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GROUP MEMBERSHIP AND SOCIAL INFLUENCE

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ABSTRACT

Can people influence others solely by virtue of shared group membership? To address this and related questions, we offer a theory of group-mediated social influence and then test it in a standardized collective task setting. The theory capitalizes on uncertainty reduction principles found in two longstanding social psychological traditions: social identity theory and status characteristics theory. Our primary hypothesis was that in-group members would be more influential than out-group members. Results from the experiment indicate that in-group members were indeed more influential than out-group members. These findings supported a key derivation of our theory, and demonstrated that the integration accounts for phenomena that are not addressed by either of the motivating theories.

INTRODUCTION

Social influence in its many forms has been a central focus of research for decades. Building from traditions in social psychology, sociologists have developed rigorous, empirically validated theories to explain how larger group structures affect events at the levels of individuals, small groups and networks.[1] In this vein, we build upon existing theories to help understand how group membership determines the emergence of social influence hierarchies. We offer a theory of group-mediated social influence and test key implications in an experimental setting.

Theories in structural social psychology generally explain how group or network structures affect individual outcomes—self-identities, exchange profits, locations within status hierarchies—as social interaction plays out in an interpersonal arena (Lawler, Ridgeway and Markovsky 1993). Sometimes individuals are unaware of the source of influence, as when the effects of distal changes in a network propagate through its connections and alter opportunity structures. Other times individuals may recognize and respond to relatively "macro" factors, such as strengthening ties in one's primary group under the perceived threat posed by a real but faceless group of outsiders. In either case, theoretically accounting for the impact of non-local factors provides a more accurate and complete understanding of the experiences, behaviors and consequences transpiring among a focal set of social actors.

The new theory integrates elements and ideas from two long-standing traditions in social psychology: self categorization theory and status characteristics theory. The integration permits us to examine the effects of status and group membership in collective task settings. Typically these settings are small face-to-face groups in which people interact in order to solve a problem. Examples range from formal work groups such as business or academic committees to informal assemblages such as a group of strangers working to free a stuck car from a snow bank. These settings share a common feature: Participants have a strong desire to reach a correct solution. Frequently however, there are complexities and ambiguities in the course of reaching this solution. Social psychologists have long argued that people is such settings look to one another for guidance. In the absence of more explicit knowledge, people readily make inferences about one another's task-relevant abilities on the basis of observable characteristics. For example, the group of strangers working to free the stuck car may use physical size as a cue to solve the problem and so decide to place the smallest member behind the wheel of the car to steer it, and the largest members at the rear of the car to push it.

Prior research demonstrates that group memberships and status characteristics both provide important informational cues in collective task settings. Our interest is in whether these factors interact in predictable ways, and whether existing theories can be integrated in order to better understand how group membership and status processes operate jointly.

Although self categorization theory and status characteristics theory share some common areas of investigation, to date there has been little overlap between the two. A synthesis would be useful because task group members are often differentiated by both group memberships and status characteristics. Moreover, because they attend to different factors, self categorization theory and status characteristics theory may generate conflicting predictions for such contexts. Kalkhoff and Barnum (2000) and Oldmeadow et al. (2003) studied the joint impact of status and

group membership and found that status and group membership did indeed operate jointly. That research was an important first step towards integration, but did not offer a theoretical mechanism explaining *how* group membership and status function together. We build on that earlier work by developing an integrated theory of the joint effects of group membership and status on influence. Our theoretical integration and the new empirical tests are reported below.

SELF CATEGORIZATION THEORY

Self categorization theory is concerned with psychological group formation (Turner 1985). It was introduced in the late 1970's, an off-shoot of the social identity theory tradition. Self categorization theory emphasizes the cognitive underpinnings of categorization processes (Turner 1985; Turner, Hogg, Oakes, Reicher and Wetherell 1987). Specifically, the theory articulates how the cognitive process of categorization generates certain *intra-group* behaviors, and how categorization affects an evaluator's perceptions of self and others. The central idea of the theory is that individuals in salient group contexts act more in terms of their *shared* group identity than in terms of separate personal identities (Turner 1991:155). The theory argues that the process of group categorization generates *depersonalization*—the perceived interchangeability of members in terms of prototypical features of the group (Turner 1985). When categorization occurs, group members come to see themselves as interchangeable in terms of the prototypical features of the group, and they come to perceive out-group members as interchangeable rather than as unique individuals.

