2008). However, this project focuses on strong identities. I find that strong identities work differently in that they are more likely to take action when underdogs (i.e. in the minority) rather than when they are in parity, as moderate-identifiers do. These findings have implications for mobilization attempts and the need to target them based on type of identification.

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Introduction

In politics, groups often engage in mobilization efforts. These mobilization efforts often determine the winners and losers in politics. One of the key mobilization tactics involves political elites and campaigns targeting the group identities of potential group members. However, while group-based mobilization is clearly widespread in politics, social science theories have little to say about *which* group-based mobilization strategies are likely to work and *under what circumstances*.

In previous work, I find that frames that target group identity are more likely to succeed in affecting group behavior when they are reinforced by moderators of behavioral responses to frames: the instrumental factors (1) threshold effects and (2) stakes of the decision (Aroopala 2008). However, this work focused on moderate-strength identifiers, who are known to be more receptive to frames (Rosenstone & Hansen 1993; Zaller 1992; Huckfeldt & Sprague 1992) and on weak-strength identifiers. However, it remains unclear how strong group-identifiers will respond to the combination of instrumental factors and group frames. This project seeks to answer this question. The findings here indicate that strong-identifiers in fact respond very differently to thresholds, suggesting that mobilizers must condition their appeals depending on the identification strength of the audience.

In this project, I use a survey-experiment in which a group-targeted frame is given to respondents. To analyze the behavioral effects of frames, I draw on two potential moderators of frames that come from the rational choice framework: (1) thresholds and (2) the stakes of the decision. Previous literature in political science and experimental economics shows that high stakes decisions lead to greater participation than low stakes

decisions (Chong 2001; Ledyard 1995) and that being below a threshold can sometimes trigger an 'underdog effect' (Levine & Palfrey 2007). In this project, I interact frames with these two moderators of frames (thresholds and stakes) to generate empirically testable predictions of successful group mobilization in response to frames.

A threshold effect is induced by varying the distance from a fixed threshold and the stakes of the decision are measured with survey items. In terms of thresholds, I expect that with strong-identifiers, an underdog effect will take place within the group frame. In other words, I expect higher participation rates when respondents are given a group frame in a minority context relative to parity or majority. This underdog effect is a function of the strong neighborhood identity used in this study reacting to the feeling that their group is unpopular when in the minority. A large literature in social psychology finds a strong relationship between minority status and greater ingroup bias (Leonardelli & Brewer 2001) suggesting that group frames in a minority context are likely to further increase ingroup bias. In terms of stakes, I expect that in high stakes decisions, the response to a group frame will be greater than in low stakes decision, indicating an underlying rationality in framing responses.

I also further explore how strong identities react to the combination of frames and thresholds by comparing responses to a group frame and to a broad non-group frame. The findings suggest that strong-identities do in fact differ in their response to frames and moderators compared to moderate or weak identities. Taken together with the findings in previous work (Aroopala 2008), the findings here suggest that variance in group identity strength is a critical part of understanding responses to group mobilization attempts.

Literature Review

Frames are interpretations of events or issues that are provided to individuals that then affects their opinion on the issue (Chong & Druckman 2007a; 2007b; 2007c).

Framing theory elaborates on how framing effects occur (Chong & Druckman 2007a).

When individuals are asked their opinion on a survey, their response reflects the fact that they have drawn on information that is easily accessible, including the frames to which they were recently exposed (Zaller 1992). Frames, then, come to influence attitudes by affecting the relative salience given to attributes of the object of the frame.

Social movement research suggests that frames that target group identity can mobilize supporters to take action (Gamson 1992; Polleta & Ho 2006; Klandermans 2003; Benford & Snow 2000; McCarthy and Zald 1996). This work ties is similar to the research that focuses on the effects of group-targeted frames on public opinion towards group-oriented policies (Kravitz & Platonina 1993; Kinder & Sanders 1996; Nelson & Kinder 1996; Jacoby 2000; Transue 2007). Both areas of research establish that frames that target group identity serve to reinforce collective identity which then has the potential to affect public opinion and/or group behavior. However, neither branch provides causal explanations for why or how this potential for group mobilization is actually met²⁴. In other words, there is little work that provides empirically testable hypotheses for when we can expect group identity to be successfully mobilized.

²⁴ The social movement literature does provide important concepts for understanding mobilization, such as preconditions to framing movements in the form of political opportunity structures (Polleta & Ho, 2006; McCarthy & Zald, 1996; Diani, 1995). However, the theoretical causal mechanisms have yet to be fully explored or empirically tested.

Theory & Hypotheses

I argue that understanding of group mobilization is dependent upon accounting for two critical factors: (1) differences in group identity strength and (2) moderators of framing effects.

I. Differences in Group Identity Strength

Previous literature makes clear that group identity varies in strength, as reflected in the thermometer questions in the NES and other studies (Conover 1984). However, as Huddy (2003) points out, most work in political science neglects to account for the effects of variance in group identity strength. Accordingly, there are many mixed findings in group identity work with some scholars finding strong identity effects on behavior, policy preferences, and framing responses (Canon 1999; Hero 1992; Lublin 1997; Terkildsen 1993; McDermott 1998; Barreto et al. 2005; Henig 1993; Graves 2000) and others finding weak or no effects (Sniderman & Carmines 1997; Voss 1996; Cain & Kiewiet 1984). However, accounting for variance in group identity can help resolve some of these mixed findings as well as provide more nuanced expectations regarding when group identity will have an effect and when it will not.

In previous work, I focus on moderate-strength identifiers (Aroopala 2008) as they are most likely to be susceptible to frames and to mobilization attempts (Rosenstone & Hansen 1993; Zaller 1992; Huckfeldt & Sprague 1992). I also find that moderate-identifiers and weak-identifiers respond very differently to group frames when external factors are accounted for. These findings suggest that group identity strength does in fact have a strong effect on how individuals respond to group frames and mobilization attempts.

Accordingly, this project focuses on individuals with strong group identity. Based on observed differences in behavior between moderate-identifiers and weak-identifiers, it is likely that strong-identifiers will also respond very differently to group frames and mobilization attempts. Therefore, the central question in this project revolves around whether it is possible to mobilize strong identifiers, and if so, what conditions are necessary for them to respond to group mobilization attempts?

II. Moderators of Framing Effects

The research on framing effects on public opinion pays particular attention to the role of moderators, or factors that limit framing effects. The work on moderators of framing effects stems from the understanding that frames often fail (Druckman 2001b). There are known differences in terms of respondents' level of education, political knowledge/awareness, and predispositions that correspond with differences in when frames work. These moderators imply an inherent underlying *rationality in responses to frames* and help us generate predictions for when individuals are likely to respond to frames.

My central argument is that accounting for these moderators of frames and for differences in group identity strength can help us generate predictions for when group-based mobilization will be successful.

A. Interaction: Frames & Threshold Effects

In previous work, I focus on *threshold effects*, as an unexplored potential moderator of behavioral responses to frames. A fair amount of work focuses on nearness to a threshold as a factor that increases participation due to the individual's feeling of being pivotal in determining the election outcome (Levine & Palfrey 2007; Suleiman &

Rapoport 1992; Hanjal 2007; Klandermans 2003; Gerber & Green 2000). In earlier work, I combine these two factors (frames and rational moderators) to test whether moderate-identifiers are more responsive to group frames when they are combined with threshold effects (Aroopala 2008). I find that moderate-identifiers that are in a parity context, where their group is 45-55% of the electorate, are significantly more likely to participate in response to the group frame relative to the neutral frame. Further, in the same experiment, individuals were also given a weaker identity, which responded to frames most in a majority context, suggesting that group identity is in fact an important factor in the success of mobilization attempts.

Accordingly, this study focuses on strong group-identifiers to assess whether they are responsive to instrumental factors in the same way as moderate and weak identifiers are. In other words, how do strong group identifiers respond to group frames and threshold effects? Previous work on threshold effects leads to the theoretical expectation that being below the threshold induces an underdog effect in strong group identifiers. In their voting game study, Levine & Palfrey (2007) find an 'underdog effect' in which individuals are more likely to vote for the perceived less popular candidate relative to the perceived more popular candidate. In other words, individuals were more likely to participate in a minority context in which their candidate was perceived to be less popular relative to a majority context in which their candidate was perceived as quite popular.

This expectation is reinforced by a large literature in social psychology on the effects of group size on ingroup bias. This literature indicates that being in the minority leads to increased ingroup bias (Bettencourt et al. 1997; Brewer et al. 1993; Leonardelli & Brewer 2001; Sachdev & Bourhis 1984; 1991; Mullen et al. 1992; Gerard & Hoyt

1974). Therefore, there is clear evidence of a relationship between minority status and strong ingroup identification. If individuals in a minority context are more likely to feel ingroup bias, we can expect that a group frame given in a minority context will only increase ingroup bias, particularly among strong-identifiers. Additionally, according to Levine & Palfrey (2007), individuals feel their group is unpopular when their group is in the minority relative to another group in the majority, and this feeling triggers the underdog effect.

As such, in terms of strong group identifiers, I expect that in a minority context, the perception that their group is less popular will increase participation in response to a group frame. I argue that strong identifiers in particular are more likely to have a strong response to the perception that their group is less popular. Moderate-identifiers are less attached to the group and therefore do not have the same reaction to the perception of being in the unpopular group in the minority. Therefore, for strong-identifiers, being well below a threshold will induce an underdog effect and will cause them to participate more in response to the group frame and the perception that their minority group is less popular relative to the majority group. As such, I expect that when groups are well below a threshold, they will be more responsive to a group-targeted frame relative to when they are near or well above a threshold.

H1: The response to a group frame is greater when below a threshold than when near or above a threshold (for strong identifiers)

B. Interaction: Frames & Stakes of the Decision

As the focus of this project is *behavioral* responses to frames, I also investigate another potential factor that can help explain the shifting of a costly decision choice in response to a frame. Previous literature shows that the *stakes of the decision* can influence policy preferences, with higher support for policies coming from individuals who perceive greater benefits from the policy (Chong 2001). For example, there is evidence that parents with school-aged children have greater support for school funding proposals relative to adults without school-aged children (Rosenstone & Hansen 1993; Jennings 1979). Again, the underlying notion here is that individual self-interest is at work when individuals have policy preferences based on the perception of greater benefits.

There is also evidence of behavioral responses to stakes in the experimental economics literature. Shifts in the stakes of the participation decision (how beneficial it is to participate) or MPCR (marginal per capita rate of return) cause shifts in behavior, with higher stakes leading to higher participation rates than lower stakes (Ledyard 1995).

Given the evidence that higher stakes leads to greater participation rates, it is reasonable to consider whether the stakes of the decision are an important moderator of group-based mobilization strategies. Specifically, given that the stakes of the decision have an impact on behavior, it is reasonable to expect that group-based behavior in response to mobilization strategies will also likely be affected by stakes. Below I present the hypotheses derived from interacting group frames with the moderator of stakes of the decision.

H2: The response to a group frame is greater in high stakes decisions than in low stakes decisions

C. Exploratory Analysis: Group Frame v. Broad Frame

Finally, another approach I take to explore differences in group identity strength is to compare responses across different frames when threshold effects are accounted for. In the current study, half of the individuals receives a group frame and the other half receives an alternative non-group frame.²⁵ Comparing across two different frames allows us to assess how these different types of frames interact differently with thresholds, which has not been done before. In other words, in order to better understand group mobilization, it is equally important to understand whether there are circumstances in which it is better to avoid mobilizing based on group identity.

For example, in other related work on the interaction between same-group source credibility and stakes of the decision, I find that in a low stakes situation it is actually better for participation to refrain from using a group source (Aroopala 2008). Similarly, by comparing across a group frame and a different type of frame, we can assess whether there are circumstances in which strong-identifiers are less likely to respond to a group frame relative to an alternative frame. This part of the analysis is purely explorative and there are no clear expectations with regard to relative participation rates between these two different frames.

²⁵ This Broad frame is not the same as Neutral frame. As such, we cannot isolate a framing effect by comparing across a group frame and a neutral frame. Further, we cannot assess whether the same underdog effect expected within the group frame is evident when we make comparisons with a neutral frame.

Research Design

These hypotheses are tested with a survey-experimental design that randomly assigns individuals to treatments that vary (1) frame and (2) distance from threshold. I use a survey-experimental design in which individuals are given a frame and then asked to their willingness to donate money to help mobilize support for a school bond. The dependent variable is whether the respondent was willing to give \$1 or more to help mobilize support for the school bond. As such, this design creates a tension between private and collective interests, which captures the nature of the collective action problem (Olson 1965; Ledyard 1995; Croson 2008). These findings are applicable to voting behavior and other forms of group-based participation. This experimental design isolates the tension between individual and group interests because it does not occur in a competitive context. A key benefit of this type of design is that it allows a real world test while still maintaining experimental control of treatments (Gaines, Kuklinski, & Quirk 2007). Accordingly, this survey provides a real world test of many of the theoretical arguments in this thesis that were tested in the experimental laboratory setting.

This survey data was collected by YouGovPolimetrix²⁶, a survey firm that conducts surveys through their PollingPoint website with a proprietary opt-in survey panel comprised of 1.08 million U.S. residents who have agreed to participate in YouGov Polimetrix's Web surveys. The primary method of recruitment for the PollingPoint Panel is Web advertising campaigns that target respondents based on their keyword searches. Other recruiting methods include permission-based email campaigns, partner sponsored solicitations, telephone-to-Web recruiting (RDD based sampling), and mail-to-Web

²⁶ To contact, please visit the website www.polimetrix.com.

recruiting (voter registration based sampling). Participants are not paid to join the PollingPoint panel, but do receive incentives through a loyalty program to take individual surveys. Data collection for this project took about five days total, beginning on 1/29/2009 and ending on 2/2/2009.

In this survey, I am interested in assessing interactions between the following factors: *a group-targeted frame that targets 'neighborhood' group identity, the presence of a threshold, and the stakes involved*. The school bond issue is a modified version of a school tax experiment used in the work of Sniderman & Carmines (1997) and later implemented by Transue (2007) in his analysis of the interaction between frames and social identity. The benefit of this experiment is that it allows us to target group identities as recipients of benefits of this bond as well as capture the effects of self-interest in terms of the stakes involved.

In this survey, I am interested in assessing how *neighborhood* group identity affects the willingness to help support the school bond. Since school taxes are generally administered at the local level, a feeling of neighborhood group identity likely increases the willingness to support school tax increases. The histogram in Figure 3.1 below shows that indeed neighborhood identity is a strong one with over 85% of respondents saying they feel warmly towards their neighborhood on a thermometer scale question (over 50 degrees).²⁷

²⁷ The thermometer question also asked about feelings towards other groups such as students, neighborhood students, and their own and other racial groups. These items had significantly more variance in responses than responses to the question concerning neighborhood identity, indicating far greater attachment to the neighborhood relative to other groups. This lends further support to the assessment that the neighborhood identity does indeed seem to be a strong one.

Figure 3.1: Feelings of Closeness to Neighborhood (Group Identity Strength)

Table 3.1 below presents the 2 X 4 factorial design of *group frame X threshold*. There are 8 treatments with 66-75 respondents per treatment, totaling 565 respondents. The main dependent variable assesses the willingness to contribute money to help mobilize support for the school bond. Specifically, individuals were asked for a dollar amount that they were willing to contribute and the dependent variable is a binary variable that separates those unwilling to give any money from those willing to give \$1 or more. All of the exact survey items in the statistical models are included in Appendix C.

Table 3.1: Research Design – Treatments in the Survey-Experiment

		THRESHOLD TREATMENT				
		Control No Threshold	Minority Poll Support	Parity Poll Support	Majority Poll Support	Total
FRAMES	Group Frame	71	70	66	72	279
	Broad Frame	67	73	71	75	286
Total						565

Treatments

The main independent variables of interest include *frames* and *thresholds*. Both *frames* and *thresholds* will be manipulated in the treatments. The basic design uses the questions-as-treatments design in order to implement a framing effect. A *group frame* is implemented by invoking neighborhood identity when describing the school bond issue. A *broad frame* is identical but lacks the reference to the neighborhood identity and instead refers to the school bond benefitting “various regions.”²⁸

In the *ingroup-targeted* frame condition, subjects are asked the question with an explicit reference to a “your neighborhood” group identity:

“Suppose a school bond has been proposed for placement on the ballot. This bond will raise taxes to improve educational opportunities in (*your neighborhood*). The bond needs over 50% of the vote to be passed and a scientific poll reports the bond is currently supported by (*insert threshold treatment*) of voters.”

²⁸ This “Broad frame” is not the same as a Neutral frame which would not have specified a location where educational opportunities would be improved by the school bond. As such, direct comparison between the “Group frame” and “Broad frame” in order to isolate a framing effect is not possible.

In the *broad frame* condition, subjects are asked:

“Suppose a school bond has been proposed for placement on the ballot. This bond will raise taxes to improve educational opportunities in (*various regions*). The bond needs over 50% of the vote to be passed and a scientific poll reports the bond is currently supported by (insert threshold treatment) of voters.”

To induce a *threshold*, the school bond question reflects the level of support for the bond among voters (i.e. based on polling results). These ranges capture the *below*, *near*, and *above* the threshold treatments. Additionally, there is a control condition of *no threshold* for each type of frame. Below are the threshold treatments:

- a) Near Threshold: 45-55%
- b) Below Threshold: 20-30%
- c) Above Threshold: 75-85%
- d) None (Control condition)

This treatment does not include the final sentence of the frames. Specifically, it reads:

“Suppose a school bond has been proposed for placement on the ballot.

This bond will raise taxes to improve educational opportunities in (*various regions/ your neighborhood*).”

Other Measures & Controls

The *stakes* are assessed with the question asking how important the neighborhood schools are to them. This *stakes* variable is meant to capture how important participants feel this decision is to them. Accordingly, it makes sense that individuals who feel that

neighborhood schools are very important to them are more likely to view the school bond decision as a high stakes decision. In other words, these individuals will feel the results of the school bond issue will have important and meaningful consequences for them since they feel neighborhood schools are important to them. This measure has six categories with 1=very important and 6= very unimportant. This stakes measure is transformed into a binary variable in order to clearly distinguish between low and high stakes.

