

ABSTRACT

Title of Dissertation: EFFECTS OF GROUP STATUS AND
IDENTITY ALIGNMENT ON SOCIAL
INFLUENCE

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A series of three studies examine effects of social identity alignment versus social status on influence within task groups. Status Characteristics Theory (SCT) predicts that deference will be given to high-status members, and Social Identity Theory (SIT) predicts deference to in-group members. This dissertation investigates conditions under which social status or identity alignment might be more predictive of deference by examining status characteristics that also constitute significant identities or memberships to a social in-group (e.g., race, gender). By discerning when social identity or status holds greater sway in task groups, results of three experimental studies shed light on influence dynamics and the interplay of status and social identity. The studies tested three mechanisms—degree of in-group identification, identity threat, and task importance—expected to be impactful in affecting the influence of high-/low-status, in-/out-group partners under varying conditions.

Study 1 examines these processes in a minimal group setting (based on abstract groups based on “cognitive association styles”), and Studies 2 and 3 use more naturally-occurring social groups (e.g., home state in Study 2), such as those attached to an overarching status hierarchy (e.g., gender and race in Study 3). Each experiment had participants work with two (simulated) partners to complete a series of trials on an uncertain group task. This setting met the scope conditions for the theories I am applying to establish group structures: Participants were task and collectively oriented (SCT), were working on a task with no immediate feedback about performance and were explicitly told of categorical group differences between themselves and their partners (SIT). The instructions for Study 1 assigned participants to minimal groups based on bogus cognitive association styles. Study 2 used self-reported home state as a group-differentiating characteristic, and finally, Study 3 tested theorized processes with gender and race.

Hypothesis 1 predicted that high-status partners would exert more influence than low-status partners and found partial support in Studies 2 and 3, primarily driven by the influence of high-status (in-group) partners over subjects. Hypothesis 2 predicted that in-group partners would have more influence than out-group partners, and results generally supported this by revealing strong influence from in-group partners, regardless of status (although in-group high-status partners were most influential in Studies 2 and 3). Hypothesis 3, which expected heightened task importance to increase deference to high-status others, did not receive strong empirical or theoretical support and was only directly manipulated in Study 1.

Hypothesis 4 predicted that under threat to group identity, the effects of group membership on influence would increase relative to that of status. Contrary to expectations, results revealed that identity threat significantly increased the influence levels of high-status partners, even when that high-status meant out-group membership. These findings suggested that identity threat did not

heighten the SIT-based effects on social influence (i.e., in-group influence), as predicted, and in some ways point to an SCT-based explanation (i.e., high-status influence) under threat. Hypothesis 5, predicting that identification to the in-group would increase the impact of group membership, relative to that of status, on outcomes of social influence, was strongly supported in Studies 1 and 3. Participants who more highly identified with their in-group accepted greater influence from their in-group (compared to out-group) partners, regardless of that in-group's relative (high- or low-) status. An SIT interpretation of this finding suggests that low-status in-group members who more highly identify with their (e.g., racial, gender) in-group may not necessarily be more influenced by similar in-group others simply because of their shared group membership. They do, however, appear to be significantly less influenced by out-group others (even when that out-group is higher-status), a finding consistent with my predictions on in-group identification.

Finally, Hypothesis 6, predicting in-group identification to moderate the relationships between task importance (6a) and identity threat (6b) on social influence, found mixed support. More highly-identified participants were more influenced by in-group partners (compared to their out-group counterparts), and in-group identification significantly and directly predicted influence above and beyond effects from experimental manipulations. Results from the three studies show that subtle features of the group context (identity threat and heightened in-group identification) affect how much influence (high- and low-status) group members exert over individuals. Findings from this research highlight the complex interplay between status, group membership, identification and threat in shaping social influence dynamics, and I conclude by using these results to evaluate the relative strength of status-based (SCT) versus identity-based (SIT) processes in driving outcomes of social influence.

EFFECTS OF GROUP STATUS AND IDENTITY ALIGNMENT ON SOCIAL
INFLUENCE

by

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Table of Contents

Acknowledgements.....	ii
Table of Contents.....	iii
List of Tables	v
List of Figures.....	vi
Chapter 1: Introduction.....	1
Dissertation Structure.....	7
Chapter 2: Theoretical Background.....	10
Status Characteristics and Expectation States.....	10
Behavioral Effects on the Status Order.....	14
Scope Conditions	16
Social Identity and Group Membership.....	18
In-group Identification.....	21
Identity Threat.....	23
Relationships Between Theories.....	24
Synthesis of Literature and Theoretical Integration.....	28
Chapter 3: Predictions and Research Approach.....	32
Main Effects of Status and Social Identity	32
Degree of Task Importance.....	34
Identity Threat.....	36
Level of In-Group Identification.....	37
Research Approach and Method.....	41
Chapter 4: Study 1 - Minimal Group Context	44
Experimental Design.....	46
Pilot Study.....	49
Study 1 Procedures	51
Experimental Manipulations.....	57
In-Group Identification (Condition 2)	59
Identity Threat (Condition 3).....	60
Task Importance (Condition 4).....	60
Measures	61
Dependent Variable	62
Results.....	63
Analytic Strategy	64
Sample.....	65
Manipulation Checks	68
Hypotheses Tests	71
Additional Analyses.....	84
Study 1 Discussion.....	88
Chapter 5: Study 2 – Social Group Context (Home state).....	93
Study 2 Design.....	97
Procedures and Manipulations.....	100
Results.....	101
Sample.....	101
Hypotheses Tests	102

Study 2 Discussion.....	108
Chapter 6: Study 3 – Gender and Racial Identity	111
Design and Procedures.....	112
Identity Threat Manipulation (Gender).....	113
Identity Threat Manipulation (Race)	114
Results.....	115
Sample.....	116
Hypotheses Tests	117
Additional Analyses.....	121
Study 3 Discussion.....	122
Chapter 7: Discussion	126
Main Findings and Primary Contributions	127
<i>Additional and Unexpected Findings</i>	129
Limitations and Future Research	130
Conclusion	133
Appendices.....	138
Appendix A: mTurk Study Advertisement.....	139
Appendix B: Supplemental Information for Study 1	140
Study 1 News Article Manipulations.....	145
Status Manipulation of Minimal In-/out-groups	149
Appendix C: Supplemental Information for Study 2	163
In-group (home state) Identity Threat Manipulation	163
Appendix D: Supplemental Information for Study 3.....	165
Gender Identity Scale and Threat Manipulation.....	165
Racial Identity Threat Manipulations (News Articles).....	168
References.....	171

List of Tables

Table 1. Study 1 Experimental Conditions	47
Table 2. Study 1 Partner Configurations of Status and Group Membership	55
Table 3. Ratings of Each Partners' Competence and Similarity by Condition.....	69
Table 4. Pair of $p(C_n)$ s (Partner Influence) and Sample Sizes by Condition.....	71
Table 5. Partner Influence by Level of In-Group Identification.....	80
Table 6. Summary Statistics for Study 1 Post-Task Items.....	85
Table 7. Study 2 Partner Configurations of Status and Group Membership	95
Table 8. $p(S)$ Responses by In-Group Status and Identification Level.....	105
Table 9. Competence and Similarity Ratings by Participant/In-Group Status	108
Table 10. $P(S)$ Means by Threat and In-group Status (Gender & Race).....	118

List of Figures

Figure 1. p(S) Responses by Experimental Condition.....	76
Figure 2. Study 1 Pairs of p(C _n) Means by Condition.....	78
Figure 3. High-status Out-group Partner Influence by Identification x Condition.....	83
Figure 4. Perceived Task Performance ('Number correct') by Condition.....	87
Figure 5. Pair of p(C _n) Means by In-group Status (No Threat Condition)	106
Figure 6. P(S) Responses by Threat Condition and In-group Status (Gender).....	120
Figure 7. Pairs of p(C _n) Means by Status x Threat (Gender & Race).....	121
Figure 8. Pair of p(C _n) Means by Condition (Race only)	124

Chapter 1: Introduction

This research addresses relative effects of social identity alignment and social status in affecting social influence within task groups, and on how particular mechanisms may be associated with one playing a stronger role than the other. Sociologists have long explored the dynamics of conformity, obedience, persuasion, and in-group bias to understand deference in group settings. Studies indicate that both group affiliations and status play significant roles in affecting influence and evaluations in collective tasks (with persons more likely to defer to high- versus low-status others and in- versus out-group others), but two major theoretical traditions offer distinct perspectives on social influence mechanisms. Status Characteristics Theory (SCT) explains how societal inequalities map onto status hierarchies and affect rates of participation and influence in task groups, whereas Social Identity Theory (SIT) focuses on intergroup dynamics, from which influence differences between in- and out-group members is one consequence (Berger, Cohen, and Zelditch 1966, 1972; Berger, Fisek, and Norman 1989; Tajfel 1979).

Social status has the distinctive characteristic of affording individuals a wide range of advantages, including social influence, even when such advantages and influence do not seem warranted or deserved. This phenomenon, referred to as status generalization, has been studied extensively by researchers working from the

perspective of SCT (Berger, Fisek, Norman, and Zelditch 1977). According to the theory, individuals with high social status can exert influence over others in a wide range of domains because diffuse status characteristics, such as race and gender, are associated with expectations about competence that generalize to a wide range of tasks. Although the theory specifically addresses social influence in task groups, it makes no explicit claims about the functional role of social groups in the status generalization process. In fact, group processes of self-categorization and social identification may play an important role in status generalization by creating the psychological conditions necessary for social influence and defining the dimensions upon which status is based (Oldmeadow 2007; Oldmeadow, Platow, and Foddy 2005).

Despite some overlap in their explanatory domains, limited research has explored the role of social identity processes (Tajfel and Turner 1986; Turner 1985; Turner and Oakes 1989) in status generalization, incorporating some of the consequences of shared group membership into SCT (e.g., Oldmeadow, Platow, Foddy, and Anderson 2003). Researchers in this area have proposed that perceived social group membership and status characteristics constitute separate but additive predictors of social influence (Kalkhoff and Barnum 2000; Oldmeadow et al. 2003).

Furthermore, status and social identity appear to affect behavior through different mechanisms. Individuals are influenced by their higher status peers because they expect them to perform competently, and by those with whom they share some social group membership from a sense of belonging and subjective

validity (Kalkhoff and Barnum 2000). This interesting juncture between two prominent theoretical perspectives (SCT, on the one hand, and SIT on the other) raises several questions about the process of social influence when considering important social identities that also operate as status characteristics (for example, race or gender).

Examples of interactive groups in which both status and identity are deduced can be found in countless real-life situations. Think of any group context in which we may find a strong sense of identification, and where that particular group attribute to which we identify also is attached to an overarching status hierarchy. Political working parties are likely to deduce part of their identity from the content of the overarching political ideology, simultaneously contrasting themselves to comparable working parties of the out-group. Similarly, units in the military derive their identity and status largely from the organization they are in and by contrasting themselves to other units within the larger organizations or to their enemy (depending on context). Similar processes may be observed in larger social categories as defined by gender, race, and social class.

Importantly, I offer an alternative way to think about the role of group membership in status generalization. Rather than think about group membership as a characteristic of individuals that has additive effects on their perceived task competence, I propose a more interactive model of the role of shared social identity in status generalization, which is fundamentally a group-based process, contained within and constrained by group boundaries. Psychological group formation, in

terms of self-categorization and social identification with others, facilitates status generalization by connecting the gap between status or expertise in one domain and influence in another unrelated domain.

The questions derived from this reasoning helped guide and motivate the investigation of this dissertation. One question concerns the factors that might moderate the strength of status generalization versus social identity processes in affecting influence in task groups: Under what conditions will status position and group membership each be relatively more important in predicting influence processes? Another question concerns the mechanisms through which shared group membership produces influence in task groups: Are in-group members expected to be more competent than out-group members, and if not, why are they more influential? Are in-group members more influential than more competent, high-status others (i.e., others that they don't share the same group membership with)?

Concerning attributes that convey both status and social identity (such as gender and race), more specifically, how does the intersectionality of low-status in-group membership change the expected influence effects tied to status? Lastly, a final inquiry concerns how to gain the clearest theoretical understanding of the additive effects of status and group membership: What concepts might be used to link the two theories, accounting for the different mechanisms and the additive effects of status and group membership on influence?

In the following chapters I report results from three online experiments designed to test a set of predictions that address the questions presented above in

minimal groups (Study 1) and naturally occurring (Studies 2 and 3) group contexts. These experiments allowed me to explore the conditions under which social identity alignment or higher status tied to that particular attribute of group categorization carries relatively more or less weight in influencing (or being influenced by) others. In each study, participants completed a group task with two (fictitious) partners: one in-group partner and one out-group partner, where in-/out-group categories varied in status (high or low). Additionally, I isolated and examined three factors that research has identified as likely to be relevant to the strength of status versus social identity processes on outcomes of social influence: degree of in-group identification, identity threat, and task importance.

Study 1 experimentally manipulated the three proposed mechanisms between-subjects in a minimal group context across three treatment conditions, with a fourth control condition representing the baseline standardized experimental setting for SCT. Study 2 employed a similar three-person group (participants and their two partners) design but replaced the minimal group context with a more naturally occurring, yet innocuous social group/status attribute (home state). Finally, Study 3 experimentally manipulated identity threat to significant, naturally-occurring social group identities that also constitute diffuse status characteristics (i.e., gender or race) and explored the moderating role of identification to the (gender or racial) in-group.

Hypothesis 1, which predicted high-status partners to exert greater influence over participants than low-status partners, was generally supported across studies.

Hypothesis 2 predicted that in-group partners would have more influence than out-group partners and was marginally supported. Hypothesis 3 predicted that increased task importance would be associated with relatively more influence for high-status versus in-group partners and received mixed support. While high-status partners did not receive a boost in influence when task importance was increased, heightened task importance did significantly increase the rejection of influence (i.e., proportion of “stay responses” during the group task) by participants.

Hypothesis 4 predicted that under threat to an in-group identity, the effects of group membership on influence would increase relative to status effects and was not supported. Results instead revealed that participants under identity threatening conditions were significantly more influenced by their high-status partners, even if their high-status partners belonged to the outgroup. Hypothesis 5 predicted that greater identification to the in-group would be associated with group membership having relatively stronger effects on influence compared to status and was generally supported across studies.

In addition to the findings on social influence outcomes, I also measured participants’ evaluations of their study partners on several dimensions. Analyses on these evaluations revealed that, across experimental conditions, participants perceived their high-status in-/out-group partners as being more competent and performing significantly better than low-status in-/out-group partners. Participants belonging to a high-status in-group perceived their (equally high-status) in-group partners as significantly more competent than their (relatively lower-status) out-

group partners, a difference not observed among those belonging to a low-status in-group.

Further analysis revealed that this discrepancy in evaluations was primarily driven by low-status participants perceiving their relatively higher-status, out-group partners as performing significantly more competently. High-status participants did not perceive their equally high-status in- or out-group partners any more or less competently than their low-status in- or out-group partners.

Dissertation Structure

This first chapter introduces the investigation of this dissertation and briefly summarizes my predictions and findings. Next, Chapter 2 reviews theoretical frameworks and research from social psychological theories of status and social identity and synthesizes the two theoretical perspectives to develop a set of predictions on social influence in task groups. In Chapter 3, I use this theoretical integration to outline my main hypotheses on how identity threat, task motivation, and group identification affect whether social identity alignment or status tied to a particular group characteristic carries relatively more or less weight on outcomes of influence.

Chapter 3 then introduces the experiments that I designed to test my predictions: Participants in all studies worked on a group task with two fictitious partners, varying in level of group membership (in-group or out-group) and status (high or low), in which there are opportunities for social influence. Chapters 4

through 6 present results from my three studies that experimentally manipulate or measure task importance, identity threat, and in-group identification, and directly measure influence among high- and low-status in- and out-group partners. Finally, Chapter 7 provides a general discussion of my results across the three studies and discusses the implications of these findings for research on status and social identity processes.

My findings make several contributions to sociological theories of social identity and status. Three of the most important of these contributions are worth noting. First, the results show that an underlying identity process affects social influence, independent of social structure. I found that participants were more likely to defer to in-group partners, even if those in-group others were of lower-status, in naturally-occurring groups (Studies 2 and 3). In minimal groups (Study 1), low-status participants did not defer any more or less to their high-status/out-group partners compared to their low-status/in-group partners. Additional analyses revealed that, across experimental conditions, participants perceived their high-status partners as being more competent and performing significantly better than their low-status partners, regardless of group membership—a finding that was only significant in naturally-occurring social group contexts (Studies 2 and 3).

Second, the findings advance theories and research on social identity by revealing the ways in which the social context of categorization affects how actors weigh their perceptions of others' competence against the desire to feel valued or included as a member of their in-group. Identity-threatening contexts lead actors to

reject influence from task partners more than non-threatening contexts, while non-threatening contexts lead actors to rely more on high-status others, regardless of group membership.

Third, results confirm that participants with higher levels of identification to their in-group were significantly more influenced by their in-group partners (compared to their out-group partners). This finding was significant regardless of that in-group's low-status relative to out-group/high-status partners. Results thus contribute to the literature by revealing how degree of in-group identification operates via the status process to affect social solidarity among group members.

Chapter 2: Theoretical Background

Ambiguities frequently arise in group situations during the process of reaching solutions that lead people to look to one another for reference. When direct information is absent about other members' ability at the task at hand, individuals form inferences based on interpersonal and situational cues, such as the observable features of other members. The literature recognizes status and social identity as important cues for such inferences in collective task settings.

Research in SCT reveals that a person's position along an established status hierarchy affects how competent they are perceived and how influential they are over other group members (Berger et al. 1977). In contrast, SIT emphasizes how outcomes of group interaction stem from one's membership to and identification with a social group (Tajfel and Turner 1986). In this chapter, I address each of these theoretical frameworks, first individually and then together.

Status Characteristics and Expectation States

According to the status characteristics and expectation states tradition of theory and research, certain group members are held in high esteem, assumed to be more competent, and exercise greater influence on group decisions relative to others in the group (Berger, Cohen, and Zelditch 1972). SCT, one theory in the larger expectation states program of theory and research, describes how beliefs

about oneself and others in groups vary by the observable features of individuals, in which members are categorized in terms of differentially evaluated status characteristics (Berger and Webster 2006). According to the theory, people draw upon observable characteristics of group members, such as race or occupation, to inform expectations of oneself and others' ability or competency into an ordered hierarchy of power, prestige, and influence (Berger et al. 1977).

Status can thus be generally defined as an individual's relative standing in a group based on prestige, honor, and deference (Berger, Cohen, and Zelditch 1972). Research demonstrates that group members tend to agree on the group's status hierarchy (Anderson et al. 2006), evaluate higher status members more favorably than others (Foschi 1992), defer to them more often (Berger et al. 1977), give them more chances to speak and act (Cohen 1994), and allocate more resources to them (Berger et al. 1985). In all these ways, being accorded higher status in a group is valuable to the individual.

Status characteristics are culturally defined markers that society invests with value and status significance. In this way, a structural feature of the larger society is brought into smaller task groups by conferring advantages and disadvantages to certain group members (Berger and Webster 2006). Members with characteristics associated with higher expectations for performance are held in higher regard and are expected to make more competent contributions (Webster and Foschi 1988). The theory operates within the scope of groups that are task

orientated (i.e., working on a valued task) and collectively orientated (i.e., group members are motivated to work together) (Berger et al. 1972).

SCT specifies between two types of status characteristics. A characteristic is specific if it carries expectations for competence in a narrow range of situations, such as math skills or artistic ability. A characteristic is diffuse if it carries with it expectations for general competence in a wide variety of situations (Berger et al. 1972). The theory proposes that a group member will use expectations tied to status characteristics to infer each member's competence to contribute to a group task, even if that particular attribute has not been previously associated with the goal at hand (Berger et al. 1977). This is emphasized by the theory's burden-of-proof assumption which states that group members will consider a status characteristic to be task-relevant, so long as it is not actively disassociated from the task (Berger and Webster 2006).

In the U.S., diffuse status characteristics such as race and gender have many associated expectations. Decades of research has shown that group members have mistakenly associated race (Melamed et al. 2019), gender (Rashotte and Webster 2005), age (Kelley, Soboroff, and Lovaglia 2017), education, and occupation, among other attributes, with innate abilities on tasks unrelated to these social categories (Berger et al. 1972; Brezina and Winder 2003; Lucas 2003; Ridgeway 2009; Webster and Foschi 1988). Research has, for example, demonstrated how race acts as a status characteristic that advantages whites relative to blacks in American society (e.g., Brezina and Winder 2003). Cohen and Roper (1972) found

that white students participated more than black students in classroom settings, whereas Webster and Driskell (1978) found that black partners had less influence than white partners in an interaction task.

Research identifies, for example, concrete status distinctions involving differences in attributes such as race (Cohen and Roper 1972; Brezina and Winder 2003), gender (Lockheed and Hall 1976; Lovaglia et al. 1998, Ridgeway and Diekema 1992; Wagner and Berger 1998), military status (Berger, Cohen, and Zelditch 1972), educational attainment (Zelditch, Lauderdale, and Stublarec 1980; Markovsky, Smith, and Berger 1984), occupational positions and sexual orientation (Webster, Hysom, and Fullmer 1998), and physical attractiveness (Webster and Driskell 1983; Jackson, Hunter, and Hodge 1995).

Less visible characteristics, such as sexual orientation and educational background, are also status characteristics and can affect expectations of task competence if revealed (Ragins 2008). However, for the purposes of this research I concentrate particularly on characteristics that are readily visible and, more importantly, simultaneously represent membership to an important social category (i.e., a social identity). In the studies in this dissertation, I systematically vary the way in which participants are included in one of two groups by either experimentally assigning membership to an artificial high- or low-status group in minimal group contexts (Study 1), or by letting people indicate themselves to which group they identify and belong based on naturally occurring, diffuse status characteristics/social group memberships (Studies 2 and 3).

Behavioral Effects on the Status Order

Low-status group members face challenges when attempting to gain status due to the self-reinforcing nature of status hierarchies. Because high-status people are expected to be more competent than others, they are given more opportunities to contribute, contribute more, and their contributions are evaluated more favorably (Ridgeway and Blackwell 1997; Phelan et al. 2014). High-status group members are evaluated as more competent simply because they are high status, leading to a legitimization of the self-fulfilling status order. Members with low performance expectations will have and will accept fewer opportunities to perform, speak less, be more hesitant to offer contributions, and defer more to others who disagree. The result is that people occupying the de-valued state of status characteristics end up with less influence in groups than people occupying the more valued state of the status characteristic for reasons likely unrelated to actual task competence.

Status-disadvantage, due to the lower performance expectations, has negative consequences, and one way to foster the perception of competence for low-status group members is to highlight personal achievements and contributions to group success. A potential problem with this approach is that others may perceive these efforts as “status violation” (behaving in ways expected of someone of higher or lower status). It is more socially acceptable for high-status group members to be assertive, interrupt others, and be persistent when sharing opinions (Ridgeway and Berger 1988). In contrast, behaviors associated with a low-status position include

making less eye contact, passively and infrequently expressing opinions, and deferring to more high-status others in the group.

Evidence indicates that status violations may hinder low-status actors' efforts at gaining status, rather than help them (Younggreen and More 2008). According to Wagner's (1988) theory of status violations, when an individual routinely behaves in ways typically associated with a higher-status position than they hold, they are violating the group's behavioral expectations. In response, the group will attempt to correct and socially control the deviant behavior in efforts to realign the behavior in accordance with the lower-status position. If the member continues to engage in the status-deviant behavior, other group members may employ expectational control, which considers persistent status-deviant behavior.

This process introduces a new status-dimension: the moral characteristic, which is then integrated into the existing status hierarchy within the group. Status-deviant group members are assigned the de-valued state and status-conformers are assigned the more valued state. This dimension is combined with existing status characteristics, altering the status structure. Those in the morally higher state would experience status-gain, and those occupying the de-valued state would experience status-loss.

Research does indicate a few strategies that appear to be effective in minimizing the status disadvantage. Notably, Ridgeway discovered that low-status group members could gain status in a group by appearing to be group-motivated (1982). This tactic's effectiveness stems from the assumption that high-status group

members are operating with the group's best interest in mind. The same assumption does not apply to low-status members and instead, often group members suspect the opposite; that lower-status group members are in fact self-interested. So, when low-status group members make task contributions, others tend to think they are operating under selfish motivations. Making qualifying statements such as, "I think doing XYZ would really help the group succeed," may help ameliorate assumptions that the low-status group member is behaving out of self-interest (Ridgeway 1978). Additionally, I believe the finding may indicate a possible group identification element to status processes. If individuals gain status by presenting their contributions as group motivated, perhaps it generates a sense of shared membership that itself generates increased deference.

Scope Conditions

As noted, SCT is bound by scope conditions that must be present for the theory to maintain predictive value (Foschi 1997). Two main scope conditions constrain the breadth of implications for SCT: task orientation and collective orientation (Berger et al. 1977). Specifically, the predictions of SCT are limited to goal-oriented task groups where there is a clear distinction between success and failure (task orientation), and a sense that group members' contributions may influence the likelihood of achieving a goal (collective orientation) (Berger, Rosenholtz, and Zelditch 1980). Not all groups are task and collectively oriented, for example, some groups with a predominantly social purpose would fall outside

the scope of SCT (Correll and Ridgeway 2003). These conditions are important because without task and collective orientation, group members would not have a reason to form performance expectations and defer to others they see as more competent.

One important concern is therefore the applicability of SCT's scope to the present research and in combination with other theories of identity (see the following sections in this Chapter). I argue that the limited scope of the theory is still appropriate for use in the present investigation. Past studies, for example, have found that status characteristics sometimes guide behavior outside of these scope conditions (e.g., Correll, Benard, and Paik 2007; Harkness 2016). The broad applicability of SCT outside of these scope conditions provides some basis to use the theory here.