Self-categorization theory asserts that depersonalization operates in conjunction with an *uncertainty reduction* motive (Hogg and Mullin 1999). The latter idea stems from classic social comparison theory (Festinger 1954; Moscovici 1976, 1981; Moscovici and Mungy 1983; Suls and Miller 1977; Suls and Wills 1991). However, in contrast to traditional views on uncertainty reduction, self categorization theory argues that shared group or category membership is a precondition for uncertainty reduction and influence.[2] In essence, the theory asserts that people establish confidence in their beliefs and opinions by comparing them to the beliefs and opinions held by similar others—psychological in-group members. Consensus with in-group members generates confidence and the potentially false belief that perceptions are unbiased and veridical. In contrast, disagreement with in-group members generates uncertainty (David and Turner 1996; 2001). When group membership is salient, depersonalization causes in-group members to appear more similar to oneself. Disagreement with in-group members then opens the door to influence because it generates uncertainty and the possibility that perceptions may be inaccurate.

STATUS CHARACTERISTICS THEORY

A *status characteristic* is any property of a person that has two or more levels or states that are differentially valued, each having associated with it one or more similarly evaluated expectations for behavior. In contemporary society, *diffuse status characteristics* such as race, gender and education have many associated expectations. In contrast, *specific status characteristics* may only be pertinent within the local setting, e.g., "mathematical ability" as the specific characteristic associated with a mathematical problem-solving task. Status characteristics theory investigates how such characteristics organize interaction and social influence in collective task settings by evoking expectations about relative task abilities: higher status members of the group

are expected to be more competent. When played-out in series of pair-wise interactions, these performance expectations lead to the emergence of differentiated power, prestige and influence structures among group members.[3] Relative to lower status members, higher status members are thereby advantaged with respect to the group's *observable power and prestige order* (OPPO). That is, relative to lower status actors, those with higher status *(i)* are given more opportunities to make suggestions, *(ii)* actually offer more suggestions, *(iii)* have more positively evaluated suggestions, and *(iv)* have more influence over other members' opinions.

The scope conditions of the theory assert that it applies in settings where interactants believe *(i)* it is necessary and legitimate to consider each other's suggestions in attempting to solve a group task, and *(ii)* the task has both correct and incorrect solutions. The theory's five assumptions argue the following: (1) *Salience:* If a status characteristic differentiates members of a task setting or if the members perceive it as relevant to the task, then it will be salient. (2) *Burden of proof:* If a status characteristic is salient and has not been disassociated from the task, then the actor forms expectations that are consistent with states of the characteristic. (3) *Sequencing:* Given that actors have formed expectations consistent with states of the characteristic, if actors enter or exit an ongoing task engagement, then performance expectations generated by status information in one encounter are preserved. (4) *Combining:* If an actor forms expectations for task outcomes, then she uses these expectations to infer the task competence of self and others. The effects of multiple similarly evaluated status characteristics combine to form aggregated expectation sets. In such a set, each additional piece of information has a decreasing proportional effect. All else being equal, the effects of specific status characteristics are greater than those of diffuse characteristics. (5) *Basic expectation assumption***:** If a person uses expectations to infer task competence, then the greater a person's perceived competence, the higher the person's position in the group's OPPO.

BRIDGING THE THEORIES

Self categorization theory and status characteristics theory both investigate social influence. According to self categorization theory, when disagreements arise, interactants use available information on group membership to make quality inferences that favor in-group members. In status characteristics theory, interactants resolve disagreements via ability inferences and exert influence consonant with the states of status characteristics they possess.