Measures of other important control variables include ideology, warmth to students, employment status, and quality of public schools, and are discussed in greater detail below. To account for differences in group identity strength, I also include a thermometer measure of feelings of closeness to their neighborhood. This thermometer measure allows us to assess how strongly individuals attach to their group identity with low ratings indicating cold feelings towards the group and high ratings indicating warm feelings to wards the group.

Results & Discussion

Aggregate-Level Analysis

The dependent variable is whether the respondent was willing to give \$1 or more to help mobilize support for the school bond. The variable is coded as 1 if the respondent was willing to contribute \$1 or more and as 0 if the respondent chose to give \$0. The main independent variables of interest are *frame*, *distance from threshold* (group size) and *stakes of the decision*. The variable *broad frame* captures the frames, with broad frame=1 and group frame=0. The threshold effect is captured with dummy variables *minority*, *majority*, and *parity* which differentiates between when subjects were in parity

contexts (near the threshold) versus non-parity contexts (above or below the threshold).

Finally, the *stakes* variable captures whether individuals view the situation as a high stakes case (coded as 1) or as a low stakes case (coded as 0). Stakes coding is measured based on the survey item asking individuals how important the neighborhood school is to them. Actual survey items are included in Appendix C.

Table 3.2 shows the aggregate level distribution of contribution decision by size for the group frame. We see that contributing money in the minority case is slightly higher (60%) than in parity (47%) or majority (50%), however a chi-squared test indicates that these differences are not significant ($\chi^2 = 2.57$, $p < .28$). Using one-tailed paired t-tests, however, it seems that contribution is more likely when individuals are in the minority versus non-minority ($t = 1.56$, $df = 206$, $p < .059$), lending mild support to the underdog effect hypothesis. In addition, there is no significant difference in contribution when individuals are in a majority v. non-majority context ($t = -.503$, $df = 206$, $p < .308$) or in a parity v. non-parity context ($t = -1.06$, $df = 206$, $p < .143$).

Table 3.2: Contribution by Size – Group Frame

GROUP FRAME	N	CONTRIBUTION	
		\$0	\$1 or more
All Sizes	208	47.60%	52.40 %
Minority	70	40.00 %	60.00 %
Parity	66	53.03%	46.97%
Majority	72	50.00%	50.00%
$\chi^2 = 2.57$ ($p < .277$)			

Table 3.3 shows the aggregate level distribution of contribution decision by stakes for the group frame. We see that contributing money in the high stakes case is higher (61.54%) than in the low stakes case (32.31%), and a chi-squared test indicates that these differences are significant ($\chi^2 = 15.308$, $p < .000$). Further, using paired t-tests, it seems

that contribution is more likely when individuals are in the high stakes case versus the low stakes case ($t=-4.78$, $df=277$, $p<.000$, lending support to stakes hypothesis.

Table 3.3: Contribution by Stakes – Group Frame

GROUP FRAME	N	CONTRIBUTION	
		\$0	\$1 or more
All Stakes	208	47.60%	52.40 %
Low Stakes	65	67.69 %	32.31%
High Stakes	143	38.46%	61.54%
$\chi^2= 15.31$ ($p<.000$)			

Individual-Level Analysis

I turn next to individual-level analysis to estimate the effects of frames, thresholds, and stakes on contribution decision. Since each individual made a single independent decision about whether to contribute money to help mobilize support for the school bond, I use a logit model to predict contribution decisions. Descriptive statistics on the variables included in the multivariate analysis in the chapter is presented in Table 3.4 below.

Table 3.4: Descriptive Statistics on Variables in Multivariate Models

Variable	Observations	Mean	St. Dev.	Min	Max
Contribution	565	.54	.50	0	1
Broad Frame	565	.50	.50	0	1
Minority Size	427	.33	.47	0	1
Parity Size	427	.32	.47	0	1
Majority Size	427	.34	.48	0	1
Ideology	562	1.85	.77	1	3
Student Warmth	548	6.76	2.15	.1	10
Employment	565	.59	.50	0	1
Stakes	564	.72	.45	0	1
Public School Quality	565	3.59	1.36	1	6

The main control variables include ideology, thermometer measure of feelings towards students, employment status, and their opinion concerning the quality of public schools. Exact wording for these measures is included in Appendix C. The *ideology* variable captures whether individuals are conservative (coded as 1) moderate (coded as 2), or liberal (coded as 3). The *student warmth* variable is thermometer measure asks individuals how warmly they feel towards students in general, ranging from 1 to 100 degrees with 50-100 degrees indicating warm feelings. This variable was transformed to range from 1 to 10 for ease of interpretation. *Employment* is a binary variable with 0=unemployed and 1=employed. The final control variable, *public school quality*, asks individuals how they would rate the quality of the public school system, ranging from 1 to 6 with 1 equaling very weak and 6 equaling very strong.

Table 3.5 presents results from Models 1-3 that test for the underdog effect in the group frame (*H1*). Dummy variables are created for the different levels of support for the poll (minority, parity, or majority) and separate logistic regressions are run using each dummy variable. Doing so allows us to assess whether particular distances from the threshold cause an increase in participation.

As can be seen in Model 1 in Table 3.5, the *minority* coefficient is positive and significant, indicating that when given a group frame, individuals in a minority context are more likely to contribute than those in a non-minority context, supporting *H1*. This finding is reinforced by the finding that *parity* in Model 2 and *majority* in Model 3 are both non-significant indicating that these size contexts do not significantly affect contribution in the group frame context. Additionally, though not reported here, identical models for the Broad frame indicate that size has no effect in the Broad frame. In other

words, the underdog effect is only triggered in the Group frame condition, indicating that reinforcement of group identity through the group frame is what triggers strong-identifiers' behavior. Without the explicit identity reinforcement, as in the Broad frame, strong-identifiers in the minority context are no more likely to participate relative to other size contexts.

Table 3.5: Logistic Regression on Contribution by Size for Group Frame

	Model 1: Minority	Model 2: Parity	Model 3: Majority	Model 4:²⁹ No Size
Minority	.70** (.34)	--	--	--
Parity	--	-.29 (.34)	--	--
Majority	--	--	-.43 (.34)	--
Stakes	.75** (.36)	.73** (.35)	.75** (.35)	.73** (.35)
Ideology	.24 (.21)	.20 (.20)	.21 (.20)	.19 (.20)
Student Warmth	.22** (.09)	.21** (.08)	.22** (.08)	.21** (.08)
Employment	.50 (.33)	.42 (.33)	.53 (.34)	.45 (.33)
Public School Quality	.26** (.12)	.25** (.12)	.26** (.12)	.25** (.12)
Constant	-3.94*** (.84)	-3.36*** (.79)	-3.50*** (.79)	-3.47*** (.78)
Log-Likelihood	-118.51	-120.34	-119.90	-120.72
χ^2	36.03***	32.37***	33.25***	31.61***
N	197	197	197	197

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test. Standard errors are in parentheses. The dependent variable is the contribution choice, 0=\$0 and 1=\$1 or more.

²⁹ Similar findings are obtained when the control treatments are included and using the control treatments alone.

In terms of the control variables in Model 1, it is not surprising that *student warmth* and *public school quality* variables are positive and significant indicating that greater warmth to students, and higher quality of public schools increases the likelihood of contribution.

To further explore the underdog effect in Model 1 in Table 3.5, predicted probabilities for Model 1 are calculated and illustrated in Figure 3.2 below. Given that these are maximum likelihood estimates, the best way to get a sense of the substantive impact of these findings is to calculate predicted probabilities and their differences for the cases of interest. Changes in the predicted probability of voting for X are calculated for the individual voter by holding the independent variables at their mean value and changing the *Minority* variable value from 0 to 1. In doing so, we isolate the effect of being in the minority context within a group frame. These changes in predicted probabilities for Model 1 are illustrated in Figure 3.2 below.

Looking at Figure 3.2, we see that in fact there is substantive meaning behind the significance of the *minority* variable coefficient. Individuals in the group frame that are in a minority context are 17% more likely to contribute money to mobilize support for a school bond than those in a non-minority context.

Figure 3.2: Predicted Probability of Contributing by Group Size in Group Frame

Stakes

Model 4 in Table 3.5 tests whether high stakes situations increase participation relative to low stakes situations in the group frame context, without accounting for threshold effects. As can be seen in Models 1-4 in Table 3.5, the *stakes* coefficient is positive and significant, indicating that when given a group frame, individuals in a high stakes context are more likely to contribute than those in a low stakes context, supporting *H2*. The control variables do not differ from earlier models.

When we calculate predicted probabilities for Model 4 in Table 3.5 we see that individuals are 17% more likely to contribute money to mobilize support for a school bond when they view the decision as a high stakes situation relative to a low stakes situation (see Figure 3.3). In other words, when individuals are given a group frame, those individuals that feel the neighborhood schools are very important to them are more

likely to contribute money relative to those that say the neighborhood schools are unimportant to them.

Figure 3.3: Predicted Probability of Contributing by Stakes in Group Frame

Exploratory Analysis: Group Frame v. Broad Frame

In this part of the chapter, I compare how a group frame performs relative to an alternative frame that has broad appeal by specifying that various regions will benefit rather than a single neighborhood. This broad frame could conceivably be considered as an alternative mobilization tool for mobilizers trying to decide how best to frame the school bond issue. In this section, I explore whether these different frames interact differently with instrumental moderators of frames (thresholds and stakes). Doing so not only allows insight into how these instrumental factors affect different types of frames but also provides a better understanding of whether strong-identifiers respond to these factors differently than moderate-identifiers do.

As can be seen in Table 3.6, when we compare the group frame to the broad frame in different size contexts, there is a significant difference only in the parity context. In other words, individuals in a parity context are more likely to respond to the broad frame relative to the group frame but there are no such differences in responses to these frames in minority or majority contexts. The controls do not differ from earlier models.

Table 3.6: Logistic Regression on Contribution by Size, Across Frames

	Model 5: Minority	Model 6: Parity	Model 7: Majority
Broad Frame	-.06 (.39)	.78* (.39)	-.06 (.38)
Stakes	.91** (.42)	-.54 (.49)	.67 (.45)
Ideology	.78*** (.27)	.33 (.27)	.33 (.24)
Student Warmth	.14 (.10)	.22* (.11)	.26*** (.10)
Employment	.57 (.40)	.82** (.41)	-.23 (.40)
Public School Quality	.25 (.15)	.62*** (.16)	.11 (.15)
Constant	-3.74*** (1.05)	-4.71*** (1.17)	-3.30*** (.91)
Log-Likelihood	-80.05	-73.33	-85.99
χ^2	24.36***	33.06***	24.60***
N	135	130	142

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test. Standard errors are in parentheses. The dependent variable is the contribution choice, 0=\$0 and 1=\$1 or more.

When we look at Figure 3.4, which shows the predicted probabilities for contributions in the parity case across frames, we see that individuals are 19% more likely to participate in parity if they receive a broad frame relative to a group frame.

Figure 3.4: Predicted Probability of Contributing by Frame, in Parity

This finding taken together with the earlier finding of an underdog effect in the minority case in a group frame suggests that strong-identifiers are more likely to free-ride in parity and majority contexts in the group frame condition. This finding is very different from the finding in previous work for moderate-identifiers that a group frame is most likely to succeed in a parity context (Aroopala 2008). Taken together, these two contrasting findings suggest that group identity strength is in fact an important factor in determining how well frames and thresholds interact to affect participation. In other words, for moderate-identifiers, individuals in parity are most responsive to group frames (Aroopala 2008). However for strong-identifiers, individuals in parity are likely to free-ride in response to a group frame and are actually most responsive to a frame with broad appeal rather than narrow group appeal. As such, these findings highlight the fact that targeting group identity is not always the best path to maximizing participation and reinforce the need to account for group identity strength in order to generate predictions

concerning the effectiveness of thresholds or group frames in mobilizing groups to participate.

Conclusion

This project provides an empirically testable theory of *when* and *how* group-based mobilization efforts are most likely to succeed. While group-based mobilization is frequently invoked in both mobilization and rational choice participation models, an empirically testable theory of mobilization has been elusive in the social sciences. This elusiveness is largely due to an inability to derive testable predictions about when these strategies are likely to be successful and a failure to account for what sorts of causal mechanisms make individuals respond to such efforts. This project provides such an account by using the framing effects literature to merge group-based models with the rational choice model.

In this project, the key concepts of *thresholds* and *stakes of the decision* from the rational choice approach provide the basis for the argument here that these moderators of framing effects play an important role in whether group identities can be successfully mobilized. The framing effects literature provides the causal mechanisms by which the content of group-targeted frames successfully increases participation. It is the interactions between perceptions of benefits and group-based rhetoric that provides us with a theoretical model that generates empirically testable hypotheses.

The findings in this project suggest that there are two critical factors that can help determine when group-based mobilization is likely to be successful: *group identity strength* and *instrumental factors that moderate behavioral responses to group frames*. I find that individuals with strong identities respond very differently to the instrumental

factor of thresholds than moderate-identifiers. Specifically, with strong-identifiers, members of groups that are below a threshold are more likely to participate than members of groups that are near or above a threshold (*H1*). This underdog effect is very different from the parity effect observed with moderate-identifiers, which reinforces the notion that group identity strength plays an important role in determining how individuals respond to group mobilization attempts and instrumental factors that affect behavior.

I also find evidence that individuals with strong identities are more likely to contribute money to help mobilize support for a school bond when they perceive they are in a high stakes situation relative to a low stakes situation (*H2*). This finding reinforces the claim that group identity has an underlying rationality that can help us generate predictions for when group-based mobilization is likely to be successful.

Turning to the exploratory analysis of comparisons across a group frame and a broad frame, I find that strong-identifiers in a parity context are more likely to respond to a broad frame relative to a group frame. This finding reinforces the notion that group identity strength has a strong effect on behavior in response to thresholds and frames with strong-identifiers responding very differently than moderate-strength identifiers. With regard to stakes, I find that strong-identifiers in a low stakes case are more likely to participate if they receive the broad frame relative to the group frame. This finding taken together with the other stakes finding reinforces the idea that group identity has an underlying rational component that determines when individuals will respond to group-base mobilization attempts.

Taken together, the findings in this project suggest that the tools of frames and thresholds can be used to effectively mobilize collective identities of varying strengths to

participate in group-based behavior. However, identity strength has an independent impact on framing effects and group-based behavior, and future work should continue investigating the impact of different identity strengths.

CHAPTER 4:

Are Group Sources Always Credible? :

An Experimental Study of Sources, Stakes and Participation*

Abstract

When is mobilization of group identity successful? Work on social movements suggests that frames that target group identity can mobilize groups (Gamson 1992; Polletta & Ho 2006). However, this work does not address *when* group mobilization using frames is likely to be successful. Recent work on source credibility finds that same-group sources are an important moderator of framing effects (Nelson et al. 2007) and previous work on stakes of the decision shows that individuals in high stakes are more likely to participate than those in low stakes. I combine these two moderators of frames to generate predictions for when group sources are most likely to be credible. I test these predictions in the context of a public goods game laboratory experiment in which targeted frames are given to group members by sources that share their group identity and in which stakes of the decision are varied. The findings of this project have implications for political mobilization and campaigning based on group identities.

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Introduction

Group competition is an inherent part of democracy. The winners and losers in politics are often determined by the relative strengths of competing groups. Groups often engage in mobilization efforts in order to increase their relative strengths and prevalence. Social movements, like the civil rights movement and the women's liberation movement of the 1960s and 1970s, illustrate the large role that group mobilization plays in politics. One of the key mobilization tactics involves political elites and campaigns targeting the group identities of potential group members. However, while group-based mobilization is clearly widespread in politics, social science theories have little to say about *which* group-based mobilization strategies are likely to work and *under what circumstances*.

This project seeks to fill this gap by examining *how* and *when* these group-based mobilization attempts work. Frames in political communication (i.e. persuasive messages containing interpretations of events) have been shown to change individuals' opinions or behavior and can be used to mobilize groups if the frame targets group identity (Iyengar 1991; Gamson 1992; Polletta & Ho 2006). However, moderators, or factors that limit framing effects, can help us predict whether individuals will accept or reject frames (Druckman 2001a; 2001b). This project focuses on *source credibility*, an important moderator of framing effects. Previous literature shows that sources perceived to have expertise and trustworthiness (Lupia & McCubbins 1998; Druckman 2001a) are highly credible. Further, sources that share a group identity with respondents, such as race, are viewed as credible in certain circumstances, and can influence public opinion (Nelson et al. 2007). However, McGuire (1973) and Sears & Whitney (1973) discuss circumstances in which sources with clear bias, such as ingroup bias, are viewed as *non-*

credible. This project attempts to sort between these contrasting approaches by exploring whether other factors can help us understand why group sources sometimes *fail* to induce group members to undertake costly behavior for the group.

To analyze the behavioral effects of frames, I draw on another potential moderator of frames that comes from the rational choice framework: *the stakes of the decision*. Previous literature in political science and experimental economics shows that high stakes decisions lead to greater participation than low stakes decisions (Chong 2001; Ledyard 1995). In this project, I focus on the interaction of these two moderators of frames (source credibility and stakes) to generate empirically testable predictions of when we can expect appeals by group sources to actually fail in mobilizing groups.

Specifically, I use a public goods game laboratory experiment in which group-targeted frames are given by same-group sources. The stakes of the decision are varied, as well as whether the source of a frame is a group member or not. I expect that in high stakes decisions, the influence of a same-group source will be equal to that of a neutral source since the apparent group interest of the source does not conflict with the self-interest of the participant (Druckman 2001a; Lupia & McCubbins 1998). However, in low stakes decisions, I expect the influence of a same-group source will be less than that of a neutral source due to the conflict between the source's apparent group interest and the individual's self-interest. In other words, this project has a new take on source credibility that emphasizes the inverse relationship between same-group sources and credibility in low stakes situations. The findings of this project suggest that group-based mobilization has a greater underlying rational component than previously thought and has

serious implications for our understanding of political campaigning and mobilization based on group identity.

Literature Review

Frames are interpretations of events or issues that are provided to individuals that then affects their opinion on the issue (Chong & Druckman 2007a; 2007b; 2007c).

Framing theory elaborates on how framing effects occur (Chong & Druckman 2007a).

When individuals are asked their opinion on a survey, their response reflects the fact that they have drawn on information that is easily accessible, including the frames to which they were recently exposed (Zaller 1992). Frames, then, come to influence attitudes by affecting the relative salience given to attributes of the object of the frame.