In the following chapters I describe a series of studies conducted using a web-based program. In each, lone participants work with two other (fictitious) partners on a standardized task that is commonly used for SCT research. However, I made several adjustments to the standardized design (such as adding additional task partners to the group and implementing fictitious in- and out-group categorizations to partners) to test my predictions that incorporate elements from SIT (see next chapter subsection).

I would argue that, despite these adaptations to the standardized SCT experimental setting, the theory still holds predictive value for the studies. Importantly, participants are still working on a group task and are encouraged to

regard it as legitimate and important for task success to consider the input of everyone in the group. However, I am adding group categorizations within the larger task group structure that I acknowledge may complicate the collective orientation of study participants (i.e., partners may be considered “in-group” members insofar as they are all members of the broader task group, there are additional in-/out-group distinctions made among these group members). Nonetheless, there is still a propensity to work in a collective manner on a team-based task that I argue appropriately fits within the scope of SCT.

Social Identity and Group Membership

The social identity theoretical perspective is a social psychological analysis of group processes and self-concept, with a basic assumption that people are generally motivated to think positively about themselves (Taylor and Brown 1988). The core principle of SIT is that people derive part of their self-concept from the social groups and categories to which they belong, and that this awareness of belonging to an in-group has emotional value and significance to the person (Tajfel 1979). When people belong to and identify with a social group, the group becomes part of their sense of self and contributes to their self-evaluation. Group members assess their group’s standing by making intergroup comparisons on valued comparison dimensions. Members are motivated to maintain and restore the positive distinctiveness of their in-group, which then reflects positively on their social identity. SIT has been used to investigate prejudice, discrimination, and other

conditions that promote different types of intergroup behavior such as conflict, cooperation, social change, and social movements (Turner et al. 1987).

Self-categorization theory, a subset of SIT, expands on the social cognitive process of categorization that motivates people to identify with groups and construe themselves and others in in- and out-group terms (Turner 1985). Evaluations of self and others are made based on the least inclusive group to which one belongs, and it is this determination that informs judgements of others' relative value (Turner et al. 1987). Those most prototypical of the in-group are considered most liked and representative of the group (Tajfel 1979).

As a result of such classifications, we tend to focus on similarities between individuals within the same category and see them as interchangeable elements that share some representative common characteristics (e.g., racial group, or national citizenship). At the same time, we accentuate differences between individuals who are grouped into different categories as a way of clarifying the meaning of the situation (Tajfel 1979; Hogg 2007). As a result, when people are categorized into groups, they come to be seen in terms of characteristic group features that define their social identities, while neglecting individual traits which define their uniqueness.

What makes social identity categories different from any other object categories is the process of social identification: the realization that the self is included in some social categories and excluded from others. It is impossible, for instance, to categorize and compare people of different genders without realizing

that at least one of these categories must include the self. Thus, when specific features are associated with a social group, or when these features are valued in a certain way, the process of social identification determines how this reflects upon the self. This can either imply that the self is identified with that group and presumably shares its characteristic features or lead to the conclusion that the self is distinct from that group and its features.

Social identification not only refers to the cognitive awareness that one can be included in a particular group, but also incorporates the emotional significance of that group membership for the self (Tajfel 1979). To the extent that people care about the groups to which they belong (i.e., their in-group), they will be motivated to emphasize the distinct identity of those groups apart from the out-group, and to uphold or enhance the value of that group.

The process of categorization under the social identity approach, then, differs from the motivating factors of comparison under SCT. For SIT, a particular identity is most important in intergroup contexts where one can reference both in-group and out-group members. Simply distinguishing between individuals on the basis of their group affiliations appears to be sufficient to produce in-group favoritism. Research has found even subtle and trivial distinctions to foster intergroup bias (Hogg 2005). Likewise, Tajfel and colleagues (1971) indicate that even with no prior contact, under conditions of anonymity, and with insignificant social categories, members still develop an awareness of “us” versus “them.”

In-group Identification

For a social categorization to affect group behavior, the group identity must be psychologically salient as the basis for perception and self-comparison. Because of the highly dynamic aspect of a person's social identity, people in most social contexts are simultaneously members of several different groups that differentiate people in the context. Social categorization theorists, however, propose that only a limited number of groups influence a person's behavior at any time. Salient groups tend to be those which are most "accessible" to the individual and those which best "fit" perceptual input (Oakes, Haslam, and Turner 1994; Turner et al. 1987). A social categorization is accessible if an individual is motivated or prepared to think in terms of the category (Oakes 1987).

Therefore, individuals draw upon social categories that are important to them, are self-evident, and are situationally accessible in the immediate context. For instance, race and gender are social group identities that are readily accessible in a range of social situations. The concept of fit refers to the extent to which that categorization accounts for similarities and differences among individuals in their behaviors and attitudes (Hogg and Turner 1987). If the fit of the identity to the social situation is poor (for instance, if people do not behave in gender or racially stereotypical ways), individuals will cycle through other accessible identities until an optimal level of fit is achieved.

Although one may see her or himself as a member of a particular group, that group may or may not be situationally relevant or important to their self-concept.

When it is, however, individuals internalize the norms and values of the in-group, are motivated to see the in-group in a positive light and tend to be attracted to and cooperate with other in-group members (Turner and Oakes 1989). Thus, in situations where an identity indicating group membership is made salient, individuals act more in line with their shared group identity and less with their personal identities (Turner 1985).

A general principle concerning in-group identification that can be derived from SIT is that the group forms an important perspective from which to perceive the world for those who identify strongly with it (Tajfel and Turner 1986). Consequently, high identifiers are more likely to focus on intragroup similarities (and intergroup differences) than people for whom group membership is relatively unimportant (Hogg and Turner 1987). Thus, high identifiers are expected to perceive less variability within their own group and within an out-group, along with greater differences across groups. On the other hand, individual differences within both groups, and similarities across groups, are expected to be more noticeable among low identifiers.

Cognitively speaking, the importance of a particular category may cause people to view the world in a group-based manner, in which intragroup similarities (and intergroup differences) are accentuated. In a study by Simon and Pettigrew (1990), participants were assigned to a group, ostensibly based on their preference for a particular painter. The researchers found a significant negative relationship between the importance of group membership (level of group identification) and

perceived group variability. In other words, the more important a particular group membership was for them, the less variably people perceived their own group. This result supports the notion that high identifiers may be more inclined to perceive the world in intergroup terms and behave in ways favoring their in-group identity.

Identity Threat

Threat has become a core explanatory concept within the social identity framework. Part of the growing interest in this topic is due to the important consequences of social identity threat, ranging from lowered self-esteem and discrimination against out-groups, to increased identification with and effort on behalf of the in-group (Ellemers, Spears, and Doosie 2002). People are especially motivated to maintain positive feelings about their in-group in the presence of identity threats, and researchers have shown how numerous types of threats to social identities can differentially affect intergroup attitudes and behaviors (Branscombe et al. 1999).

Despite the amount of research on the topic, there is not a widely accepted and consistently used definition of identity threat in the literature. A review and synthesis of the literature leads me to define identity threats as experiences appraised as indicating potential harm to the value, meanings, and/or enactment of an identity. I propose that this definition encompasses the diversity and focus of existing literature on identity, specifically from the disciplines of social psychology, organizational sociology, and management.

This definition also corresponds to my proposed methods, in which I manipulate and measure threats to the value of one's social identity in real and minimal groups (e.g., stemming from a negative intergroup comparison or when the group's value is undermined). However, it should be noted that there are other kinds of identity threat in intergroup contexts, such as threats to the distinctiveness of one's group, the threat of being categorized against one's will, and the threat of being excluded from the group (Ellemers et al. 2002).

Relationships Between Theories

Taken together, both SCT and SIT apply to a general process in which group disagreements motivate people to look to others for guidance, but the two theories take different explanatory routes to account for differential outcomes of influence (Tajfel and Turner 1986). Under SCT, status characteristics are based on culturally shared conceptions of which groups are more valued, influential, and expected to be most competent. SIT emphasizes social categorizations made by the perceiver in terms of group membership, where in-group members are generally favored over their out-group counterparts (Turner et al. 1987).

Despite substantial empirical support for both theories and consideration that positions of diffuse status characteristics often constitute membership to social group categories (e.g., racial identity, gender group), each theory has largely been tested in isolation from the other. The few studies that have directly compared the effects of identity and status investigated individuals that did or did not share

membership along one dimension (e.g., nationality), and were either higher or lower status along a separate characteristic (e.g., race). Kalkhoff and Barnum (2000) used an adapted version of SCT's standardized experimental setting in which subjects interacted with two partners on a task. Four experimental conditions manipulated status (level of education) and trivial group membership (preference for one of two artists) independently and concurrently.

Results revealed that high-status partners and in-group partners had comparable influence advantages over low-status partners and out-group partners, respectively. When both status and group membership were known, the effects were additive: having high-status increased the influence of both in-group and out-group partners, as did the addition of in-group membership for low-status and high-status partners. The addition of low-status (to in-group or out-group partners) or out-group membership (to high- or low-status partners), however, did not change the amount of influence exerted by these partners (Kalkhoff and Barnum 2000).

Oldmeadow and colleagues (2003) investigated the independent and concurrent effects of group membership (American or Australian nationality) and status position (captain or junior member) on Australian university students and manipulated the relevance of the status dimension to the group task. When the dimension of status was more relevant to the task, participants were more influenced by their high-status, out-group partner relative to their high-status, in-group partner. Results revealed that subjects perceived American out-group members as more competent than Australian in-group members, illustrating how

conceptions of status were drawn from both team position and group membership (i.e., nationality).

Interestingly, low-status in-group partners were the most influential of all members, despite being perceived as least competent. Given that low-status in-group partners were rated as most similar to participants, subjects may have perceived a threat to their own self-concepts and responded with bias or favoritism toward their in-group in an effort to maintain a positive social identity (Oldmeadow et al. 2003). Oldmeadow and colleagues (2005) found that perceiving a partner as an out-group member reduced collective orientation and decreased influence, but only for those who identified strongly with the group. High identifiers, but not low, were less collectively oriented and less influenced by partners when their social identity was made salient (Oldmeadow, Platow, and Foddy 2005).

Furthermore, Oldmeadow (2007) examined age as a diffuse status characteristic in two different contexts in which participants interacted with two partners: one that shared their younger age-group membership, and one that belonged to an older age-group. One comparative group context made salient the undergraduate student group, heightening the perception of older partners as atypical group members of the normatively younger, university group. The other context made salient the university group as a whole, not characterized by a specific age range. Results from two experiments revealed that younger, in-group partners were more influential in the undergraduate group context, while older, out-group partners were more influential in the university group context (Oldmeadow 2007).

Interestingly, the difference in the relative influence of partners across contexts found by Oldmeadow (2007) was not explained by partner perceptions of competence or prototypicality. Older partners that were more influential in the university context, and younger partners that were more influential in the undergraduate context, were not seen as any more or less competent than other partners across contexts. Even more, prior research by Oldmeadow and colleagues (2003) found that while participants perceived their high-status partners to be more competent than other partners, participants were still more influenced by their low-status in-group partners, compared to their high-status out-group partners. While this research represents important contributions to understanding how groups may moderate status effects, the processes underlying these effects remain unclear.

Such research demonstrates that both status and social group membership information can operate concurrently to affect patterns of influence. However, none of the studies specifically investigated the status position of a single social group identity (i.e., one attribute, such as gender, which concurrently indicates both low- or high-status position and in- or out-group membership). Additionally, the additive effects of status and identity through the mechanisms found in previous research raises questions for how a single attribute may operate as both a status characteristic and a social identity concurrently and under different social conditions.

Synthesis of Literature and Theoretical Integration

Status and social identity have been identified as two major aspects of social structure that inform social comparison processes and affect group interaction. However, the two theoretical perspectives differ in the underlying mechanisms that trigger certain attributes of individuals to affect perceptions and behaviors. Individuals of high-status, such as those belonging to a high social class or racial majority, are often influential in a wide variety of social situations because people expect them to be competent at a range of tasks.

People are also influenced by members of their own social groups, such as those who belong to or share contextually important or salient social identities. Because social groups tend to value their distinctive traits, people often look to and rely on those who they share an important in-group membership with. Moreover, these social in-groups are not necessarily those belonging to the high-status group in the larger society. Despite the social status of the in-group, a strong identification to a social group has emotional value and significance to the individual (Turner et al. 1987).

There is evidence that perceived group membership and status characteristics are separate but additive predictors of influence (Kalkhoff and Barnum 2000; Oldmeadow et al. 2003). However, the additive effects of status and social identity through different mechanisms raise some questions about the process of social influence that warrant the investigation here.

One question concerns the factors that might moderate the strength of each process: Under what conditions will a group member's status position be most predictive of influence behavior, and under what conditions will the group membership to that social category be most important? Another question concerns the mechanisms through which shared group membership produces influence in task groups: Are in-group members expected to be more competent than out-group members, and if not, why are they more influential?

A third question concerns how to gain the clearest theoretical understanding of the additive effects of status and group membership: What concepts might be used to link the two theories, accounting for the different mechanisms and the additive effects of status and group membership on influence? In investigating how the processes of identity and status interact in situations where the two are co-occurring, I conduct three studies to examine the factors taken as especially relevant to the strength of each process on social influence: group identification, task importance, and identity threat.

From a theoretical standpoint, SCT and SIT both apply to general processes by which individuals look to other members for guidance on how to behave or make certain decisions when faced with disagreements or uncertainties over a task. Which group member that individual decides to rely on for such guidance leads to differential influence among members, potentially disfavoring those with relevant knowledge and elevating those without (Tajfel and Turner 1986). Since social groups tend to value their distinctive traits, group members who belong to the in-

group are seen as most prototypical. Such perceptions of similarity can motivate in-group-favoring behavior, even if that particular in-group category is not the high-status one in the larger society.

Instead, a strong identification with and awareness of belonging to a salient in-group has emotional value and significance to the individual (Turner et al. 1987). This synthesis implies that there may be certain social contexts under which one avenue of categorization becomes more or less consequential for group behavior. For group members belonging to a low-status in-group category, for instance, such contexts may shift their decision to go along with fellow in-group members over their high-status, out-group counterparts.

Research that has directly compared the effects of group membership and status characteristics on social influence assigned subjects to two partners who were either high- or low- status based on one status characteristic, and in-/out-group members based on a separate dimension. These studies have found that status and group membership had additive effects on influence, demonstrating that both status and social group identity information can operate concurrently to affect patterns of influence (Kalkhoff and Barnum 2000; Oldmeadow et al. 2003).

However, research has not considered how status characteristics operate jointly as social in-/out-groups, nor have they measured the degree to which subjects identified with their in-group, which is an important component of SIT. By experimentally manipulating status and group membership, and testing for the roles of task importance, identity threat, and group identification, I investigate this gap

in the literature. I employ three experimental studies to assess these mechanisms and test the predictions laid out in the following chapter.

Chapter 3: Predictions and Research Approach

A synthesis of the literature discussed above points to several core predictions and expectations. I begin with my main predictions concerning the independent effects of status and social identity on social influence. I then introduce the three mechanisms (group identification, identity threat, and task importance) and hypothesize about the relative strength of each process under varying conditions.

Main Effects of Status and Social Identity

According to SCT, individuals' status characteristics are a key driver of group dynamics because such characteristics shape expectations regarding which members have the most competence needed to accomplish group tasks, and thus which members are most valuable (Correll et al. 2007). When better task ability or competence is identified with particular categories of characteristics, group members in those categories are likely to be perceived as more valuable than those without. This leads to my first prediction concerning the well-established independent effect of status on social influence:

Hypothesis 1: High-status partners will have more influence over participants than will low-status partners.¹

SIT theorizes that people experience uncertainty when they disagree with others, and that social categorization processes can lead actors to be more or less accepting of social influence (Turner et al. 1991; 1989). More specifically, individuals will be more inclined to accept the opinions of in-group members than out-group members, as acceptance of in-group member positions signals a positive evaluation of those group members and oneself. Furthermore, agreement among in-group members reduces uncertainty because it is taken as an indicator of the “true” state of an issue. Therefore, I expect the following about the level of in-group (compared to out-group) member influence, and its’ interaction with the group’s status:

Hypothesis 2: In-group partners will have more influence over participants than will out-group partners.

In terms of the joint effects of status and social group identity, I expect the two to have additive effects such that influence will be highest among high-status, in-group partners and lowest among low-status, out-group partners.

¹ If the data do not reveal effects consistent with status expectations of competence for high- and low-status others, it may be argued that the attribute was therefore not operating as a status characteristic. I address this possibly in the results for each study in their respective chapters. Because I investigate several different (status) attributes across studies, and for simplicity and ease in presenting hypotheses, I say high- and low-status here rather than, for example (Study 3), men and women, respectively.

Degree of Task Importance

I expect aspects of the nature of the group task at hand to affect outcomes of influence. It is likely that the subjective importance of the group task, such as the degree of importance in completing the group task accurately, will affect the expectations of the responses and support provided by other group members. In particular, participants who are informed that the group task is relatively more important will likely experience a higher level of self-threat than participants who are informed that the group task is less important.

As mentioned, we know that influence resulting from status is based in performance expectations. The reasons for in-group deference are less clear, but they appear to be about the degree of “in-groupness” rather than competence expectations. As a task becomes more important, getting it correct becomes more important to participants, and so they might become especially likely to look to whoever they see as most capable (i.e., high-status).

My reasoning is that working on highly joint tasks where solely individual contributions are difficult if not impossible to separate from the final task outcome will generate a greater sense of shared responsibility. While working on tasks in which successful answers among the entire group (i.e., in agreement) are depicted as being critically important to receiving reward outcomes for the study, participants are less likely to attribute the final task product to a combination of individual efforts and are more likely to question other individual group member’s contribution and commitment to group goals, including their own. In line with this

reasoning, I expect that the relative importance of the group task will be positively associated with social influence:

Hypothesis 3: As perceived task importance increases, effects of status on influence will increase relative to effects of group membership on influence.

Research also shows that the type of influence task is related to individual's responses to similar and dissimilar sources (Crano 1991). With subjective judgment tasks, for example, responses are largely a function of personal attitudes and preferences, and the views of similar others may be preferred over dissimilar others and may be more influential.

In contrast, with more objective judgment tasks, responses tend to reflect attributes of the issue itself, and the views of dissimilar others may be preferred. In this case, out-group others may be more influential than those of more similar in-groups to the extent that dissimilar others can provide objective information. Influence in the case of heightened task importance will even more strongly depend on the expectations people hold for the validity of evaluations they receive from others. I therefore expect greater levels of influence exerted by high-status (in-group or out-group) partners, compared to low-status (in-group or out-group) partners, under conditions of higher task importance.

Identity Threat

People are more likely to retreat to their in-group identity and trust in-group sources when the group is under threat or in conflict with other groups. High identifiers are particularly likely to embrace their group identity even when this implies accepting a stigma or low-status (Ellemers et al. 2002). Specifically, under such group-level threats, group members are likely to self-stereotype and conform more to the prototypical in-group position (Spears et al. 1997), to close ranks and perceive greater in-group as well as out-group homogeneity (Doosje et al. 1995), and to show more group loyalty. Under conditions where self-enhancement is the primary motive, such as when the identity to the group is threatened, people may be more concerned with group identification and solidarity than with obtaining the objectively correct solution.

Under threat, group identification becomes more salient (Moskalenko et al. 2006). Affect Control Theory predicts that when there is discrepancy between the self and the situation, individuals are motivated to adjust the situation to lessen the dissonance (Owens 2006). Similarly, Identity Control Theory explains that due to the desire for a consistent and verified identity, people will behave in ways consistent with salient identities and will attempt to counteract any disturbances.

When identity relations are perceived as under threat, for example, dependence on the out-group may be inconsistent with the in-groups' pursuit for equality and therefore lead to greater rejection of influence from out-group members. Threat to an in-group identity drives members to positively distinguish

their in-group from the out-group. Members do this by discriminating against and devaluing the out-group (affording out-group members less social influence), and by perceiving the out-group as more homogeneous. Accordingly, if an in-group member identity is threatened, the theories predict that individuals will likely behave in ways that affirm that in-group identity. I thus predict the following:

Hypothesis 4: When group identity is threatened, effects of group membership on influence will increase relative to effects of status on influence.

Research has also found that the relationship between identity threat and influence is stronger for high-status groups than for low-status groups (Bettencourt et al. 2001; Scheepers et al. 2006). One potential reason for this is that high-status group members believe they have more power and resources to lose from the threat (Mullen et al. 1992). In contrast, when the in-group is not threatened, high-status group members should not feel a need to defend their interests against out-groups. I therefore expect the relationship between threat and social influence (i.e., that identity threat will lead to greater deference to in-group partners) to be stronger among members of high-status (compared to low-status) groups.

Level of In-Group Identification

I also expect that the degree to which people identify with the in-group will strongly moderate the relevance of group membership (compared to status) to the process of social influence. For low-status groups in particular, social identity and

group identification may comprise the seeds of action aimed at changing the status quo. Contexts in which the level of in-group identification becomes particularly high should present such cognitive alternatives to the status quo and manifest itself in group action designed to realize or resist status hierarchies. One critical assumption of SIT is that in different contexts, different levels of the self can become more psychologically and cognitively important, or salient.²

For individuals with lower in-group identification, the personal self may be emphasized over the group self, and thus they will tend to focus on individual differences between members within the group (including oneself). In contrast, individuals with higher in-group identification will likely perceive the group self as more salient to the current situation, and thus will focus on within-group similarities and between-group differences. In this sense, group behavior may be explained in terms of the classic categorization effect (Tajfel 1969), which results in an accentuation of intragroup homogeneity and intergroup heterogeneity.

As proposed by SIT, it is the extent to which people identify with a particular social group that determines their inclination to behave in terms of their membership to that group. In this way, social identification refers to a feeling of affective commitment to the in-group, rather than the mere possibility to cognitively distinguish between people of different social groups. Therefore, I argue that it is important to distinguish cognitive awareness of one's group

² I use the term "salient" to mean the subjective importance of an identity relative to other categorizations.

membership (self-categorization) from the extent to which one feels emotionally involved and identified with the group in question. If an individual identifies more with their in-group, the identity will be more psychologically salient, and they will be more likely to act on it. They would do so by tending to defer more to in-group others. I thus predict the following:

Hypothesis 5: As level of identification with the in-group increases, effects of group membership on influence will increase relative to effects of status on influence.

With respect to Hypothesis 4 concerning the effects of identity threat, I also expect in-group identification to have a moderating effect on the relationship between identity threat and influence. Research indicates that identity threats will not always result in greater influence for in-group members (Rothgerber 1997). The reasons for discrepancies likely have to do with differences in the status position of that group and the degree of in-group identification.

Group identification is likely to be a critical moderator variable, especially since it has been demonstrated that group identification can enhance perceptions of group homogeneity. Weakly and strongly identified group members respond differently to a threat to that group identity. When the group is under threat, high identifiers may feel even more inclined to perceive the in-group as more homogeneous, both for cognitive reasons (e.g., increased group salience) and motivational reasons (e.g., to close ranks and enhance in-group solidarity).

Hypothesis 6: Level of in-group identification will moderate relationships between (a) task importance and (b) group threat in affecting influence.

I expect that the responses of group members to such threats differ according to their commitment to the in-group (i.e., high or low in-group identification): Uncommitted or less identified group members are likely to dissociate themselves from the in-group and defer to the more esteemed (high-status) group member, whereas highly identified and committed members are reluctant to dissociate themselves from the in-group because their self-concepts are highly invested in the group's welfare.

Less identified group members will also likely be less affected by threat manipulations relative to high identifiers. In addition, because their in-group is less important to them personally, they are not as motivated as their highly identified counterparts to protect their in-group's resources or values when under threat (Morrison et al. 2010; Morrison and Ybarra 2009). Low identifiers hold more heterogeneous perceptions of both groups in general, and thus behave in ways more in line with status-based processes, compared to high identifiers.

I therefore expect to find a moderating effect of in-group identification on the relationship between identity threat and influence such that the relationship will be stronger for high, compared to low, identifiers (Hypothesis 6b). In terms of task importance, I predict that the effects of status on influence will increase relative to

effects of group membership on influence and that this relationship will be stronger among low identifiers compared to high identifiers (Hypothesis 6a).

Research Approach and Method

My hypotheses concern effects of in-group versus out-group identity on group members' propensity to be influenced by (high- or low-status) in-group partners and (high- or low-status) out-group partners. I predict the relative strength of either status or group membership on outcomes of social influence will vary under different conditions of group identification, identity threat, and task importance. Each study has participants work with two task partners (an in-group partner and an out-group partner, varying in status) and experimentally manipulates or measures one of the three mechanisms of interest (i.e., group identification, identity threat, and task importance).

In natural collective action settings, such as activist groups, determining causality is difficult. Experiments thus allow me to manipulate the key variables of interest in isolation from other variables and test the validity of the theoretical predictions without concern that other, unmeasured variables are responsible for the observed relationships between status and social influence (Lucas 2003). In addition, random assignment to experimental conditions helps control for the potential contaminating effects of individual differences.

Employing adapted versions of standardized experiments used for research in SCT, the design of the group task and use of fictitious computer-programmed

“partners” allows me to manipulate the levels at which participants categorize their partners via status and group identity information: as either high-status or low-status and as in-group or out-group members. This experimental design helps to decipher the relative weight of underlying mechanisms’ by measuring the reactions and influence of high- and low-status group members as a function of task importance, identity threat, and level of group identification.

Study 1 uses a minimal group experiment to assess and establish the basic relationship between the status of an in- or out-group identity and patterns of social influence while additionally varying task importance. Study 2 employs a similar design with a high-/low-status, in-/out-group intergroup context, but replaces the minimal group scenario with a naturally occurring and innocuous social group tied to status (i.e., diffuse status characteristics that also constitute membership to a social group identity). Finally, Study 3 manipulates identity threat to a more significant, naturally-occurring social group membership (i.e., gender and racial identity), and explores the roles of group status (high- or low-) and level of identification to the in-group.