The "evaluation-expectations" branch of status characteristics theory specifies mechanisms that generate influence effects, and it is there that we find a concept that may offer a useful point of connection between the two traditions: *behavioral interaction pattern* (Balkwell 1991; Fisek, Berger and Norman 1991; Skvoretz and Fararo 1996). The theory explains how interaction cycles in newly formed, open interaction task groups produce advantages and disadvantages among members (Fisek et al.1991:116). Task-oriented behavior is classified into four categories: chances to contribute a suggestion, actual suggestions, and positive or negative reactions. As interaction transpires in a task group, these serve as components for "behavior cycles" of opportunities, actions and evaluations (Fisek et al.1991:116). A behavioral interchange pattern (BIP) is a set of interaction cycles with consistent orderings among actors insofar as who gives and receives positive and negative evaluations.

Fisek et al. (1991:118) argue that an established BIP classifies behaviors into high and low status types—a *status typification* process. Status typification states are commonly understood via relatively concrete dimensions such as "leader-follower," "initiator-reactor," "aggressive-shy." They become relevant to high or low task ability states, and thus to success or failure at the group task. In short, BIPs connect behavioral cues to task outcomes. Along the way they order status and influence patterns in the group. Our problem now is how to forge an analogous connection between group membership and influence, because membership is not a behavioral cue in the status characteristics theory.

There is much research to validate self categorization theory's claim that in-group disagreements facilitate influence. [4] The theory argues that others are perceived as competent insofar as they are deemed to be prototypical of the in-group. Moreover, when this is not the case—when people *do not* perceive themselves as similar to the in-group—they may change their self categorization to that of the out-group. Over time, the cumulative effect of this process locks-in the general expectation that in-group members' suggestions are superior to those of out-group members. This would appear to be an inter-group analog of status characteristics theory's behavioral interchange pattern. Pressing the analogy further, we might expect that, in conjunction with the emergence of in-group favoritism, this inter-group BIP will produce an *inter-group* status typification state analogous to the concept's interpersonal manifestations.

"Group membership" does not satisfy the definition for status characteristics, nor is it necessarily relevant to performance expectations. We believe group membership serves as a guidepost that provides people with an uncertainty-reducing heuristic. The demands of the task setting induce beliefs about in-group members only because, when faced with uncertainty, people adopt a strategy that has worked for them in the past: They accept suggestions from in-group members whom they perceive as referents.

Formal Connections

This section completes the theoretical bridge by integrating Hogg and Mullin's (1999) uncertainty reduction argument into the assumptions of status characteristics theory.[5]

Scope Conditions. The theory applies in *task settings* that satisfy the following conditions: The focal actor (1) perceives each of a number of other actors either as an in-group member or an out-group member, (2) believes that he or she is working with at least one partner on a evaluated collective task, and (3) uses either group memberships or status characteristics as a cue for behavior.

Assumptions. The theory is embodied in five assumptions that form an argument explaining how group membership affects influence patterns in collective task settings. As specified in the scope conditions, the assumptions apply to a focal actor in the task setting:

Assumption 1. If group membership differentiates members of a task setting, then it is *salient*.

A salient group membership is available for use as a behavioral cue. This assumption is based on research by Hogg and his colleagues (Hogg and Mullin 1999; Mullin and Hogg 1998, 1999;

Grieve and Hogg 1999; Hogg and Grieve 1999). In a minimal group setting, Hogg and associates found that group membership becomes salient when subjects face uncertain tasks. Hogg and Mullin (1999) reasoned that this stems from interactants using group membership as a cue to reduce uncertainty.

Assumption 2. If group membership is salient and not explicitly dissociated from the task, then a behavioral interchange pattern becomes salient.

Traditional arguments in social identity theory claim that in-group members tend to favor other in-group members and disfavor out-group members. We propose that in the task context this favoritism will translate into a pattern of performance evaluations, leading to the emergence of a BIP. When these opportunity-action-evaluation patterns stabilize into BIPs, they organize subsequent interactions including who influences whom in the setting. Webster and Hysom (1998) argue that BIPs can affect behavior even in restricted settings, such as the standardized experimental setting used in most tests of status characteristics theory. Moreover, they note that BIPs can be triggered by many factors including valued personal characteristics such as friendliness or trustworthiness. Social identity theory offers clear evidence that membership in the in-group versus the out-group affects inferences about such qualities, and thus Assumption 2 is a fairly well-grounded conjecture.