Social movement research suggests that frames that target group identity can mobilize supporters to take action (Gamson 1992; Polleta & Ho 2006; Klandermans 2003; Benford & Snow 2000; McCarthy and Zald 1996). For example, an advertisement promoting a school bond may be more successful in increasing neighborhood turnout if the advertisement specifically targets neighborhood group identity. This work ties in with the research that focuses on the effects of group-targeted frames on public opinion towards group-oriented policies (Kravitz & Platonina 1993; Kinder & Sanders 1996; Nelson & Kinder 1996; Jacoby 2000; Transue 2007). Both areas of research establish that frames that target group identity serve to reinforce collective identity which then has the potential to affect public opinion and/or group behavior. However, neither branch provides causal explanations for why or how this potential for group mobilization is

actually met³⁰. In other words, there is little work that provides empirically testable hypotheses for when we can expect group identity to be successfully mobilized and when we can expect it to fail.

However, the research on framing effects on public opinion pays particular attention to the role of *moderators, or factors that limit framing effects*. The work on moderators of framing effects stems from the understanding that frames often fail. As Druckman (2001b) argues, frames are not the powerful and persuasive tools that can be freely used by elites to manipulate the public according to whim. Rather, the minimal effects hypothesis largely holds. However, we can isolate the specific cases in which we can expect individuals to respond to frames. There are known differences in terms of respondents' level of education, political knowledge/awareness, and predispositions that correspond with differences in when frames work. These moderators imply an inherent underlying *rationality in responses to frames* and help us generate predictions for when individuals are likely to respond to frames.

This project seeks to go beyond prior work on moderators by looking at behavior rather than opinion, having a new take on credibility, looking at stakes of the decision, and focusing on the interaction between source credibility and stakes of the decision.

I. Source Credibility as a Moderator of Framing Effects

In this study, I focus on *source credibility*, an important moderator of framing effects (Druckman 2001a). A significant amount of literature has sought to address the extent to which the credibility of the source affects message reception by the public.

³⁰ The social movement literature does provide important concepts for understanding mobilization, such as preconditions to framing movements in the form of political opportunity structures (Polleta & Ho 2006; McCarthy & Zald 1996; Diani 1995). However, the theoretical causal mechanisms have yet to be fully explored or empirically tested.

Page & Shapiro (1987) find that news anchormen and popular presidents are trusted the most by the public and that they have the greatest ability to sway public opinion. Other scholars have also emphasized the key role played by the source of the message in structuring public opinion (Zaller 1992; Druckman 2001a; Druckman & Lupia 2000; Graber 2004; Mondak 1993a; 1993b). Specifically, source 'cues' are extremely significant in influencing how the message is perceived and in opinion direction (Mondak 1993a; 1993b). Cognitively-limited individuals use heuristic short-cuts to process information and make decisions. Source cues are utilized as a means of determining whether a given message is in keeping with the values and preferences of the individual.

In terms of source credibility and framing effects, Druckman (2001a) builds off of Lupia & McCubbins' (1998) criteria of expertise and trustworthiness in credible sources and finds that credible sources are more likely to influence subsequent opinion of subjects. Of particular interest to this project, the work on *same-group source credibility* shows that group sources are more credible to group members than non-group sources (Kuklinski & Hurley 1994).

There are many reasons why we might expect same-group sources to be perceived as highly credible as a function of their ingroup bias. Previous research shows that the *perceived in-group bias of same-group candidates* affects voting choices and evaluation of candidate positions by both in-group and out-group members (Conover & Feldman 1989; McDermott 1998; Terkildesen 1993; Sigelman et al. 1995; Reeves 1997; Citrin et al. 1990; Hutchings & Valentino 2004). Further, a key argument for descriptive representation is that candidates of the same racial group know what it is like to be a group member, and therefore share common interests with the group (Canon 1999;

Lublin 1997). As such, sources who share group membership with voters are perceived as having in-group bias themselves that affects their choices, including their message choices, by causing them to promote group interests.

In keeping with this approach, some scholars have studied how messages from group sources are interpreted by in-group and out-group members. In their influential article, Kuklinski & Hurley (1994) conduct an experiment in which subjects are asked to rate the credibility of various sources of information: Anglo Liberal Ted Kennedy, African-American Liberal Jesse Jackson, Anglo Conservative George Bush, and African-American Conservative Clarence Thomas. The African-Americans in the study were more willing to validate information given by African-American elites than that given by Anglo elites. More recently, Nelson et al (2007) show that respondents use racial cues of the source in assessing the validity of the source's claims of racism in describing the event of a police shooting as racist.³¹

However, it is still not clear what circumstances make group sources more or less likely to be influential. For example, Nelson et al. (2007) demonstrate that same-group sources are not always influential in that partisan cues also moderate the influence of same-group sources. Further, Sears & Whitney (1973) and McGuire (1973) discuss circumstances in which sources with clear bias, such as ingroup bias, may actually be perceived as highly non-credible as a function of their bias. In other words, individuals are often more likely to discount the messages from sources with clear interests relative

³¹ The work on source credibility reviewed here focuses on public opinion. But support for the effects of source credibility on behavior comes from recent work by Boudreau (forthcoming) which investigates the effect of source credibility on individual behavior but not group behavior. In terms of group-based behavior and source credibility, work in experimental economics shows that cheap talk between leaders and group members increases coordination (Wilson & Rhodes 1997) and that high status individuals can affect coordination (Bala & Goyal 1998). Taken together, this work suggests that source credibility likely affects group-based behavior.

to sources that appear neutral and/or disinterested in the outcome. Given these contrasting approaches to the credibility of group sources, we are then left with the question, when can we expect group sources to successfully mobilize group behavior and when can we expect them to fail? In this project, I draw on both contrasting theoretical approaches to generate predictions for when we can expect a group source to be non-credible and when we can expect them to be equally credible relative to a neutral source.

II. Stakes of the Decision as a Moderator of Framing Effects

As the focus of this project is *behavioral* responses to frames, it is important to investigate potential factors that can help explain the shifting of a costly decision choice in response to a frame. As such, it is reasonable to use the rational choice participation model as the basis for individual motivation when trying to understand when group-targeted mobilization attempts work best. If we return to the assumption that a rational individual makes decisions on the basis of maximizing utility, then it is reasonable that successful mobilization attempts are the result of individuals taking action under the *perception* that they are acting in their best interests. Elsewhere, I have argued that thresholds are an important moderator of framing effects due to the perception of pivotality, and I provide a fuller account of how group-based models can benefit from incorporating aspects of the rational choice framework (Aroopala 2008). In this project I focus on the stakes of the decision as a potential moderator.

Previous literature shows that the *stakes of the decision* can influence policy preferences, with higher support for policies coming from individuals who perceive greater benefits from the policy (Chong 2001). For example, there is evidence that parents with school-aged children have greater support for school funding proposals

relative to adults without school-aged children (Rosenstone & Hansen 1993; Jennings 1979). Again, the underlying notion here is that individual self-interest is at work when individuals have policy preferences based on the perception of greater benefits.

There is also evidence of behavioral responses to stakes in the experimental economics literature. Shifts in the stakes of the participation decision (how beneficial it is to participate) or MPCR (marginal per capita rate of return) cause shifts in behavior, with higher stakes leading to higher participation rates than lower stakes (Ledyard 1995).

Given the evidence that higher stakes leads to greater participation rates, it is reasonable to consider whether the stakes of the decision are an important moderator of group-based mobilization strategies. Specifically, given that the stakes of the decision have an impact on behavior, it is reasonable to expect that group-based behavior in response to mobilization strategies will also likely be affected by stakes. As such, this project primarily focuses on the interaction between stakes of the decision and source credibility. Below I present the hypotheses derived from interacting the moderators of source credibility and stakes of the decision.

Theoretical Hypotheses

The literature reviewed above suggests that moderators of framing effects can help us predict when group-based mobilization is likely to succeed and when it is likely to fail. Specifically, the moderators of *source credibility* and the *stakes of the decision* are likely to affect behavioral responses to frames. The argument here is that external reinforcement for messages from same-group sources, in the form of the *stakes of the decision*, will moderate responses to frames. The stakes involved can either reinforce or

undermine the claims of the source. The question, therefore, is how do we sort out whether stakes will reinforce or undermine source credibility?

First, it is important to review the explanations for why these moderators increase responsiveness to frames and sources.³² With same-group sources, the *perceived in-group bias of the source* leads group members to respond well to frames coming from that source. Specifically, shared group membership gives group members the perception that group sources themselves have in-group bias and will choose messages that will benefit group interests. As such, group sources are viewed as pursuing group interests. A large literature on the minimal group paradigm finds that groups in the laboratory prefer ingroup members to outgroup members (Tajfel & Turner 1979) and experimental economic work finds that status figures, whether randomly selected or selected based on task performance, can influence other participants' behavior (Bala & Goyal 1998). As such, I do not re-test these hypotheses concerning the positive effect that group sources or credible sources have on behavior.³³ However I do discuss their theoretical importance at the end of this section.

The lingering question concerns whether we can explain some of the variance in when group source are persuasive. In other words, when are group sources perceived as non-credible and when are they perceived as equally credible relative to a neutral source?

The stakes of the decision can help us understand some of this variance in the credibility of group sources. With the stakes of the decision, it is primarily self-interest

³² Please see Aroopala (2008) for a more detailed discussion of the underlying rationality of group behavior as shown in the role of moderators in framing effects for group members.

³³ However, detailed pre-tests were administered during pilot studies to ascertain that the group source and credibility manipulations were working as expected.

that dictates participation rates. The perception of higher stakes results in higher participation rates relative to the perception of lower stakes (*H1*).

H1: Participation will be higher in high stakes relative to low stakes..

As such, the interaction between same-group source credibility and stakes allows us to analyze how group interests and individual interest interact to affect behavior. The argument here is that when group sources give a group frame, the perception of in-group bias of the source has differing effects on the group member based on the stakes. In high stakes situations, the group interest conveyed by the same-group source is not in conflict with the individual self-interest of a group member. In other words, the perceived in-group bias of the source signals what action would benefit the group, and this action is not in conflict with action that would benefit the individual in a high stakes situation. As such, *group sources* in high stakes situations should be viewed as credible.

With a neutral source in high stakes, they do not appear to have in-group bias that is motivating them to give the group frame. As such, their recommended actions for pursuing group interests do not come into conflict with individual self-interest of the group members. In high stakes situations, therefore, *neutral sources* are also viewed as credible, particularly when their performance on a task signals their knowledge/trustworthiness (Lupia & McCubbins 1998). Accordingly, I expect that in high stakes situations, same-group sources and neutral sources are viewed as equally credible and, as such, are equally persuasive.

H2a: In high stakes situations, same-group sources and neutral sources are equally persuasive.

However in low stakes situations, individual self-interest and group interests come into conflict and this leads to different interpretations of the perceived in-group bias of the group source. Specifically, in low stakes, the action recommended by group sources to pursue group interests is in direct conflict with the individual self-interest of the group member. In this sense, the low stakes situation gives group members the motivation to *discount* the advice of group sources because the perceived in-group bias of the source now seems to be a negative characteristic of the source (Sears & Whitney 1973; McGuire 1973). Nelson et al. (2007) discuss a similar situation in which the advice from sources with perceived ulterior motives is discounted. This is in contrast to the high stakes situation in which individuals do not have the motivation to discount the advice because it is also in their individual self-interest to follow the advice (i.e. the in-group bias of the source is not suspect in high stakes because it does not conflict with the individual's self-interest). As such, in low stakes, I do not expect the same-group source to be very credible.

However, the messages of neutral sources in low stakes are less likely to appear motivated by in-group bias of the source, and so group members are less able to discount the neutral source's advice. In low stakes then, I expect neutral sources to be credible. The expectation for both sources in low stakes is that a same-group source will be less credible than neutral sources, and, as such, less persuasive than neutral sources (H1b).

H2b: In low stakes situations, same-group sources will be less persuasive than neutral sources.

Another set of hypotheses implied by this theory, which I do not test here, concerns the impact of medium-level stakes or non-credible sources. The manipulations

discussed above of high and low stakes as well as of highly expert/trustworthy sources are intentionally meant to swamp source effects by significantly driving participation up or down. However, there are also cases in which the perception of stakes is uncertain, such as a medium-level stakes circumstances or where the perception of credibility is uncertain, such as sources without particular qualifications to lead. In keeping with arguments in other work concerning the impact of uncertainty on participation (Aroopala 2008), I expect that medium stakes or unqualified sources that induce uncertainty will make the group source particularly appealing. However, I do not test these hypotheses in this project. Previous literature explores source credibility (Lupia & McCubbins 1998; Nelson et al. 2007) and future work should explore the impact of medium stakes. In this project, I focus on exploring how factors that reduce uncertainty, such as high and low stakes and highly credible sources, affect responses to group appeals.

Research Design

Same-Group Sources, Stakes, & Participation in a Public Goods Experiment

These hypotheses are tested with an experimental design that assigns individuals group identities, manipulates the stakes involved, and varies whether the source of a group frame is a group member or a neutral source. I use a public goods game experimental design in which individuals are allocated a certain number of tokens and make decisions concerning allocations between themselves and a collective group “pot”. Contributions to the self are equivalent to keeping the money whereas contributions to the collective good are multiplied by the experimenter and divided equally among the subjects. As such, this design creates a tension between private and collective interests,

which captures the nature of the collective action problem (Olson 1965; Ledyard 1995; Croson 2008). These findings are applicable to voting behavior and other forms of group-based participation. Public goods games have traditionally been used to assess solutions to the collective action problems associated with group behavior, as well as testing ingroup/outgroup bias in allocations between members of different groups (Kollock 1998; Dawes et al. 1988; Brewer & Kramer 1986). This experimental design isolates the tension between individual and group interests because it does not occur in a competitive context.

The experiment includes four main components: (1) group-based tasks by which individuals were assigned to groups, (2) selection of the message source, (3) message delivery (4) public goods game (5) responses to a survey of attitudes and demographic information. A total of 220 subjects participated in this experiment (10 subjects in each of 22 sessions: 3 pilot sessions, 3 control sessions, and 4 sessions for each of 4 treatments).³⁴ The basic design is a 2 (stakes) X 2 (source type) factorial design, which I detail below. Each session consisted of 10 subjects (8 decision-makers and 2 sources). Each of the 4 main treatments had 32 total observations.

When subjects arrive at the lab, they are asked to sign a consent form and draw a card assigning them their id number for anonymous payment at the end. Oral instructions are read to subjects for the duration of the experiment. Initial instructions are followed by examples and a comprehension quiz.³⁵

³⁴ Pre-tests were done during pilot studies in which participants were interviewed after the session to confirm that manipulations of group identity, group sources, and stakes were having the expected effect.

³⁵ Full protocols for Group & Neutral High stakes are included in Appendices F & G.

In the first part of the experiment, subjects participate in a group task that determines their group assignments and a source for message delivery is chosen. Group assignments are based on selection of a colored object (Green Triangle or Red Square). As demonstrated in previous work, individual choice in choosing group identity rather than being randomly assigned to groups in the laboratory significantly increases the feeling of group attachment and group cooperation (Perreault & Bourhis 1984; Huddy 2003). Accordingly, each participant is presented with a tray of green triangles and red squares and is asked to select whichever object they like most. Subjects were then in either "Group Green" or "Group Red" for the duration of the experiment (Perreault & Bourhis 1984; Huddy 2003). To reinforce group identity, subjects are then asked to stand together with group members in different parts of the room (i.e. all Group Green are on the left side of the room and all Group Red are on the right side of the room). They are then seated in the same row of cubicles as their group members for the duration of the experiment. Both methods of reinforcing group identity in the lab are taken from (Bettencourt et al. 1999). The method of selection of the source for the messages is related to the source credibility treatments and is noted below.

In the experiment, individuals are given ten tokens worth \$1 each and two envelopes. One is labeled '*Self*' and the other labeled '*Group*'. They are instructed that whatever number of tokens they place in the *Self* envelope, they can keep. Whatever number of tokens they place in the *Group* envelope will be multiplied by a factor (dependent on treatment) and divided equally amongst them and their group members. Participants are then asked to write their group name on the *Group* envelope in order to reinforce group identity.

After instructions are read and understood, and right before the allocation decisions occurs, a message is selected by the source and distributed to group members. The message reinforces group identity and urges individuals to contribute tokens to the *Group* envelope. In keeping with the definition and operationalization of group-targeted frames used in previous work (Aroopala 2008), this group-targeted frame invokes ingroup bias by (a) affirming group identity and (b) affirming that the participation decision involves determining benefits to the group. Accordingly, after instructions are given, a reminder/review notice is given to subjects right before they make their allocation decision.³⁶ The *group frame* reads:

“Remember, you can contribute as many tokens as you want to your group (group’s name) effort. The experimenter will increase tokens in the pot by (50% or 200%) & it will be shared equally by you and your group (group’s name) members.”

The source of the message is discussed further below. Once allocation decisions have been made, the envelopes are collected, and subjects fill out the survey questionnaire while their payoffs are calculated. They are then paid anonymously one at a time.

Treatments

Stakes

A key treatment involves varying the stakes of the contribution. Some individuals make the decision between self and group when the stakes of contribution are low (i.e.

³⁶ A neutral version of the frame was used for the purpose of pre-testing the group frame and read “Remember, you can contribute as many tokens as you want. The experimenter will increase tokens in the pot by (50% or 200%)”. An additional treatment was conducted in which group sources gave a neutral frame, which addresses a separate question about subtle v. overt frame content from a group source, which is not discussed in this dissertation.

Marginal Per Capita Return is low) and in another treatment, the stakes of contribution are high (high payoff). To induce differences in stakes (perceived benefits associated with participating, with higher stakes meaning higher payoffs) the experimenter manipulates the multiplier to the group pot such that one treatment has a higher payoff than another treatment (.65 versus .35). In the *low stakes* treatment, subjects are told their collective contribution to the group pot would be “increased by 50%”. For example, if two tokens are in the pot, an increase of 50% means $.50 \times 2 = 1$. $1 + 2 = 3$ tokens. The original two tokens is increased by 50% (by 1 token) resulting in 3 total tokens. In *high stakes*, subjects are told their contribution to the group pot would be “increased by 200%”.