The first study serves as initial tests of the effect of in-group status on social influence under minimal group induction procedures. Participants work in groups of three (with one in-group partner and one out-group partner), where categorization into one of two minimal groups (i.e., Analytic or Holistic) is given via false feedback to their results on a task used to determine their “cognitive association style.” This design sets up an appropriate intergroup situation to

empirically evaluate my predictions while satisfying the scope conditions of SCT: Participants were collectively- and task-oriented and worked with two partners that varied in status (high- or low-status) and group membership (in- or out-group) along a single attribute. This allows me to analyze the degree to which partner influence depends more on the status of a group identity or their shared in-group membership. I first investigate this in minimal groups (Study 1) and then in groups tied to actual social identities (Studies 2 and 3).

Finally, to test whether results found in the minimal group contexts (Study 1) can be generalized to more natural group settings, Studies 2 and 3 employ an experiment tied to actual social identities to investigate whether these processes work similarly with real social identities (and diffuse status characteristics), such as gender and race (Study 3). Using preexisting groups in which identification with the in-group is presumably stronger than for identities created in the laboratory, this study further specifies the conditions under which high versus low identifiers experience influence in the presence (or absence) of identity threat.

Chapter 4: Study 1 - Minimal Group Context

The goal of Study 1 was to examine the effects of social categorization and status on social influence in a minimal group context and to evaluate baseline effects for my proposed mechanisms (in-group identification, identity threat, and task importance). The study used a modified version of status characteristics “standardized experimental setting” (Berger et al. 1977; Moore 1969). The standardized experimental procedures have been used to investigate aspects of SCT in many studies (Meeker 1990; Berger 2007). The setting requires that three conditions are met: (1) that the participants do not meet, so that a status hierarchy may be “created,” (2) that a set of standard instructions is used for ensuring that the scope conditions of the theory are met (e.g., that the participants are both task and collectively oriented), and (3) that a standard measure of social influence is used (e.g., behaviorally rejecting influence attempts from a partner).

The experimental situation I created for Study 1 met these requirements while introducing one key modification: participants worked in task groups of three, rather than the typical dyad (e.g., Hysom 2009; Webster and Rashotte 2010). Participants interacted with two task partners who were only differentiated by a single attribute (i.e., assignment to an abstract, trivial group based on their revealed “cognitive association style”). Furthermore, categorization of this single attribute (based on group members revealed cognitive association style) conveyed both

group membership and status information. Based on this information, subjects' task group always consisted of one low-status, in-group partner and one high-status, out-group partner (see Table 1 in next subsection for layout of partner configurations).

In a standard minimal group experimental setting, participants are categorized into groups on the basis of a trivial criterion (e.g., "under-estimators" versus "over-estimators" on an estimation task). Other crucial aspects of a minimal group setting include anonymity of one's responses and the absence of any contact within or between groups. Upon categorization into minimal groups, participants complete some kind of group task with other anonymous members of their in-group and out-group. Research has consistently shown that within this minimal group situation, people tend to favor their own in-group over members belonging to the out-group (Diehl 1990; Mullen, Brown, and Smith 1992; Tajfel 1978).

I adopted an experimental design under minimal group conditions in Study 1 to assess my hypotheses for multiple reasons. First, the method allows me to apply precise and clear manipulations of status and identity. The experimental conditions for various levels of status and identity can be tailored to the overall study design while maintaining the validity of indicators when employing the minimal group context. Second, the controlled environment and random assignment are appropriate for causal analysis. Considering many factors that drive how group members influence each other, my proposed explanation focuses on aspects of the identities held by the participants (e.g., the status of the group identity, whether the identity is under threat, level of group identification). Therefore, it is necessary to

control for confounding factors and separate the effects of status and identity. Finally, the characteristic that experiments are replicable facilitates further checks and verification of study results. With the aim of rigorous research, I attempted to replicate some of these results in Studies 2 and 3 under more naturalistic group conditions.

Originally, I had proposed to vary both status and group membership of a single task partner, but several of the resulting conditions (where partners are low-status/out-group or high-status/in-group) were not necessary to evaluate my predictions. The additive effects of the two processes have been documented in the literature, finding that high-status/in-group partners tend to be most influential and low-status/out-group partners tend to be least influential. Because varying both status and group membership (2x2) of a single task partner would nearly quadruple the required sample size, I decided to modify the typical dyad task group by having participants work in groups of three (themselves plus two partners). This allowed me to collapse the overall number of study conditions (and reduce the sample size required), while giving all subjects opportunities of accepting (or rejecting) influence from in-group and out-group partners.

Experimental Design

Participants were randomly assigned to one of the four experimental conditions listed in Table 1 below. These conditions correspond to one of the three theoretical mechanisms detailed in the previous chapters (in-group identification,

identity threat, and task importance) as well as a control/baseline condition which did not manipulate of these three factors. Specifically, the three treatment conditions in this study allow me to test for each of the factors predicted about in Hypotheses 3 through 6.³

Table 1. Study 1 Experimental Conditions

Condition 1: Control/baseline
Condition 2: Heightened in-group identification
Condition 3: Threat to in-group identity
Condition 4: Increased task importance

Condition 1 represents the baseline situation and SCT's standard experimental setting in which only in-/out-group assignments (and their associated low-/high-status delineations) were made. Condition 2 included a manipulation that artificially heightened subjects' level of in-group identification. Condition 3 depicted a manipulation in which the in-group identity was under threat. Finally, Condition 4 involved experimental instructions intended to heighten the perceived importance of the group task portion of the study (where the main dependent variable of social influence was captured). Greater details on how each of these manipulations were executed in the study are given in the sections below and are also presented in Appendix B.

³ I address concerns involving the experimental design of Study 1 that made it difficult to be able to test Hypotheses 1 and 2 later in this chapter.

Across all experimental conditions, participants in Study 1 were first categorized into minimal groups (i.e., “Analytic” or “Holistic”) based on their results to the bogus “cognitive association style” test. They were informed that they would be working on a problem-solving task with two other partners in real-time (an “Analytic” partner and a “Holistic” partner). Participants’ minimal out-groups were always depicted as the higher-status group (relative to their in-group), such that their task partners consisted of one high-status/out-group partner and one low-status⁴/in-group partner. Participants’ two study “partners” were always fictitious, and their participation was pre-programmed.

All parts of the study were conducted online, and participants were solicited through Amazon’s Mechanical Turk (mTurk), an online survey service owned and operated through Amazon Web Services. MTurk has become particularly popular within the social sciences as a cost-effective method of finding audiences for original data collection (Berinsky et al. 2012). Individuals and businesses can recruit people to perform tasks by posting “jobs” to the mTurk marketplace known as Human Intelligence Tasks (HITs).

The mTurk service offers several benefits to the research process, including allowing users to set their own hours and earn extra money from the comfort and convenience of their home or office. MTurk samples tend to be significantly more diverse than traditional participant samples at U.S. colleges and universities.

⁴ It should be noted that “low-status” partners were lower in status relative to high-status partners only and were technically of equal-status to participants themselves.

Participants can be recruited rapidly (several hundred in under a few hours) and at relatively low costs (e.g., \$3-5 per participant compared to \$15-20 in a lab setting), and the data tends to be reasonably reliable (Buhrmester, Kwang, and Gosling 2011).

Pilot Study

Before fielding Study 1, I first conducted an early pilot version ($N = 16$) to evaluate the manipulations in my minimal group context.⁵ The pilot study collected data from 16 HITs and the program randomly assigned these subjects to one of the four experimental conditions introduced above (resulting in 4 participants per condition). The results of the pilot study confirmed that my priming manipulations for heightened in-group identification (Condition 2) and identity threat (Condition 3) were accurately capturing these constructs, but also suggested other aspects of the study design be revised, which I address below.

Most notably, half (8 out of the 16 participants) of the pilot sample failed the status manipulation checks for their task partners. In the post-task questionnaire, half of the participants could not accurately recall the high- or low-status assignments of (at least one) partner(s). Immediately before the group task portion of the study, participants were exposed to the status via bogus results of each groups' prior performance on the task which always revealed their minimal out-

⁵ mTurk workers who completed the pilot study were programmatically excluded from participating in the full Study 1, which was fielded about one week after the pilot.

groups to be of higher-status. It was likely that exposing subjects to the status information only one time shortly before the group task was not strong enough to make them perceive Holistics (or Analytics; whichever minimal group participants did not belong to) as higher-status relative to their own association style in-group. Therefore, I adjusted the study program to more obviously display the “leaderboard” manipulation (depicting subjects’ out-groups as outperforming members of their in-group) at the top corner of the computer screen during the entirety of the study (except for during the post-task questionnaire and debriefing).

Another adjustment made based on results from the pilot involved the manipulation intended to increase the perceived task importance, which was manipulated via the payout structure described in study instructions. Regardless of condition, everyone was purportedly able to earn up to \$10 for participating, but the guaranteed minimum compensation was significantly lower in the heightened task importance condition. I assessed attention to this manipulation with a post-task question asking participants the following: “For completing this study, you were able to earn up to \$10 for your participation depending on your performance on the group task. Prior to the task, how much was your guaranteed minimum pay (in dollars)?” The guaranteed minimum payment for Conditions 1-3 (all conditions that did not heighten task importance) was \$5, and the minimum pay for Condition 4 (increased task importance condition) was \$1.

Nearly all pilot subjects (14 out of 16) failed this check and answered with a dollar amount greater than \$5 (with the vast majority answering with a value

closer to the maximum possible payout, \$10). The guaranteed minimum compensation (\$1) for participants in Condition 4 (increased task importance) was only accurately answered by 1 pilot participant out of the four who were assigned to Condition 4. Responses to additional post-task items that indirectly assessed this construct, nonetheless, did demonstrate that participants in Condition 4 (increased task importance) were more task-focused than others (i.e., “How important was the outcome of the group task to you?” from (1) Not at all important to (8) Extremely important).

I reasoned that my task importance manipulation and the check(s) for this manipulation needed to be strengthened for several reasons. Although it is possible that all 14 subjects who failed this check did not pick up on (or retain) the information about the study’s “guaranteed minimum pay,” it is also likely that participants answered with the maximum dollar amount in hopes that they would be compensated more. Furthermore, the wording of the (“extra pay”) manipulation check was somewhat unclear (e.g., it went from talking about how they could “earn an additional \$X in pay” to how they have a “minimum pay of \$X” already guaranteed...). I incorporated these revisions into the final protocol for Study 1 described in more detail below in the next sections.

Study 1 Procedures

The online study was presented as “Association Styles and Visual Tasks” to prevent suspicion about its true purpose (see Appendix A for the full

advertisement of the HIT posted to mTurk).⁶ Participants were led to believe they were completing a group task that reflects a fictitious ability (i.e., “contrast sensitivity”) with other mTurk workers in real-time, and that compensation for participating depended on their performance on this group task. Each participant actually engaged with two pre-programmed, fictitious partners that varied in both status and group membership. Similar to the pilot study, Study 1 was presented as paying a minimum dollar amount (which varied depending on assignment to condition; see section on task importance manipulation below), with higher pay possible based on performance on the group task. All participants actually received the maximum possible amount (\$10) at the conclusion of the study.

After subjects read a brief introduction to the study and provided consent for participation, they were explained that new research has revealed that people can be divided into two categories on the basis of something called “cognitive association style”: “Holistic” or “Analytic” association styles. Everyone read the following brief introduction: *“Previous research on the topic of perception has shown that people can be categorized either as “Analytic” or as “Holistic” perceivers. Analytic perceivers typically notice the details in a picture or an image. Holistic perceivers mainly notice whole shapes in an image or picture. In general, Analytic and Holistic perceivers differ in the process of perception.”* Participants were then informed that the purpose of the study was to examine whether “Holistic”

⁶ This was the study title, advertisement, and background rationale given across all experiments (Studies 1-3).

or “Analytic” group members performed better in pattern recognition-type tasks. This served as the basis of the minimal group memberships to which participants (and their fictitious partners) were assigned. To further make salient group distinctiveness, participants were told that psychologists often classify people into Analytic and Holistic association styles because these group memberships relate to a variety of personality characteristics (although the specific personality characteristics associated with each group were not specified).

To determine their cognitive association style, participants were first asked to complete a short, computerized task (i.e., a dot estimation task) that researchers (ostensibly) use to reveal whether one is more of an analytic or a holistic perceiver. They were told that the task would measure their perceptual orientation and categorize them into one of the two groups based on their revealed association style. The dot estimation task involved estimating how many dots had appeared in an image of a cluster of dots that only briefly appeared on the computer screen for a few seconds (Jetten, Spears, and Manstead 1996). Each cluster consisted of a random mixture of 45 to 100 small black dots (see Appendix B for the full procedures of Study 1).

Following several trials of the dot estimation task, participants were told that based on their performance on the dot estimation task they had been categorized as an Analytic perceiver: Regardless of their performance on the dot estimation task, all participants were assigned to the Analytic association style

group.⁷ For the remainder of the study, participants (and their task partners) were identified on the computer screen by their group name assignment, each indicated with a unique color and symbol: Holistic (green symbol, **H**) and Analytic (red symbol, **A**) perceivers. This was further emphasized throughout the course of the study, with the colored group labels (**H** or **A**) appearing next to each partner and their activity during the group task, signifying their membership to either group.

Before participants moved on to the main group task, there was a brief loading screen that appeared after they were assigned to association style groups. The study program informed participants that they were waiting for all group members to finish the part one study procedures. During this time, participants were given bogus feedback revealing current leaderboards from this research with each association style group's performance on the contrast-sensitivity task (see Appendix B for the bogus "leaderboard" graphic containing the status manipulation). This feedback was given to manipulate the in-/out-group's status: since participants were always assigned to the Analytic group, the leaderboard's "preliminary study results" always revealed that the Holistic out-group as outperforming Analytics (participants' in-group) on the task.

Throughout the rest of the study, participants were exposed to this leaderboard containing the "preliminary study results" on Analytic versus Holistic

⁷ Previous research under the minimal group paradigm, as well as results from my pilot study, demonstrated that assignment to either minimal group (Analytic or Holistic) produces no substantive differences; Therefore, one was chosen for simplicity of programming the experiment and fictitious partners.

performance, emphasizing the relatively higher-status of Holistics (the participants' out-group) over Analytics (the participants' in-group). According to this information, their out-group partner was depicted as being superior in task performance (i.e., high-status) in comparison to their in-group partner (and themselves). Table 2 displays this three-partner configuration (i.e., participants + their 2 fictitious partners) of Study 1's experimental setting.

Table 2. Study 1 Partner Configurations of Status and Group Membership

	Task Group Member		
	Partner 1	Partner 2	<i>Partner 3*</i>
Partner's Attributes	Low-status, In-group	High-status, Out-group	Low-status, In-group

Note: *Partner 3** indicates actual participants; Partners 1 and 2 were always fictitious and computer-programmed.

After participants were assigned to minimal groups and connected with partners, the study continued to the main group task. This consisted of a modified version of the “contrast sensitivity task,” a standardized task used in research on SCT. In the original contrast sensitivity task based on Berger et al.'s (1977) standard experimental setting, participants are presented with a rectangular image that is made up of a proportion of smaller blocks of two different color shades and are asked whether they believe the rectangle has a greater shaded (black) or non-shaded (white) area. This task is intentionally designed to be ambiguous in order to

focus on the effects of status differences among group members. Participants are led to believe that for every question there is only one correct answer choice, and thus are motivated to look to other group members for help with choosing the best answers to such an uncertain task.⁸

Because the original task gives only two answer options to choose from (the standard experimental setting for SCT typically involves working on the task with only one other partner), I needed to adapt the task to include a third answer choice in order to stage three-way disagreements between subjects and their two other partners. Participants in my study were instead asked the question, “Which of the three images has the most white-shaded area?” Three answer choices were then given that depicted smaller versions of different rectangular images with varied shaded and non-shaded areas (see Appendix B for a visual example of a trial of the group task).

In line with previous research, participants went through a series of 25 trials of this modified version of the contrast sensitivity task with their two partners. Subjects were instructed that for each trial of the task, they would first be given thirty seconds to choose an answer alone. Then, they would be given an additional thirty seconds to view how each of their partners had responded to that same question before submitting a final answer for that round. When each partners’ initial answer choices for a given round were displayed, each task partners’ group

⁸ In fact, all rectangles presented contained the same proportion of shaded and non-shaded areas—only the smaller blocks of white and black shapes were distributed differently such that it was perceived that each rectangle may have more or less than the other.

membership symbol (signifying membership to either “Analytic” or “Holistic” groups) also appeared on the computer screen alongside their indicated answer choices and next to their numeric identifier (i.e., Partner 1, Partner 2).

As in the standardized experimental setting, and to avoid suspicion of simulated behaviors, unanimous agreements between subjects and her or his two partners were staged on Trials 1, 6, 13, 17, and 22 of the activity (Berger et al. 1977). These consensus trials were excluded from analyses. Because a second partner was additionally included in my study design, I also staged “two versus one” disagreements on Trials 4, 10, 11, and 20 to make the experiment seem more realistic. Trials 4 and 11 revealed that the subject’s initial choice was only different from Partner 1 (low-status in-group partner), and finally Trials 10 and 20 depicted a discrepancy between the participant and Partner 2 (high-status out-group partner).

On the remaining 16 trials of the task, the computer program depicted three-way disagreements among all three members such that participants were put in a situation in which there was opportunity to be influenced by either partner. These 16 critical trials staging the three-way disagreements allowed me to operationalize social influence as a behavioral measure of the degree to which participants changed their initial choice to go along with each of their two partners.

Experimental Manipulations

All study procedures described so far applied to all experimental conditions and characterize the baseline condition analogous with the standardized

experimental setting for SCT research. This represents Study 1's control/baseline condition (Condition 1) in which I expected the effects of status to be relatively more important in predicting social influence than that of group membership (Hypothesis 1). In total, Study 1 contained four conditions (see Table 1 at the start of this chapter), and in all conditions participants had two study partners: One partner with a lower performing (low-status) Analytic association style (in-group), and one partner with a higher performing (high-status) Holistic association style (out-group). As previously described, all participants were informed that they exhibited an "Analytic" (red group) association style. After receiving this feedback, they were asked to read a randomly chosen article on association styles that had ostensibly been published recently in a scientific news journal ("*Insider Intelligence*") made for communicating research findings to the public.

Depending on assignment to one of the four experimental conditions, participants received either a (1) neutral article (Condition 1, control/baseline; Condition 4, heightened task importance), (2) identification-affirming article (Condition 2, heightened group membership) or (3) identity-threatening article (Condition 3, group threat). Condition 4 (increased task importance) was additionally manipulated in study instructions as described below, rather than in the news article presented to participants (which were used to induce/heighten either in-group identification or identity threat). Thus, participants in both Condition 1 (control) and Condition 2 (task importance) were given the neutral article.

The material for the news article manipulation contained a typical first page of a research-style magazine article and gave a short snippet of text with graphics detailing (bogus) research from an organization studying association styles in different populations. Whereas most of the study protocol and article information was held constant across conditions, the title and body text of these news articles were altered depending on assignment to condition and described in further detail below (also see Appendix B for the exact news article manipulations for each experimental condition).

In-Group Identification (Condition 2)

In the heightened in-group identification condition (Condition 2), participants were provided a news article, “*All about Analytics.*” The information given in this manipulation was confirmed in the pilot study to successfully heighten their attachment to the minimal group membership. The news article in this condition explained that “*According to our research, what association style you belong to affects so many other domains of life, from relationships to jobs to even where you live. Being an Analytic, for example, tells so much about your personality and life outcomes – you have an innate ability to process information, make connections, and prioritize relationships...*” This was accompanied with a pie chart graphic that displayed such main dimensions of their social and psychological self that are strongly determined by association-style type (see Appendix B).

Identity Threat (Condition 3)

Participants assigned to the group threat condition (Condition 3) read a news article showing threatening trends for people with analytic association styles (their in-group). The article stated: “*According to recent data projections, Holistics are rapidly dominating the majority share of the population. This is threatening to people with Analytic association styles, who also have positive aspects and qualities...*” This text was supplemented with a line graph of population projections emphasizing the increasing proportion of Holistics (subjects’ out-group) in the population compared to Analytics (subjects’ in-group).

Task Importance (Condition 4)

Similar to the pilot study, task importance was manipulated during the instructions regarding the pay structure of the study. In the control condition (Condition 1), instructions stated that participation guarantees payment of at least \$5 for simply completing the study, but that they may earn an additional \$5 (for a maximum of \$10) depending on their group task performance.⁹ In the heightened task importance condition (Condition 4), instructions instead emphasized that participants would primarily be paid for correct answers on the group task problems.

⁹ Note that these together create task and collective orientation (scope conditions of SCT).

To enhance the perceived importance of the task, participants were told they would start the study only with \$1 guaranteed payment initially, but that they could earn up to an additional \$9 (for a maximum of \$10) depending on how they complete and perform on the group task. Participants were further told that taking the task seriously is highly important and encouraged. My argument was that the payout structure informed to participants in Condition 4 would make performing well more financially important to them, thus increasing the perceived importance of the study task.

Measures

To ensure that the scope of SCT was realized (e.g., task orientation and collective orientation), instructions emphasized that participants could potentially be paid more if their group performed better on the task, and that those who considered their partners' suggestions are most likely to achieve correct answers on the task. The post-task questionnaire additionally asked participants to indicate on an eight-point Likert-type scale.

how important it was to them to achieve correct answers on the task problems (1 = Not at all important; 8 = Extremely important). For assessing collective orientation, participants were similarly asked after the group task whether they considered their partners' initial choices before making a final choice during the task.

The post-task questionnaire also included measures of various perceptions of each study partner (competence, task ability/performance, similarity, confidence, trustworthiness), the strength of participants' in-group identification, self-reported emotions (e.g., happy, angry, confident, sad, threatened), as well as basic sociodemographic items (see Appendix B for full post-task questionnaire). Additional manipulation checks for elements of the experiment were also included to ensure that the intended status distinctions and assignments to minimal groups—for participants themselves and for each of their two partners—were correctly recognized and recalled.

Dependent Variable

The main dependent variable of interest here is the level of social influence each of their partners exerted over subjects. As mentioned previously, capturing this variable involved a behavioral measure of each partners' level of influence over participants and came from participants responses to the 16 critical trials that staged three-way disagreement among members. When participants changed their initial choices to agree with either partners' answer during a three-way disagreement, this is taken as an indication of that partner's influence over the participant. Likewise, participants choosing to stay with their initial choices in the face of three-way disagreements (i.e., not change their answers to go along with either partner) can also be taken as a representation of social influence (in that participants themselves were influential, having rejected being influenced by either partner).

Although most of my analyses examine the pair of means for each partner's level of influence (indicating their likelihood to change answers to go along with either partner), I do highlight some additional findings that instead utilize the proportion of times participants rejected influence and stayed with their own initial answers as the outcome of interest. As for the main dependent measure of social influence, $p(C_n)$ therefore represents the proportion of times that the participant changes her or his initial answer to agree with each (n th) partner across the 16 critical trials. Conversely, the participant is regarded as having resisted influence if she or he does not change initial answers to go along with either partner during three-way disagreements (represented as $p(S)$: the proportion of "stay" responses or proportion of times participants rejected influence from either partner).

Results

The study was administered to 144 mTurk workers to ensure at least thirty participants in each experimental group, assuming rejections for suspicion, failed manipulation checks, and/or other technical errors. The only requirements for participants required that they be at least 18 years of age, residents of the United States, and able to complete the study in English. After responding to the study advertisement (HIT) posted on the mTurk website, workers were guided to Qualtrics.com to complete the study. All participants completed the study in under an hour, with the average participant taking 27 minutes to finish, and were all paid

\$10 for their participation at the conclusion of the study (regardless of task performance or assignment to condition).

Study 1 participants were randomly assigned to one of four experimental conditions (also listed in Table 1 at the start of this chapter): (Condition 1) control/baseline condition under the standardized SCT setting, (Condition 2) heightened group identification, (Condition 3) identity threat, or (Condition 4) increased task importance. Because only one HIT was created in mTurk linking to the Qualtrics program that randomly assigned participants to one of the four treatments, no participant was able to participate in the study more than once.

Analytic Strategy

I conducted all analyses using Stata v.18 statistical analysis software program. I conducted tests of the differences of means or proportions across the experimental conditions to ensure there were no problematic differences in independent variables. For continuous variables, these were analysis of variance tests (ANOVAs or MANOVAs), and for indicator variables, these were chi-square tests. I created condition indicator variables to assess differences between them (using the control/baseline Condition 1 as the reference group) and used post-model estimation contrast tests of differences of means or proportions where appropriate.

If there were statistically significant differences for one or more variables, I assessed models that controlled for these variables statistically. I considered differences approaching statistical significance (e.g., $p = .059$) as well as

sociodemographic controls and other post-task items in the study. Directional tests accommodated one-tailed tests where possible, and otherwise, less conservative criteria were used to account for the predictions. The analyses presented sometimes only highlight the most theoretically relevant results, such as a single term or coefficient from a larger model.¹⁰

Sample

A total of 144 participants completed the study prior to data cleaning and dropping for failed checks and/or poor quality. I was strict about dropping participants for failed checks, suspicion over the experimental situation, and any other technical errors or concerns. I wanted to ensure that I was only analyzing responses from those who picked up on all aspects of the study procedures and treatments, as Study 1 was intended to assess the baseline influence effects under the experimental conditions of interest (in minimal group contexts). Several checks throughout the study as well as post-task items assessed these aspects of the experimental design.

Participants were dropped if they did not perceive in-group partners as low-status (and out-group partners as high-status), if they failed to correctly categorize any group member into their appropriate minimal group assignments (i.e., Holistic or Analytic cognitive association style groups), if they did not perceive taking

¹⁰ Additional details about statistical results, including full models, control-adjusted means and proportions, and variables used are available from the author upon request.

others' answers into consideration as important (violating the scope conditions for SCT), if they did not remember information given in the bogus news article (containing the manipulations for heightened group identification or threat to in-group identity), and if they were at all suspicious about the study or nature of the group task. A total of 69 observations were dropped from the final sample for failed checks and/or poor quality (see paragraph below for detailed breakdown of dropped observations), resulting in a final sample size of 75 subjects.