Assumption 3. If a behavioral interchange pattern becomes salient, then actors form positive group status typification states for in-group members and negative group status typification states for out-group members.

If the ordering of evaluations in BIPs favors the in-group, then group status typification states also should form in a manner consistent with group membership. This is based on Fisek et al.'s (1991:124) "burden of proof through status-typification states" assumption.

The next assumption borrows the concept of *abstract task ability* from status characteristics theory. This refers to whether or not a person is presumed to be generally capable in task settings.

Assumption 4. If the actor forms positive group status typification states for in-group members and negative group status typification states for out-group members, then the actor forms positive abstract task ability expectations for in-group members and negative abstract task ability expectations for out-group members.

For our purposes this means that in-group members' task contributions are more apt to produce positive task out-comes than are out-group members' task suggestions.

The integration is completed using the following two assumptions, paraphrased from status characteristics theory:

Assumption SCT 4 (Combining). If an actor has formed ability expectations, then s/he uses them to infer task competence for actors in the setting.

Assumption SCT 5 (Basic Expectation Assumption). The greater an actor's perceived competence, the higher his/her position in the group's OPPO.

The experiment described below tests the key derivation (from Assumptions 2-5) that salient group membership is sufficient to determine relative status and influence in task-oriented groups.

METHOD

We employed a modified version of a standardized experimental setting used in most tests of status characteristics theory (Berger et al. 1977). This setting provides time-tested procedures for introducing status manipulations and measuring social influence.[6] Our modification consisted of a procedure for defining the subject's partner as either an in-group member or an out-group member. The key dependent variable was the rate at which each subject was influenced by his partner across a series of task trials. Although this setting limits the ability to operationally realize BIPs, as noted above, Webster and Hysom (1998) argue that BIPs can affect behavior even in restricted settings, such as the standardized experimental setting. Consequently, BIPs are not necessarily absent in this setting, but we would expect their role to be limited.

Each subject was met by a research assistant upon arrival at the laboratory. Only males participated in order to control for gender effects. After completing a consent form, the subject was escorted to a small room containing a desk, chair, information form, computer monitor and keyboard. The assistant seated the subject, explained the use of the computer, and answered any questions before leaving the room. The subject initiated the instructions by mouse-clicking an icon on the computer screen. A roll-call created the impression that several others were participating in the experiment. Subjects were addressed only by room number, and each was asked to check-in by clicking a box on the computer screen. The program simulated the presence of others and so subjects never actually interacted with one another.

The roll-call was followed by the group membership manipulation. Subjects were told that the experiment investigated the relationship between artistic preference and decision making. The program displayed a series of five screens, each containing one painting by Paul Klee and one by Wassily Kandinsky. The subject was asked to indicate his preference for one of the two paintings on each screen. Subjects were told that their responses would be analyzed to determine which artists' paintings they seemed to prefer. Each subject was then assigned to one of three conditions. For Conditions 1 and 2 each subject was informed that he was a member of the group that preferred the paintings of Klee, and that his randomly-assigned partner either was a member of the group preferring Klee (Condition 1, *In-group Partner*) or the group preferring Kandinsky (Condition 2, *Out-group Partner*).[7] This sentence was omitted for Condition 3 (*Baseline*). The computer then prompted subjects in Conditions 1 and 2 to complete a "group information worksheet" that had been placed on their desks. This form was designed to reinforce the salience of group membership or non-membership.