Credibility & Sources

Credibility of the source of the message is held constant for all sources and is established by using Lupia & McCubbins' (1998) conceptualization that expertise and trustworthiness of sources increases perceived credibility. Accordingly, expertise of the source is established by using the responses to a comprehension quiz.³⁷ Selecting sources based on highest scorers on the quiz helps establish the credibility of sources. This criterion of 'highest scorer' is announced to all participants before selection of the source in order to establish expertise and credibility of the source. Sources select and distribute messages to group members urging them to contribute to the group envelope.

A source is either selected from each group after group assignments have been made (*Group Source treatment*) or they are selected from the room at large before group assignments have been made (*Neutral Source treatment*). Selecting the source from among group members induces the feeling that the source shares the group's interests,

³⁷ The 10-question quizzes for Neutral and Group High Stakes are included in Appendices F & G.

whereas a randomly selected source is not expected to do so. Accordingly, it is also necessary to establish that the same-group source has a *high degree of ingroup bias*. As such, in addition to being paid a fixed fee, the source in the same-group condition has additional payoffs that are tied to contributions to the group (5% of the group pot). In the neutral condition, the source earns a fixed fee plus additional payoffs that are tied to the overall contributions of both groups (3% of the overall contribution to both group pots). The examples on the examples sheet made these additional payoff amounts for sources seem roughly comparable and are included in Appendix D.

Accordingly, there are two types of sources: *Same-Group* and *Neutral*. This design allows me to test hypotheses concerning the effect of frames on participation in low versus high stakes when different types of credible sources are taken into account. Table 4.1 below provides the experimental design and Table 4.2 provides information on sessions and treatments.

Table 4.1: Experimental Treatments

		STAKES	
		HIGH (pot increased by 200%)	LOW (pot increased by 50%)
SOURCE TYPE	GRP SOURCE	HIGH, GRP SOURCE (32 obs.)	LOW, GRP SOURCE (32 obs.)
	NEUTRAL SOURCE	HIGH, NEUTRAL SOURCE (32 obs.)	LOW, NEUTRAL SOURCE (32 obs.)

Table 4.2: Sessions & Treatments

Frames Treatment	# of Sessions	# of Subjects Per Session	Total # of Subjects	Total # of Observations*
Neutral Source				
High Stakes	4	10	40	32
Low Stakes	4	10	40	32
Total	8		80	64
Group Source				
High Stakes	4	10	40	32
Low Stakes	4	10	40	32
Total	8		80	64
Grand Total	16		160	128

*Each session had 8 observations from decision-makers and 2 sources (non-observations).

Results & Discussion

Aggregate-Level Analysis

The aggregate results are consistent with other findings from single-shot public goods games. Much like other studies which find that participants contribute 40-60% of their money to the group pool (Ledyard 1995; Heinrich et al. 2005), the sample here contributes about 50% on average across the treatments to the group pool (the average contribution is \$5.41 with a standard deviation of \$3.54). There is a significant amount of heterogeneity among participants in what is contributed. Figure 4.1 illustrates the distribution of dollars contributed to the public good for high stakes (Figure 4.1a) and for low stakes (Figure 4.1b). The modal contribution varies depending on treatment with both high stakes treatments and non-group low stakes giving all \$10 and group-low stakes giving \$5-\$7. Of the entire sample, about 17% of participants kept all \$10 and contributed nothing to the common pot. About 78% contributed at least \$2 or more to the common pot, and about 20.5% put all \$10 in the group pool. In terms of the stakes

hypothesis, as we would expect, there is a lower average contribution in low stakes (\$4.77) relative to in high stakes (\$6.07).

Figure 4.1b: High Stakes

Figure 4.1a Low Stakes

Did contributing to the common pool pay off? The average amount of money participants contributed was \$5.41 for all treatments, \$4.77 for low stakes, and \$6.05 for high stakes. The average group earnings range from a high of \$30 to a low of \$9 per person for high stakes, and from \$10.50 to \$3.75 for low stakes. The average return to subjects was \$18.14 for high stakes (SD \$5.22) and \$7.15 for low stakes (SD \$2.36).

Combining this with the average amount initially kept in the personal envelopes brings the total payoff close to \$22 for high stakes (\$22.09, SD \$4.79) and close to \$13 for low stakes (\$12.38, SD \$2.95). Accordingly, groups benefited from contributing to the common pool, increasing their possible earnings by \$3 to \$12.

In terms of the second hypothesis, it is useful to compare the distributions of contributions to the common pool illustrated in Figure 4.1. If we look at the willingness to contribute high amounts to the common pool (\$9 or all \$10) we see clear differences across treatments. Looking at the high stakes treatment, we can see that roughly equal proportions of participants in both the group source and non-group source treatments contribute \$9 or all \$10 to the common pool (34.38% in the group treatment and 31.26% in the neutral treatment). However, in the low stakes treatment, most of the individuals contributing in the \$9-\$10 range come from the non-group treatment, and there is a stark difference between the contributions from each treatment. Only 6.25% of the group treatment in low stakes contributes \$9-\$10 to the common pool, whereas 21.88% of the neutral treatment is willing to contribute \$9-\$10. This lends preliminary support to the hypotheses that same-group sources are less compelling in low stakes but not in high stakes.

Individual-Level Analysis

To fully test these hypotheses, the multivariate models in this section incorporate individual characteristics that may impact the observed variation in contributions to the common pool. The dependent variable is *Group Contributions* and ranges from 0 to 10 tokens. Since the dependent variable has ten categories that increase in value, I use an ordered logit model.

Descriptive statistics for each of the variables included in the multivariate models are presented in Table 4.3 below and question wording for survey items are included in Appendix D. The main independent variable of interest is the dummy variable *Group Source* which defines whether the source was a group source or a neutral source. Also included is *Source credibility*, a survey measure tapping the participants perception of the source's trustworthiness. Previous literature has shown potential effects from being an economics major or having taken game theoretic classes in that the training received affects behavior (Ledyard 1995). Additionally, altruism and ideology have been shown to affect behavior in experimental economic games (Ledyard 1995; Fowler & Kam 2007). *GPA* is included as a proxy for comprehension of the rules. *Group Attachment* is a composite measure of two survey items assessing whether individuals feel a part of their group and how close they feel to group members. Individuals that are more attached to the group should be more likely to contribute to the group pot.

Table 4.3: Descriptive Statistics on Variables in Multivariate Models

Variable	Observations	Mean	St. Dev.	Min	Max
Group Contributions^a	128	5.40	3.54	0	10
Source Credibility^b	127	4.27	1.30	1	6
Gametheory Classes^c	128	1.42	.75	1	4
Ideology^d	127	2.37	.70	1	4
Altruism^e	128	3.08	.60	1.66	4.66
GPA^f	128	7.85	1.48	2	10
Group Attachment^g	128	3.62	1.08	1	6

^a Dependent variable, amount sent to common group pool, ranging from 0 to 10.

^b Survey measure assessing trustworthiness of source (in Appendix D), lower values indicate the source has less credibility

^c The number of Game Theory classes taken, ranging from 1 to 4; 1=0 classes and 4=3 or more classes.

^d Lower values indicate more conservative

^e Composite measure from survey items (in Appendix D), lower values indicate low Altruism

^f 10 category variable with low scores equaling lower GPA

^g Composite measure of two survey items measuring how whether individuals felt a part of their group and how close they felt to group members; lower values indicate low group attachment

Table 4.4 below presents results from Model 1 (both stakes), Model 2 (high stakes only), Model 3 (low stakes only) and Model 4 (interaction model).

Table 4.4: Ordered Logit Regression of Group Contributions by Stakes

	Model 1: <u>Both Stakes</u>	Model 2: <u>High Stakes</u>	Model 3: <u>Low Stakes</u>	Model 4: <u>Interaction</u>
Stakes	.77** (.33)	--	--	.15 (.48)
Group Source	-.27 (.33)	.41 (.46)	-1.33** (.57)	-.88* (.48)
Stakes X Group Source	--	--	--	1.19* (.69)
Source Credibility	.64*** (.16)	.38* (.22)	1.32*** (.30)	.71*** (.17)
Game theory Classes	-.62*** (.22)	-.13 (.42)	-1.15*** (.30)	-.64*** (.22)
Ideology	.34 (.24)	.60 (.38)	.31 (.33)	.37 (.25)
Altruism	-.19 (.27)	-.08 (.40)	-.57 (.43)	-.31 (.28)
GPA	.12 (.11)	.18 (.20)	.27* (.15)	.15 (.11)
Group Attachment	.64*** (.17)	.78*** (.25)	.54** (.25)	.68*** (.17)
Cutpt 1	3.34 (1.48)	5.25 (2.49)	3.40 (2.12)	3.30 (1.49)
Log-Likelihood	-253.00	-122.04	-113.53	-251.48
χ^2	57.37***	19.13***	50.73***	60.41***
N	127	64	63	127

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test. Standard errors are in parentheses. The dependent variable is the token contribution to the common pool (0-10 tokens).

As can be seen in Model 1, *stakes* is positive and highly significant indicating that higher stakes decisions significantly increase contributions to the group pot. This lends support to H1. In terms of the control variables, the group source is negative and significant indicating that the group source was less persuasive than the neutral source.

However, this is not surprising given that this model combines high and low stakes, and the low stakes are expected to drive down the credibility of a group source. As we would expect, *source credibility*, the measure for whether participants found sources credible based on trustworthiness is positive and highly significant, showing that the more trustworthy they believed the source to be, the more contributions they gave to the group. The *Game theory Class* variable shows that individuals are significantly less likely to contribute to the group pool if they have taken game theory courses. *Ideology*, *Altruism* and *GPA* fail to reach significance. Not surprisingly, the *Group attachment* variable indicates that individuals that feel more attached to their group are significantly more likely to contribute to the group pot.

As can be seen, in the *High Stakes* condition (Model 2), *Group Source* does not have a significant effect on contributions to the common group pool. In other words, group sources were no more or less successful than neutral sources in motivating individuals to contribute to the group. This finding lends support to H2a. When we look at Model 3, the *Low Stakes* condition, we see that *Group Source* is in fact negative and this finding is significant at the .01 level on a two-tailed test. In other words, in low stakes, a group source actually significantly decreases contributions to the group, lending support to H2b.

The control variables do not differ much from Model 1. However, the *Game theory Class* variable shows that only in low stakes, these individuals are significantly less likely to contribute to the group pool, whereas in high stakes the finding is negative also but fails to reach significance. This is further proof that the high stakes situation appears to be beneficial in terms of individual self-interest relative to the low stakes

situation. Additionally, *GPA* exerts a positive and significant influence on contributions only in the low stakes situation.

To further test the interaction hypothesis that the effect of a group source is moderated by stakes of the decision, I also include an interaction model, Model 4, which includes an interaction term between stakes of the decision and group source type. The positive and significant coefficient on the interaction term provides mild support for the interaction hypothesis. Group source continues to have a mild main effect but the effect of stakes of the decision is swamped by the interaction term. The controls do not differ significantly from earlier models.

However, as these are maximum likelihood estimates, the best way to interpret the substantive impact of these findings is to calculate predicted probabilities for the different source treatments in Models 2 and 3.³⁸ As such, the independent variables are held at their mean value and the *Group Source* variable value is changed from 0 to 1. In doing so, the effect of source type on group contributions in different stakes treatments is isolated. For ease of interpretation, the middle values of the dependent variable are clumped in groups of three tokens each. Figure 4.2 below illustrates these predicted probabilities for Models 2 and 3 in Table 4.4.

³⁸ Predicted probabilities calculated for the interaction model in Model 4 in Table 4 are similar to those presented here for Models 2 & 3.

Figure 4.2a: Predicted Probabilities – High Stakes **Figure 4.2b: Predicted Probabilities – Low Stakes**

As can be seen in Figure 4.2a above, in *High Stakes*, the average individual in the sample behaves similarly regardless of which of the two source treatments he/ she received. For example, in terms of the 7-9 token range, there are only minor differences in probability of contributing to the group pot based on whether an individual is in the group source condition or the neutral source condition. This suggests that a group source is as persuasive as a neutral source in high stakes, lending further support to H1a.

However, when we turn to Figure 4.2b, we see that in *Low Stakes*, the average individual behaves very differently based on which source treatment he/she received. In Figure 4.2b we can see real separation in behavior based on the treatments such that a participant in the non-group source treatment is more likely to give in the higher ranges and whereas the same person in a group source treatment is more likely to give in the lower ranges. Specifically, we can see that in the 0 token and 1-3 token ranges, the greatest likelihood of falling in these ranges comes from an individual in the group source treatment. However, for all contributions of 4 tokens or more, there is a greater likelihood that the individual is from the non-group source treatment. This suggests, therefore, that in *Low Stakes*, a group source actually decreases contributions relative to a neutral source, lending further support to H1b. If perceived in-group bias of the source is playing a role here, it is clear that only low stakes situations bring this in-group bias of the source into conflict with the individual self-interest of the group member, suggesting a greater underlying rational component to group-based mobilization.

Conclusion

Previous work on social movements discusses the potential to mobilize group support using frames that target group identity (Gamson 1992; Benford & Snow 2000). However, there has yet to be clear identification of the conditions in which we can expect frames to successfully mobilize groups, nor do we have causal explanations for how they work. The literature on moderators of framing effects suggests that an underlying rationality often moderates whether frames will be successful in shifting opinion (Druckman 2001a). This project builds on these previous works to help identify the conditions in which we can expect group-based mobilization to be successful (i.e. when frames affect *behavior*). Specifically, by combining two moderators of frames, *source credibility* and the *stakes of the decision*, I generate and test predictions for successful group mobilization.

The findings in this project reinforce earlier findings that high stakes decisions increase participation relative to low stakes decisions (*H1*). Further, these findings also suggest that group sources who deliver framed messages to participants are less successful in increasing group-based behavior in conditions of low stakes, however they are equally successful as neutral sources in high stakes (*H2a, H2b*). This result is a function of how the *perceived in-group bias* of a same-group source is interpreted by participants in different stakes conditions. In high stakes situations, the in-group bias of the source is not in conflict with individual self-interest of the participant, and so the in-group bias of the source does not provide the individual with the motivation to discount the framed message from the source. However in low stakes situations, the participant is

highly motivated to *discount* the framed message from the source because the source's in-group bias seems to be at odds with the individual's self-interest.

Taken together, these findings suggest that group-based behavior has a greater underlying rationality than previously thought. Accordingly, future research on group mobilization should take into account other potential moderators of frames that may further reveal the linkage between group-based behavior and rationality (Aroopala 2008). Doing so will not only help in generating empirically testable predictions for group mobilization, but will also help increase our understanding of when and why group mobilization is an effective strategy as well as when it is ineffective. As such, the research presented here has implications for campaigning and political mobilization based on group identity.

CHAPTER 5: Conclusion

Groups are often mobilized to take action in politics. One of the key mobilization tactics involves political elites and campaigns targeting the group identities of potential group members. While previous work on mobilization has shown that group identity, frames, and rational factors may influence mobilization, there is still a gap in our understanding concerning when and how mobilization actually succeeds. This gap in our understanding of group-based mobilization stems from a divide in the field between explanations of decision-making that emphasize individual costs/benefits analysis (rational models) and those that emphasize attachment to group (group models). This project seeks to fill this gap by merging *group-based models* with the *rational choice model* to provide an empirically testable theory of *when* and *how* group-based mobilization efforts increase participation.

The key question is: what factors make individuals susceptible to group-based mobilization attempts? Frames in political communication (i.e. persuasive messages containing interpretations of events) have been shown to change individuals' opinions and/or behavior and can be used to mobilize groups if the frame targets group identity (Iyengar 1991; Gamson 1992; Polletta & Ho 2006). However, an underlying *rationality* determines whether individuals will accept or reject frames. This rationality is captured by factors, or moderators that limit framing effects, that help us *predict* whether individuals will accept or reject frames (Druckman 2001a; 2001b). My research combines the insights from rational choice and psychological theories to generate empirically testable predictions of successful group-based mobilization.

The central argument in this dissertation is that an understanding of three factors is critical for understanding group-based mobilization: (1) variance in group identity strength, (2) group-targeted frames, and (3) instrumental factors that moderate behavioral responses to group frames. As Huddy (2003) points out, group identity varies in strength and this ought to be accounted for in our social science models. In fact, many of the mixed findings concerning the impact of group identity (Lublin 1997, Voss 1996) may potentially be resolved if group identity strength is accounted for. Given that group identity varies in strength, it makes sense that group frames and instrumental factors likely affect individuals with varying group identity strength in different ways. Accordingly, each chapter of this dissertation explores the different ways in which group-targeted frames and instrumental factors affect individuals with varying group identity strength.

Review of Findings & Central Contributions

In Chapter 2, I use a laboratory experiment with a voting game design to test how thresholds (rules that determine how far the group is from their goal) affect responses to frames. Threshold effects have been well-documented in previous work on voting behavior and public goods contributions in that nearness to a threshold increases participation due to a feeling of being 'pivotal' (Levine & Palfrey 2007; Suleiman & Rapaport 1992). I use this concept of thresholds to test whether frames have a greater effect when individuals are part of a group that is near a threshold (i.e. near 50% under majority rule) rather than far from a threshold.

In this voting game experiment, individuals are given task-based group identities and asked to make a decision about whether or not to participate in group behavior (a costly decision). Threshold effects are induced by varying group size randomly each round under a majority rule system and a framing effect is induced by giving participants a frame that reinforces their group identity and highlights the benefits that are possible for their group. I find support that a group frame is most likely to increase group behavior when groups are near a threshold rather than far from a threshold. Further, I find that weak-identifiers in fact respond very differently to frames and thresholds than moderate-identifiers. Specifically, weak-identifiers are more likely to respond to group frames by participating in majority contexts, providing further support for the need to account for variance in identity strength. These findings suggest that identity psychology can be combined with cost-benefit rationality in explaining group behavior.

In Chapter 3, I test the interaction of frames and stakes and thresholds in a survey-experiment. High stakes decisions have been shown to increase support for policies (Chong 2001) and contributions to the public good (Ledyard 1995). I test whether thresholds and stakes of the decision moderate behavioral responses to group frames. This survey-experiment assesses the impact of a group frame on willingness to contribute money to mobilize support for a proposed school bond. The group frame claims that the neighborhood will benefit from the school bond whereas a broad frame claims various regions will benefit from the school bond. The frame is coupled with messages that vary threshold (e.g., polls suggestive of the current amount of support). Finally, stakes of the decision are measured with items assessing how important the neighborhood school is to

the respondent. This survey-experimental design allows an exploration of whether successful identity frames depend on thresholds and stakes in the real world.