Analyses reported hereafter include the 75 participants who passed all checks for experimental manipulations and quality. Seventeen of the 144 (roughly 12%) were excluded for suspicion. Participants deemed "suspicious" in the debriefing phase of the experiment expressed concerns about the true purpose of task and/or whether they were actually working with other people. A total of 39 subjects (roughly 27%) either failed to accurately recall status and/or minimal group membership assignments for one or more task partner(s) of their study group, or failed checks for their appropriate experimental condition (e.g., did not recall the payout structure difference in the increased task importance condition, or did not pick up on heightened ingroup identification/identity threat in the bogus new article manipulations). Finally, an additional 13 participants (roughly 9%) were excluded because of their failure to meet the initial scope criteria (i.e., task and collective orientation).

Although my rejection rate was quite high (nearly 48% of the original sample size), research that has used online platforms such as mTurk reports to drop

around 40% of the original sample (Berinsky, Huber, and Lenz 2012). In addition, there were several experimental conditions and treatments in my study that I needed to ensure participants passed and picked up on (more than for the typical SCT experiment). My participants needed to accurately recall not only status assignments for each group member, but also group memberships (for each partner and self) and treatments given in the study procedures (i.e., task importance manipulation) and manipulations contained in the bogus news article (i.e., heightened group identification and identity threat manipulations). In any case, the final sample resulted in about 20 participants in each of the four experimental conditions, which was sufficient for analyzing the data.

49 participants (65%) in the final sample were men, and 26 (35%) were women. Participants ranged in age from 22 to 68 years old, with an average age of 34.1 years. In terms of the racial/ethnic background of the sample, the majority of participants (74.5%) identified as White or Caucasian. The remaining subjects identified as either Asian (23.5%) or Black/African American (2.1%), with one subject (<1.5%) identifying as American Indian/Alaska Native. A separate item assessed Hispanic/Latino(a) origin (with a Yes/No response), with most participants (75.9%) responding “No” to this item.

Participants currently resided in regions from across the United States: 38% of participants were living in the Midwest, 28% in the South, 18% in the Northeast, and 16% in the West. A slight majority of subjects (54.7%) indicated that the highest education level they had completed was a bachelor’s degree. 30.7% of

participants had completed college education beyond a bachelor's degree (e.g., master's degree or above), 13.3% had completed up to a high school diploma/GED, and one participant (<1.5%) had less than a high school diploma/GED.

Manipulation Checks

According to my analyses of manipulation check items from the post-task questionnaire, the status manipulation generally produced generalized competence expectations for high-status (Holistic) and low-status (Analytic) partners as intended. Participants also perceived minimal group membership as being indicative of their (dis)similarity to their in-group (Analytic) and out-group (Holistic) partners in a manner consistent with experimental treatments and SIT.

Table 3 summarizes the means, standard deviations, and sample sizes for subjects' ratings of each partner's similarity to themselves as a person and competence at the group task (by assignment to experimental condition). For similarity, responses to "How similar to you as a person is [Partner X]" for each partner were made on a Likert-type scale ranging from 1 (Not at all similar to me) to 8 (Extremely similar to me). Response options for the item measuring perceived competence ranged from 1 (Not at all competent) to 8 (Extremely competent).

Table 3. Ratings of Each Partners' Competence and Similarity by Condition

Partner	Condition							
	(1) Control (n=17)		(2) Identification (n=21)		(3) Threat (n=18)		(4) Task Importance (n=19)	
	Low-status In-group	High-status Out-group	Low-status In-group	High-status Out-group	Low-status In-group	High-status Out-group	Low-status In-group	High-status Out-group
Competence	$\bar{x} = 6.4$ sd = .86	$\bar{x} = 7.1$ sd = .74	$\bar{x} = 6.7$ sd = .97	$\bar{x} = 6.9$ sd = 1.2	$\bar{x} = 6.4$ sd = .98	$\bar{x} = 6.6$ sd = .85	$\bar{x} = 6.7$ sd = .87	$\bar{x} = 7.2$ sd = 1.1
Similarity	$\bar{x} = 6.4$ sd = 1.2	$\bar{x} = 5.7$ sd = 1.4	$\bar{x} = 7.4$ sd = 1.2	$\bar{x} = 4.9$ sd = 1.1	$\bar{x} = 6.5$ sd = .92	$\bar{x} = 5.7$ sd = 1.6	$\bar{x} = 6.8$ sd = 1.2	$\bar{x} = 6.1$ sd = 1.6

Results on mean ratings of each partner's competence (displayed in Table 3) highlight that subjects across experimental conditions generally expected their high-status partners to have been (slightly) more competent than their low-status partners. Related-samples *t*-tests by experimental condition revealed that this difference only reaches statistical significance in Conditions 1 (control/baseline) and Condition 4 (increased task importance) ($t(74) = 1.9, p = .04$, two-tailed). Stated differently, under conditions of heightened in-group identification (Condition 2) or identity threat (Condition 3), participants did not perceive their high-status partners as being any more (or less) competent than their low-status counterparts.

Average ratings of participants perceived (dis)similarity to each of their two task partners also demonstrated successful experimental manipulation of trivial group membership in Study 1. Participants across the board rated their in-group partners as significantly more similar to themselves compared to their out-group counterparts ($t(74) = 3.6, p < .001$, two-tailed). Subjects' perceptions of similarity

to their in-group and out-group partners also confirmed that my experimental manipulation heightening participants' level of in-group identification (Condition 2) operated as intended.

On average, participants in Condition 2 (in-group identification) rated their in-group partners as most similar to themselves and saw them as significantly more similar than in-group partners perceived similarity in the control (Condition 1). An independent-samples *t*-test (with unequal variances) confirmed that participants in Condition 2 (identification) rated in-group partners as significantly more similar to themselves than their out-group partners, compared to other conditions ($t(33.8) = 2.9, p < .01$; two-tailed). In addition, participants under conditions of heightened in-group identification (Condition 2) rated their out-group partners as significantly more dissimilar to themselves, compared to perceived similarity to out-group partners in the control condition ($t(57.4) = -2.9, p < .01$; two-tailed).

Using a MANOVA model to further examine subjects' perceived competence of their high-status and low-status partners simultaneously, I found no multivariate effect of experimental condition ($F(3, 74) = 1.65, p = .14$). Also, in examining participants ratings of perceived (dis)similarity to their in-group and out-group partners simultaneously, I also found no multivariate effect of condition, but only when Condition 2 (increased in-group identification) was excluded from the model. I expected that heightening the psychological identification of participants to their minimal in-groups would generally increase their perceived similarity to in-group partners, so this finding was not surprising.

In short, pairs of subjects' ratings of each partner's competence and similarity to themselves on average did not differ significantly between experimental conditions, and where the ratings did significantly differ was in a manner intended by my experimental treatments. These results provide evidence that my manipulations of status and minimal group membership had a comparable impact on subjects across experimental conditions.

Hypotheses Tests

The main dependent variable of social influence, $p(C_n)$, again represents the proportion of times a subject changed their initial answers to agree with each of their two partners across the 16 critical trials (i.e., when three-way disagreements were staged) of the group task. Table 4 below presents the pair of $p(C_n)$ means, standard deviations, and sample sizes for each condition of Study 1.

Table 4. Pair of $p(C_n)$ s (Partner Influence) and Sample Sizes by Condition

Partner	Condition							
	(1) Control (n=17)		(2) Identification (n=21)		(3) Threat (n=18)		(4) Task Importance (n=19)	
	Low-status In-group (P1)	High-status Out-group (P2)	Low-status In-group (P1)	High-status Out-group (P2)	Low-status In-group (P1)	High-status Out-group (P2)	Low-status In-group (P1)	High-status Out-group (P2)
$p(C_n)$	$\bar{x} = .25$ sd = .19	$\bar{x} = .41$ sd = .18	$\bar{x} = .36$ sd = .19	$\bar{x} = .18$ sd = .16	$\bar{x} = .24$ sd = .15	$\bar{x} = .32$ sd = .25	$\bar{x} = .25$ sd = .18	$\bar{x} = .22$ sd = .16

Note: $p(C_n)$ represents the proportion of times participants changed their answers to agree with each of their partners over the 16 critical trials (i.e., during three-way disagreements).

To even begin assessing the relative strength and concurrent effect of status-based and social identity-based influence processes (e.g., Hypotheses 1 and 2), I first conducted a multivariate analysis of variance (MANOVA) using the pair of $p(C_n)$ means as the dependent variables and assignment to one of the four experimental condition as the independent variable.¹¹ MANOVA results indicated a strong and significant effect of condition (Wilks' lambda = .72; $F(3, 140) = 4.33$, $p = .001$). In other words, I can conclude from the results of the MANOVA that the pair of $p(C_n)$ means are not the same across conditions.

It should be firstly noted that the partner configuration that I employed in Study 1 (in which participants always had one high-status/out-group partner and one low-status/in-group partner) made it difficult for me to actually test for the relative strength/concurrent effects of a status-based (versus social identity-based) influence process, since I was unable statistically control for status (or group membership). Nonetheless, analyses on Study 1 data still let me indirectly investigate relative strength effects of status-based and social identity-based influence processes. Therefore, I describe below the indirect tests I ran to better evaluate and speculate on Hypotheses 1 and 2 under minimal group conditions (i.e., in Study 1), but recognize these limitations that prevented me from being able to fully test for Hypotheses 1 and 2 and draw conclusions about their support (or not) based on data from Study 1.

¹¹ I conducted multivariate tests first rather than separate univariate tests on each $p(C_n)$ mean to reduce the problem of inflated Type I error rates that would be associated with the latter.

Hypothesis 1 predicted that high-status partners would exert greater influence over participants than low-status partners. In terms of the relative strength of a status-based versus social identity-based explanation of influence, I expected that high-status partners would exert more influence under conditions that mimicked the more standardized experimental setting under SCT (i.e., Condition 1). Results revealed that within Condition 1 (control/baseline condition) the average proportion of times subjects were influenced by their high-status partners was 0.41 (SD = .18), compared to an average of 0.25 (SD = .19) for low-status partners. This difference reached statistical significance ($t(32) = -2.52$, two-tailed $p = 0.01$) and does suggest that subjects in the control/baseline experimental setting were more influenced by their high-status partners (despite their out-group membership) than their low-status (in-group) partners.

Across conditions in the minimal group context of Study 1 and comparing $p(C_n)$ means between subjects two task partners, results revealed that participants were not significantly more (or less) influenced by their higher-status (i.e., Holistic) partners compared to their lower-status (i.e., Analytic) partners ($t(74) = 1.37$, $p = 0.17$, two-tailed). I am unable to say I fully received support for Hypothesis 1 and as previously stated, design considerations specific to this study made it difficult for me to statistically control for group membership and/or status, which was necessary to test my first two predictions.

My second prediction, similar Hypothesis 1, predicted about the independent effect of social identity and group membership, as opposed to status,

on social influence. Hypothesis 2 predicted in-group partners to exert greater levels of influence over participants than out-group partners. All experimental conditions taken together; I did not find a statistically significant difference between the influence levels of participants' two partners. However, results did reveal that within Condition 2 (heightened group identification) the proportion of times subjects were influenced by their in-group (Analytic) partners was 0.36 (SD = .19) compared to an average of only 0.18 (SD = .16) for out-group (Holistic) partners. This difference reached statistical significance ($t(40) = 3.32, p = 0.01$ two-tailed), indirectly lending some support to Hypothesis 2.

In consideration of my tests for Hypotheses 1 and 2, a few points need to be emphasized. Importantly, my Study 1 design did not experimentally manipulate or randomly assign subjects' in- and out-group partners to varying levels of status. Instead, participants' out-group membership (and thus their out-group partner) was always deemed higher-status, with their in-group membership (and in-group partner) always being relatively lower-status (or equal-status to that of the participant). Therefore, the design of Study 1 made it difficult for me to fully test Hypotheses 1 and 2 regarding the relative influence of high- and low-status partners (and in- and out-group partners).

Although I cannot statistically control for status and/or group membership in Study 1, I am still able to analyze this data in ways that shed light on the processes predicted on in Hypotheses 1 and 2. Furthermore, the data from Study 1 are undoubtedly useful in assessing some baseline effects of the mechanisms I

predicted about in a highly controlled, minimal group context. The experimental conditions in Study 1, which manipulated each of the proposed mechanisms between-subjects, generally allowed me to directly test for my predictions in Hypotheses 3 through 6.

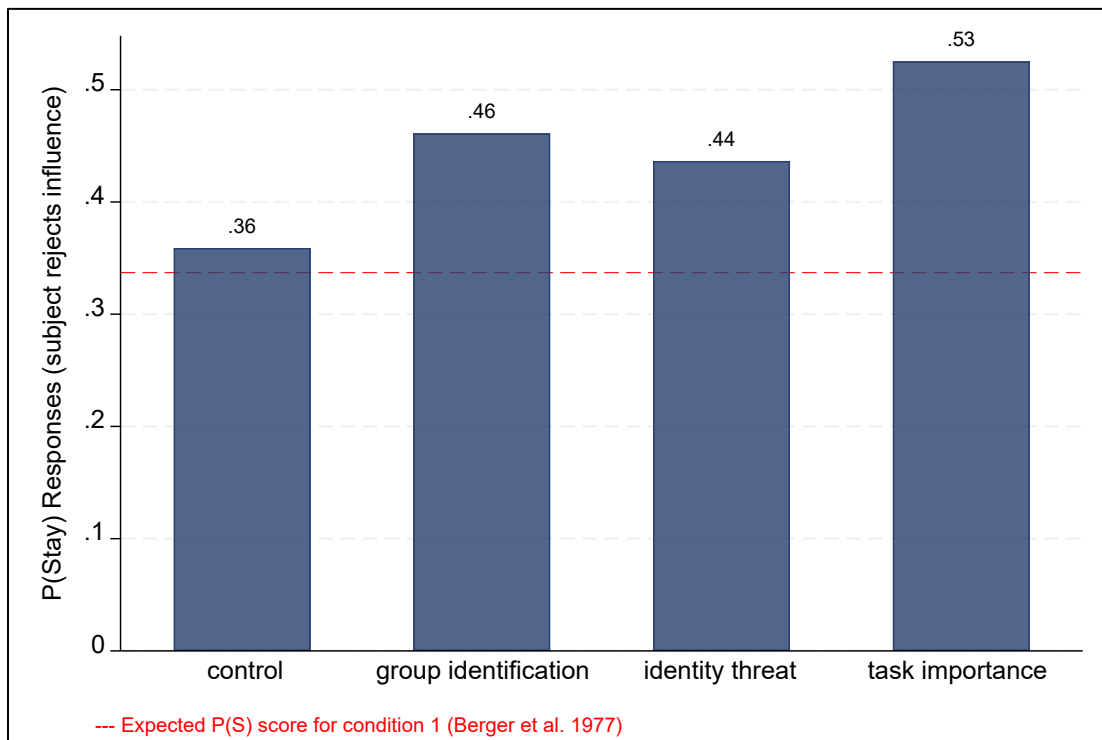
I attempt to further address this flaw of Study 1 in subsequent studies and chapters, where I was better able to test my first two hypotheses on the main effects of status and social identity, respectively. Specifically, I experimentally manipulated status (high- or low-) assignments to participants and their partners between-subjects (in Study 2) and within-subjects (using pre-existing racial or gender identities in Study 3), which allowed me to statistically control for group membership and/or status.

Hypothesis 3 predicted that as perceived task importance increases, the effects of status on influence would increase relative to effects of group membership on influence. As shown previously in Table 4, the average level of influence exerted by each partner did not significantly differ in Condition 4 (i.e., when task importance was increased). Results revealed that participants actually rejected influence (from either partner) significantly more in Condition 4 with increased task importance. Analyzing $p(S)$ as the dependent variable, the higher the proportion of stay responses the more the subject is regarded as having been influential (i.e., rejecting influence from their partners).¹²

¹² The proportion of “stay responses”, or $p(S)$, is not simply the inverse of $p(C)$. This is because there were three answer choices in total (i.e., two additional ways of changing their initial answer choice). Therefore, $p(S)$ is equal to $1 - (p(C_1) + p(C_2))$.

I conducted an independent sample t -test to compare $p(S)$, the proportion of times subjects kept their initial answers (i.e., participants regarded as having been “influential”), by condition (control versus task importance). There was a significant difference in the scores for Condition 1 (control) ($M = 0.39$, $SD = .04$) and Condition 4 (increased task importance) ($M = 0.53$, $SD = .05$); $t(28) = -1.97$, $p = 0.05$ (two-tailed). Therefore, although Hypothesis 3 was not supported by the previous analyses of the data, heightened task importance did seem to have a significant effect in the direction of supporting my argument. Participants, inherently being in-group (Analytic) members themselves, were significantly more influential when task importance was heightened (i.e., in Condition 4). They

Figure 1. $p(S)$ Responses by Experimental Condition

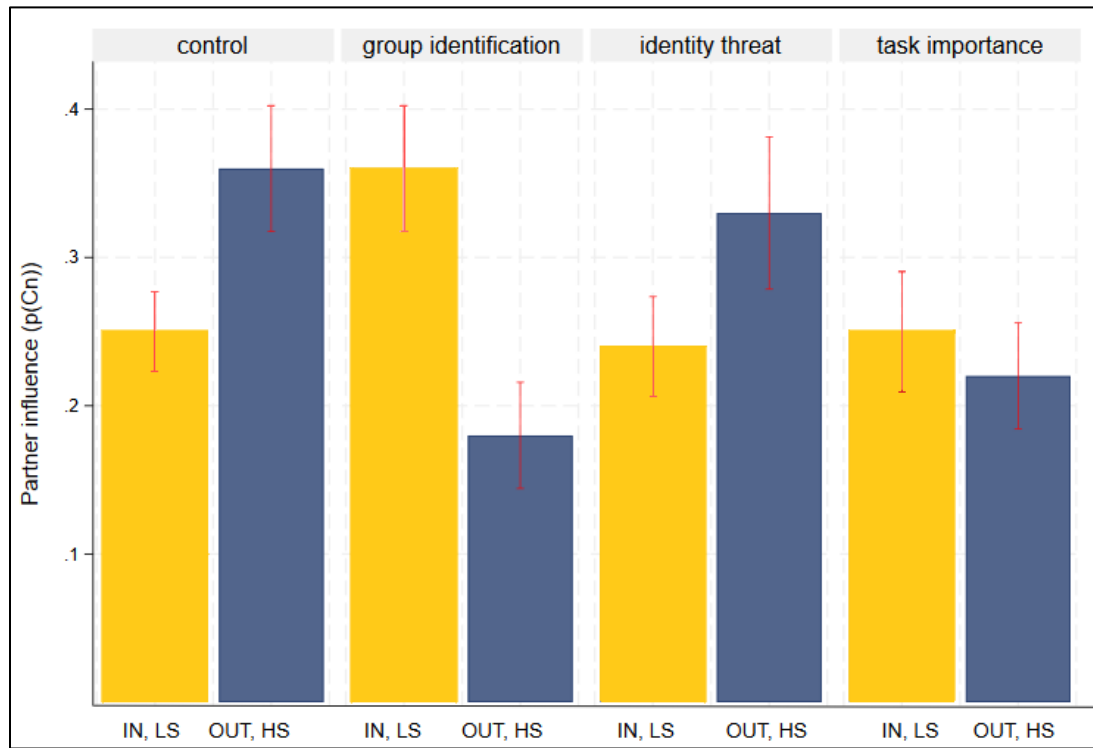


rejected influence from higher-status partners significantly more in this condition, which does lend support to Hypothesis 3.

Overall, participants were the least influenced by either partner (i.e., kept their original answer choices during three-way disagreements) when task importance was increased (Condition 4), and were most influenced (i.e., changed their original answer choices to one of their two partners during disagreements) in the control/baseline condition (Condition 1). $p(S)$ scores within the control/baseline condition are consistent with the expected $p(S)$ values (see the dotted red reference line in Figure 1 above) under the formal version of SCT (Berger et al. 1977; Fox and Moore 1979).

This only tells a part of the story, however, since $p(C_n)$ scores in this study are not necessarily equal to $1-p(S)$, because participants interacted in a group with two other partners (see Footnote 12 above). Pairs of $p(C_n)$ means by experimental condition are illustrated in Figure 2.

Figure 2. Study 1 Pairs of $p(C_n)$ Means by Condition



Hypothesis 4 predicted that when group identity is threatened, the effects of group membership on influence will increase relative to effects of status on influence. I did not find support for this in my data. In fact, I found support for the opposite effect: Identity threat appeared to significantly heighten the influence levels of out-group (high-status) partners. A significance test of these proportions, comparing levels of influence between subjects' two partners within the identity threat condition, revealed that high-status out-group partners were more influential than low-status in-group partners, and this difference approached marginal significance ($t(38) = -1.47$, $p = 0.06$, two-tailed). This finding does suggest an

interpretation whereby the effects of status on influence might have increased, relative to the effects of group membership on influence, when the in-group identity was under threat (contrary to what I predicted in Hypothesis 4).

Hypothesis 5 predicted that level of identification to the in-group would be positively related to effects of group membership on influence, relative to effects of status on influence. To examine this prediction, I analyzed a post-task item that asked participants, “How important is being a member of the Analytic association style group to your overall self and identity?” Answer options were along an 8-point Likert-type scale that ranged from (1) not at all important to (8) extremely important. From this item, I created a two-level identification factor using a median split along this 8-point identification scale (Median = 6; SD = 2.2). I then conducted two separate ANOVAs (for influence of each of their two partners) to examine the effects of identification to the in-group on influence.

Analysis of the pair of $p(C_n)$ means, using separate ANOVAs on each of the two $p(C_n)$ variables, revealed a significant difference in influence between high- and low-identifiers. In-group (low-status) partners exerted significantly more influence over high-identifying participants, compared to low-identifying participants ($F(1, 74) = 2.37, p = 0.03$). In terms of the influence exerted by out-group (high-status) partners, results revealed the opposite effect. Those who had lower identification to their in-group were significantly more influenced by their out-group (high-status) partners ($F(1, 74) = 2.45, p = 0.02$) than those with higher in-group identification.

These results lend strong support for Hypothesis 5 and revealed that higher levels of identification to the in-group was positively related to effects of group membership on social influence (relative to effects of status on influence). Means and standard deviations of each partners' influence by in-group identification level are given below in Table 5.

Table 5. Partner Influence by Level of In-Group Identification

	$p(C_1)$ In-group (Low-status) Partner	$p(C_2)$ Out-group (High-status) Partner
High Identifiers	.33 (.18)	.20 (.14)
Low Identifiers	.26 (.24)	.32 (.27)
Note: Standard deviations given in parentheses next to $p(C_n)$ means.		

My last prediction (Hypothesis 6) expected level of in-group identification to moderate the relationships between (Hypothesis 6a) task importance and (Hypothesis 6b) identity threat in affecting social influence. I assessed these predictions using multiple regression analyses, beginning the first step running a regression model examining the relationship between $p(S)$ responses (i.e., rejecting influence and staying with original answer choice) and assignment to experimental condition.

Only the terms for Condition 2 (group identification) and Condition 4 (task importance), compared to Condition 1 (control/baseline), were statistically significant ($p < 0.04$) and positive in direction. Participants on average resisted influence (from either partners) more under conditions with heightened in-group

identification (Condition 2) and increased task importance (Condition 4), compared to the control/baseline (Condition 1) ($F(1, 74) = 2.37, p = 0.04$). The term for identity threat condition (Condition 3) did not reach statistical significance (see results on Hypothesis 4 above concerning the main effects of identity threat on influence), and therefore, Hypothesis 6b was not supported.

I then conducted analyses examining the relationship between out-group (high-status) partner influence (dependent variable) and assignment to experimental condition and identification level (independent variables). Comparing each of the three experimental conditions to the control/baseline condition, I again found that participants in Condition 2 (i.e., heightened in-group identification) and Condition 4 (i.e., increased task importance) compared to Condition 1 (i.e., control/baseline) were significantly less influenced by their out-group (high-status) partners ($F(1, 74) = 2.57, p = 0.000$).

In terms of assessing the moderating effects of in-group identification predicted in Hypotheses 6a and 6b, there were several options in the data that I could analyze. First and foremost, I focused on the experimental manipulation by looking at outcomes as a function of experimentally heightened group identification. I initially analyzed post-task items assessing participants' self-reported degree of identification to the in-group (assessed along an 8-point Likert-type scale).