After the group manipulation, the computer informed subjects that they would be working via the computer with their partner on a series of 25 "contrast sensitivity" tasks. The program informed each subject that it was important to consider the partner's suggestions in considering final answers. The contrast sensitivity task is used commonly in status characteristics research. It

requires subjects to judge which of two colors covers the greater area within a series of rectangles projected on the computer screen.[8] The task is ambiguous by design, ensuring equal competence for all subjects. For each trial the subject submits an initial response, receives information on the partner's initial response, and then renders a final response. The information received after the initial response is experimentally controlled so that the partner appears to disagree with the subject's initial response at a predetermined rate, typically 80% of the time. The dependent variable is the "probability of stay" or P(S) response: the proportion of trials in which, given disagreement with the partner's initial answer, the subject is not influenced by the partner and stays with his own initial response.

Following the completion of the group task, the computer administered a questionnaire. Each subject used a scale ranging 0-100 to indicate his views on (1) the importance of obtaining correct answers, (2) attending to the partner's initial choices, (3) the partner's contrast sensitivity ability, (4) his similarity to the partner, (5) his confidence in his final answers, (6) his performance, and (7) the accuracy of his partner's initial choices. Finally, the research assistant returned to the room, debriefed the subject, explained all conditions and deceptions, and paid him $12.00 for participating in the experiment.

Hypotheses

A key derivation of the theory is that if group membership is salient, then an in-group member will be more influential than an out-group member, i.e., the in-group member's position in the observable power and prestige order of the task group will be higher than an out-group member's position. Assumption 4 asserts that the focal actor forms positive abstract task ability expectations for in-group members and negative expectations for out-group members. This implies that focal actors would perceive the ability level of an out-group member as lower than that of a "neutral" actor—a *disidentification effect*. Thus, subjects in the *In-group Partner* condition should be influenced more than subjects in the *Baseline* condition, who in turn should be influenced more than subjects in the *Out-group Partner* conditions. Strictly speaking, the baseline condition violates the scope conditions of our theory. The theory does not make predictions in settings where neither group membership nor status is salient. We included the baseline to lend insight into the strength of the group membership effect and whether a disidentification effect exists. In terms of probability of stay responses by condition, we predict

Hypothesis 1: $P(S)_{In\text{-}group} > P(S)_{Baseline} > P(S)_{Out\text{-}group}$

A second derivation from the theory states that if group membership is salient in a task setting, then the perceived quality of information and ability of others should be highest for in-group partners and lowest for out-group partners. The questionnaire asked subjects: "How much contrast sensitivity ability do you think your partner has?," and "How much attention did you pay to your partner's initial choice?" If a subject believes his partner has more ability than another, then he is likely to think his partner is a better source of information than the other and is also likely to pay more attention to the partner's initial choices than if the partner is seen as a poor source of information. The derivation thus leads to the following hypothesis regarding the perceived quality of information received from the partner (*Q*):

Hypothesis 2: $Q_{In\text{-}group} > Q_{Baseline} > Q_{Out\text{-}group}$

RESULTS

Subjects

Subjects were drawn from a pool of university students who volunteered in undergraduate classes to participate in experiments for pay. A trained assistant contacted subjects individually to schedule them for experimental sessions. In all, 98 subjects participated in the experiment. Hypotheses do not apply to subjects who fail to satisfy scope conditions, and so in order to ensure collective orientation and task orientation we established a strict criterion value of 35 for responses to the questionnaire items, "How important to you was it that your group obtained correct answers?" and "How much attention did you pay to your partner's initial choice?" Twenty-three subjects did not meet the criterion for one or both questions. Five more subjects were excluded from the analyses due to an error with the random assignment protocol. The post-experiment debriefing led to the exclusion of four more subjects—three that were highly suspicious of experimental manipulations and one who misunderstood instructions. Finally, one subject was excluded due to an equipment malfunction. Thus, our analyses included 65 subjects. The excluded cases were quite evenly distributed across conditions and we have no reason to suspect that their exclusion introduced any biases. (See the Appendix for a statistical check.)