I find that individuals with strong identities respond very differently to thresholds than moderate-identifiers or weak-identifiers, further reinforcing the need to account for variance in identity strength. Specifically, strong-identifiers participate more in minority cases rather than in parity or majority cases, suggesting an “underdog effect.” With regard to stakes of the decision, I find that stakes moderate framing effects in that frames work moderately better in high stakes decisions relative to low stakes decisions. As such, further evidence is found for the notion that there is an underlying rationality in responses to group mobilization efforts.

In Chapter 4, I use a second laboratory experiment with a public goods game design to assess the influence of group frames on contributions to the group when we account for the effects of the moderators: (1) credible sources and (2) stakes of the decision. Credible sources of a framed message have been shown to increase responses to frames (Druckman 2001a), particularly when the source of the message shares a group identity with the respondent (Kuklinski & Hurley 1994; Nelson et al 2007). I combine the two moderators, source credibility and stakes of the decision, to identify the conditions in which group sources are actually less likely to increase contributions to the group.

In this public goods game experiment, individuals are given task-based group identities, and as before, are given a frame that reinforces their group identity and reminds them of potential group benefits. They are then asked to make an allocation decision between their individual interests and the group interests. Stakes of the decision

are manipulated by changing the rate of return for contributions to the group (high and low). The findings suggest a strong interaction effect between stakes and source credibility in that stakes determine whether or not a same-group source is viewed as credible and has the accompanying ability to increase contributions to the group using a group frame. Specifically, group sources in a low stakes situation are viewed as non-credible and are therefore significantly less likely to motivate contributions to the group relative to a neutral source. These findings indicate that rational calculations have the capacity to influence identity-based behavior.

In sum, these experiments find evidence that group-based frames successfully mobilize groups only when certain conditions are met. Specifically, these findings suggest that successful group mobilization using group frames is influenced by group identity strength, thresholds, stakes, and source credibility. This dissertation combines group-based expectations with expectations derived from the rational choice framework in order to identify conditions for successful group mobilization and to assess the extent to which these two branches of work can be combined to explain the role of group identity in behavior.

Understanding the role of group identity in politics is important for three central reasons. First, it helps us understand the participation of various groups in society, including minorities and underrepresented groups with typically low participation rates. Further, this dissertation shows that group mobilization can take place without also instigating inter-group tensions. Since campaigns frequently use group-mobilization to increase turnout, it is important to understand the causal mechanisms behind successful mobilization, particularly the forms of mobilization that do not increase inter-group

tensions. And finally, there are many situations in which group tensions are already high, and the findings in this dissertation suggest that certain factors can affect whether or not individuals respond to group identity. As such, this research opens the door for explorations of similar tactics that may help to decrease responses to group-mobilization attempts in situations in which inter-group tensions are already high. In other words, understanding group behavior is a necessary aspect of understanding how to demobilize groups in cases in which group conflict is already heightened.

Extensions

Future work should continue to investigate the effect of group identity strength, frames, and moderators on mobilization. I plan on extending my dissertation research in several ways. Here I conclude with a review of some of the extensions to my dissertation that I plan on pursuing. First, while my experiments offer strong evidence in support of my theoretical expectations, they provide a minimal test on many dimensions. I plan to implement additional experiments to further assess the robustness of my findings. First, in both the voting game experiment and the public goods game experiment, participants were given a subtle frame only one time before making their decision. However, as Chong and Druckman (2007) highlight, in real political debate, frames are often of varying strength, frequency, and direction such that an environment of competitive framing is a better test of the effect of frames on decision-making. As such, I would like to build on the experimental designs used in my thesis by incorporating multiple frames of varying strength and direction. This extension allows me to assess whether the interaction effect between frames and moderators that I find support for in my thesis holds up in a competitive environment.

A second and related extension involves assessing my theoretical predictions in the context of competing group identities. In both of my thesis experiments, participants are assigned a single identity or are asked to make choices on behalf of a single identity at a time. While this design is the perfect first take on whether group identity matters for behavior, it is a minimal test since individuals in fact possess multiple identities at any given moment (Huddy 2003). As such, a stronger test of the role of group identity on behavior is to incorporate multiple and competing identities into the experimental designs used in my thesis. Specifically, by asking participants to choose which identity to act on after administering frames and moderators, I will be able to better assess the interaction effect of frames and moderators in light of multiple and competing identities.

Additionally, I intend to conduct a field experiment that implements frames and moderators such as sources, stakes, and thresholds, through direct mail. Previous work illustrates the effectiveness of direct mail on turnout rates (Gerber et al. 2008; Nickerson 2008) but much remains to be known concerning the effect of different types of content in direct mail on group-based behavior. In so doing, I will move beyond most extant work on content that focuses either on tone (e.g., negativity) or civic duty (Gerber et al. 2008). Further, manipulating the group frames and moderators in direct mail and then matching these data with public voting records provides a test of how the interaction between these factors affects actual voter turnout rates, providing greater external validity to the laboratory findings in the thesis.

Another extension I am currently working on is to assess how group frames and the moderator of thresholds interact to affect both voter turnout and ethnic violence in a comparative context. Specifically, building on the work of ethnic violence scholars

(Brass 2003; Wilkinson 2004) I am interested in whether a threshold effect is induced in first-past-the-post electoral districts (FPTP) in India with equivalent religious group sizes (i.e. Hindus and Muslims). I want to analyze whether group frames administered in these 'near threshold' districts can further increase voter turnout and ethnic violence relative to 'far from threshold' districts in which group sizes are extremely unequal. I have collected and coded data from a national Indian newspaper for the same time period on the number of incidents of violence in these districts. I plan to merge these data on ethnic violence with the Indian ethnic violence data collected by Varshney (2002) and available from the ICPSR website. The remaining portion of this project entails performing additional content analysis of national and local newspapers to analyze the various group frames that were implemented during this time period. These data on group frames in newspapers and the district group sizes allows me to assess the interaction effect of frames and thresholds on both voter turnout and ethnic violence, providing a better account of the anticipated and unanticipated negative residual effects of group-based mobilization.

Finally, this dissertation also opens the door for explorations of strategies for *diffusing* intergroup tensions, particularly in situations where these tensions are high and could involve violence or conflict. The findings of this thesis suggest that group-based behavior can be increased by a combination of frames and moderators. An important implication of these findings is that it may be possible to use similar methods to diffuse these tensions and decrease group-based behavior in situations of inflamed intergroup tension and conflict. As such, I intend to conduct additional experiments to explore what combinations of different types of frames and moderators (sources, stakes, and

thresholds) can successfully *demobilize* groups when they have already been mobilized and are potentially experiencing an increase in intergroup conflict.

Bibliography

- Aroopala, Christy. 2008. "Mobilizing Collective Identity: Frames & Rational Individuals." Unpublished manuscript.
- Bala, Venkatesh, and Sanjeev Goyal. 1998. "Learning from Neighbors." *Review of Economic Studies* 65: 595-621.
- Barreto, Matt. 2007. "Si Se Puede! Latino Candidates and the Mobilization of Latino Voters." *American Political Science Review* 101:425-41.
- Benford, Robert.D and Snow, David.A. 2000. "Framing Processes and Social Movements: An Overview and Assessment." *Annual Review of Sociology* 26:611-39.
- Bettencourt, B. Ann, Norman Miller, and Deborah L. Hume. 1999. "Effects of numerical representation within cooperative settings: Examining the role of salience in in-group favouritism." *British Journal of Social Psychology* 38: 265-287.
- Bettencourt, B. Ann, Kelly Charlton, and Cyndi Kernahan. 1997. "Numerical Representation of Groups in Cooperative Settings: Social Orientation Effects on Ingroup Bias." *Journal of Experimental Social Psychology* 33: 630-659.
- Boudreau, Cheryl. 2006. "Are Two Heuristics Better Than One? An Analysis of How Citizens Use Multiple Heuristics." Working Paper.
- Bobo, Lawrence and Vincent Hutchings. 1996. "Perceptions of Racial Group Competition: Extending Blumer's Theory of Group Position to a Multiracial Social Context." *American Sociological Review* 61: 951-972.
- Bobo, Lawrence, and Frank Gilliam. 1990. "Race, Sociopolitical Participation and Black Empowerment." *American Political Science Review* 84:377-93.
- Brass, Paul. 2003. *The Production of Hindu-Muslim Violence in Contemporary India*. London: Univ. of Washington Press.
- Brewer, Marilyn B., Jorge M. Manzi, and John S. Shaw. (1993). Ingroup identification as a function of depersonalization, distinctiveness, and status. *Psychological Science*, 4, 88-92.
- Brewer, Marilyn and Roderick Kramer. 1986. "Choice Behavior in Social Dilemmas: Effects of Social Identity, Group Size, and Decision Framing." *Journal of Personality & Social Psychology* 50 (3): 543-449.

- Cain, Bruce. And Kiewiet, D. Roderick. 1984. "Ethnicity and electoral choice: Mexican American Voting Behavior in California 30th congressional districts." *Social Science Quarterly* 65:315-27.
- Canon, David. 1999. *Race, Redistricting, and Representation: The Unintended Consequences of Black Majority Districts*. Chicago: Univ. Chicago Press.
- Cardy, Emily Arthur. 2005. "An Experimental Field Study of the GOTV and Persuasion Effects of Partisan Direct Mail and Phone Calls." *Annals of the American Academy of Political and Social Science* 601 (September):28-40.
- Chai, Sun-Ki. 2001. *Choosing an Identity: A General Model of Preference and Belief Formation*. Ann Arbor: The Univ. of Michigan Press.
- Chong, Dennis. 2000. *Rational Lives: Norms and Values in Politics and Society*. Chicago: Univ. Chicago Press.
- Chong, Dennis, Jack Citrin, and Patricia Conley. 2001. "When Self-Interest Matters." *Political Psychology* 22 (3): 541-570.
- Chong, Dennis, and James N. Druckman. 2007a. "Framing Public Opinion in Competitive Democracies." *American Political Science Review* 101 (4):637-55.
- . 2007b. "Framing theory." *Annual Review of Political Science* 10:103-26.
- . 2007c. "A theory of framing and opinion formation in competitive elite environments." *Journal of Communication* 57 (1):99-118.
- Citrin, Jack, Donald P Green, David O. Sears. 1990. "White reactions to black candidates: When does race matter?" *Public Opinion Quarterly* 54: 74-96.
- Coate, Stephen , and Michael Conlin. 2004. "A Group Rule: Utilitarian Approach to Voter Turnout: Theory and Evidence." *American Economic Review* 94:1476-504.
- Conover, Pamela. 1984. "The influence of group identification on political perception and evaluation." *Journal of Politics* 46:760-85.
- Conover, Pamela Johnston and Stanley Feldman. 1989. "Candidate Perception in an Ambiguous World: Campaigns, Cues, and Inference Processes." *AJPS* 33 (4): 912-40.
- Croson, Rachel. 2008. "Differentiating Altruism and Reciprocity." Forthcoming, *Handbook of Experimental Economics Results*, Plott & Smith (eds.).
- Dawes, Robyn M., John M. Orbell, Randy T. Simmons, Alphons J.C. Van De Kragt. 1986. "Organizing Groups for Collective Action." *APSR* 80: 1171-1185.

- Diani, Mario. 1996. "Linking mobilization frames and political opportunities: insights from regional populism in Italy." *American Sociological Review* 61:1053-69.
- Druckman, James N. 2001a. "The implications of framing effects for citizen competence." *Political Behavior* 23 (3):225-56.
- . 2001b. "On the limits of framing effects: Who can frame?" *Journal of Politics* 63 (4):1041-66.
- Druckman, James N. and Arthur Lupia. 2000. "Preference Formation." *Annual Review of Political Science* 3: 1-24.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.
- Eckel, Catherine C., and Philip J. Grossman. 1998. "Are Women Less Selfish Than Men?: Evidence From Dictator Experiments." *The Economic Journal* 108 (May):726-35.
- Edlin, Aaron, Andrew Gelman, Noah Kaplan. 2007. "Voting as a Rational Choice: Why and How People Vote to Improve the Well-being of Others." *Rationality & Society* 19:293.
- Elster, Jon. 1989. *The Cement of Society*. Cambridge: Cambridge Univ. Press.
- Erbring, Lutz, Edie N. Goldenberg, and Arthur H. Miller. 1980. "Front-page news and real-world cues: another look at agenda-setting by the media." *American Journal Of Political Science* (24):16-49.
- Feddersen, Timothy, and Alvaro Sandroni. 2002. "A Theory of Participation in Elections." Unpublished Paper.
- Fowler, James , and Cindy Kam. 2007. "Beyond the Self: Social Identity, Altruism, and Political Participation." *Journal of Politics* 69:813-27.
- Gaines, Brian, James Kuklinski, and Paul Quirk. 2007. "The Logic of Survey Experiment Reexamined." *Political Analysis* 15: 1-20.
- Gamson, William A. 1992. *Talking Politics*. Cambridge: Cambridge Univ. Press.
- Gerard, Harold B. and Michael F. Hoyt. (1974). Distinctiveness of social categorization and attitude toward ingroup members. *Journal of Personality and Social Psychology*, 27, 836-842.

- Gerber, Alan S., Donald P. Green, and Christopher W. Larimer. 2008. "Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment." *American Political Science Review* 102 (1): 33-48.
- Gerber, Alan S. and Donald P. Green. 2000. "The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment." *American Political Science Review* 94 (September): 653-63.
- Giles, Michael W. and Melanie A. Buckner. 1993. "David Duke and Black Threat: An Old Hypothesis Revisited." *Journal of Politics* 55: 702-713.
- Glaser, James. 1994. "Back to the Black Belt: Racial Environment and White Racial Attitudes in the South." *Journal of Politics* 56: 21-41.
- Graber, Doris. 2004. "Mediated Politics and Citizenship in the Twenty-first Century." *Annual Review of Psychology* 55: 545-71.
- Graves, Scott and Jongho Lee. 2000. "Ethnic Underpinnings of Voting Preference: Latinos and the 1996 U.S. Senate Election in Texas." *Social Science Quarterly* 81: 226-236.
- Green, Donald and Rachel Seher. 2003. "What Role Does Prejudice Play in Ethnic Conflict?" *Annual Review of Political Science* 6: 509-31.
- Hajnal, Zoltan. 2007. *Changing White Attitudes Toward Black Political Leadership*. Cambridge: Cambridge Univ. Press.
- Henig, Jeffrey R. 1993. "Race and Voting- Continuity and Change in The District-Of-Columbia." *Urban Affairs Review* 28 (4): 544-570.
- Henrich et al. 2005. "'Economic Man' in cross-cultural perspective: Behavioral Experiments in 15 small-scale societies." *Behavioral and Brain Sciences* 28: 795-855.
- Henshel, Richard L. and William Johnston. 1987. "The Emergence of Bandwagon Effects: A Theory." *The Sociological Quarterly* 28 (4): 493-511.
- Hero, Rodney E. and Caroline J. Tolbert. 1996. "A Racial/Ethnic Diversity Interpretation of Politics and Policy in the States of the U.S." *American Journal of Political Science* 40: 851-71.
- Huckfeldt, Robert, and John Sprague. 1992. "Political Parties and Electoral Mobilization: Political Structure, Social Structure, and the Party Canvas." *American Political Science Review* 86:70-86.

- Huddy, Leonie. 2003. "Group Identity and Political Cohesion." In *Oxford Handbook of Political Psychology*, ed. D. Sears, L. Huddy and R. Jervis. Oxford: Oxford University Press.
- Hutchings, Vincent and Nicholas A. Valentino. 2004. "The Centrality of Race in American Politics." *Annual Review of Political Science* 7: 383-408.
- Iyengar, Shanto. 1991. *Is Anyone Responsible: How Television Frames Political Issues*. Chicago: Univ. Chicago Press.
- Jacoby, William G. 2000. "Issue Framing & Public Opinion on Govt. Spending." *American Journal Of Political Science* 44 (4):750-67.
- Jennings, M.. Kent. 1979. "Another Look at the Life Cycle and Political Participation." *American Journal of Political Science* 23: 755-771.
- Kinder, Donald , and Lynn Sanders. 1996. *Divided by Color: Racial Politics and Democratic Ideals*. Chicago: Univ. of Chicago Press.
- Klandermans, Bert. 2003. "Collective Political Action." In *Oxford Handbook of Political Psychology* ed. L. H. D. Sears, & R. Jervis. Oxford: Oxford University Press.
- Kollock, Peter. 1998. "Social Dilemmas: The Anatomy of Cooperation." *Annual Review of Sociology* 24: 183-214.
- Kravitz, David A., and Judith Platonina. 1993. "Attitudes and Beliefs About Affirmative Action: Effects of Target and of Respondent Sex and Ethnicity." *Journal of Applied Psychology* 78:928.
- Kuklinski, James H. and Norman L. Hurley. 1994. "On Hearing and Interpreting Political Messages: A Cautionary Tale of Citizen Cue-Taking." *Journal of Politics* 56 (3): 729-51.
- Ledyard, John O. 1995. "Public Goods: A Survey of Experimental Research." In *Handbook of Experimental Economics*, ed. J. Kagel and A. Roth. Princeton, NJ: Princeton Univ. Press.
- Leonardelli, Geoffrey L., and Marilyn Brewer. 2001. "Minority and Majority Discrimination: When and Why." *Journal of Experimental Social Psychology* 37:468-85.
- Levine, David, and Thomas R. Palfrey. 2007. "The Paradox of Voter Participation? A Laboratory Study." *American Political Science Review* 101:143.
- Lublin, David V. 1997. *The Paradox of Representation*. Princeton, NJ: Princeton Univ. Press.