A significance test of the means of in-group identification level by experimental condition revealed that participants in Condition 2 (in-group

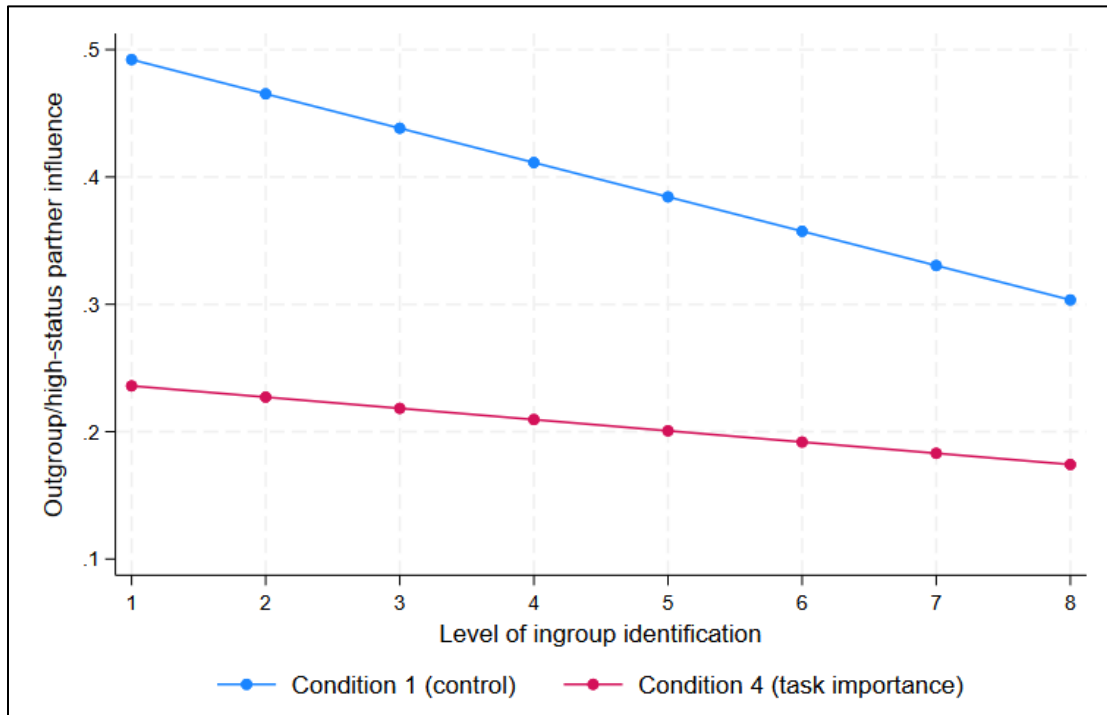
identification) more strongly identified to their minimal in-group assignments compared to those in Condition 1 (control/baseline). This difference approached statistical significance ($t(32) = -1.93, p = 0.04$, two-tailed), providing further support that my experimental manipulation in Condition 2 served to psychologically heighten the level of in-group identification of participants.

To further assess Hypothesis 6a (regarding the moderating role of identification on the relationship between task importance and influence), I conducted a multi-step regression analysis comparing the effects of increased task importance (Condition 4) to the control/baseline (Condition 1) with in-group low-status partner influence ($p(C_1)$) as the dependent variable. The beta coefficient comparing Condition 4 (task importance) to Condition 1 (control) reached statistical significance (Beta = .13, $t = 1.91, p = 0.05$) and revealed that in-group (low-status) partners exerted more influence over subjects when the group task was perceived as more important. Then, I added level of identification to the in-group into the model as an additional independent predictor of social influence. With identification level included in the model, the beta coefficient for experimental condition (task importance versus control) was no longer significant (Beta = .12, $t = 1.51, p = 0.14$) and identification level reached statistical significance (Beta = .30, $t = 2.93, p = 0.01$).

I then conducted a similar multi-step regression analysis for the task importance condition (compared to control), but this time using out-group high-status partner influence ($p(C_2)$) as the dependent variable. Adjusted predictions of

high-status out-group partner influence ($p(C_2)$) by level of in-group identification interacted with experimental condition (task importance versus control) are illustrated in Figure 3.

Figure 3. High-status Out-group Partner Influence by Identification x Condition



When task importance was experimentally increased, degree of in-group identification did not matter in predicting high-status out-group partner influence. And, across the board, high-status out-group partners were significantly less influential over subjects when task importance was heightened (in Condition 4). In Condition 1 (control/baseline), however, level of identification to the in-group did matter. As predicted, higher level of in-group identification decreased the influence level of high-status partners, supporting Hypothesis 6a. These results therefore lend

support to the prediction that degree of in-group identification moderated the effects of these variables on outcomes of social influence.

Additional Analyses

Supplemental analyses on post-task items shed further light on the findings of Study 1. Several post-task items assessed perceptions participants had on the competence and future ability of their in-group (low-status) and out-group (high-status) partners. After the group task, participants were told that “*In future experimental sessions, [researchers] will continue to look at the task performance of Analytic and Holistic individuals.*” Participants were then asked to indicate which of the two groups of people (Analytics or Holistics) they thought would succeed most at these types of tasks.

Results indicated that proportions differed significantly across experimental conditions (chi-square = 12.8, $p = 0.005$). Follow-up analyses reveal that this effect is explained by the comparison between Condition 2 (group identification) versus Condition 1 (control) (chi-square = 8.1, $p = 0.003$). Participants were significantly more likely to prefer having an Analytic (in-group) member as a future task partner and expected Analytics to outperform Holistics (out-group members) in future task performance. This finding may help explain why in-group partners exerted greater influence over participants in the heightened group identification condition, despite these partners’ relatively low-status.

Table 6. Summary Statistics for Study 1 Post-Task Items

Variable	n	Mean/Proportion	SD	Min	Max
Happy	72	6.8	1.1	3	8
Angry	72	3.3	2.1	1	8
Threatened	72	4.7	2.5	1	8
Number correct (self)	72	18.3	4.3	1	25
Task importance	72	7.4	0.9	4	8
Identification	72	6.3	1.9	1	8

Table 6 presents summary statistics from several other post-task items of interest. One interesting result worth noting involves participants' evaluations of their own performance on the group task ('Number correct' variable in Table 6). On the item assessing how many trials (out of the 25 rounds of the group task) they thought they ended up answering correctly, I found some interesting results. Overall, participants generally thought they performed fairly well on the study task (overall $M = 18.3$ trials answered correctly), and this item varied significantly by experimental condition.

Taking this item (Number correct) as the dependent variable, the coefficient comparing Condition 4 (task importance) to Condition 1 (control) reached statistical significance ($Beta = 1.8, t = 1.97, p = 0.005$). Additionally, the coefficient comparing Condition 2 (group identification) to Condition 1 (control) approached marginal statistical significance ($Beta = 1.6, t = 1.76, p = 0.07$), while Condition 3 (identity threat) did not produce any significant effect on perceived self performance on the task. These findings led me to further explore the effect of this post-task item (Number correct) on my main analyses by including this item in

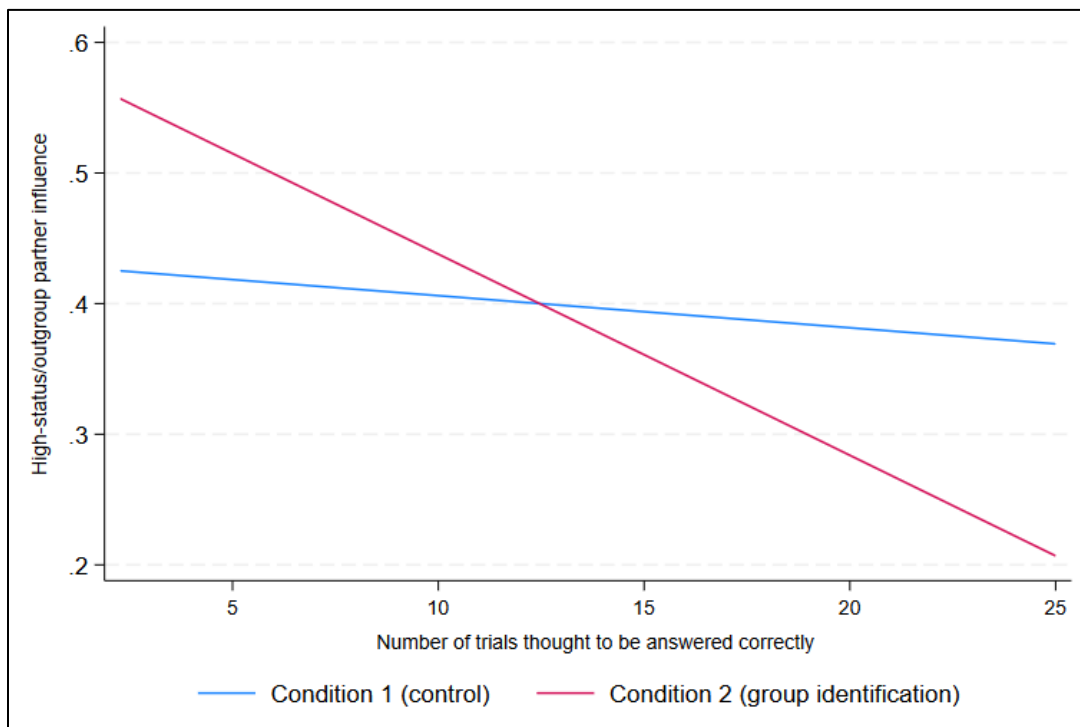
models predicting partner influence. Looking at high-status out-group partner influence as the outcome variable revealed significant main effects for Condition 2 (in-group identification; with Condition 1 as reference group) and number correct (as a continuous independent predictor). Results revealed that subjects were less likely to be influenced by high-status out-group partners when in-group identification ($Beta = -.15, t = -2.43, p = 0.021$) and perceived task importance ($Beta = -.03, t = -2.21, p = 0.03$) were heightened.

I followed up this finding by exploring the interaction between perceived task performance (Number correct) and experimental condition on high-status out-group partner influence. A significant interaction effect between Condition 2 (group identification) and number correct revealed that perceived task performance strongly affected acceptance of influence from high-status out-group partners, under conditions of heightened in-group identification (Condition 2). This finding revealed an interesting effect on social influence of high-status partners: How well participants thought they performed on the group task generally had no impact on the acceptance of influence from high-status (out-group) partners in the control condition (Condition 1). Regardless of how well subjects thought they performed, participants on average accepted influence from high-status (out-group) partners approximately 40% of the time.

For participants in Condition 2 (increased group identification), perceived task performance had a significant effect on high-status out-group partner influence. When in-group identification was heightened, only participants who

thought their task performance was poor (i.e., thinking they answered less than 10 of the trials correctly) were significantly influenced by high-status out-group partners. Participants who thought they had performed really well on the task, under conditions of heightened in-group identification, accepted the least amount of influence from their high-status out-group partners. These findings and the interaction effect between perceived task performance and experimental condition are illustrated in Figure 4.

Figure 4. Perceived Task Performance ('Number correct') by Condition



The evidence from Study 1 is therefore mixed on whether these data help tease out the evaluation of an SCT versus SIT explanation for social influence outcomes. Hypothesis 5 predicted that level of identification to the in-group would

be positively related to effects of group membership on influence (relative to effects of status on influence), which I found generally strong support for in the data. However, the findings illustrated in Figure 4 appear to qualify this finding on whether subjects perceived that they performed well on the group task. In other words, my finding for Hypothesis 5 might be conditional on individuals walking away from the group activity feeling good about their performance and how well they completed the task.

Analyses on post-task items assessing perceived competence and task performance of each of their two partners also revealed some interesting results relevant to the evaluation of an SCT versus SIT explanation for social influence. In the control/baseline condition (Condition 1), participants perceived their high-status out-group partners as significantly outperforming their low-status in-group partners ($t(16) = -1.57, p = 0.05$, two-tailed). There was no significant difference, however, in evaluations between their two partner's competence and task performance for subjects in Condition 2 (group identification). In other words, when in-group identification was heightened, participants no longer perceived their out-group (high-status) partners as performing better than their in-group (low-status) partners.

Study 1 Discussion

The findings of Study 1 shed light on several of my hypotheses regarding the dynamics of influence within task groups and tested these predictions under a

controlled experimental setting in which minimal groups based on trivial group membership were used. Hypothesis 1 predicted that high-status partners would exert more influence over participants than low-status partners. Although my Study 1 design did not allow me to directly test for this prediction (by fully controlling for group membership between-subjects), my results did indirectly support an interpretation in line with this expectation. On average, participants were generally more influenced by high-status (out-group) partners compared to low-status (in-group) partners across conditions, but particularly in the standardized experimental setting/control (Condition 1).

Hypothesis 2 similarly predicted that in-group partners would have greater influence than out-group partners (although, as with Hypothesis 1, I was unable to fully statistically control for status to evaluate this prediction). Although not consistently supported across conditions, within the heightened in-group identification condition (Condition 2), participants were significantly more influenced by in-group partners compared to out-group partners, despite their in-group's relatively lower-status.

Hypothesis 3 predicted that increased task importance would amplify the effects of status on influence relative to group membership. Although not universally supported (i.e., participants were not significantly more influenced by high-status (out-group) partners when task importance was experimentally heightened), increased task importance did lead participants to significantly resist

influence from either partner (in which I found a significant increase in the proportion of “stay” responses).

I compared $p(S)$ responses between Condition 4 (increased task importance) and Condition 1 (control) to assess how (low-status, in-group) participants resisted influence from their high-status (out-group) and low-status (in-group) partners. The beta coefficient comparing $p(S)$ responses as a function of experimental condition produced a significant result (Beta = .15, $t = 2.06$, $p = 0.03$), indicating that participants were more likely to reject influence from in-group (and out-group) others when task importance was experimentally heightened.

The rejection of social influence here (as captured by the dependent variable $p(S)$, or the proportion of times subjects stayed with their original answers when faced with three-way disagreements between partners), while not directly supporting my prediction on task importance, leads to some interesting interpretations. I had originally predicted that heightened task importance would serve to increase the influence of high-status others, regardless of in-/out-group membership—a result that did not reach statistical significance in my data. Nonetheless, the finding that subjects rejected influence from both partners significantly more in Condition 4 (heightened task importance) at least suggests that the effects of group membership on social influence were depressed enough to allow for status-based expectations to more so drive influence.

Hypothesis 4, predicting that identity threat would increase the influence of group membership relative to status, was not supported. Instead, out-group high-

status partners were found to be more influential, particularly under identity threat conditions. Thus, although minimal group identity threat effects operated unexpectedly in this study, other ad hoc groups may result in the sort of influence effects believed to commonly afflict real-world groups. Research guided by the bio-social model (Blascovich and Tomaka 1996), for instance, suggests that anxiety from threat may prompt different motivational states affecting affective and cognitive processes, perhaps improving or impairing some behavioral responses in response to goal-directed group situations like the group task scenario in my experiment.

One of these motivational states suggests that individuals feel they have the resources or skills to meet the demands of a particular situation, whereas a threatening motivational state suggests that individuals feel they do not have the necessary resources or ability. Though I was not expecting a reversal of the expectation-to-performance relationship, it could be the case that participants who were informed about their identity being under threat (based on their in-group membership) could have felt they needed to effectively prove the expectation wrong in a reactance-like manner (by resisting influence from either partner more, regardless of their status or group membership). Findings from Study 1, although not statistically lending support for Hypothesis 4, do provide some interesting interpretations from the data in the evaluation of Hypothesis 4 and suggestions for future research.

I predicted in Hypothesis 5 that level of identification to the in-group would increase effects of group membership on influence relative to effects of status on influence (in-group partner influence). Results supported this prediction and confirmed that higher levels of identification to the in-group were positively related to the effects of group membership on influence. Additional analyses nonetheless revealed that this effect could be conditional on individuals walking away from the group activity feeling generally good and positive about their performance on the group task.

Finally, my last predictions captured in Hypothesis 6 concerned the moderating role of in-group identification on social influence. Hypothesis 6a predicted that in-group identification would moderate the relationship between task importance and influence and was generally supported in the data. Participants were more influenced by in-group (low-status) partners under conditions of heightened task importance (Condition 4), compared to the control/baseline. Moreover, level of identification to the in-group significantly and independently predicted influence, overshadowing the effect of experimental conditions. These findings highlight the complex interplay between status, group membership, task importance, and identification in shaping social influence dynamics.

Chapter 5: Study 2 – Social Group Context (Home state)

Study 2 also assessed the mechanisms, but with a more natural (still innocuous) social identity attribute. In the second study, I moved away from the minimal group paradigm (used in Study 1), and instead used a characteristic that is not necessarily attached to an existing established status hierarchy/ranking structure already: home state. Study 2 used a status manipulation similar to the design of Study 1. Participants again worked in groups of 3 (with two fictitious partners: one in-group partner and one out-group partner), however Study 2 differed in that in-group status (high- or low-status) was randomly assigned between-subjects. Subjects self-selected their own in-group memberships (home state), and their two fictitious partners consisted of one same-state partner and one (randomly-selected) different-state partner.

Several major differences were made to the design of Study 2 that build on the findings gathered from the first experiment and contribute to answering my research questions. While Study 1 did not manipulate status between-groups (participants' in-groups were always low-status in Study 1), Study 2 did in fact randomly assign participants (and, consequently, their in-group category membership) to either high- or low-status. This gives me greater statistical power to better evaluate and test for Hypotheses 1 and 2 on the independent effects of status and group membership, respectively.

Another major difference between Studies 1 and 2 was the exclusion of the task importance manipulation. This condition was not repeated in Study 2 because it had generated nearly the same outcomes as the control condition in Study 1. I also dropped the experimental manipulation of group identification, and instead measured for subjects self-reported degree of identification to in-group (based on their home state identity) and used as an independent variable in some analyses. Thus, Study 2 builds upon the takeaways from Study 1 and extends the treatments to a less abstract experimental situation in which more naturally-occurring identity and status processes are bound to occur.

Experimentally manipulating status (high versus low) of the in-group category in Study 2 helps me to tease out the effects of identity versus status between groups as opposed to within (for status). Using a more innocuous, yet still naturally-occurring social group/characteristic is also useful for assessing baseline effects of the key mechanisms of interest (like Study 1 does under minimal group conditions), but in a more relatable in-/out-group context (i.e., one that is not already attached to an agreed-upon status hierarchy, allows for better control over status variable). Study 2 therefore employed home state identity as the group-differentiating (and status-differentiating; see below for detailed status manipulation) characteristic among task partners.

Study 2 also experimentally varied threat to in-group identity, resulting in a 2x2 factorial design (2 status conditions x 2 threat conditions), resulting in 4 total conditions. Table 7 presents the partner configurations by condition for Study 2

(where in-/out-group and high/low-status is based on home state membership). Study 2 also used several independent and moderator variables, including natural level of home state in-group identification and perceived task importance. I reasoned that Study 2 would allow for me to discern how identity threat effects might differ for low- versus high-status in-groups (which is directly manipulated between-groups in Study 2).

Table 7. Study 2 Partner Configurations of Status and Group Membership

		Member's Attributes		
		<i>p</i> *	Partner 1	Partner 2
In-Group Status	LOW	Low-status, in-group	Low-status, in-group	High-status, out-group
	HIGH	High-status, in-group	High-status, in-group	Low-status, out-group

Note: **p* denotes the participant (who is always a low-status, in-group member).

If my predictions involving identity threat are supported (Hypotheses 4 and 6b), results would reveal that, for participants in the low-status in-group condition, the influence of Partner 1 (low-status, in-group partner) is relatively greater than that of Partner 2 (high-status, out-group partner) under conditions of in-group threat. Such a result would also support a SIT interpretation of results, which is in line with my threat hypothesis argument. In the no threat condition, however, Partner 2 (high-status, out-group partner) influence should be relatively greater than

that of Partner 1 (low-status, in-group partner), supporting an interpretation more consistent with SCT.

Regarding the high- in-group status condition, on the other hand, I would expect high-status participants to accept the least amount of influence from Partner 2 (low-status, out-group partner) across the board (i.e., whether the identity is threatened or not). However, I do expect influence exerted by Partner 1 (high-status, in-group partner) to vary significantly by threat conditions. If in the threat condition Partner 1 (high-status, in-group partner) influence is significantly greater than that same partners' influence in the control condition (i.e., not under threat), this would further support my threat hypothesis and a SIT explanation.

Additionally, I would expect $p(S)$ (i.e., the proportion of stay responses or rejecting influence from either partner) to be relatively higher in the control (no threat) condition, compared to when the in-group identity is under threat. Stated differently, I would expect findings most consistent with status theories when the in-group identity is not under threat, across in-group status (high- or low-) status configurations.

When there is no threat to the group identity present, high-status partners (regardless of group membership) should be most influential. For those in the low-status in-group status configuration, this would mean that Partner 2 (high-status, out-group partners) exert greater influence over participants compared to Partner 1. For subjects in the high-status condition, I would expect one of two findings: either a relatively greater level of influence exerted by Partner 1 (high-status, in-group

partners), or an overall increase in $p(S)$ responses (rejecting influence). Such findings would support an interpretation in line with SCT.

A potential explanation for low-status partner influence (which I expected to find in the low-status, identity threat conditions) may argue that individuals should be more motivated to seek out positive distinctiveness and rely on in-group partners (despite their low-status ranking). The threat to in-group identity would arguably discourage them from relying on their high-status, out-group peers, as doing so could be seen as capitulating to the threat and/or devaluing the in-group. Finally, I also expected these relationships to be strongly moderated by level of in-group identification (Hypothesis 6).

Study 2 Design

The experimental design for Study 2 was generally like the procedures of Study 1, however the assignment to Analytic versus Holistic association style groups (i.e., minimal groups) was removed and replaced with Home State symbols and indicators for differentiating group membership. In addition, I removed the bogus “dot estimation task” used to purportedly assign subjects to association style groups, both because it was unnecessary and to save study time. Instead, this time was used to give rationale for and ask questions gathering their home state identifications.

The task importance manipulation was also removed, as it produced generally the same results as the control/baseline condition in Study 1. In Study 2,

all participants were told, *“You will be guaranteed a minimum payment of \$5 just for participating and regardless of your performance on the study task. However, based on your group’s performance you may earn up to an additional \$5 (for a total of \$10), so how you work with your partners to complete the group task is of critical importance.”*

They were told the following backstory in order to reasonably manipulate group membership based on home state and incorporate known home states of partner into the group task. The program explained *“Before being connected to your partners for the group task, we will first tell you a bit more about the science behind this study...”* Then, they read a short paragraph about cognitive association styles (like Study 1 procedures), before being given the following rationale/connection to home state group membership:

Community Membership and Association Styles

Research finds that Analytic and Holistic perceivers differ in how they interpret and perceive the world around them: For example, people of different cultures and communities (such as different home states or nationalities) show differences in these association styles.

One goal of this research is to examine how members of different states and communities perform on such association style tests. This study is therefore open to an international pool of participants: you may work on the group task with participants from all around the world.

After this text, they were asked the following question about their nationality, but this question was only included to make the backstory about

gathering such information among study partners believable. All participants were Americans, and my sample was already restricted to U.S. participants anyway. But this was included as a distraction, and then immediately after they answered “United States” to this question they were asked a follow-up question getting their home state (in-group membership). The initial question gathering nationality information is shown below (note that all participants were in fact U.S. nationals, but I reasoned that including this question makes the backstory about studying and comparing people from various communities more believable).

First, please choose the nationality to which you belong:

United States  ☐	Canada  ☐	Brazil  ☐	United Kingdom  ☐	Europe (Other)  ☐
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The follow-up question to this, which measured home state in-group, gave all 50 U.S. states as answer choices and displayed similar category avatars next to each choice, with each state’s flag as the globe logos (see Appendix C). The home state chosen by participants in this question was then coded to be the home state of one of their partners (in-group membership). The computer program randomly assigned the other partner to one of the remaining 49 states to serve as their out-group category membership.

Procedures and Manipulations

Participants chose their own home state icon. Status was given via bogus feedback with the “live tracker” (see Study 1 Appendix B), but for either their own home state or out-group partners’ home state. This was randomly chosen to show the state globe/avatar of either the participants’ home state or their out-group partners’ home state. See Table 7 in the subsection above for the potential partner configurations in this experiment. Apart from high- or low-status, the only other factor manipulated between subjects in this study was the threat to the in-group identity (i.e., based on home state). I employed a manipulation similar to the news article manipulating identity threat in Study 1’s Condition 3 (see Appendix C for Study 2’s revised news article manipulation used for threatening home state identity).

Similar to Study 1, Study 2 depicted population change of their in-group state as being threatened (or not, in the control condition). The threat manipulation in Study 2 utilizes a news article (“Insider Intelligence”) manipulation like Study 1, but instead of showing “research findings on Holistic versus Analytic thinker populations,” it describes (either threatening or non-threatening) population data trends of participant’s home state versus out-group state. In the control condition, they were shown news nearly identical news articles as the one from the Study 1 control/baseline condition.

Results

Study 2 was administered online to a total of 144 mTurk workers to ensure at least 30 participants per experimental condition (assuming rejections for failed checks or poor quality). Study restrictions required that participants be at least 18 years of age and residents of the United States. The mTurk study advertisement (HIT) for Study 2 was nearly identical to the one used for Study 1 (see Appendix A). The study was advertised as taking less than 30 minutes to complete and paying up to \$10 in compensation for their participation. Participants were randomly assigned to one of 4 conditions in a 2x2 factorial design. This crossed two levels of identity threat (no threat/control or in-group identity threat) with two levels of in-group status (low-status or high-status).

Sample

A total of 144 participants completed Study 2, which resulted in about 25 to 30 participants in each experimental condition upon rejecting observations for poor quality and failed manipulation checks. After cleaning the data, I dropped a total of 37 participants (26% of the original sample) for failing manipulation checks (e.g., misremembering task partner assignments to in-/out-groups and high-/low-status or not picking up on the in-group threat in the identity threat condition) or suspicion of the nature of the study. This resulted in 107 total participants and an average of 25 subjects per experimental condition.

77 participants (72%) in the sample were men, and 30 (28%) were women. Subjects ranged in age from 22 to 68 years old, with an average age of 33.16 years. In terms of participant's race/ethnic background, the majority (74.5%) identified as White or Caucasian. The remaining subjects identified as either Asian (23.5%) or Black/African American (2.1%), with one subject (<1%) identifying as American Indian/Alaska Native. A separate item assessed Hispanic/Latino(a) origin (with a Yes/No response): Most participants (75.9%) responded "No" to this item.

Participants currently resided in regions from across the country: 38% of participants were living in the Midwest, 28% in the South, 18% in the Northeast, and 16% in the West. A slight majority of participants (51.7%) indicated the highest education level they have completed was a bachelor's degree. 37.6% of participants had completed college education beyond a bachelor's degree (e.g., master's degree or above), while the remaining 11% had completed a high school diploma/GED or below.

Hypotheses Tests

Hypothesis 1 predicted high-status partners to have more influence over participants than low-status partners. Across conditions, high-status partners were more influential than low-status partners ($t(100) = 1.78, p = 0.03$, two-tailed). This effect was due to the greater influence that other high-status partners exerted over participants who were equally of higher-status (versus low-status partners). In other

words, low-status partners were not significantly influenced any more or less by their high-status versus low-status partners.