Table 1. Means and Standard Deviations for Key Measures

Condition (N)	In-group (22)	Baseline (22)	Out-group (21)
Perceived Similarity	35.36 (17.01)	28.95 (17.36)	27.67 (16.38)
P(S)	.561 (.123)	.632 (.073)	.633 (.120)
Attention to Partner's Choice	84.00 (13.98)	71.09 (16.51)	62.71 (16.92)
Partner's Ability	55.04 (18.86)	47.00 (17.42)	45.85 (17.04)

Manipulation Checks

A questionnaire item was designed to measure the efficacy of the group membership manipulation: "How similar to you as a person would you say that your partner is?" The first data row of Table 1 displays means and variances for this variable. The means are in the predicted order by condition. Subjects perceived in-group members as more similar to themselves than unknown others, and unknown others as more similar than out-group members. An initial ANOVA F-test indicates differences between conditions were not significant, $F(2,62) = 1.288$, $p = .283$, $\varsigma_p^2 = .040$. However, our theory allows only one of six possible orderings of conditions to support the hypothesis. To test for this predicted ordering, the p value is divided by

the number of possible orderings, giving the probability of obtaining the observed ordering of conditions by chance alone. By this so-called "one-sixth tail test" (Howell 1998:155; Wuensch 2006), the overall test does achieve significance ($p = .283/6 = .047$). Planned contrasts suggest that differences in perceived similarity between the *In-group* and *Out-group* conditions were sufficiently robust.[9] However, means for the *Baseline* and *Out-group* did not differ significantly from one another. Implications for predicted influence effects are discussed below.

Influence Effects

The P(S) response is the behavioral measure of influence developed for status characteristic theory's standardized experimental setting (Berger et al.1977). Higher P(S) values indicate greater resistance to the influence of the partner's communicated initial choice. Hypothesis 1 asserted that a subject is more influenced by an in-group member than by either an unknown other or by an out-group member, and that the unknown other is more influential than the out-group member. The observed ordering of mean P(S) values in Table 1 confirmed this hypothesis. However, consistent with the non-significance of the perceived similarity measure noted above, the difference between the *Baseline* and *Out-group* conditions was negligible. We used non-parametric significance tests for P(S) data. The Kruskal-Wallis test, which tests for differences between three or more groups, was significant, $\chi^2 = 6.025$, $p = .049$. The Mann-Whitney U test found significant differences for *In-group Partner* vs. *Out-group Partner* comparison, $z = -2.002$, $p = .045$, and for *In-group* vs. *Baseline,* $z = -2.210$, $p = .027$.[10] Consistent with the results for our manipulation check, the *Out-group* vs. *Baseline* comparison was not significant. Support for hypothesis 1 is thus only partial [11]. We interpret this finding in our Discussion and Conclusions section below.

Hypothesis 2 asserted that subjects would attend to in-group members' initial opinions more than to unknown others', and more to unknown others' initial suggestions than to out-group members'. This was tested using a post-task questionnaire item that asked subjects how much attention they paid to their partner's initial suggestion. As evident in the third data row of Table 1, the ordering of means was consistent with the hypothesis. ANOVA found a significant difference between conditions, $F(2,62) = 9.89$, $p < 0.0001$, $\varsigma_p^2 = .242$. Planned contrast tests revealed significant differences between the *In-group* vs. *Baseline,* $t(62) = 2.704$, $p = .005$, and *Baseline* vs. *Out-group* conditions, $t(62) = 1.734$, $p = .044$. Additionally, hypothesis 2 asserted that subjects would perceive in-group partners as more able than unknown others, and unknown others as more able than out-group members. This was tested using the using the questionnaire item that asked subjects for their assessments of their partners' contrast sensitivity ability. The ordering of the fourth row of Table 1 is consistent with this prediction, but, ANOVA found no significant differences between conditions, $F(2,62) = 1.72$, $p = .187$. However, because the theory does not actually make predictions for baseline conditions, we conducted further analysis with a *t*-test comparing the in-group to the out-group condition. This test was significant $t(62) = 1.67$, $p = .047$ (one-tailed).

DISCUSSION AND CONCLUSIONS

Status characteristics theory and self categorization theory account successfully for influence patterns in task group settings, however they take different explanatory routes. Self

categorization theory focuses on disagreements with in-group members, status characteristics theory on performance expectations. Integrating elements of both theories opens an array of potential new applications without subverting either theory's basic assumptions.