- Lupia, Arthur and Mathew D. McCubbins. 1998. *The Democratic Dilemma: Can Citizens Learn What They Need to Know?* Cambridge: Cambridge University Press.
- Marsh, Catherine. 1985. "Back on the Bandwagon: The Effect of Opinion Polls on Public Opinion." *British Journal of Political Science* 15 (1): 51-74.
- McCarthy, John D., and Mayer N. Zald. 1996. "Introduction: opportunities, mobilizing structures, and framing processes – toward a synthetic, comparative perspective on social movements." In *Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures, and Cultural Framings*, ed. e. a. D. McAdam. New York: Cambridge Univ. Press.
- McDermott, Monika L. 1998. "Race and gender cues in low-information elections." *Political Research Quarterly* 51: 895-918.
- McGuire, William J. 1973. "Persuasion, Resistance, and Attitude Change." In *Handbook of Communication*, ed. I. DeS. Pool, W. Schramm, F. W. Frey, N. Maccoby, and E. B. Parker. Chicago, IL: Rand McNally.
- McNulty, John E. 2005. "Phone-Based GOTV- What's on the Line? Field Experiments with Varied Partisan Components, 2002-2003." *Annals of the American Academy of Political and Social Science* 601 (September):41-65.
- Michelson, Melissa R. 2005. "Meeting the Challenge of Latino Voter Mobilization." *Annals of the American Academy of Political and Social Science* 601 (September):85-101.
- Mondak, Jeffrey J. 1993a. "Source Cues and Policy Approval: The Cognitive Dynamics of Public Support for the Reagan Agenda." *AJPS*: 37 (1): 186-212.
- Mondak, Jeffrey J. 1993b. "Public Opinion and Heuristic Processing of Source Cues." *Political Behavior* 15 (2): 167-92.
- Morton, Rebecca. 1987. "A Group Majority Voting Model of Public Good Provision." *Social Choice and Welfare* 4:117-31.
- Mullen, Brian, Rupert Brown, and Colleen Smith. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, 22, 103–122.
- Nelson, Thomas E., Kira Sanbonmatsu, Harwood McClerking. 2007. "Playing a Different Race Card: Examining the Limits of Elite Influence on Perceptions of Racism." *Journal of Politics* 69: 416-429.

- Nelson, Thomas, and Donald Kinder. 1996. "Issue Frames & Group-Centrism." *Journal of Politics* 58 (4):1055-78.
- Nickerson, David W. 2008. "Is Voting Contagious? Evidence from Two Field Experiments." *American Political Science Review* 102 (1): 49-57.
- Nickerson, David W. 2005. "Partisan Mobilization Using Volunteer Phone Banks and Door Hangers." *Annals of the American Academy of Political and Social Science* 601 (September):10-27.
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard Univ. Press.
- Page, Benjamin and Robert Shapiro. 1987. "What Moves Public Opinion?" *APSR* 81 (1): 23-43.
- Perreault, Stephane , and Richard Y. Bourhis. 1999. "Ethnocentrism, Social Identification, and Discrimination." *Personality and Social Psychology Bulletin* 25:92-103.
- Polletta, Francesca, and M. Kai Ho. 2006. "Frames and Their Consequences." In *The Oxford Handbook of Contextual Political Studies*, ed. C. T. RE Gooden. Oxford: Oxford Univ. Press.
- Ramirez, Ricardo. 2005. "Giving Voice to Latino Voters: A Field Experiment on the Effectiveness of a National Nonpartisan Mobilization Effort." *Annals of the American Academy of Political and Social Science* 601 (September):66-84.
- Reeves, K. 1997. *Voting Hopes or Fears? White Voters, Black Candidates, and Racial Politics in America*. New York: Oxford Univ. Press.
- Riker, William H. *The Theory of Political Coalitions*. CT: Yale Univ. Press
- Rosenstone, Steven, and Jim Hansen. 1993. *Mobilization, Participation, and Democracy in America*. New York: Macmillan Press.
- Sachdev, Itesh.and Richard Y. Bourhis. (1984). Minimal majorities and minorities. *European Journal of Social Psychology*, 14, 35-52.
- Sachdev, Itesh.and Richard Y. Bourhis. (1991). Power and status differentials in minority and majority group relations. *European Journal of Social Psychology*, 21, 1-24.
- Sapiro, Virginia. 2004. "Not Your Parents' Political Socialization." *Annual Review of Political Science* 7 (1):1-23.

- Sears, David O. and Richard E. Whitney. 1973. "Political Persuasion." In *Handbook of Communication*, ed. I. DeS. Pool, W. Schramm, F. W. Frey, N. Maccoby, and E. B. Parker. Chicago, IL: Rand McNally.
- Segura, Gary and Helena Rodriguez. 2006. "Comparative Ethnic Politics in the United States: Beyond Black and White." *Annual Review of Political Science* 9: 375-95.
- Shachar, Ron , and Barry Nalebuff. 1999. "Follow the Leader: Theory and Evidence on Political Participation." *American Economic Review* 89:525-47.
- Sidanius, Jim and Felicia Pratto 1999. *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. New York: Cambridge Univ. Press
- Sigelman CK, Sigelman L, Walkosz BJ, Nitz M. 1995. "Black Candidates, white voters: understanding racial bias in political perceptions." *American Journal of Political Science* 39: 243-65.
- Simon, Herbert. A. 1954. "Bandwagon and Underdog Effects and the Possibility of Election Predictions." *The Public Opinion Quarterly* 18(3): 245-253.
- Sniderman, Paul and Edward Carmines. 1997. *Reaching Beyond Race*. Cambridge: Harvard Univ. Press.
- Snow, David.A., and Robert.D. Benford. 1988. "Ideology, Frame Resonance, and Participant Mobilization." In *From Structure to Action: Comparing Movement Participation across Cultures, International Social Movement Research* ed. B. Klandermans, H. Kriesi and S. Tarrow. Greenwich, CT: JAI Press.
- Straffin, Phillip D. Jr. 1977. "The Bandwagon Curve." *American Journal of Political Science* 21 (4): 695-709.
- Suleiman, Ramzi, and Amnon Rapoport. 1992. "Provision of step-level public goods with continuous contribution." *Journal of Behavioral Decision-Making* 5:133-53.
- Terkildsen, Nayda. 1993. "When white voters evaluate black candidates: the processing implications of candidate skin color, prejudice and self-monitoring." *American Journal of Political Science* 37:1032-53.
- Transue, John. 2007. "Identity Salience, Identity Acceptance, and Racial Policy Attitudes: American National Identity as a Uniting Force." *American Journal Of Political Science* 51 (1):78-91.
- Trivedi, Neema. 2005. "The Effect of Identify-Based GOTV Direct Mail Appeals on the Turnout of Indian Americans." *Annals of the American Academy of Political and Social Science* 601 (September):115-22.

- Truman, David B. 1951. *The Governmental Process: Political Interests and Public Opinion*. New York: Knopf.
- Uhlman, Carole. 1989. "Rational Turnout: The Neglected Role of Groups." *American Journal of Political Science* 33:390-422.
- Varshney, Ashutosh. 2002. *Ethnic Conflict and civic Life: Hindus and Muslims in India*. New Haven, CT: Yale Univ. Press.
- Voss, Stephen D. 1996. "Beyond Racial Threat: Failure of an Old Hypothesis in the New South." *Journal of Politics* 58:1156-70.
- Wilkinson, Steven. 2004. *Votes and Violence*. Cambridge, UK: Cambridge Univ. Press.
- Wilson, Rick K. and Carl M. Rhodes. 1997. "Leadership and Credibility in N-Person Coordination Games." *Journal of Conflict Resolution* 41 (6): 767-791.
- Wong, Janelle S. 2005. "Mobilizing Asian American Voters: A Field Experiment." *Annals of the American Academy of Political and Social Science* 601 (September):102-14.
- Zaller, John. 1992. *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge U. Press.

APPENDIX A – Additional Tables & Sample Screens for Chapter 2

Table A1: Earnings Based on Choice of X or Y & Group Decisions

YOU ARE ALPHA & YOU CHOOSE:	MORE OF ALPHA CHOOSES X THAN BETA?	YOUR EARNINGS (ALPHA)	BETA EARNINGS
X			
	YES	105	5
	NO	5	105
	TIE BETWEEN ALPHA & BETA	55	55
Y			
	YES	105 + Y	5
	NO	5 + Y	105
	TIE BETWEEN ALPHA & BETA	55 + Y	55

Table A2: Sessions & Treatments

Frames Treatment	# of Sessions	Total # of Subjects	Total # Observations (25 per Group ID & 50 per Subject)
Neutral Frame	3	45	2250
Rivalry Frame ³⁹	3	44	2200
Total	6	89	4450
Controls:			
Neutral without Size ⁴⁰	2	29	1450
Neutral - Single ID	2	30	1500
Total	4	59	2950
Grand Total	10	148	7400

³⁹ One subject from the Rivalry condition was invariant on the dependent variable. Logit estimates could not be obtained when models were run for the subject.

⁴⁰ One subject in this control had a computer malfunction during the session.

Table A3: Descriptive Statistics on Variables in Multivariate Models (Per Subject)

Variable	Observations	Mean	St. Dev.	Min	Max
Vote	50	.44	.50	0	1
Rivalry Frame	1	.50	.50	0	1
Parity	50	.40	.49	0	1
Size	50	2.32	.71	1	3
Ybonus	50	2.73	1.61	0	5.5
Period	50	3	1.41	1	5
Sex	1	.52	.50	0	1
Altruism	1	2.97	.63	1.43	4.57
Type Alpha/Green	1	.26	.44	0	1
Type Alpha/Blue	1	.27	.44	0	1
Type Beta/Green	1	.26	.44	0	1
Type Beta/Blue	1	.20	.40	0	1
Decision Task	50	.50	.50	0	1

Ybonus: As discussed in the text, the Y-Bonus ranges from 0 to 55 and captures voting costs in the form of opportunity costs. Following Levine & Palfrey (2007), I transform the *Ybonus* variable by dividing it by 100. I also transformed the *Ybonus* variable by dividing it by 10. Both versions provide nearly identical results. Transforming the *Ybonus* variable rather than recoding it into a categorical variable allows us to capture the sensitivity to costs at various Y-Bonus values. Similar results are obtained when using a dummy variable for Y-Bonus >50, when using a version of the variable that exponentiates and then normalizes the Y-Bonus for each subject for each round to capture the dominant strategy of choosing Y if Y-Bonus >50, and when I recode the variable into an 11 category variable in 5 point increments.

Decision Task: This variable captures whether individuals received a frame for and had to make a decision for their Alpha/Beta identity or their Blue/Green identity. There were 25 rounds of decisions for each of the two identities (total of 50 rounds).

Table A4: Predicted Probabilities for Weak Identity– Framing Effect, by Size

Threshold Distance	Frame Treatments	Likelihood of Voting for (X)
Model 6		
Minority (Below Threshold)	Neutral	.33
	Rivalry Frame	.41
	Difference	.08
Model 7		
Parity (Near Threshold)	Neutral	.45
	Rivalry Frame	.47
	Difference	.02
Model 8		
Majority (Above Threshold)	Neutral	.27
	Rivalry Frame	.42
	Difference	.15

Table A5: Controls - Logistic Regression on Vote

	Control 1 (No Size)	Control 2 (Single ID)
Parity	.05 (.10)	.53*** (.20)
Ybonus	-.82*** (.12)	-.67*** (.10)
Period	-.16*** (.05)	-.10* (.05)
Sex	-.25 (.58)	-.31 (.33)
Altruism	.40 (.58)	-.18 (.33)
Alpha/Blue	-.63 (.86)	-.29 (.58)
Alpha/Green	-.43 (.87)	-.54 (.58)
Beta/Blue	-.11 (.92)	-.38 (.63)
ID Task	-.31*** (.08)	.10 (.15)
Constant	2.30 (1.86)	2.38* (1.44)
Log-Likelihood	-762.72	-831.56
N	1450	1500
χ^2	77.90***	64.58***
Obs. Per Subj.	50	50
Subjects	29	30

Note: * $p < .10$, ** $p < .05$, *** $p < .01$ or better for a two-tailed test. Standard errors are in parentheses. The dependent variable is the vote choice, 0=Y 1=X.

The control sessions are presented in Table E above. In *Control 1*, no size was shown, and in *Control 2*, only a single identity at a time was shown on the decision screen. These controls help us isolate the effect of size and rule out these alternative explanations for the size findings that showing double identities on the screen drive the findings. As I expect, in *Control 1*, parity does not significantly affect the likelihood of voting, whereas in *Control 2*, parity matters and this result is significant at the .01 level on a two-tailed test.

Interestingly, in *Control 1*, I can test whether the 2 group identities were equivalent in the absence of size by looking at the *ID Task* variable (coded 0=moderate 1=weak) and I find that the weak identity had significantly less participation than the moderate identity, yielding evidence of a stronger attachment to the Alpha/Beta identity relative to the Blue/Green identity.

Table A6: Survey Questions in Chapter 2 – Voting Game

Variable	Description	Coding
Sex	Sex of subject	1=male 0=female
Altruism	<p>Altruism Scale (7 items):</p> <p>1) Most people do not hesitate to go out of their way to help someone in trouble.</p> <p>2) It's only a rare person who would risk his own life and limb to help someone else.</p> <p>3) People pretend to care more about one another than they really do.</p> <p>4) The typical person is sincerely concerned about the problems of others.</p> <p>5) Most people exaggerate their troubles in order to get sympathy.</p> <p>6) Most people would stop and help a person whose car is disabled.</p> <p>7) People are usually out for their own good.</p>	<p>6 pt scale:</p> <p>1=Strongly Agree 2=Agree 3=Slightly Agree 4=Slightly Disagree 5=Disagree 6=Strongly Disagree</p>

APPENDIX B – Sample Decision Screens for Chapter 2

Figure B1. Neutral Frame Condition

DECISION SCREEN ROUND 1 OF 50	
THIS DECISION TASK: ALPHA & BETA	YOU ARE A MEMBER OF GROUPS: ALPHA & BLUE
<p>ALPHA: 45-55% of total participants in this round BETA: 45-55% of total participants in this round</p> <p>BLUE: 75-85% of total participants in this round GREEN: 15-25% of total participants in this round</p> <p>Y-BONUS: 27</p> <p>YOUR CHOICE:</p> <p>X Y</p>	

Figure B2. Rivalry Frame Condition

DECISION SCREEN ROUND 1 OF 50	
THIS DECISION TASK: YOUR GROUP ALPHA versus RIVAL GROUP BETA	YOU ARE A MEMBER OF GROUPS: ALPHA & BLUE
<p>YOUR GROUP ALPHA: 45-55% of total participants in this round versus RIVAL GROUP BETA: 45-55% of total participants in this round</p> <p>YOUR GROUP BLUE: 75-85% of total participants in this round versus RIVAL GROUP GREEN: 15-25% of total participants in this round</p> <p>Y-BONUS: 27</p> <p>YOUR CHOICE:</p> <p>X Y</p>	

APPENDIX C – Question Wording for Survey Items – In Ch. 3

A. STAKES

How important is the quality of your neighborhood schools to you?

- a) Very Important b) Important c) Somewhat Important d) Somewhat Unimportant
e) Unimportant f) Very Unimportant

**Recoded to 1=high stakes and 0=low stakes*

B. DEPENDENT VARIABLE

Willingness to Contribute to Help Mobilize Support for School Bond

1) How likely would you be to contribute money to help mobilize support for the school bond?

- a) Very Likely b) Likely c) Somewhat Likely d) Somewhat Unlikely e) Unlikely f) Very Unlikely

2) How much would you be willing to give in dollars? _____

- a) \$1-\$5 b) \$6-\$10 c) \$11-\$15 d) \$16-\$20 e) \$20-\$25

**Dependent variable based on question about actual amount in dollars. Recoded to 1=\$1 or more and 0=\$0*

C. CONTROLS

1) Closeness – Thermometer Question

“We'd also like to get your feelings about some groups in American society. When I read the name of a group, we'd like you to rate it with what we call a feeling scale. Ratings between 50-100 mean that you feel favorably and warm toward the group; ratings between 0 and 50 mean that you don't feel favorably towards the group and that you don't care too much for that group. If you don't feel particularly warm or cold toward a group you would rate them at 50.”

- a. Your neighborhood
b. Students in general

**Recoded to range from 0-10*

2) Public School Quality

How would you rate the quality of the public school system?

- a) Very Strong b) Strong c) Somewhat Strong d) Somewhat Weak e) Weak f) Very Weak

3) *Ideology*

Politically, do you consider yourself a Conservative, a Moderate, or a Liberal?

a) Conservative b) Moderate c) Liberal

4) *Employment*

Which statement best describes your current employment status?

- a) I work as a paid employee
- b) I am self-employed
- c) I am an owner or partner in a small
- d) business, professional practice, or farm
- e) I work at least 15 hours a week without
- f) pay in a family business or farm
- g) I am unemployed, temporarily laid off, but
- h) looking for work
- i) I am retired
- j) I am disabled
- k) I am a homemaker
- l) Other

**Recoded to 1=employed and 0=unemployed*

APPENDIX D

Table D 1: Survey Questions for Ch. 4

Variable	Description	Coding
Altruism	<p>Altruism Scale (7 items):</p> <p>1) Most people do not hesitate to go out of their way to help someone in trouble.</p> <p>2) It's only a rare person who would risk his own life and limb to help someone else.</p> <p>3) People pretend to care more about one another than they really do.</p> <p>4) The typical person is sincerely concerned about the problems of others.</p> <p>5) Most people exaggerate their troubles in order to get sympathy.</p> <p>6) Most people would stop and help a person whose car is disabled.</p> <p>7) People are usually out for their own good.</p>	<p>6 pt scale:</p> <p>1=Strongly Agree</p> <p>2=Agree</p> <p>3=Slightly Agree</p> <p>4=Slightly Disagree</p> <p>5=Disagree</p> <p>6=Strongly Disagree</p>
	<p>Source Credibility</p> <p>1) Advisor trustworthy</p>	<p>6 pt scale:</p> <p>1=Strongly Disagree</p> <p>2= Disagree</p> <p>3=Slightly Disagree</p> <p>4=Slightly Agree</p> <p>5= Agree</p> <p>6=Strongly Agree</p>
	Ideology	<p>1=Conservative</p> <p>2=Moderate</p> <p>3=Liberal</p>
	Game Theory Courses	<p>1=None</p> <p>2=One</p> <p>3=Two</p> <p>4=Three or more</p>

	My GPA is approximately:	1=<2.0 2=2.0-2.24 3=2.25-2.49 4=2.5-2.74 5=2.75-3.0 6=3.0-3.24 7=3.25-3.59 8=3.5-3.74 9=3.75-4.0 10=4.0+
Group Attachment	1) I felt I was a part of my group 2) I felt close to my group members	6 pt scale: 1=Strongly Disagree 2= Disagree 3=Slightly Disagree 4=Slightly Agree 5= Agree 6=Strongly Agree

APPENDIX E: Example Sheet for *Group Source/ High Stakes* –in Ch. 4

Example 1

Suppose you put 4 tokens in the 'Group' envelope and 6 tokens in your 'Personal' envelope. Others make their decisions and there are 20 total tokens in the Group envelopes. This amount is increased by 200% and you get an equal share.