Hypothesis 2 predicted in-group partners to have more influence over participants than out-group partners. An overall test of significance between in-group partner influence and out-group partner influence approached marginal significance ($t = 1.39$, $p = 0.08$, two-tailed), with in-group (high-status) partners being more influential than their out-group counterparts. In order to better evaluate my first two hypotheses, I also analyzed participants responses to the task trials in which two-way disagreements were staged between participants and their in-group (or out-group) partners. Analyzing responses to the two-way disagreements allowed me to test whether participants switched more to in-group (low-status) partners than out-group (low-status), controlling for status.

Using responses to the two-way disagreements in which participants agreed with their in-group partners (and disagreed with their out-group partners) as the dependent variable, results revealed that in-group partners were slightly more influential than out-group partners ($t(101) = -1.79$, $p = 0.07$, two-tailed), a difference that approaches marginal significance. This serves as a stronger test for Hypothesis 2, controlling for status, and lends partial support to my prediction that in-group members would be more influential than out-group partners (Hypothesis 2). Furthermore, by flipping how I analyzed responses to the two-way disagreements, I could also better evaluate my Hypothesis 1 (predicting high-status members to be more influential than low-status members) by testing whether

participants switched more to high-status (in-group) partners than low-status (in-group) partners. Controlling for in-group membership, participants were significantly more likely to switch answers to their high-status partners ($t(101) = -1.84, p = 0.04$, two-tailed), supporting Hypothesis 1.

Hypothesis 3 (that increased task importance would heighten influence of high-status others, regardless of group membership) was not supported in Study 1 and therefore decided not to experimentally manipulate task importance in Study 2. However, I was able to assess Hypothesis 3 in Study 2 using the post-task item asking them how important performing well on the group task was to them. The term for task importance as an independent variable included in the model approached marginal significance ($p = 0.07$), lending some support to Hypothesis 3.

Hypothesis 4 predicted that when group identity is threatened, the effects of group membership on influence would increase relative to effects of status on influence. I first looked at the level of influence exerted by in-group partners, and high-status partners (independently) by assignment to the identity threat condition. This did not produce any significant effect on the data; therefore Hypothesis 4 was not supported. Hypothesis 5 predicted that as level of identification with the in-group increases effects of group membership on influence would increase relative to effects of status on influence. Table 8 displays summary statistics for $p(S)$ stay responses (i.e., rejecting influence from either partners) as a function of in-group status and in-group identification level.

Table 8. *p*(S) Responses by In-Group Status and Identification Level

In-group Status		
	Low-status	High-status
High Identifiers	.48 (.22)	.45 (.23)
Low Identifiers	.49 (.22)	.52 (.27)

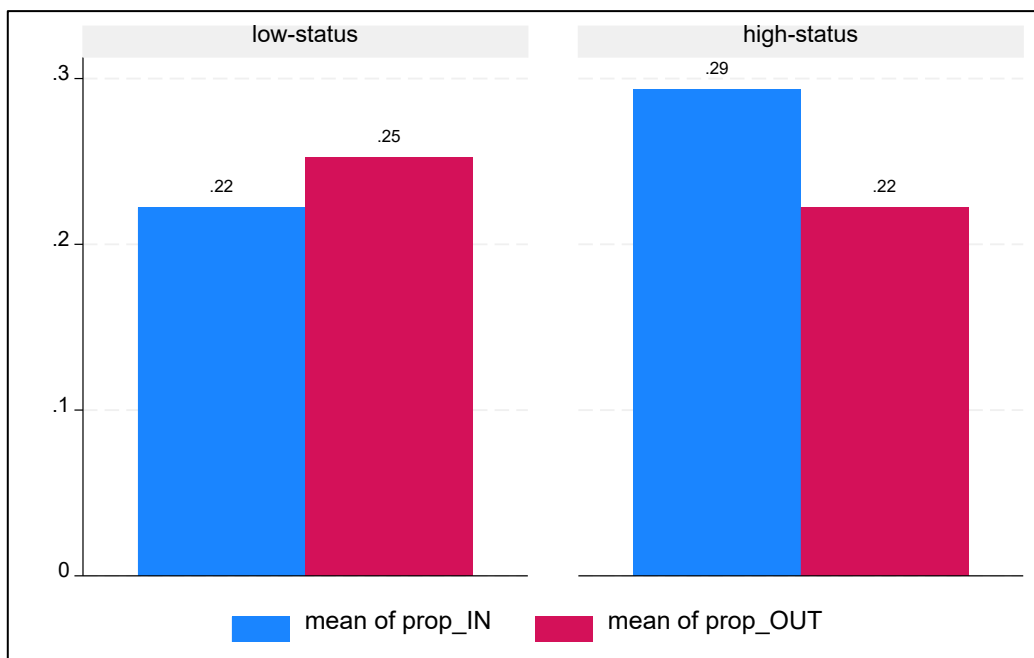
Looking at overall influence levels for each partner based on in-/out-group membership, subjects' in-group category (home state) was randomly assigned to be either low-status or high-status. So, while participants always interacted with one in-group (high- or low-status) partner and one out-group (high- or low-status) partner, they differed in status. This gives me two ways to look at partner levels of influence in the data: I can look at how influential partners were based on subjects' in-/out-group membership or high-/low-status assignment to this group membership. Since status of group membership was manipulated between-groups, analyzing in-group partner influence does not necessarily (but could) mean they are also the high- (or low-) status partner. On the other hand, subjects in the high-status in-group condition were more influenced by their low-status (in-group) partners.

Overall, across conditions, high-status in-group partners exerted the greatest amount of influence over participants. Figure 4 shows the mean levels of each partners' influence over subjects (Note that assignment to high-/low-status is always consistent with in-group). In the graph here, the in-group partner (blue bars) on the left side portion of the graph is low-status, while the in-group partner on the

right side is high-status. On the other hand, the left side out-group partners (red bars) are high-status, while out-group partners on the right side are low-status (i.e., the opposite of whatever status the participant was assigned to).

Low-status participants were no more or less influenced by their partners based on their group category's status (Mean $p(C)$ scores to low-status partners was around .21). However, the property of having a high-status in-group membership did serve to slightly boost high-status partners' influence (Mean $p(C)$ scores for high-status partners was about .29). Further analyses reveal that this effect is due to an increase in high-status, in-group partner influence (and not high-status/out-group influence). Figure 5 illustrates each partners' influence by assignment to in-group status level (high or low) when subjects were not under group threat (i.e., in the control condition).

Figure 5. Pair of $p(C_n)$ Means by In-group Status (No Threat Condition)



Alternatively, I could model this data by whether the partner was of high- or low-status (could be either in-group or out-group partner, depending on condition). This changes the results, but only for those in the low-status condition (mean influence of in-group partners becomes higher than that of out-group partners). What is interesting is that this finding suggests a different group membership versus status influence effect happening for low versus high-status participants. When not under threat, low-status members were not differentially influenced by their in-/out-group partners.

I also analyzed post-task evaluations of partners. A *t*-test comparing the performance evaluations of high-status (in- or out-group) versus low-status (in- or out-group) partners revealed a significant difference in evaluations strongly moderated by participant status. Participants who were assigned to the high-status in-group condition perceived their equally high-status in-group partners to perform significantly better than low-status (out-group) partners ($t = 2.30, p = 0.015$, two-tailed). This difference in performance evaluations did not reach statistical significance for low-status (in-group) participants. Means and standard deviations of performance evaluations, as well as perceptions of competence and similarity to each partner, are displayed in Table 9.

Table 9. Competence and Similarity Ratings by Participant/In-Group Status

In-Group Status	Competence	Similarity	Performed Well
High-Status			
In-Group (HS) Partner	6.5 (1.7)	6.4 (1.5)	7.6 (1.6)
Out-Group (LS) Partner	5.9 (1.6)	6.2 (1.4)	7.1 (1.5)
Low-Status			
In-Group (LS) Partner	6.6 (1.3)	6.8 (1.2)	7.8 (1.4)
Out-Group (HS) Partner	6.7 (1.4)	6.6 (1.2)	7.9 (1.1)
<i>Note:</i> Higher values mean greater perceived competence/similarity and more positive evaluations. Standard deviations are given in parentheses.			

Breaking down this finding further, a test of significance comparing the performance evaluations of out-group partners by status condition revealed that this difference in evaluations was driven by low-status group members. A t-test ($t = -2.58, p = 0.005$, two-tailed) confirmed status manipulations and perceptions: low-status participants perceived out-group partners as performing significantly better than how high-status participants perceived out-group partners.

Study 2 Discussion

Study 2 aimed to investigate the influence of social status and group identity on participants within task groups. Hypothesis 1 predicted that high-status partners would exert more influence than low-status partners, which was supported across conditions, with high-status partners proving more influential. This effect was primarily driven by the influence of other high-status partners on participants,

indicating that low-status partners were not significantly influenced differently by high-status versus low-status partners.

Hypothesis 2 predicted that in-group partners would have more influence than out-group partners, with tests of significance approaching marginal significance between in-group and out-group influence, favoring in-group (high-status) partners. Hypothesis 3, predicting increase task importance to increase effects of status on influence relative to effects of group membership on influence, received partial support. Although I did not experimentally manipulate or test for task importance in Study 2, including the post-task item assessing how important participants perceived the group task in the model as an independent predictor does approach statistical significance.

Hypothesis 4, which predicted that under threat to group identity, the effects of group membership on influence would increase relative to status effects, was not supported. Analyses revealed that participants in the identity threat condition were no more or less influenced by their high-status partners compared to those in the control condition.

Hypothesis 5 predicted that as identification with the in-group increases, the influence of group membership on social influence would be greater than that of status. Results revealed that subjects did not accept any more or less influence from in-group partners (high- or low-status) as a function of their identification level to the in-group. However, the level of identification did have a significant effect on the level of influence they accepted from out-group partners. A significant t-test (t

= -1.61, $p = 0.05$, two-tailed) revealed that high-identifiers were much less likely to accept influence from out-group others compared to low-identifiers, lending partial support to Hypothesis 5.

Finally, participants' evaluations of partner performance showed that those in the high-status in-group condition perceived their equally high-status in-group partners as performing significantly better than low-status out-group partners, a difference not observed among low-status participants. Further analysis revealed that this discrepancy in evaluations was primarily driven by low-status participants perceiving out-group partners as performing significantly better than high-status participants did.

Chapter 6: Study 3 – Gender and Racial Identity

Building from the findings from Studies 1 and 2, Study 3 goes a step farther from the minimal and innocuous social group contexts to examine two frequently salient, naturally-occurring group identities attached to socially pervasive status beliefs: race and gender. Participants in Study 3 were randomly assigned to one of the two naturally-occurring social identities (i.e., race or gender). This attribute (race or gender) serves to be the main group identifier/status characteristic categorizing task partners during the study. This was then crossed with (2) conditions manipulating threat to the in-group identity (control or identity threat).

Because gender and race are already ranked into a preexisting agreed-upon status hierarchy, Study 3 sampled equal numbers of racial/gender majority/minority members in each cell (half women; half non-white). This way, I could examine status (high- or low-status) as a between-subjects factor. The total sample (before data cleaning, dropping for failed checks, etc.) was 288 participants with approximately equal subjects from each demographic group (white/male, white/female, black/male, black/female) randomly assigned to the two between-subjects factors varying the group characteristic (gender or race) and identity threat (control/no threat or threat).

A similar 3-partner task group configuration (where participants worked with two task partners) was used for Study 3. The two fictitious task partners were preprogrammed to display one partner as belonging to participants' gender or racial in-group category and one partner as belonging to their gender or racial out-group category.

Design and Procedures

The protocol and study procedures for Study 3 largely follow that for Study 2 (and Study 1), with a few minor adjustments. The main difference was the removal of the home state identifier (used as the group membership identifier in Study 2) and the introduction of threat manipulations for gender or race (depending on condition).

The first factor in Study 3 manipulated and tested for was the social identity/status characteristic that differentiated group members in the study. Participants were exposed to either the race or gender of themselves and their two study task partners. Within each of these conditions, I ensured that half of the sample belonged to the low-status category of that attribute (women or black) and half to the high-status category (men or white). These status markers of participants and their (fictitious) partners were revealed to them during the study using preassigned group-identifying avatars next to each group member.

As stated, participants were either high-status (men or white) or low-status (woman or black) and, as in Studies 1 and 2, interacted with two task partners: a

high-status (in-group OR out-group) partner and a low-status (in-group OR out-group) partner. Therefore, depending on the status of the participants' gender or race, their in-group (or out-group) partner could have been either high- or low-status. Note that within each condition determining the attribute of differentiation (race or gender), groups were equated on the other characteristic. In other words, if a woman participant was in the gender condition, her and her two partners all belonged to the same racial group as her but differed in gender. Similarly, if a white man participant was assigned to the race condition, his two study partners would also be men but varied in race.

Identity Threat Manipulation (Gender)

Participants first filled out a demographic questionnaire and a “gender identity survey,” the text of which is given in Appendix D. The gender identity survey was the Bem Sex Role Inventory (BSRI), a battery that asks respondents to indicate how well a series of adjectives (e.g., competitive, soft-spoken) describes their personality (Bem 1974). This 60-item survey is advertised as characterizing a person as masculine or feminine as a function of the difference between their endorsement of masculine/feminine personality characteristics. After completing the battery, participants waited a short period of time while the program ostensibly scored the survey to give them their results. Participants were then given results on their gender identity (randomly assigned to either results that threatened or did not threaten their gender).

Feedback displayed a 0-50 scale of possible scores on the gender identity survey (see Appendix D). The range from 0 to 25 was the masculine half of the scale and from 26 to 50 the feminine half. In the middle of each range, brackets indicated the “average male range” and “average female range” for scores in the study. In actuality, the average ranges given on the feedback sheets, as well as the participants’ scores, were false and created purely for the purposes of manipulating gender identity feedback.

Men and women in the study were randomly assigned to receive either masculine or feminine feedback. Half of men were told they scored an “11” on the gender identity survey, a score corresponding to the middle of the masculine distribution noted on the feedback sheets, while the other half were given a score of “32,” just inside the feminine range of the scale. Half of the women in the study were told that they scored a “39” on the gender identity survey, corresponding to the middle of the feminine distribution, while the other half were told they scored an “18,” a number just within the typical masculine range of the scale.

Identity Threat Manipulation (Race)

Participants read news articles, like the ones given in Studies 1 and 2, manipulating the extent to which the data of population trends depicted in the article was threatening (or not) to their in-group racial identity (see Appendix D). White (high-status) participants and black (low-status) participants were randomly

assigned to either receive threatening or non-threatening news articles to their racial group population.

Results

Study 3 was administered online to a total of 288 mTurk workers to ensure at least 30 participants per experimental condition (assuming rejections for failed checks or poor quality). As with Studies 1 and 2, study restrictions required that participants be at least 18 years of age and residents of the United States. The mTurk study advertisement (HIT) for Study 3 was nearly identical to the ones used for Studies 1 and 2 (see Appendix A) and was advertised as taking less than 30 minutes to complete and paying up to \$10 in compensation for their participation.

Study 3 employed a 2x2 between-subjects factorial design that manipulated social identity category (gender or race) and threat to in-group identity (control/no threat or threat). Study 3 also had one within-subjects factor (social category status: low or high), sampling half of the participants to be members of the low-status social identity category (woman, for gender, or black, for race) and half to be high-status (male or white). These participants were randomly assigned to one of the 4 experimental conditions manipulating social identity attribute (gender or race) and threat (control or threat). Crossing the (2x2) between-subjects manipulations with the (2) within-subjects factor sampling for equal numbers of high-/low-status individuals resulted in 8 total study conditions.

130 participants in total were dropped (45% of the total sample) for the following reasons: not perceiving task partners of the same gender or race, depending on condition, as in-group members (or not perceiving partners of opposite category membership as out-group members) (31 subjects), failing to correctly categorize task partner(s) to their appropriate social category memberships (39 subjects), violating the collective and task orientation scope conditions of SCT (15 subjects), incorrectly recalling information given in the study containing the manipulations for identity threat (32), and being at all suspicious about the study or nature of the group task (13 subjects).

Sample

The total sample (before data cleaning, dropping for failed checks, etc.) was 288 participants, with approximately equal subjects of each demographic group (white/male, white/female, black/male, black/female) randomly assigned to the two between subject conditions varying the social group attribute (gender or race) and identity threat (control or threat). After dropping observations for failed checks and poor quality, the sample included 158 participants. This resulted in about 20 participants in each of the eight study conditions. Results reported below include these 158 participants who were kept in the final dataset.

Across conditions, the majority (62%) of participants in the sample were men (38% women) and identified their race as white (73%). The remaining 27% of non-white participants identified their race as black (all the non-white participants

belonged to the RACE social category condition). Subjects ranged in age from 22 to 77 years old, with an average age of 35 years.

Participants currently resided in regions from across the country: 29% of participants lived in the Midwest, 40% in the South, 22% in the Northeast, and 9% in the West. A slight majority of participants (54%) indicated the highest education level they have completed was a bachelor's degree. 33% of participants completed college education beyond a bachelor's degree (e.g., master's degree or above), while the remaining 13% completed a high school diploma/GED.

Hypotheses Tests

As stated, all participants in Study 3 were men or women (or white or black). Participants' fictitious task partners were depicted as being either a man (of higher or equal status to participants) and woman (of lower or equal status to participants), or as white (of higher or equal status to participants) and black (of lower or equal status to participants). First, looking at perceptions of task performance/competence of each partner, results revealed that overall and across conditions participants perceived their high-status partners (i.e., men or whites) as performing significantly better on the group task than their low-status partners (i.e., women or blacks) ($t(157) = -1.62, p = 0.05$).

Table 10. $p(S)$ Means by Threat and In-group Status (Gender & Race)

In-group Status		
	Low-status	High-status
No Threat (Condition 1)	.46 (.21)	.56 (.26)
Threat (Condition 2)	.48 (.24)	.47 (.27)

The observed ordering of mean $p(S)$ values (i.e., proportion of times they resisted influence or stayed with their initial opinions during three-way disagreements) given in Table 10 provides some initial support for Hypothesis 1 (predicting high-status influence more than low-status influence). Consistent with the non-significant finding of perceived similarity between their two partners, the difference between conditions was negligible for participants with a low-status in-group. High-status subjects whose in-group was not under threat (i.e., Condition 1), however, resisted influence from partners approximately 56% of the time. This was significantly greater than the amount of influence resisted by low-status participants in the no threat condition ($t(76) = 1.83, p = 0.03$), providing support for my first hypothesis.

I used nonparametric significance tests for analyzing this data with $p(S)$ as the dependent measure. The Kruskal-Wallis test, which tested differences between the experimental conditions, was statistically significant ($\chi^2 = 6.025, p = 0.049$). Additionally, a Mann-Whitney U test revealed significant differences for in-group versus out-group partner comparison ($z = -2.002, p = 0.045$), and for high-status

versus low-status partners. Support for Hypothesis 2 (predicted in-group influence more than out-group influence) is thus only partial.

My status manipulation here again introduced social differentiation and an inequality in ability between participants. It is possible that inequality in ability alone shapes perceptions of similarity or group cohesion. Supplemental analyses regressing task performance ability on influence, however, revealed no significant effects between these variables. In addition, to examine whether differences in task ability affected the other components of my model, I reran analyses with a dummy variable controlling for perceptions of task ability. Although this variable had a significant direct effect on social influence, it did not substantively change results relevant to the comparative strength of an SCT versus SIT explanation. I therefore do not report these models because they are tangential to my main theoretical argument.

Figure 6. $p(S)$ Responses by Threat Condition and In-group Status (Gender)

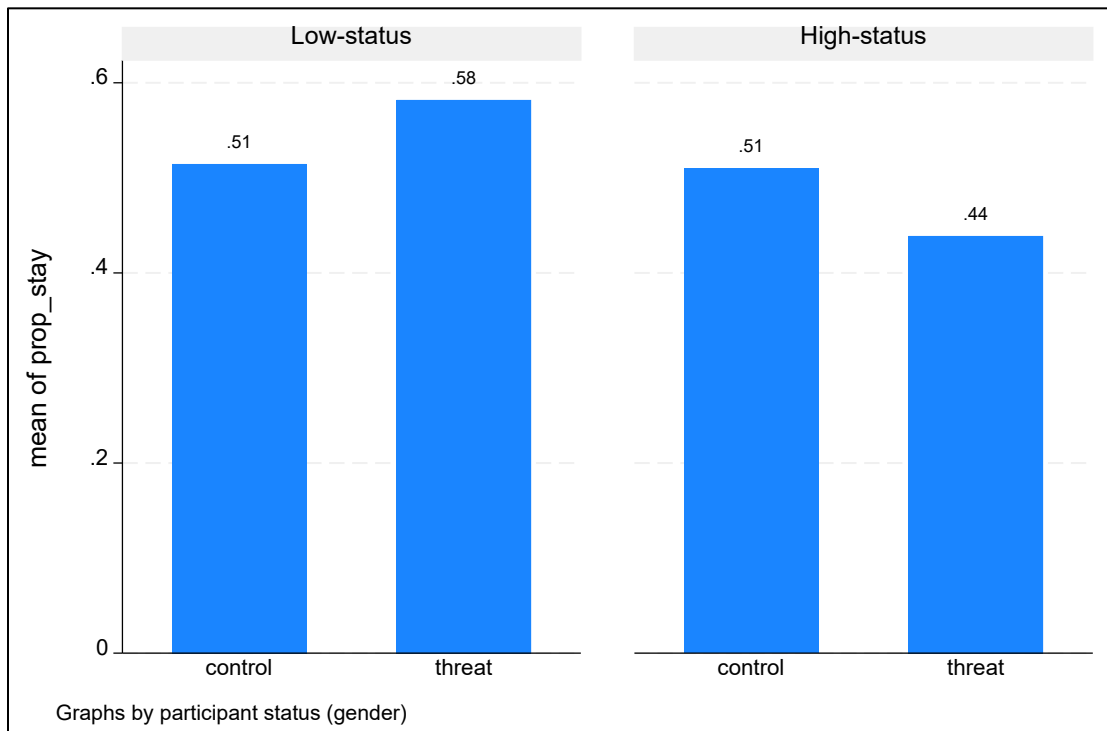
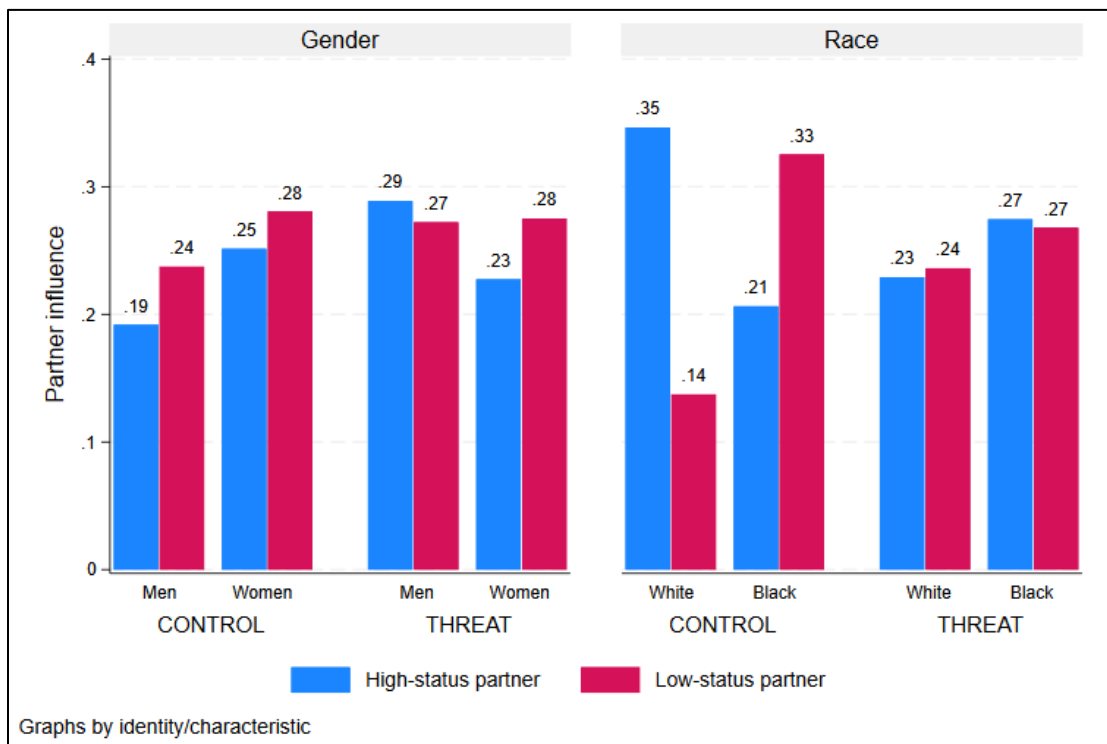


Figure 6 illustrates $p(S)$ responses by threat condition and group status (i.e., participant gender) for those in the gender social group category only. Results reveal that high-status participants (i.e., men) who had that gender identity threatened resisted influence (i.e., stayed with their own initial opinions) the least. In other words, threatened men were influenced the most overall (by either partner). On the other hand, low-status (i.e., women) participants under threat were significantly less likely to be influenced by either partner. In other words, women under threat were generally much more likely to resist influence (from either partner) by staying with their initial opinions in the face of disagreements.

Additional Analyses

Additional analyses on how similar participants saw themselves (compared to each task partner), and on how well each partner performed on the group task, add to the interpretations drawn from Study 3 findings. A significant test of significance comparing performance evaluations of each of their two partners confirmed that participants generally perceived their male partners to be of higher-status ($t(21) = 2.16, p = 0.021$).