We tested our theoretical integration in a standardized experimental setting. The results supported a key derivation, demonstrating that the integration accounts for phenomena that neither theory alone addresses. Specifically, we observed that group membership affected social influence in the predicted fashion: Subjects were influenced more by in-group members than by out-group members. However, we did not observe a predicted disidentification effect by which out-group members would have been less influential than unknown others. These conclusions were substantiated by our questionnaire results. Subjects partnered with in-group members paid more attention to partners' suggestions than subjects in the other conditions, but differences between the *Out-group* and *Baseline* conditions were not significant.

It would be premature to alter the theory until we can be more certain that the anomalous result is not an artifact of our experimental context, especially given that the group membership manipulation was not extremely robust. It is possible that the manipulation creating the various distinctions among conditions needs to be strengthened in order to create greater salience for subjects. Alternatively, the manipulation check simply may not have been sensitive enough to detect the effects of the manipulation. In fact, research on self categorization theory typically uses a much more elaborate set of queries (see Mullin and Hogg 1998; Grieve and Hogg 1999; Hogg 1992; Hogg and Sunderland 1991).

If the anomaly stems from weakness in the group membership manipulation, then it is possible that a more realistic roll-call procedure using audio and video devices could produce effects. Switching from a between-subjects to a within-subjects design is another way to heighten the salience of group membership, i.e., each subject experiences at least one in-group partner *and* at least one out-group partner, thereby heightening the contrast between conditions. Some of our results do point to possible disidentification effects, such as the ordering of the means for the "attention paid to partner" item of the questionnaire. An important question for future examination is whether increased group salience will magnify this tendency.

The group status typification state is another issue that should be investigated further in order to examine the potential utility of this concept. Such research ought to attempt to observe status typification states more directly using specific questions about partners as sources of information. Then if the phenomenon is found to exist, efforts must be made to see exactly how it is linked to task outcomes. Such an analysis, in conjunction with the graph-theoretic modeling used in status characteristics theory, would allow formal visualizations of the impact of group membership on status expectations and influence. Empirically informed theoretic structures would enable us to investigate the relative strength of the group membership effect in comparison to status characteristics, and to determine what this strength means in terms of influence calculations. In turn, this knowledge could be used to develop intervention strategies to attenuate the status disadvantages some actors must face due to group membership. For example, in a classroom setting, group membership could be used to counteract the interaction disadvantages that poorer students face (Ridgeway 1982). Knowing group membership's strength and whether it combines additively with status or whether it tends to cancel it out could be used

to create "minimal groups" that would serve to offset the status effects. The theory and findings from the present work are a crucial step in this direction.

ENDNOTES

[1] For examples, see Berger and Zelditch (2002), Burke, Owens, Serpe and Thoits (2003), Friedkin (1998), McClelland and Fararo (2006), Molm (1997), Willer (1999).

[2] See Tajfel (1974, 1978, 1982); Tajfel and Turner (1979, 1986); Turner (1982); Turner, Hogg, Oakes, Reicher and Wetherell (1987).

[3] See Berger, Cohen and Zelditch (1972), Berger, Fisek, Norman and Zelditch (1977), Berger and Zelditch (1985), Berger, Norman and Balkwell (1992), Webster and Foschi (1988).

[4] See Turner (1991); Hogg and Turner (1987a,b); Abrams, Cochrane, Hogg and Turner (1986); van Kippenberg and Wilke (1992); Abrams et al. (1986); Kalkhoff and Barnum (2000).

[5] Most of self categorization theory is highly informal, however Barnum (1997) has formalized key elements of social identity theory.

[6] The computer program used in this setting was developed by Troyer (1997). Detailed information on the experimental procedures is available from the first author.