<i>Personal</i>	<i>Total in Group Envelopes</i>	<i>Increase By 200%</i>	<i>Total Pot</i>	<i>Your Equal Share</i>	<i>Advisor (equal to 5% of Total Pot)</i>	<i>Your Payoff</i>
<u>6</u>	20	$20 * 2 = 40$	$20 + 40 = 60$	$60 / 4 = \underline{15}$	$60 * .05 = 3$	$\underline{6} + \underline{15} = 21$

Example 2

Suppose you put 6 tokens in the 'Group' envelope and 4 tokens in the 'Personal' envelope. Others make their decisions and there are 32 total tokens in the Group envelopes. What would you receive? Please write in the blanks on the example.

<i>Personal</i>	<i>Total in Group Envelopes</i>	<i>Increase By 200%</i>	<i>Total Pot</i>	<i>Your Equal Share</i>	<i>Advisor (equal to 5% of Total Pot)</i>	<i>Your Payoff</i>
<u>4</u>	32	$32 * 2 = \underline{64}$	$32 + \underline{64} = \underline{96}$	$\underline{96} / 4 = \underline{24}$	$96 * .05 = \underline{4.8 = 5}$	$\underline{4} + \underline{24} = \underline{28}$

APPENDIX E: Example Sheet for *Neutral Source/ High Stakes* – in Ch. 4

Example 1

Suppose you put 4 tokens in the 'Group' envelope and 6 tokens in your 'Personal' envelope. Others make their decisions and there are 20 total tokens in the Group envelopes. This amount is increased by 200% and you get an equal share.

<i>Personal</i>	<i>Total in Group Envelopes</i>	<i>Increase By 200%</i>	<i>Total Pot</i>	<i>Your Equal Share</i>	<i>Your Payoff</i>
<u>6</u>	20	$20 * 2 = 40$	$20 + 40 = 60$	$60 / 4 = 15$	$\underline{6} + \underline{15} = 21$

Example 2

Suppose you put 6 tokens in the 'Group' envelope and 4 tokens in the 'Personal' envelope. Others make their decisions and there are 32 total tokens in the Group envelopes. What would you receive? Please write in the blanks on the example.

<i>Personal</i>	<i>Total in Group Envelopes</i>	<i>Increase By 200%</i>	<i>Total Pot</i>	<i>Your Equal Share</i>	<i>Your Payoff</i>
<u>4</u>	32	$\underline{32} * 2 = \underline{64}$	$32 + \underline{64} = \underline{96}$	$\underline{96} / 4 = \underline{24}$	$\underline{4} + \underline{24} = \underline{28}$

Suppose these were the Group pot totals for both groups in today's session. The Advisors would each get an extra amount of money equal to 3% of the total in the Group envelopes. How much would each Advisor get?

<i>Group Pot 1</i>	<i>Group Pot 2</i>	<i>Total in Group Envelopes</i>	<i>Total in Group Envelopes</i>
60	<u>96</u>	$\underline{60} + \underline{96} = \underline{156}$	$\underline{156} * .03 = \underline{4.8 = 5}$

APPENDIX F for Chapter 4:

Protocol –FORM # 2 (Neutral Source, High Stakes)

BEFORE THE SESSION

1. *Prepare consent forms, sign in sheet.*
2. *Prepare all materials*

CHECK-IN

1. *Check-in. Sign in with name & e-mail address.*
2. *Pass out consent forms and pens. Collect Forms.*
3. *After have 10 people & waiting to pay extras (if any), close door & put up sign on outside of door.*

INTRODUCTION

When there are 10 people ready, start reading the script.

ID # CARDS

We're ready to begin the experiment. I am now going to hand you an ID card with your ID # on it. I am also handing you stickers with your ID # on them. This ID # is very important. It is the only link between you and what you will get paid. So please keep them private.

Hand respondents their ID numbers & ID stickers

Please check and make sure that the ID # on your card and on your stickers are the same. If not, please raise your hand.

Welcome. Thank you for coming today. My name is Christy. You will have an opportunity to receive money based on a decision task.

Before we begin there are several rules I would like you to keep in mind:

1. First, you should not talk with one another or look at anyone else's work.
2. Second, please listen to all instructions that I give you. This is very important. If you follow the instructions carefully you can make a considerable sum of money.
3. Third, I will be handing out different forms and materials to you. Please do not begin filling out or looking at those forms until I ask you to do so.
4. Fourth, please turn off your cell phones.
5. Finally, you received stickers of the same ID number on them. Keep your stickers handy because you will be using them to ensure that you get payment.

Now, let me tell you a little about this research project. We are interested in the ways in which people make different decisions about money. These decisions will involve you and other people in this room.

For your participation, you will be paid in cash, at the end of the experiment. Different participants may earn different amounts. What you earn depends partly on your decisions and partly on the decisions of others.

We will start with a group task. Then we'll have a brief instruction period. If you have any questions, raise your hand, and I will come and assist you privately. It is important that you not talk or in any way try to communicate with other participants during the experiments.

You will be paid your earnings plus the show-up fee of \$5.00. Everyone will be paid in private, and you are under no obligation to tell others how much you earned. Your earnings during the experiment are denominated in tokens worth \$1 each.

We're now going to move into the next room. You'll be changing seats shortly so feel free to put your things along the wall if you like. Please follow me into the next room & take a seat at the cubicles marked 20-24 & 1-5.

Go to next room. Wait for them to settle down.

I am now passing out a brief instruction sheet. Please follow along.

Pass out their Instruction Sheet

DECISION TASK DESCRIPTION

I'm now going to review the instructions. In this decision task, you are going to be asked to make decisions with other people. You will be given 10 tokens, and 2 envelopes labeled "Personal" and "Group". Everyone will get the same materials that you get. Your task is to decide how you want to allocate your tokens between these envelopes. You can put your tokens into your "Personal" envelope or into your "Group" envelope. The number of tokens you put into any envelope is entirely up to you.

What's the difference between the envelopes? Whatever you put into the "Personal" envelope is yours and will not be shared with anyone else. As mentioned before, every token you put into that envelope is worth \$1 to you regardless of the other people's decisions.

Now, what about the Group envelope? You will have 4 people, including you, who are making an allocation decision. Any tokens that you and three other people put into your "Group" envelopes will be increased by 200% by me, and then shared equally by you and

your group members. We'll do some examples later, but first we're going to talk about Group Advisors.

ADVISOR EARNINGS DESCRIPTION

There a total of 10 people in this room. 2 people will be the Advisors. They will not participate in the allocation decision. We'll discuss the selection of Advisors later. Advisors will not participate in the decision task. They have a different task to perform and their earnings are different.

The Advisors will be paid a flat fee of \$10. In addition, they will receive an extra amount of money that is based on how much money is put in total in both group envelopes. The Advisor will not get a share of what is in the 2 envelopes but the experimenter will give them an extra amount of money that is equal to 3% of what is the total of both group envelopes.

So now let's do some examples to make certain you understand how earnings are calculated.

EXAMPLES

I am handing you a sheet of examples. *Hand out examples sheet. (and a pen?)*

First, please take off one of your ID # stickers & place it in the upper right-hand corner of this sheet. Please follow along with the examples that have been handed out to you.

For Example #1, suppose that you put 4 tokens in your "Group" envelope and you put 6 tokens in your 'Personal envelope. The other three people also make their decisions, and there are 20 total tokens in the Group envelopes. These 20 tokens will be multiplied by 200% which = 40 tokens. These 40 tokens are added to the 20 tokens originally in the pot, so the total is 60 tokens. These 60 tokens will be divided equally among the 4 group members, which equals 15 tokens per group member, which equals \$15.

So your individual payoff equals the 6 tokens you put in your personal envelope plus the 15 tokens which is your share of the group envelope. The total you get back is 21 tokens, which equals \$21. Is anyone uncertain about how this happens?

Example 2

To take another simple *example* (#2) Suppose you put 6 tokens in the 'Group' envelope and 4 tokens in the 'Personal' envelope. Others make their decisions and there are 32 total tokens in the Group envelopes. What would you receive?

Please write in the blanks on the example.

Wait while participants make calculations; look around to see if they are attempting to come up with the answer; encourage someone to give an answer.

Okay, let's review this together. How many tokens in total would you receive? Does anyone have the answer? (28). How much money would you then earn? (\$28).

Here's how we got the answers:

You would receive a total of 28 tokens. First you would have 4 tokens in your "Personal" envelope. Given that there were 32 tokens in the Group envelopes, the 20% increase would be 64 tokens. So the total would be 96 tokens (32 original + 64 added by me). These 96 tokens would be divided equally among the 4 group members, equaling 24 tokens per person.

Okay, so you would end up with the 4 tokens you put in your Personal envelope plus the 24 tokens which is your share of the group pot, totaling 28 tokens. This equals \$28. Are there any questions about this?

So let's talk about the Advisors earnings. Suppose the 2 examples on this sheet reflect how 2 groups behave. The Advisors get 3% of the total of both Group pots. So what would the Advisors earn?

So, the overall total of both Group pots would be $60 + 96 = 156$. 3% of $156 = 4.8$ tokens, which we'll round up to 5 tokens, which equals \$5. We'll round partial tokens up to the nearest quarter token. Are there any questions?

Now, I'm going to collect your Examples Sheet.

collect Examples Sheet.

COMPREHENSION QUIZ

Now we are ready for a brief comprehension quiz to check if you understand how you can make money.

A sheet is being handed out to you with 10 questions on it. Please do not answer the questions until you are told.

At this point pass out the comprehension sheet.

Before you do anything, please remove one of your stickers and put it in the upper right-hand corner of the sheet that was just handed out.

Pause until everyone has done so.

Please mark the answer you think is most appropriate and be sure to write your choice in the blanks on the side. I'll read out the first question and answer choices. Then I'll give you 90 seconds to complete the quiz. We'll then review some of the answers.

1. What happens when a token is put into the Group envelope?
 - (a) Nothing (b) increased by 50% (c) increased by 30% (d) increased by 300%
 - (e) increased by 200%

Please mark your answer & complete the Quiz.

Okay, please stop and turn your paper over. I will come by and pick up your quiz.

Please wait a few minutes while I grade your quizzes.

< select Advisor by taking the top 2 scoring quizzes >

Let's review some of the answers. *Ask for their guesses and reinforce right answers if they give wrong answers.*

1. How many people, including you, are in the Group? (Two people; Three people; Four people; Five people)
2. How much money would 11.78 tokens equal? (\$6.50, \$11, \$11.50, \$12, \$24)
3. All 4 members of the group make the allocation decision. (True/ False)
4. All 4 members of the group & the Advisor get an equal share of the Group envelope. (True or False?)
5. The Advisor also makes an allocation decision. (True/ False)

.....

SELECTING GROUP ADVISOR -- Credible, Neutral Source

So, now let's discuss what the Advisors' task is. There will be 2 Advisors. Their task will be to select a message to give to the people making allocation decisions.

Now, we will select the two Advisors. We are selecting these Advisors based on which 2 people in the room scored the highest on this quiz.

Will ID #s (____) & (____) please stand up and join me at the front of the room? You two made the highest scores on the comprehension quiz, indicating that you have mastered the rules and have a strong understanding of the payoffs.

So you two have been selected to be the Advisors. Your task will be to select a message to pass out to the people making allocation decisions.

Here are some instructions. Please take a seat in cubicles # (14) & (15) & wait for further instructions. Give Brief Instruction Sheet.

GROUP TASK

We are now ready for the Group Task. Your choices in this task will determine your group identity.

I am walking around with a box that has 8 objects in it. Please select one of your liking. Once everyone has an object, I will give further instructions.

Pass out all objects; should have 8 total: 4 red squares & 4 green triangles

The task you and all the participants just performed determines the group you belong to.

Will the people that chose a *Red Square* please stand up and move to the left side of the room where the sign "Station 1" is posted?

Walk over to Group Red.

All of you that selected a *Red Square* from the box are in Group RED. This is your group in this experiment. Please remember the name.

Will the people that chose a *Green Triangle* please stand up and move to the right side of the room where the sign "Station 2" is posted?

Walk over to Group Green.

All of you that selected a *Green Triangle* from the box are in Group GREEN. This is your group in this experiment. Please remember the name.

<i>SEAT # CARD DRAW → will have 2 left</i>
--

I am now coming over to each group, and each of you will select a card with a seat # on it. You will sit with your group for the duration of the experiment.

Go to 1st Group & let subjects draw their new seat assignments.

All of your group members are sitting in the same row of cubicles as you. Once you've selected your card, please take a seat in the cubicle that matches the seat # on your card.

Go to 2nd Group & let subjects draw their new seat assignments.

All of your group members are sitting in the same row of cubicles as you. Once you've selected your card, please take a seat in the cubicle that matches the seat # on your card.

Pause and wait for them to settle down.

I am now passing out a sheet that asks you to write down your Group Name.

<i>Pass out 'Group Name' sheet- (only 1) per person</i>

First, please take off one of your ID # stickers & place it in the upper right-hand corner of this sheet. Also, write-in your seat #.

Next, please write your group name down on the sheet of paper given to you asking for your group identity. If you chose a *Red Square*, you are in group RED. If you chose a *Green Triangle*, you are in group GREEN.

The people that chose the *same color and shape* as you did are in your group. This is your group for the duration of the experiment. You and three other people in your group will participate in the decision task.

I am now coming around to collect these objects. Please place them in the box when I come by.

Collect objects

ADVISOR TASK

So, now let's discuss the Advisors' task more. Advisors, please come to the front of the room. Everyone, please look at the Advisors.

Advisors, you were selected because you had the highest scores on the comprehension quiz. Your task is to select a message to give to one of the groups. You will randomly draw which group to give messages to. Let me be clear. Advisors, you are not a member of either group, and you do not belong to the group that you give a message to.

I'm going to give each of you a set of 3 different file folders containing messages that you can pass out. Each folder has a message in it. Your job is to take these folders to your cubicle *and select a message* that you would like to give to members of the group that you randomly draw from the envelope. All members of that group will receive the same message.

This envelope has the 2 group names in it. Please randomly draw a slip of paper to see which group you will be giving messages to. Draw Group Names.

Here are your materials. Give materials, Instructions, 2 Advisor slips, & 3 file folders

After you select the message that you would like to give, please stay seated in your cubicle and be ready to pass out the message when I tell you to.

BEGIN DECISION TASK

We are now ready to begin the experiment.

I am now going to pass out your materials. Please do not do anything until you're told. *Pass out materials.*

You should have an envelope marked "Personal" and an envelope marked "Group". You should have 10 tokens (each of which are worth \$1 to you and everyone else). Your tokens are in your "Personal" envelope. Please take them out and count them to make certain you have 10. Raise your hand if you are missing any materials. *Pause.*

The first thing I would like you to do is take two stickers off your ID card and put it on the upper right corner of both your envelopes. Please make certain you do this. This is the only way we can make certain you will be paid.

Now, I would like for you to take your "Group" envelope and write your group name on it, either RED or GREEN. *Pause.*

Please move all materials to the left side of your desk. You will be told when you can make your decision.

In a few minutes, the Advisors will pass out the messages that they have selected. They randomly drew Group names from an envelope to determine which group to give messages to. All group members will receive the same message. After you read the message, please wait for further instructions. Do not make your decision until you are told to do so.

Advisors, you were given 3 file folders with messages. You were asked to choose 1 file folder that had a message that you would like to give out to one of these groups.

Please keep the one file folder that you have selected as the message you want to pass out to that group. And please come up to the front and turn in to me the 2 file folders of messages that you did not select to pass out. Pick up 2 file folders from each Advisor.

Before Advisors pass out messages, I wanted to remind everyone that the messages may be different in today's session compared to previous sessions & future sessions. So please read your message carefully.

Advisors, please go ahead and pass out the messages that you have chosen. Come up to the front & tell me which group you have. *Call out "Where are the Green/Red Group members sitting?"*

Advisors pass out messages.

All members of a group will receive the same message. Advisors, when you're done, please return to your seat & wait for instructions.

Everyone else, please take a few minutes to read your message and then wait for instructions. Remember, you are not to talk or in any way communicate with others.

Wait a minute or so for them to read message.

Okay, I'm going to ask you to make your decision in a few minutes. After you make your decision, please paperclip your envelopes together and place them on the center of your desk. Please DO NOT seal the envelopes. I will come around and collect your envelopes. If you have any questions please raise your hand.

Okay, please make your decision.

Subjects make their decisions.

Remember, after you make your decision, please paperclip your envelopes together and place them on the center of your desk. Please DO NOT seal the envelopes. I will come around and collect your envelopes.

The envelopes will be collected. Also, collect the "Advisor" slips of paper with Group name, id # and seat # from the Advisors.

I should double check each envelope to make certain that it has an ID number attached to it. If not, ask the subject to do it before the envelopes are placed in the box.

Now that everyone's decision has been made, the envelopes will be matched with your group members and how much money you receive will be calculated. It will take a while to do this. At the end of the session you will be paid individually.

QUESTIONNAIRE

While you are waiting for the decisions to be matched, please fill out the questionnaire that I'm about to hand you. While you fill it out, I will be working to make the matches and pay you for your task.

Everyone please look up at the front of the room so you can be clear on how we're going to do the payment.

If you want to be paid properly, it is important that you listen to what I'm about to say.

When you receive your questionnaire, please put your ID sticker in the upper right hand corner.

When you're finished, please put your completed questionnaire in the Red box on this chair at the front of the room. Please remain seated & do not talk to one another.

You will be paid one at a time. I will come back into the room in about 5 minutes with further instructions about collecting your other materials & doing the payments. If you like, you may surf the internet after you finish your survey until I return with further instructions.

I'm now going to pass out surveys. Remember to put your id# sticker on them.

Okay, we're now ready to do the payments. Did everyone turn in their survey into this red box? Now, I'm going to collect all your materials except for your id# card. *Collect Materials.*

Now, I'm going to pay you one at a time based on the order in which you finished your survey. I'm going to be in the other room. I will call out your id# when it is your turn. Please do not come into the room until I've called your id #. This is really important so that I can pay each of you in private.

I want to thank all of you for your participation. I'll begin calling id#s for payment in a few moments.