Figure 7. Pairs of $p(C_n)$ Means by Status x Threat (Gender & Race)



Study 3 Discussion

Study 3's findings generally lend greater support for my Hypothesis 2 regarding the heightened influence of in-group partners above and beyond status. The observed ordering of $p(S)$ means confirmed this hypothesis, although the difference between conditions was minor and only reached marginal significance. Nonparametric tests revealed significant differences between in-group and out-group partners, lending support to Hypothesis 1. Nonetheless, Hypothesis 1, which predicted that high-status partners would have greater influence, received stronger support in the race attribute condition (and not gender).

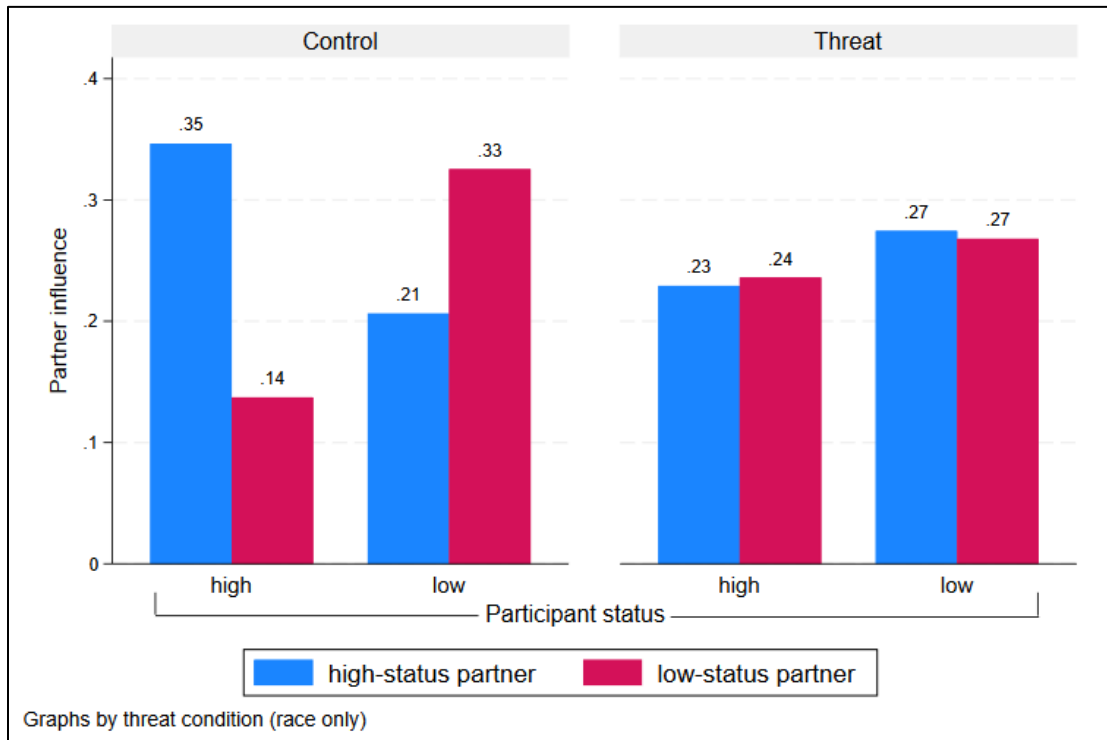
The manipulation of social status introduced social differentiation and inequality in ability among participants. While it is conceivable that this inequality alone shaped perceptions of influence and task ability, supplementary analyses did not find a strong effect of task performance on influence. Participants, for example, thought their women partners were equally competent as their men partners. Moreover, including a dummy variable to control for differences in task ability did not substantially alter the results or conclusions of the main theoretical argument, although it did have a slight direct effect on social influence.

The results here demonstrate that participants with the high-status in-group category state (i.e., men), and whose in-group identity was threatened, were the most influenced. This finding is illustrated in Figure 6 presented earlier which depicted the average "stay" responses (i.e., resistance to influence) by threat condition and in-group status (for those assigned to the gender attribute condition

only). Conversely, low-status in-group members (i.e., women) under threat were the least likely to be influenced (by either partner). Thus, results from Study 3 do not support my threat predictions (Hypothesis 4 and Hypothesis 6b), and instead almost find an opposite effect. Identity threat did not serve to heighten an SIT-based effect on social influence.

In other words, identity threat did not drive subjects to be more influenced by in-group partners regardless of status. In fact, findings on subjects assigned to the racial identity attribute condition reveal that racial identity threat generally evened out the influence levels of subjects' two partners, such that they were no more or less influenced by either partner. This is illustrated in the right portion of the graph in Figure 8. Here, low-status subjects (i.e., blacks) under threat were slightly more influenced overall by either partner ($M = 0.27$), compared to high-status subjects (i.e., whites) under threat ($M = 0.23$).

Figure 8. Pair of $p(C_n)$ Means by Condition (Race only)



In this way, and completely contrary to my identity threat hypotheses (Hypothesis 4), these findings suggest identity threat serves to drive effects more in line with an SCT explanation, rather than an SIT-based explanation as I initially predicted. On the contrary, findings in the control (no threat) condition, as illustrated on the left side portion of Figure 8, reveal an SIT-based process driving the outcomes of social influence whereby all subjects (high- and low-status) are significantly more influenced by their in-group partners, regardless of that partners' relative in-group status. So, although I cannot say I found support for Hypotheses 4 and 6b, these findings do point to an interesting and nuanced interplay between

social status, group identity, and identity threat in shaping the social influence of task partners.

Some limitations of this study are worth noting in light of the findings reported in this chapter. I worry that the group-identifying avatars that I employed in the Study 3 protocol might have made race and gender salient so much to the point that it washed out effects consistent with SCT. Low-status partners (when they were in-group members specifically) were generally always more influential. A key difference of Study 3 from the previous two studies was that this study only used characteristics (i.e., gender and race) that conveyed status not explicitly relevant to the group task (i.e., they are naturally-occurring identities and are diffuse status characteristics attached to an overarching hierarchy). This significant difference in the operationalization and manipulation of status in Study 3 I suspect is likely an important consideration in light of evaluating these findings with the data from Studies 1 and 2.

Chapter 7: Discussion

In a series of three online experiments using minimal and real (naturally-occurring) social group identities, a generally consistent pattern of findings emerged in my data. Members of a subject's in-group were more influential than members of the out-group. In addition, higher-status partners were also generally more influential than low-status partners, but under more minimal group conditions (i.e., Study 1). In terms of gender and race as the group- and status-differentiating characteristic (Study 3), results revealed that participants were significantly more reliant on in-group others (despite their in-group's relatively low-status) compared to high-status out-group partners.

What emerged as the most consistent predictor of social influence was the degree of identification to the in-group, which resulted in greater in-group partner influence and higher perceived similarity, likability, and warmth toward in-group others. In addition, higher level of identification to the in-group was strongly and positively related to the effects of group membership on influence (compared to the effects of status on influence). In-group (low-status) partners exerted significantly more influence over high-identifying participants, compared to low-identifying participants. Additional analyses suggested that this effect could be conditional on

individuals walking away from the group interaction feeling generally good and positive about their performance on the group activity.

Main Findings and Primary Contributions

My findings on social influence outcomes generally support my argument that the salience of a social identity based on shared in-group membership moderates the effects of status characteristics on outcomes of social influence. Results revealed that whether high- or low-status partners were more influential depended strongly on degree of in-group identification. Study 1 showed under minimal group conditions that increasing the degree of in-group identification among partners (i.e., Condition 1 vs. Condition 2) reduced the influence of high-status (out-group) partners and increased the influence of low-status (in-group) partners. Study 2 expanded on this in more natural, yet still innocuous groups by replicating these findings in groups based on home state.

Results from Study 3 revealed that race generally functioned more as a diffuse status characteristic in the control condition, but not in conditions that threatened racial group identities. In the identity threatening condition, the relative influence of high- and low-status partners seemed more in line with SIT-based predictions focused on identity and self-categorization processes. For the gender-identity attribute condition, results demonstrate that participants with the high-status in-group state (i.e., men) under threat were generally the most influenced (by any partner).

Conversely, low-status in-group members (i.e., women) under threat were the least likely to be influenced. These findings do not support my threat predictions laid forth in Hypotheses 4 and 6b, and instead point to an effect in the opposite direction. Identity threat did not heighten the SIT-based effects on social influence (i.e., in-group influence), and in some ways pointed to an SCT-based explanation (i.e., high-status influence) under threat.

Although the results on social influence seem to generally support an overall SCT interpretation in Conditions 1 (control/baseline conditions) and an SIT interpretation in more group-heightened conditions, the processes underlying these effects remain unclear. Data from Study 2 did not support my overall in-group identification hypothesis, which predicted those with higher in-group identifications to exert greater influence than those with lower degrees of identification. Rather, I found that low identifiers were generally more influenced (by both/either partner), while high identifiers tended to be most likely to resist influence (i.e., stay with their initial opinions during the group task) overall. Nonetheless, additional analyses do reveal support for the proposition that in-group identification levels are important to outcomes of group interaction and influence.

As stated, there was no significant difference between high and low identifiers in terms of the influence exerted by low-status, in-group partners. However, high-status partners exerted more influence over low identifiers compared to high identifiers ($t = 1.481, p = 0.04$), and this difference is significant. Thus, the SIT interpretation is that low-status in-group members who more highly

identify with their (racial, gender) in-group may not necessarily be more influenced by similar in-group members simply because of their shared group membership. They do, however, appear to be significantly less influenced by their out-group counterparts (despite these out-group members' higher-status), resulting in the findings on social influence outcomes consistent with my predictions.

Additional and Unexpected Findings

Participants' perceptions of each partner's competence and similarity also did not bring forth much clarity on the processes involved affecting social influence outcomes. My results on perceived prototypicality and similarity to partners are consistent with Oldmeadow's (2007) research that examined age (as both a status characteristic and a group membership) in different group contexts. Like Oldmeadow, I generally found no differences in the relative perceived similarity of participants to their two partners in the different experimental conditions (although Study 1 Condition 2, which sought to experimentally heighten in-groupness, did produce statistically significant effects in this respect, but such manipulation was intended for that study's design). It therefore remains unclear whether the increase in low-status partner influence in the experimental conditions (compared to Condition 1, the control/baseline) was driven by any effects of in-/out-group salience or identification on perceived prototypicality.

My data on outcomes of perceived competence, on the other hand, revealed quite different results. Previous research, such as the work by Oldmeadow (2007),

found no differences in perceived competence among partners by context. The perceived competence of both partners in my studies was generally static across conditions and between partners (i.e., low-status partners were generally seen as just as competent as high-status partners). Furthermore, I only found significant differences between high- and low-status partners' perceived competency within Condition 1 (the control/baseline for SCT) for Study 1 (using minimal groups) and Study 2 (using home states).

Limitations and Future Research

I recognize, of course, the potential limitations of this research. The current examination of in-group social influence focused only on a single psychological group membership (i.e., home state, race, gender), but multiple group memberships are often at play, each varying in its relative salience as a function of the context and people's motives and goals. In my three studies, I always reduced the group-differentiating attribute of focus (e.g., minimal "cognitive association" group, home state, gender, race) to a simple two-category characteristic. In reality, social group identities (and status attributes) are much more multifaceted and intersectional. I did not explore the effects of my proposed mechanisms on individuals that hold multiple (racial, gender, home state) identities, although the quality of holding multiple (high- and/or low-status) identifications to a particular attribute likely augments processes we would expect from an SCT perspective and is indeed a fruitful area for future research to explore.

What this might suggest is that in-group social influence (based on whatever attribute) need not always be operative and/or salient. For example, in a developmental study by Grace and colleagues (2008), researchers found that girls were influenced by girls and women (i.e., same gender) when their gender identity was salient, but girls were also influenced by girls and boys (i.e., same age) when their age identity was salient. Examining this dynamic process in the context of understanding judgments of intergroup attitudes is likely to contribute to a fuller understanding of the dynamic processes by which women come to endorse certain attitudes and become influenced (or not) by other women and men.

As acknowledged in the main body of Study 1, decisions regarding my experimental design and only examining low-status (in-group) subjects and their interactions with two others—one equally low-status (in-group) partner and one relatively high-status (out-group) partner—severely limited my power to test Hypotheses 1 and 2. While my design changes for Studies 2 and 3 did allow me to get around this issue and test these predictions, they could have been made stronger by including a more robust control (no-status) condition. In particular, it would have been useful to compare the effects found in Study 2 (home state) to a control condition in which in-/out-group identity was attached to no level of status whatsoever.

In line with limitations regarding decisions on the experimental design, I also suspect that my use of group-identifying avatars (particularly the Study 3 avatars used to indicate race or gender among members) might have served to make

the in-groups of participants too salient or noticeable in such a way that helped wash out potential formation of status expectations in line with SCT. I wonder if the same strong in-group effects would be found in a similar design that only informed subjects of each partners' attributes (e.g., race, gender) via text and did not use the more visually-salient group avatars.

I am of course also limited by my use of an online sample and recruitment platform. After data cleaning, my sample sizes got quite small in cells for some studies, and I also had to drop many participants for failing checks critical to the experiment. Indeed, a broader sample of individuals of varying race or gender groups would allow for a reexamination of status characteristics processes. Recent research, for example, suggests that mTurk samples tend to express relatively high egalitarian views and low social dominance orientation (Weigold and Weigold 2022). A more representative sample of the American population may, thus, have provided more support for my first hypothesis (predicting men, or whites, to have relatively greater influence over women, or blacks) and allowed for a better assessment of the relative strength of an SCT versus SIT explanation for behavior.

At the same time, however, other research comparing social identity and status characteristics processes within mTurk samples have obtained more support for SCT than SIT (Robbins 2017). Sampling beyond the United States, potentially from different countries or cultures in which there may be higher average levels of perceived legitimacy of race- or gender-based status differences (for instance), may well provide enhanced support for attribute-based status differences processes. In

the end, regardless of the sample, replication and expansion is needed before drawing any strong conclusions given that I only conducted and reported on three limited, online studies.

Conclusion

These limitations notwithstanding, this research has important theoretical and applied implications. Theoretically, I was able to expand the self-categorization analysis of social influence to encompass degrees of in-group identification. Given people's social identity-based tendencies to view their own in-groups in a favorable light, the current data highlights the strength of another group-based process: in-group social influence. In addition, however, this process points directly to important applied implications by reminding us of how precarious certain identity-based (e.g., gender, race) social change can be.

There is no question, in general, that the observed pattern of data gathered from my three studies was far more complex than originally expected. Although ultimately finding evidence primarily in support of SIT processes (Hypothesis 2), the countervailing process that this influence had on acceptance of (gender, race) intergroup status legitimacy remains an important additional process that requires further attention and research.

In addition, the findings here reveal that more than one explanation can be offered for the differential influence of in-group and out-group members. From a social identity perspective, an individual organizes their social environment to

provide a stable sense of self (Turner 1982, Turner et al. 1987). Whether on the basis of past experience (showing in-groups to be generally more relevant and important than out-groups) or on a sense of common identity with in-group members, people scrutinize group-differentiating information more carefully and, therefore, are more open to influence in that respect.

Findings from my studies corroborate research from the social psychological literature demonstrating that the qualities of both increased in-groupness and higher-status enhance level of social influence. Furthermore, the data indicates that greater influence of low-status partners may be due, in part, to an enhanced similarity or credibility attributed to these low-status partners based on their shared in-group membership.

In the realm of identity and social categorization, the findings actively add to a substantial body of research demonstrating that social group categorizations frequently shape perceptions and that group members exhibit differences beyond their mere classification. Out-groups tend to appear more homogeneous than in-groups, and in-groups are perceived more favorably than out-groups. As a consequence of this categorization, variations arise in how information regarding in- and out-group partners is processed, and in the attributions of evaluation towards those engaging in interaction. These differences in information processing manifest behaviorally, notably through the heightened influence of in-group (low-status) partners.

The level at which people socially and self-categorize in a particular context is a strong predictor of evaluations and behavior towards others. In a particular situation, a person may self-categorize as a member of an organization while still being aware that the organization is made up of individuals from different racial, ethnic, gender, and age groups. Nevertheless, the person will perceive and respond to these diverse individuals as chiefly in-group members, because they are all included in the most salient level of categorization in the context (the organization).

Very different behavior might be expected if the person self-categorized at the level of gender or racial/ethnic group. If people are quick to rely on status assumptions that lead to the unequal treatments of others, then status distinctions have the potential to develop readily in populations and act as a serious force for social inequality. Thus, understanding what factors lead to different levels of categorization in social interactions is essential for understanding the processes by which attitudes, behaviors, and structures of inequality emerge in society.

Importantly, the research presented in this paper provides initial support for the argument that groups can moderate the effects of status characteristics on social influence. A major contribution of this research is the identification of social in-/out-group identification as a factor that gives rise to in-group influence, despite the in-groups lower-status quality. These results extend the status and social identity research traditions by demonstrating that influence effects of a social attribute (gender, race) vary under different conditions of group identification and identity threat.

Deference to those who are valued most in society, even when such influence does not objectively seem deserved, is a process that research has found to operate within groups in ways typically consistent with the overarching group (race, gender) status hierarchy. However, findings from my Study 3 demonstrate that those belonging to low-status gender and racial groups do have the power to constrain and change the status meaning of their groups and reduce inequalities experienced by the low-status in-group, at least within their own boundaries.

In many ways, status research (SCT) and research on social identity (SIT) deal with parallel processes, but the two traditions of theory and research have primarily been studied separately. While research on SIT has shed light on the ways in which people categorize and evaluate each other, SCT has developed around a sociological framework centering on how cultural beliefs about social categories provide a basis for inequality at a more micro-level in task groups. Given the potential for the explanatory capacity of SCT to be enhanced by developing an integrated account for the construction and maintenance of status hierarchies that incorporates identity-categorization processes and status-organizing processes, the most direct contribution of this research is in opening a line of communication between the two research traditions.

An additional and more noteworthy contribution of the present research is that it points to new avenues of status intervention. If the relative accessibility of status disadvantaging beliefs can be altered by changing group-differentiating cues within a situation, this provides a way forward for reducing inequality at the group

level. By incorporating such effects into SCT, findings from this research open the door to exploring status-organizing processes with an eye toward bringing in and accounting for new sources of information. Further research is needed to elaborate on the utility of the present findings for explaining and addressing issues of social group-based inequality.

Appendices

Appendix materials are listed by study (Appendix B for Study 1, Appendix C for Study 2, and Appendix D for Study 3). Protocol information provided is from the latest version of each study (protocols may have been adjusted slightly during the data collection processes). Some notes intended for the researcher were added, revised, or removed for clarity and readability of the protocol and study procedures. Information about post-task items, component variables of scales, and any statistical results not provided in the main body are available from the author upon request.

Note that the full procedures and protocol for Study 1 are given in Appendix B. Studies 2 and 3 followed a nearly identical procedure, backstory, and group task configuration. Key differences, such as the type of social group used to differentiate study partners and experimental manipulations, are detailed in each study's respective Appendix and in the main body. Other differences in protocol and study instructions from Study 1, such as the exact wording of the backstory and text in the debriefing, were adjusted to match each Study's respective backstory and manipulations.

Appendix A: mTurk Study Advertisement

Study Title: Association Styles and Visual Tasks

Study Description: We are a team of researchers interested in people's perceptual styles and ability at several pattern-recognition tasks. First, you will complete a short screening survey with some basic social and cognitive questions. Once determined eligible for the study, you will then be virtually connected with two other participants in real-time to complete the group task. The group task involves a pattern-recognition activity designed to evaluate a newly discovered skill. The study will conclude with some general questions about your thoughts on the study.

You will earn a maximum of \$10 for participating. The entire study will take place online and will take under 30 minutes to complete.

You have the right to withdraw from this survey at any time. There are no risks associated with participating in this study other than potential loss of confidentiality, and we have taken steps to mitigate this risk (no personally identifiable data will be collected; mTurk IDs will not be connected to responses). Only researchers associated with this project will have access to these data. This research will not directly benefit the participant but may help researchers understand decision-making processes in groups.

If you have any questions, please contact the primary investigator, Kelly Beavan (UMD.Research.Team@gmail.com) or the University of Maryland Institutional Review Board (IRB).

To complete the study, please follow this link: [LINK HERE]

-----START OF SURVEY-----

Welcome to the study!

ASSOCIATION STYLES AND VISUAL TASKS



Purpose of the Study

This research is being conducted by researchers at the University of Maryland, College Park. You are invited to participate in this research project because you have responded to our Human Intelligence Task (HIT) on Amazon's Mechanical Turk, and you meet all eligibility criteria for the study.

Procedures

The study procedures involve completing a series of activities with two partners that are designed to evaluate a newly discovered skill. You will complete a short perceptual task to measure you and your partners' association styles. You and your partners will then complete several rounds of a pattern recognition group task. You will also be asked a variety of questions about your views toward the task, your partners, and basic social-demographic questions. The entire study will take under 30 minutes to complete, depending on how quickly you and your partners progress through the tasks.

Potential Risks and Discomforts

Foreseeable risks, discomforts, or inconveniences are not severe and include (1) time commitment and (2) potential negative reactions arising from certain questions or feedback in the study. You do not have to answer any question that makes you uncomfortable, and you may stop participating at any time.

Potential Benefits

There are no direct benefits from participating in this research. We hope that, in the future, others might benefit from this study through improved understanding of decision-making processes in groups.

Confidentiality

Any potential loss of confidentiality will be minimized by collecting as little potentially identifying information as possible. Your responses are not linked to

identifying information such as your name, and all data will be stored on password protected computers or servers. Only researchers on this project will have access to the data.

Compensation

You will receive up to \$10 at the conclusion of the study depending on your performance on the group task.

Right to Withdraw and Questions

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Please email the researchers to request that your data be withdrawn if you choose to remove your data.

Participant Rights

If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the primary investigator at UMD.Research.Team@gmail.com. This research has been reviewed according to the University of Maryland, College Park Institutional Review Board procedures for research involving human subjects.

Statement of Consent

By agreeing to participate, you are indicating that you are at least 18 years of age; you are a U.S. resident; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction; and you voluntarily agree to participate in this research. You may download or print a copy of this consent form. If you agree to participate, click “I Consent” to continue to the study.

I Consent



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Introduction

The purpose of this study is to investigate people’s association styles and ability at perceptual-type (such as pattern recognition) tasks. You will first complete a short individual activity that will determine your association style. Then you will move on to the main part of the study: a pattern recognition task designed to evaluate a newly discovered skill. More details about the activities will be explained further in the study.

Shortly, you will be virtually connected with two other participants in real-time to complete the pattern recognition task as a group. You will not meet or interact with the other study participants face-to-face. All your interactions will take place online within this program, and we will not share your personal information with other participants.

For participating today, you will be guaranteed a minimum payment...

[CONDITIONS 1-3] ...of \$5 just for completing the survey and regardless of your performance on the task. However, you may earn up to an additional \$5 (for a total of \$10) depending on your group task performance.

[CONDITION 4] ...of \$1 just for completing the survey and regardless of your performance on the task. However, you may earn up to an additional \$9 (for a total of \$10) depending on your group task performance. (****Task importance manipulation****)

Your goal during the study is to earn the highest possible score on the group task. Based on your group's performance you will be able to earn additional pay for your participation, so how you work with your partners to complete the group task is of critical importance.

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Cognitive Association Styles

Before being connected to your partners for the group task, you will first complete a short test to assess your association style. Previous research on the topic of perception shows that people can be categorized into two groups: as either "**Analytic**" or "**Holistic**" perceivers.

Analytic perceivers typically focus on the finer details in a picture or image; **Holistic** perceivers are more likely to notice whole shapes or the bigger picture. Research finds that Analytic and Holistic perceivers differ in how they interpret and perceive the world around them: For example, people of different cultures display differences in these association styles.

Social scientists often classify people into Analytic and Holistic association styles

because these group memberships also relate to a variety of personality characteristics and are used to inform new attitudes and behaviors.

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Association Style Test

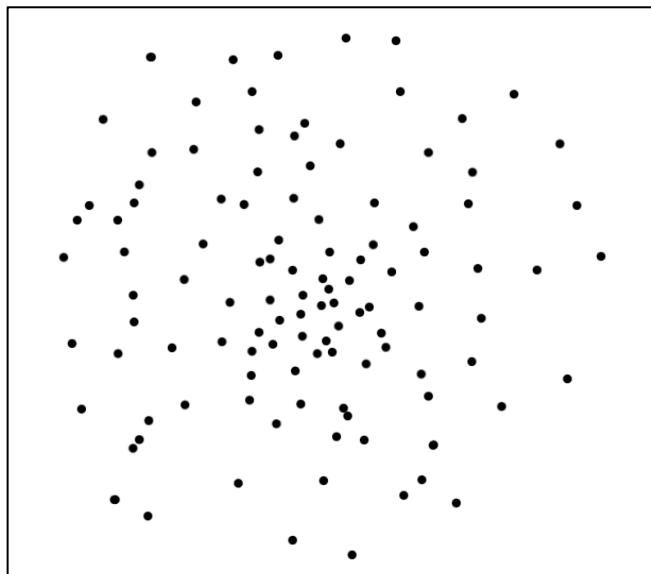
The test to determine your association style is a **dot estimation task**. Over the next several pages in the study, you will see images with random patterns of dots flashing on the screen for a short amount of time. After being presented with each pattern, we will ask you to estimate the number of dots you just saw on the screen.

Please try to estimate the number of dots as accurately as possible. Do not try to count the dots, they will disappear too quickly.

Click continue to begin the dot estimation task and receive feedback on your cognitive association style.

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Dot Estimation Task (x10 rounds)



Number of dots: [TEXT ENTRY]

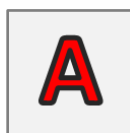
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Calculating results from dot estimation task...



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Results are in! Your association style assignment:



ANALYTIC

You have been assigned to the **Analytic** group. Analytically-oriented perceivers tend to consider the sub-parts or individual roles of an image or situation more locally, rather than the larger system and interrelation of parts globally.