[7] The experimental instructions were used to make subjects aware of the existence of two different groups in Condition 1,(in-group partner). The computer presented the following statement to the participants: “We have two *groups* of people here today, one group who prefers the paintings by Klee and one group who prefers the paintings by Kandinsky.” Subjects were assigned partners knowing he could either be an in-group member or an out-group member.

[8] A common variant has subjects judging which of two rectangles has more of a particular color.

[9] The *In-group/Out-group* contrast on the raw data yielded t(62) = 1.49, 1-tailed $p = .07$. Some outliers were evident upon inspection of the overall distribution of responses. After dropping the highest two responses and the lowest two responses from each condition, the contrast test yielded t(50) = 1.79, 1-tailed $p = .04$. We were satisfied in the strength of the effect for purposes of a manipulation check.

[10] These results were corroborated in an ANOVA. Results indicate that the overall differences between conditions are significant: $F = 3.81$, $p = 0.048$ (2, 62 df.). When rank order is considered, p drops to 0.024 (ANOVA $p = 0.048 \times 0.50$). A planned contrast test between the in-group condition and the out-group condition was significant $t(62) = -2.191$, $p = .016$ (one tailed test), as was a test between the in-group and the baseline $t(62) = 2.17$, $p = .017$ (one tailed test). However, a non-orthogonal contrast between the out-group and baseline was not significant $t(62) = .046$, $p = .963$.

[11] We estimated a linear equation to test the effect of expectations on P(S), from a preliminary graph-theoretic structure. In this model, the focal actor (P) would develop the positive state of a BIP when interacting with an out-group member and the negative state of a BIP when working with an in-group member. A BIP would not develop in baseline conditions. P's expectation advantage values are -.38534 in the in-group condition, .38534 in the out-group condition and 0 in the baseline condition. The regression coefficient $q = 0.09431$, $se = 0.0423$, $t(61) = 2.22$, $p < .01$ one-tailed test. This test does not provide a definitive assessment of the theorized BIP mechanism, but the results are consistent with it. We would like to thank an anonymous reviewer for this suggestion.

[12] As Kalkhoff (2002) points out, one problem with this approach is that the standard errors in the OLS equation will not be consistent. Following Kalkhoff (2002), we corrected this problem using a SAS/STAT macro that incorporates Greene's (1981) formula for the correct variance-covariance matrix of OLS estimates.

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APPENDIX

Of the 21 subjects excluded for violations of scope conditions, seven were in the *In-group Partner* condition, six in the *Baseline* condition and eight in the *Out-group Partner* condition. Heckman (1979) argued that sample selection bias can occur when the statistical error component of the sample selection process is correlated with the error component of the statistical equations used to analyze the data. When these components are correlated, ordinary least squares estimates are inconsistent and biased. This may affect OLS estimators in laboratory settings where exclusion is conditional on a set of scope conditions.

Heckman's (1979) method for identifying and correcting sample bias is applicable in our case. It first applies a probit model to assess the effects of inclusion vs. exclusion (coded 1 and 0, respectively) on the two scope condition questionnaire items. Then the dependent variable, P(S),

is regressed on two dummy variables created for the *Out-group* and *Baseline* conditions (*In-group* being the omitted category) and the inverse Mill's ratio (also known as the hazard rate correction, λ) calculated from the first stage results.[12] Results from this analysis appear in Table 2. The uncorrected and corrected OLS results are similar. All significant coefficients in the uncorrected model remain so in the corrected model, the standard errors in each model are nearly identical, and the coefficient for the hazard rate correction is non-significant. Together, these findings strongly suggest that the experimental results are not biased by having excluded cases from the analysis on the basis of scope condition violations.

Table 2. OLS Analyses of P(S) and Selection Bias

Variable	Uncorrected Coefficient	Corrected Coefficient
Intercept	.5613	.5548
	(.022)	(.024)
Hazard Rate λ	__	.0465
		(.035)
Out-group	.0719*	.0589*
Dummy	(.032)	(.035)
Baseline Dummy	.0704*	.0629*
	(.032)	(.032)
R-squared	.09	.10

Note: standard errors are in parenthesis.
* $p < 0.05$, one-tailed t-test.

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