Take Box of Surveys. Can check it's filled out.

QUIZ – KEY - Form # 2 (Neutral Source, High Stakes)

Please write your letter answer in the Blank provided.

- E 1. What happens when a token is put into the Group envelope?
(a) Nothing (b) increased by 50% (c) increased by 30% (d) increased by 300%
(e) increased by 200%
- C 2. How many people, including you, are in the Group?
(a) Two people (b) Three people (c) Four people (d) Five people (e) Ten people
- B 3. Everyone in the room gets an equal share of the Group envelope.
(a) True (b) False
- D 4. How much money would 11.78 tokens equal?
(a) \$6.50 (b) \$11 (c) \$11.50 (d) \$12 (e) \$24
- A 5. All 4 members of the group make the allocation decision.
(a) True (b) False
- B 6. All 4 members of the group & the Advisor get an equal share of the Group envelope.
(a) True (b) False
- B 7. The Advisor also makes an allocation decision.
(a) True (b) False
- E 8. If you put 4 tokens in the Group envelope and the total number of tokens in the Group envelope was 12, how many total tokens would you get?
(a) 4.5 (b) 7.5 (c) 9 (d) 10.5 (e) 15
- D 9. If there were 31 tokens in the Group envelope and you put 6 tokens in the Group envelope, what would your share of the Group envelope be?
(a) \$11.75 (b) \$12.50 (c) \$22.50 (d) \$23.25 (e) \$24
- E 10. If you put 7 tokens in the Personal envelope and the total number of tokens in the Group envelope was 21, how many tokens would you get in total?
(a) 7.5 (b) 8 (c) 15 (d) 15.75 (e) 22.75

APPENDIX G: for Chapter 4

Protocol –FORM # 1 (Group Source, High Stakes)

BEFORE THE SESSION

3. *Prepare consent forms, sign in sheet.*
4. *Prepare all materials*

CHECK-IN

4. *Check-in. Sign in with name & e-mail address.*
5. *Pass out consent forms and pens. Collect Forms.*
6. *After have 10 people & waiting to pay extras (if any), close door & put up sign on outside of door.*

INTRODUCTION

When there are 10 people ready, start reading the script.

ID # CARDS

We're ready to begin the experiment. I am now going to hand you an ID card with your ID # on it. I am also handing you stickers with your ID # on them. This ID # is very important. It is the only link between you and what you will get paid. So please keep them private.

Hand respondents their ID numbers & ID stickers

Please check and make sure that the ID # on your card and on your stickers are the same. If not, please raise your hand.

Welcome. Thank you for coming today. My name is Christy. You will have an opportunity to receive money based on a decision task.

Before we begin there are several rules I would like you to keep in mind:

6. First, you should not talk with one another or look at anyone else's work.
7. Second, please listen to all instructions that I give you. This is very important. If you follow the instructions carefully you can make a considerable sum of money.
8. Third, I will be handing out different forms and materials to you. Please do not begin filling out or looking at those forms until I ask you to do so.
9. Fourth, please turn off your cell phones.
10. Finally, you received stickers of the same ID number on them. Keep your stickers handy because you will be using them to ensure that you get payment.

Now, let me tell you a little about this research project. We are interested in the ways in which people make different decisions about money. These decisions will involve you and other people in this room.

For your participation, you will be paid in cash, at the end of the experiment. Different participants may earn different amounts. What you earn depends partly on your decisions and partly on the decisions of others.

We will start with a group task. Then we'll have a brief instruction period. If you have any questions, raise your hand, and I will come and assist you privately. It is important that you not talk or in any way try to communicate with other participants during the experiments.

You will be paid your earnings plus the show-up fee of \$5.00. Everyone will be paid in private, and you are under no obligation to tell others how much you earned. Your earnings during the experiment are denominated in tokens worth \$1 each.

We're now going to move into the next room. You'll be changing seats shortly so feel free to put your things along the wall if you like. Please follow me into the next room & take a seat at the cubicles marked 20-24 & 1-5.

Go to next room. Wait for them to settle down.

I am now passing out a brief instruction sheet. Please follow along.

Pass out their Instruction Sheet

DECISION TASK DESCRIPTION

I'm now going to review the instructions. In this decision task, you are going to be asked to make decisions with other people. You will be given 10 tokens, and 2 envelopes labeled "Personal" and "Group". Everyone will get the same materials that you get. Your task is to decide how you want to allocate your tokens between these envelopes. You can put your tokens into your "Personal" envelope or into your "Group" envelope. The number of tokens you put into any envelope is entirely up to you.

What's the difference between the envelopes? Whatever you put into the "Personal" envelope is yours and will not be shared with anyone else. As mentioned before, every token you put into that envelope is worth \$1 to you regardless of the other people's decisions.

Now, what about the Group envelope? You will have 4 people, including you, who are making an allocation decision. Any tokens that you and three other people put into your "Group" envelopes will be increased by 200% by me, and then shared equally by you and

your group members. We'll do some examples later, but first we're going to talk about Group Advisors.

ADVISOR EARNINGS DESCRIPTION

There will be 5 total people in each group. As stated earlier, only 4 people in each group will make the allocation decision. The 5th person will be the Advisor. We'll discuss the selection of Advisors from each group later. Advisors will not participate in the decision task. They have a different task to perform and their earnings are different.

The Advisors will be paid a flat fee of \$10. In addition, they will receive an extra amount of money that is based on how much money is put in the group envelope. The Advisor will not get a share of what is in the envelope but the experimenter will give them an extra amount of money that is equal to 5% of what is in the group envelope.

So now let's do some examples to make certain you understand how earnings are calculated.

EXAMPLES

I am handing you a sheet of examples. *Hand out examples sheet. (and a pen?)*

First, please take off one of your ID # stickers & place it in the upper right-hand corner of this sheet. Please follow along with the examples that have been handed out to you.

For Example #1, suppose that you put 4 tokens in your "Group" envelope and you put 6 tokens in your 'Personal envelope. The other three people also make their decisions, and there are 20 total tokens in the Group envelopes. These 20 tokens will be multiplied by 200% which = 40 tokens. These 40 tokens are added to the 20 tokens originally in the pot, so the total is 60 tokens. These 60 tokens will be divided equally among the 4 group members, which equals 15 tokens per group member, which equals \$15. The Advisor gets an extra amount of money equal to 5% of what is in the pot. So $60 \times .05 = 3$ tokens = \$3. This money is extra, it is not a part of the group pot.

So your individual payoff equals the 6 tokens you put in your personal envelope plus the 15 tokens which is your share of the group envelope. The total you get back is 21 tokens, which equals \$21. Is anyone uncertain about how this happens?

Example 2

To take another simple *example* (#2) Suppose you put 6 tokens in the 'Group' envelope and 4 tokens in the 'Personal' envelope. Others make their decisions and there are 32 total tokens in the Group envelopes. What would you receive?

Please write in the blanks on the example.

Wait while participants make calculations; look around to see if they are attempting to come up with the answer; encourage someone to give an answer.

Okay, let's review this together. How many tokens in total would you receive? Does anyone have the answer? (28). How much money would you then earn? (\$28).

Here's how we got the answers:

You would receive a total of 28 tokens. First you would have 4 tokens in your "Personal" envelope. Given that there were 32 tokens in the Group envelopes, the 200% increase would be 64 tokens. So the total would be 96 tokens (32 original + 64 added by me). These 96 tokens would be divided equally among the 4 group members, equaling 24 tokens per person. The Advisor gets 5% of the total pot, so $96 \times .05 = 4.8$ tokens, which we'll round up to 5 tokens, which equals \$5. So from these examples, you can see that in this example when group members get back more money (28 instead of 21), the Group Advisor also gets more money (5 instead of 3).

Okay, so you would end up with the 4 tokens you put in your Personal envelope plus the 24 tokens which is your share of the group pot, totaling 28 tokens. This equals \$28. Are there any questions about this?

A brief note, we'll round partial tokens up to the nearest quarter token. For example, 12.13 tokens would equal 12.25 tokens, which equals \$12.25.

Now I'm going to collect your Examples Sheet. *collect Examples Sheet.*

COMPREHENSION QUIZ

Now we are ready for a brief comprehension quiz to check if you understand how you can make money.

A sheet is being handed out to you with 10 questions on it. Please do not answer the questions until you are told.

At this point pass out the comprehension sheet.

Before you do anything, please remove one of your stickers and put it in the upper right-hand corner of the sheet that was just handed out.

Pause until everyone has done so.

Please mark the answer you think is most appropriate and be sure to write your choice in the blanks on the side. I'll read out the first question and answer choices. Then I'll give you 90 seconds to complete the quiz. We'll then review some of the answers.

2. What happens when a token is put into the Group envelope?
 - (a) Nothing (b) increased by 50% (c) increased by 30% (d) increased by 300%
 - (e) increased by 200%

Please mark your answer & complete the Quiz.

.....

Okay, please stop and turn your paper over. I will come by and pick up your quiz.
These sheets will be collected and the assistant will start to grade them.

Please wait a few minutes while I look these over briefly. *Put aside top scores to select top in each group after Group Task.*

Now we'll review some of the answers. *Ask for their guesses and reinforce right answers if they give wrong answers.*

6. How many people, including you, are in the Group? (Two people; Three people; Four people; Five people)
 7. How much money would 11.78 tokens equal? (\$6.50, \$11, \$11.50, \$12, \$24)
 8. Four members of the group make the allocation decision. (True/ False)
 9. All 5 members of the group get an equal share of the Group envelope. (True or False?)
 10. The Advisor also makes an allocation decision. (True/ False)
-

GROUP TASK

We are now ready for the Group Task. Your choices in this task will determine your group identity.

I am walking around with a box that has 10 objects in it. Please select one of your liking. Once everyone has an object, I will give further instructions.

Pass out all objects; should have 10 total: 5 red squares & 5 green triangles

The task you and all the participants just performed determines the group you belong to.

Will the people that chose a *Red Square* please stand up and move to the left side of the room where the sign "Station 1" is posted?

Walk over to Group Red.

All of you that selected a *Red Square* from the box are in Group RED. This is your group in this experiment. Please remember the name.

Will the people that chose a *Green Triangle* please stand up and move to the right side of the room where the sign "Station 2" is posted?

Walk over to Group Green.

All of you that selected a *Green Triangle* from the box are in Group GREEN. This is your group in this experiment. Please remember the name.

SEAT # CARD DRAW → will have 2 left

I am now coming over to each group, and each of you will select a card with a seat # on it. You will sit with your group for the duration of the experiment.

Go to 1st Group & let subjects draw their new seat assignments.

All of your group members are sitting in the same row of cubicles as you. Once you've selected your card, please take a seat in the cubicle that matches the seat # on your card.

Go to 2nd Group & let subjects draw their new seat assignments.

All of your group members are sitting in the same row of cubicles as you. Once you've selected your card, please take a seat in the cubicle that matches the seat # on your card.

Pause and wait for them to settle down.

I am now passing out a sheet that asks you to write down your Group Name.

Pass out 'Group Name' sheet- (1) per person (and a pen?)

First, please take off one of your ID # stickers & place it in the upper right-hand corner of both of these sheets.

Next, please write your group name down on the sheet of paper given to you asking for your group identity. If you chose a *Red Square*, you are in group RED. If you chose a *Green Triangle*, you are in group GREEN.

The people that chose the *same color and shape* as you did are in your group. This is your group for the duration of the experiment. You and three other people in your group will participate in the decision task.

I am now coming around to collect your objects & your Group Name Sheet. Please place your object in the box and hand me your sheet when I come by.

Collect objects.

Keep Group Sheets separate; use these to select highest scorer in each group.

You and three other people in your group will participate in the decision task. The 5th person has a different task to perform, which I will now discuss.

SELECTING GROUP ADVISOR -- Credible, Same-Group Source

Now, we will select a group Advisor from each group. The Red group will have its own Advisor and the Green group will have its own Advisor. We are selecting these group Advisors based on who scored the highest on this quiz in each group.

If you are selected as an Advisor, you will have a different task to perform.

< select Advisor by taking the top scoring quiz in each group >

Okay, we're now going to select the group Advisors based on who scored the highest on this quiz in each group.

Will ID # (____) please stand up and join me at the front of the room? You have been selected to be the Group (*Green/ Red*) Advisor because you made the highest score on the comprehension quiz in Group (*Green/ Red*).

Repeat for other group:

Will ID # (____) please stand up and join me at the front of the room? You have been selected to be the Group (*Green/ Red*) Advisor because you made the highest score on the comprehension quiz in Group (*Green/ Red*).

So both of you Advisors made the highest score on the comprehension quiz in your group indicating that you have mastered the rules and have a strong understanding of the payoffs. So you have been selected to be the Advisor for your group.

ADVISOR TASK

Everyone, please look at your Group Advisor.

Advisors, this is your task. I'm going to give each of you a set of 3 different file folders containing messages that you can give to your group members. Each folder has a message in it.

Your job is to take these folders to your cubicle *and select a message* that you would like to give to your group members. All members of the group will receive the same message.

After you select the message that you would like to give to your group members, please stay seated in your cubicle and be ready to pass out the message when I tell you to. Give materials.

BEGIN DECISION TASK

We are now ready to begin the experiment.

I am now going to pass out your materials. Please do not do anything until you're told. *Pass out materials.*

You should have an envelope marked "Personal" and an envelope marked "Group". You should have 10 tokens (each of which are worth \$1 to you and everyone else). Your tokens are in your "Personal" envelope. Please take them out and count them to make certain you have 10. Raise your hand if you are missing any materials. *Pause.*

The first thing I would like you to do is take two stickers off your ID card and put it on the upper right corner of both your envelopes. Please make certain you do this. This is the only way we can make certain you will be paid.

Now, I would like for you to take your "Group" envelope and write your group name on it, either RED or GREEN. *Pause.*

Please move all materials to the left side of your desk. You will be told when you can make your decision.

In a few minutes, the Advisors will pass out the messages that they have selected to give to all members in your group. All members in your group are receiving the same message. After you read the message, please wait for further instructions. Do not make your decision until you are told to do so.

Advisors, you were given 3 file folders with messages. You were asked to choose 1 file folder that had a message that you would like to give to your group members.

Please keep the one file folder that you have selected as the message you want to pass out to your group members. Please come up to the front and turn in to me the 2 file folders of messages that you did not select to pass out. *Pick up 2 file folders from each Advisor.*

Before Advisors pass out messages, I wanted to remind everyone that the messages may be different in today's session compared to previous sessions & future sessions. So please read your message carefully.

Advisors, please go ahead and pass out the messages that you have chosen for your group members. All group members will receive the same message. When you're done, please return to your seat & wait for instructions.

Advisors pass out messages.

Everyone else, please take a few minutes to read your message and then wait for instructions. Remember, you are not to talk or in any way communicate with others.

Wait a minute or so for them to read message.

Okay, I'm going to ask you to make your decision in a few minutes. After you make your decision, please paperclip your envelopes together and place them on the center of

your desk. Please DO NOT seal the envelopes. I will come around and collect your envelopes. If you have any questions please raise your hand. Okay, please make your decision.

Subjects make their decisions.

Remember, after you make your decision, please paperclip your envelopes together and place them on the center of your desk. Please DO NOT seal the envelopes. I will come around and collect your envelopes.

The envelopes will be collected. Also, collect the "Advisor" slips of paper with Group name, id # and seat # from the Advisors.

I should double check each envelope to make certain that it has an ID number attached to it. If not, ask the subject to do it before the envelopes are placed in the box.

Now that everyone's decision has been made, the envelopes will be matched with your group members and how much money you receive will be calculated. It will take a while to do this. At the end of the session you will be paid individually.

QUESTIONNAIRE

While you are waiting for the decisions to be matched, please fill out the questionnaire that I'm about to hand you. While you fill it out, I will be working to make the matches and pay you for your task.

Everyone please look up at the front of the room so you can be clear on how we're going to do the payment.

If you want to be paid properly, it is important that you listen to what I'm about to say.

When you receive your questionnaire, please put your ID sticker in the upper right hand corner.

When you're finished, please put your completed questionnaire in the Red box on this chair at the front of the room. Please remain seated & do not talk to one another.

You will be paid one at a time. I will come back into the room in about 5 minutes with further instructions about collecting your other materials & doing the payments. If you like, you may surf the internet after you finish your survey until I return with further instructions.

I'm now going to pass out surveys. Remember to put your id# sticker on them.

Okay, we're now ready to do the payments. Did everyone turn in their survey into this red box? Now, I'm going to collect all your materials except for your id# card. *Collect Materials.*

Now, I'm going to pay you one at a time based on the order in which you finished your survey. I'm going to be in the other room. I will call out your id# when it is your turn. Please do not come into the room until I've called your id #. This is really important so that I can pay each of you in private.

I want to thank all of you for your participation. I'll begin calling id#s for payment in a few moments.

Take Box of Surveys. Can check it's filled out.

QUIZ – KEY - Form # 1 (Group Source, High Stakes)

Please write your letter answer in the Blank provided.

- E 1. What happens when a token is put into the Group envelope?
(a) Nothing (b) increased by 50% (c) increased by 30% (d) increased by 300%
(e) increased by 200%
- D 2. How many people, including you, are in the Group?
(a) Two people (b) Three people (c) Four people (d) Five people (e) Ten people
- B 3. Everyone in the room gets an equal share of the Group envelope.
(a) True (b) False
- D 4. How much money would 11.78 tokens equal?
(a) \$6.50 (b) \$11 (c) \$11.50 (d) \$12 (e) \$24
- A 5. Four members of the group make the allocation decision.
(a) True (b) False
- B 6. All 5 members of the group get an equal share of the Group envelope.
(a) True (b) False
- B 7. The Advisor also makes an allocation decision.
(a) True (b) False
- E 8. If you put 4 tokens in the Group envelope and the total number of tokens in the Group envelope was 12, how many tokens would you get in total?
(a) 4.5 (b) 7.5 (c) 9 (d) 10.5 (e) 15
- D 9. If there were 31 tokens in the Group envelope and you put 6 tokens in the Group envelope, what would your share of the Group envelope be?
(a) \$11.75 (b) \$12.50 (c) \$22.50 (d) \$23.25 (e) \$24
- E 10. If you put 7 tokens in the Personal envelope and the total number of tokens in the Group envelope was 21, how many tokens would you get in total?
(a) 7.5 (b) 8 (c) 15 (d) 15.75 (e) 22.75