Analytic personalities prefer to process visual and semantic information in a bottom-up fashion; that is, they prefer to examine details first to form an overall impression. In contrast, **Holistic** personalities prefer to process visual and semantic information in a top-down fashion; that is, they prefer to first form an overall impression and then consider details afterward.

Before moving on to the group task, we would like to provide you with some more information about your association style gathered from recent research and editorials. The **National Association of Social Psychologists** (NASP) recently released a report on survey results comparing people who belong to holistic versus analytic association groups. We have sampled information from this NASP article for you to read below.

Remember: being paid for the study is conditioned on you carefully reading all the information presented.

PSYCHOSOCIAL ISSUES

Americans differ in what Scientists call "Cognitive-Association Styles"



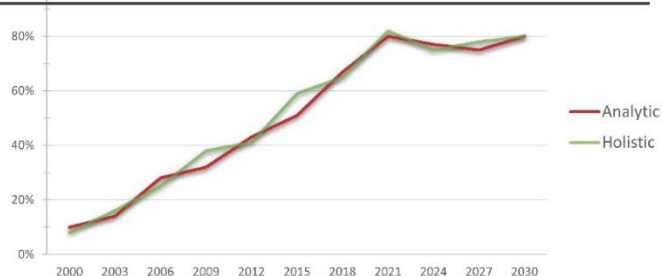
Many recent social and political events sparked discussion of changes in the psycho-social make-up of the country, and so it is important to know the results of cutting-edge research. Research from the National Association of Social Psychologists [NASP] finds that people generally fall into one of two "cognitive association styles": Analytic or Holistic. The two types of perceivers differ in how they interpret and perceive the world around them. These association styles also relate to a variety of personality characteristics and are



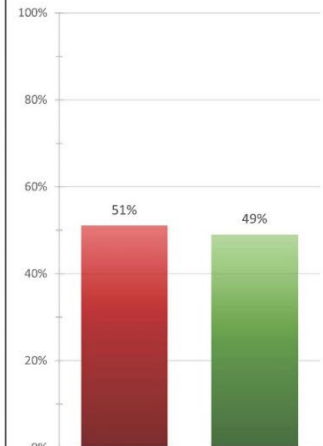
used to inform new judgments and behaviors. Although one group would like to think they have the "market" on positive qualities, that is not the case. Both association styles have positive aspects and qualities, and it appears that neither group is better than the other. Pat Smith, lead research analyst for the NASP, discusses implications about association styles with respect to education, family, and work ethic. Highlights from NASP's recent studies and polls are reported in this issue.

Data & Research

U.S. Population Projections (2000-2030)



What percent of people are your association type?*



*Estimates based on 2020 US population

Findings from recent polls and data projections reveal that currently the U.S. population is about evenly split between the two association types. When it comes to the future outlook for each type of cognitive style, population projections predict that the percent of people in our society that demonstrate qualities of each style will remain about equal. [continued on page 30]

***CONDITION 1 (Control) and CONDITION 4 (Task Importance)**

Insider Intelligence

Science News for the Public

NASP 
NATIONAL ASSOCIATION OF
Social Psychologists

PSYCHOSOCIAL ISSUES

Americans differ in what Scientists call "Cognitive-Association Styles" with Holistics taking charge



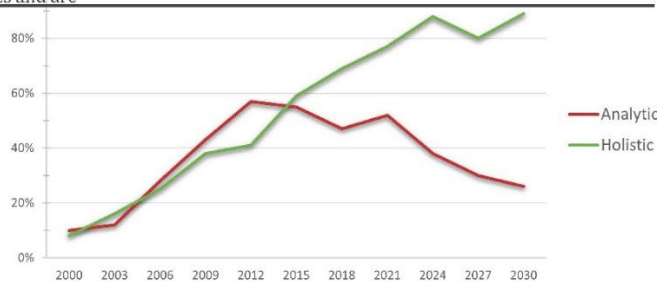
Many recent social and political events sparked discussion of changes in the psycho-social make-up of the country, and so it is important to know the results of cutting-edge research. Research from the National Association of Social Psychologists [NASP] finds that people generally fall into one of two "cognitive association styles": Analytic or Holistic. The two types of perceivers differ in how they interpret and perceive the world around them. These association styles also relate to a variety of personality characteristics and are



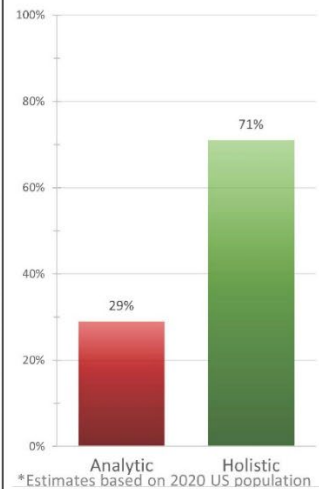
used to inform new judgments and behaviors. Pat Smith, lead NASP research analyst, shares implications about association styles with respect to population size and other domains of social life. Highlights from NASP's recent studies and polls are reported here. "According to recent data projections," Smith tells *Insider*, "Holistics are rapidly dominating the majority share of the population." This is threatening to people with Analytic association styles, who also have positive aspects and qualities.

Data & Research

U.S. Population Projections (2000-2030)



What percent of people are your association type?*



Findings from recent polls and data projections reveal that currently the U.S. population has more people with Holistic, compared to Analytic, association types. When it comes to the future outlook for each type of cognitive style, population projections predict that the proportion of Holistic people in our society will continue increasing. Rates of Analytics, on the other hand, continue falling drastically. [continued on page 30]

***CONDITION 3 (In-group Identity Threat)**

Insider Intelligence

Science News for the Public

NASP 
NATIONAL ASSOCIATION OF
Social Psychologists

PSYCHOSOCIAL ISSUES

Americans differ in what Scientists call "Cognitive-Association Styles"

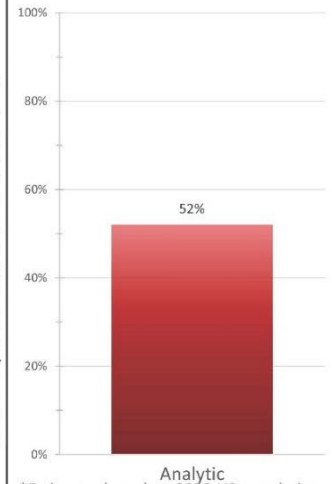
what it means for Analytics

Many recent social and political events sparked discussion of changes in the psycho-social make-up of the country, and so it is important to know the results of cutting-edge research. Research from the National Association of Social Psychologists [NASP] finds that people generally fall into one of two "cognitive association styles": Analytic or Holistic. The two types of perceivers differ in how they interpret and perceive the world around them. These association styles also relate to a variety of personality characteristics and are



used to inform new judgments and behaviors. Pat Smith, lead NASP research analyst, shares implications about association styles with respect to population size and other domains of social life. Highlights from NASP's recent studies and polls are reported here. "According to our studies," Smith tells *Insider*, "what association style you belong to affects so many other domains of life," from relationships to jobs to even where they live. Highlights from NASP's recent studies and polls are reported in this issue.

What percent of people are your association type?*



Analytic

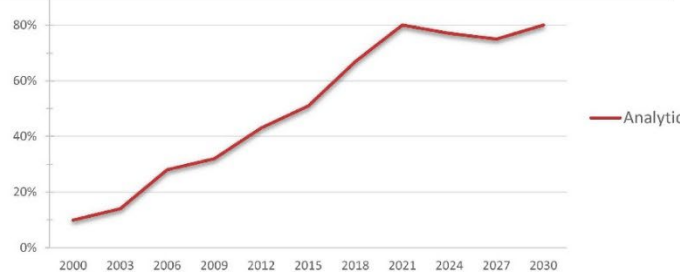
*Estimates based on 2020 US population

Findings from recent polls and data projections reveal that currently around half of the U.S. population belongs to the Analytic association style group. When it comes to the future outlook for each type, population projections predict that the percent of people that will demonstrate Analytic qualities will continue rising.

[continued on page 30]

Data & Research

U.S. Population Projections (2000-2030)



***CONDITION 2 (Heightened In-group Identification)**

Group Matching

For the next task, you will be asked to work on a different series of pattern recognition-type problems with TWO other participants that are currently taking the study in real-time. To protect your identity, we will not share any personal information with your task partners. You and your partners will be randomly identified by numbers (i.e., Partners 1, 2, and 3), and the only information that will be shared with the group includes each partner's association style categorization.

A symbol signifying each partner's group assignment ( or ) will also be displayed next to each partners' number identifier throughout the group task.

The UMDSURVEY platform now allows us to run remote connections through the GROUPSNET PORTAL plugin. Previously, we would have directed you to another website to complete the group task, then back to survey to answer any remaining questions. Using a single platform reduces the risk of connection problems and means a seamless group task experience for you.

Click **Next** to continue and enter the group matching pool.

Partner matching in progress...

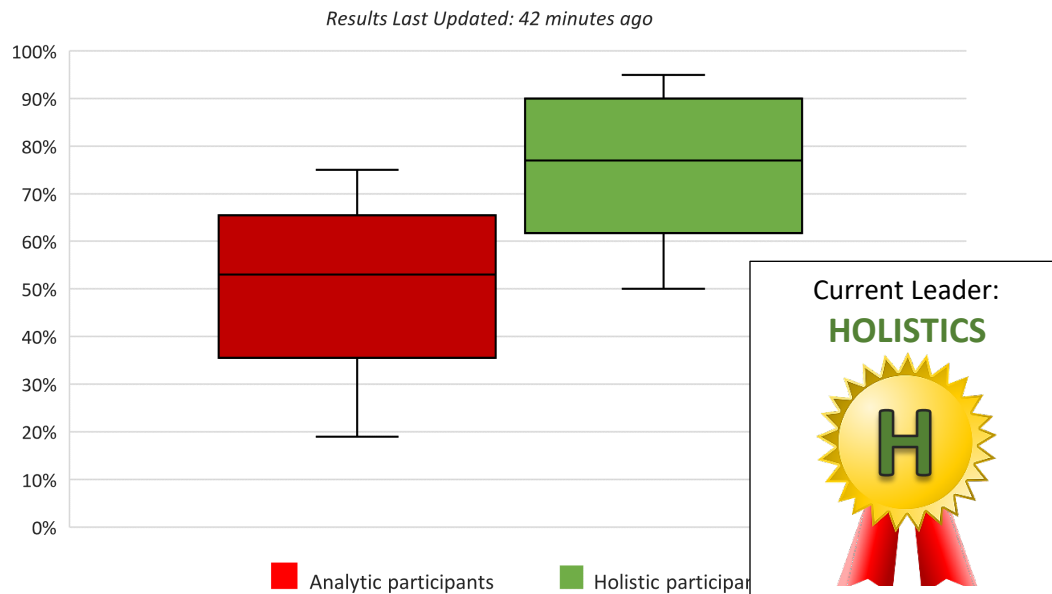


Please wait while our participant pool matches you with a group.
This page will automatically advance once you have been matched.

Below, we also provide a [Live Tracker](#) with preliminary findings from this research for your reference while you wait. The box graph shows the current distribution of task scores from past participants by their association style group, and the ribbon graphic to the right displays which group is currently leading in task performance.

Status Manipulation of Minimal In-/out-groups

Live Tracker:



-----PAGE BREAK-----

Partner Matching Complete

You have been connected to a group and have been randomly assigned to Partner Position **3**. Letter colors indicate each group member's assigned association style (**Analytic** perceivers in red; **Holistic** perceivers in green).

See your group below:

Group 1894-2 (Your Group)		
Partner 1 	Partner 2 	Partner 3  (You)

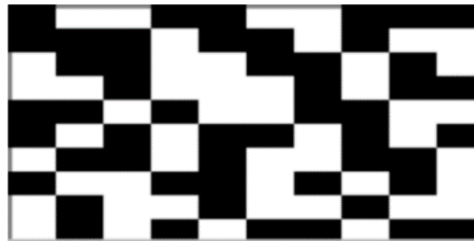
(*Group membership manipulation*)

Click continue to move on to the group task.

Group Task: Contrast Sensitivity

We will now begin the group task. For this task, you will complete 20 multiple-choice questions. In the past few years, scientists have found that individuals differ in their ability to perceive differences between figures. Scientists have found that some people are better able than others to accurately perceive contrasts between images (e.g., differences in the amount of white in a set of images) and call this ability “Contrast Sensitivity.”

Currently, social scientists do not know why some people have more accurate Contrast Sensitivity than others, but they do know that this ability is not related to specialized skills, such as mathematical or artistic ability. So, individuals with low mathematical or artistic skills may have either high or low Contrast Sensitivity, and individuals with high mathematical or artistic skills may have either high or low Contrast Sensitivity. The same pattern applies to those with other types of specialized skill. Contrast Sensitivity appears to be an entirely new



kind of ability, one that is unrelated to most other skills and abilities. In the group task, you will be shown a series of images (such as the one in the image above) that contain random areas of black and white-colored blocks. You will be asked to decide whether the images you see contain more white or black area.

Group Task Instructions

You and your partners will be working together as a team on a set of Contrast Sensitivity problems. In many problem-solving situations like this one, such as when doctors diagnose illnesses, people are called upon to make decisions that need to be correct. In these situations, people often gather advice and information from others. Studies suggest that this effort to consider others’

ideas is a good strategy, because it often improves decision-making, increasing the rate of correct decisions.

You will work with your partners to answer each question. Your goal is to earn the highest possible score. ***Remember: Depending on your group performance, you will earn up to \$10 for your participation.***

You will read each question and provide your individual answer first. Then, you will see your partners' answers for that same question. After viewing everyone's initial answers, you will then submit your final answer to the question: You may either choose to stick with your original answer - or - change your answer to that of your partner(s) in case of a discrepancy.

You will have 30 seconds to make your initial decision, and an additional 30 seconds to view your partners' responses and submit a final answer for each of the 25 rounds. Please answer the questions quickly and simply try your best. The questions are difficult and may seem ambiguous, but every question does have one best answer.

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Example Group Task Question (x25 trials)

Which of the three images has more white area?



☐ Top



☐ Middle



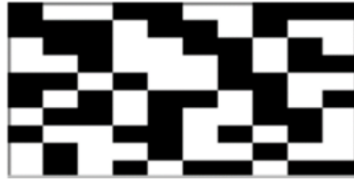
☐ Bottom

**Note: during each trial of the task, participants compared the three images (for up to 30 seconds) before indicating which one they thought contained the whitest area. They then received their two partners' initial opinions and were given 30 more seconds to study the images again before deciding on their final answers. Colored group-identifying avatars (Holistic or Analytic) were displayed next to each partners' answer choices.*

-----PAGE BREAK-----

You now have the chance to change your answer if you would like. You may either choose your original answer or switch your answer to that of your partner. Please select your final answer.

Which of the three images has more white area?



☐ Top



☐ Middle



☐ Bottom

(Program displays “Partner A”, “B”, and “C (You)”, with their respective Group symbols, next to each partner’s initial answers for that round.)

-----PAGE BREAK-----

Post-Task Survey

Thank you. The group task portion is now complete, and you are nearly complete the study. Next, we want to ask you a few questions about your general impressions of the study.

How do *you* currently feel, having completed the task?

	1	2	3	4	5	6	7	8	
Displeased	☐	☐	☐	☐	☐	☐	☐	☐	Pleased
Unhappy	☐	☐	☐	☐	☐	☐	☐	☐	Happy
Dissatisfied	☐	☐	☐	☐	☐	☐	☐	☐	Satisfied
Not Content	☐	☐	☐	☐	☐	☐	☐	☐	Content
Not Joyful	☐	☐	☐	☐	☐	☐	☐	☐	Joyful
Not Proudful	☐	☐	☐	☐	☐	☐	☐	☐	Proudful

	1	2	3	4	5	6	7	8	
Not Grateful	☐	☐	☐	☐	☐	☐	☐	☐	Grateful
Angry	☐	☐	☐	☐	☐	☐	☐	☐	Not Angry
Fearful	☐	☐	☐	☐	☐	☐	☐	☐	Not Fearful
Threatened	☐	☐	☐	☐	☐	☐	☐	☐	Not Threatened
Disgusted	☐	☐	☐	☐	☐	☐	☐	☐	Not Disgusted
Bored	☐	☐	☐	☐	☐	☐	☐	☐	Not Bored

-----PAGE BREAK-----

At the start of the study, you completed a dot estimation task to determine your cognitive association style. Which group were you assigned to based on this test?

- ☐ Analytic
- ☐ Holistic
- ☐ Unsure

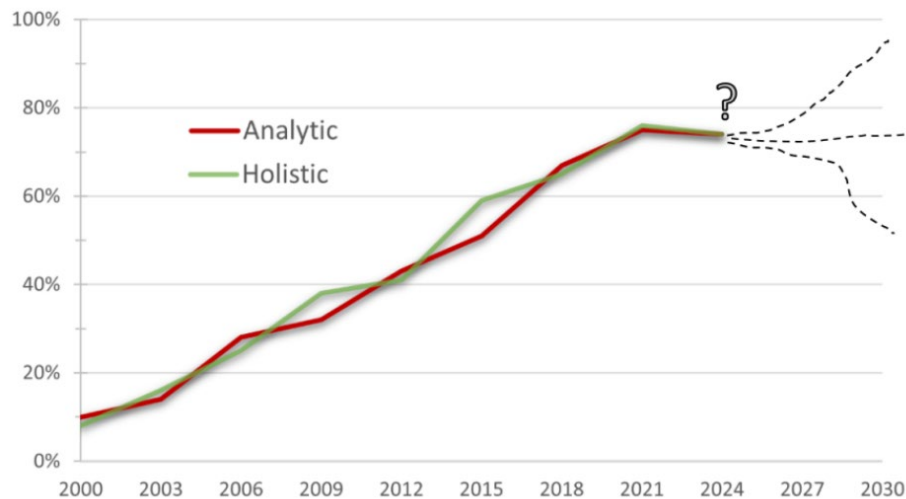
-----PAGE BREAK-----

Before completing the group task, we showed you an article snippet from "Insider Intelligence" describing recent research findings about cognitive association styles in the U.S. population.

Did you read the news article?

- ☐ Yes
- ☐ No

What did the article tell you about the projected population trends and makeup of Analytic vs. Holistic people? (*Hint: See below for a portion of the population graph shown to you in the news article*)



- ☐ Proportion of Analytics and Holistics expected to remain about equal/the same.
- ☐ Holistic population expected to increase/exceed that of Analytics.
- ☐ Analytic population expected to increase/exceed that of Holistics.

-----PAGE BREAK-----

We also provided you with a live tracker displaying results from participants' performance so far in our study.

Which association style group was currently in the lead in terms of task performance?

- ☐ Analytic
- ☐ Holistic
- ☐ Unsure



-----PAGE BREAK-----

For completing this study, you were able to earn up to \$10 as compensation for your participation depending on your task performance. Prior to the final group task, how much was your guaranteed minimum pay (in dollars)?

- ☐ \$0 (no minimum pay guaranteed)
- ☐ \$1.00 minimum (able to earn up to \$9 more)
- ☐ \$5.00 minimum (able to earn up to \$5 more)

-----PAGE BREAK-----

How important was performing well on the group task to you?

Not at all Important 1 2 3 4 5 6 7 8 Extremely Important

Out of the # multiple-choice questions you answered on the group task, how many do you think you answered correctly? [Slider from 0 to #]

Would you say that you took your partner's suggestions into consideration when choosing final answers during the task?

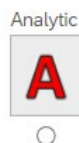
- ☐ Yes
- ☐ No

-----PAGE BREAK-----

We are also interested in whether people can learn about partners interacting over computers. Please answer the next set of questions about your partners to the best of your ability.

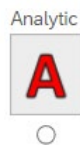
Group 1894-2 (Your Group)		
Partner 1 	Partner 2 	Partner 3  (You)

Which association style group did Partner 1 belong to?



Group 1894-2 (Your Group)		
Partner 1 	Partner 2 	Partner 3  (You)

Which association style group did Partner 2 belong to?

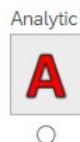


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In future experimental sessions, we will continue to look at the task performance of Holistic and Analytic thinkers in group sessions. In general, which group of people will succeed most at these types of tasks?



If you were given the option to choose, who would you like as a partner in future experimental sessions?



-----PAGE BREAK-----

Group 1894-2 (Your Group)		
Partner 1 	Partner 2 	Partner 3  (You)

Please indicate how much the following words or phrases apply to **Partner 1** of your group:

Not at all <i>competent</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>competent</i>
Not at all <i>well-intentioned</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>well-intentioned</i>
Not at all <i>trustworthy</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>trustworthy</i>
Not at all <i>confident</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>confident</i>
Not at all <i>intelligent</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>intelligent</i>
Not at all <i>sincere</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>sincere</i>
Not at all <i>similar</i> to me	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>similar</i> to me



How well do you think **Partner 1** of your group performed on the task?

-----PAGE BREAK-----

Group 1894-2 (Your Group)		
Partner 1 	Partner 2 	Partner 3  (You)

Please indicate how much the following words or phrases apply to **Partner 2** of your group:

Not at all <i>competent</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>competent</i>
Not at all <i>well-intentioned</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>well-intentioned</i>
Not at all <i>trustworthy</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>trustworthy</i>
Not at all <i>confident</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>confident</i>
Not at all <i>intelligent</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>intelligent</i>
Not at all <i>sincere</i>	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>sincere</i>
Not at all <i>similar</i> to me	☐	☐	☐	☐	☐	☐	☐	☐	Extremely <i>similar</i> to me



How well do you think **Partner 2** of your group performed on the task?

-----PAGE BREAK-----

DEMOGRAPHICS

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other (specify) _____

What is your age (in years)? [Text Box]

How would you describe your race/ethnic background?

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White or Caucasian
- ☐ Other (please specify) _____

Are you of Hispanic/Latino(a) origin?

- ☐ Yes
- ☐ No

What is the highest education level you have completed?

- ☐ Less than High School
- ☐ High School Diploma/GED
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctoral Degree or above

In which region of the United States do you currently live?

- ☐ Northeast
- ☐ Midwest
- ☐ South
- ☐ West
- ☐ Outside the United States

-----PAGE BREAK-----

Thanks! You are nearly finished. Now, we will explain the study to you in more detail and ask you a few final questions before paying you for your participation.

First, do you have any general impressions of the study?

[Text Entry]

What did you think about the other participants in the study? Did you feel like you could learn anything about your partners from your interactions with them?

[Text Entry]

Were you suspicious of anything in the study?

- ☐ Yes (→If yes) What were you suspicious of? [Text Entry]
- ☐ No

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DEBRIEFING

The purpose of this research is to investigate how individuals influence group members' behaviors. We are interested in whether differences in group

identification affects the way that group members act toward similar and dissimilar others. The study task is designed to create a situation that is ambiguous to test these ideas. To do so, however, we found it necessary to inform you and the other participants that you were interacting with each other as partners.

While there are others participating in the study right now, you were not actually interacting with them. Instead, you were interacting with computer software that was programmed to simulate the behavior of real participants. Everyone in the study belonged to a simulated group that differed in cognitive association style (Holistic or Analytic): Classification into one of these groups was pre-determined and not actually based on your dot estimation task results. We used simulated partners because we wanted to be able to manipulate these categories and stage (dis)agreements between you and your partners during certain trials of the group task.

In addition, the news article from "Insider Intelligence" magazine was actually fictitious and not based on actual verified research. We found it necessary to fabricate this article so that we could control how threatening the information was toward your group. Some participants were presented with data that expected population trends between groups to remain equal in future years, while others were shown graphs that projected an increase in one association style group over the other.

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We want you to know that it was not in our interest to deceive you. Instead, we wanted to learn from your natural and realistic responses how people behave in these kinds of situations. We apologize for the deception in this study.

We also want you to know that participants have a right to remove their data from this research after being informed about the true purpose of the study. In addition, the simulated partners are programmed to behave in realistic ways, so you should not feel at all self-conscious if you believed they were real. In fact, we expect that virtually all participants will believe that they are real. Your participation in the study is very helpful for improving our understanding behavior in these kinds of settings.

Do you understand why we found it necessary to reveal this information to you only after the study?

☐ Yes

☐ No

(→If No is selected, subject is given PI and study information again)

-----PAGE BREAK-----

As compensation for your participation today, we will actually pay you the maximum possible, \$10. This is what we pay everyone for this study because the partners were simulated and your score on the group task was irrelevant. If you choose to remove your data, please email the researcher through mTurk to request that your data be withdrawn.

Thank you again for participating in this study. Your participation has been extremely helpful. If you have any questions about the research, or have trouble receiving payment, you can contact the Principal Investigator of the study at UMD.Research.Team@gmail.com.

*Continue to the next page to receive your **confirmation code** necessary to receive payment through Amazon mTurk.*

-----END OF SURVEY-----

Appendix C: Supplemental Information for Study 2

In-group (home state) Identity Threat Manipulation

August 2023 Volume 42 No. 1

Insider Intelligence

Research and Science News for the Public

NASP 
NATIONAL ASSOCIATION OF
SOCIAL PSYCHOLOGISTS

PSYCHOSOCIAL ISSUES

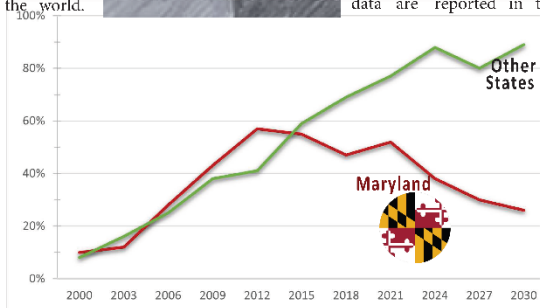
Populations differ in what Scientists call "Cognitive Association Styles"

Many recent social and political events sparked interest in changes to the psycho-social makeup of the population. Scientists thus stress the importance of knowing results of cutting-edge research on how people's psychological and cognitive traits relate to social outcomes. Research from the National Association of Social Psychologists (NASP) finds that people typically fall into one of two cognitive association styles: Analytic or Holistic. The two groups differ in how they interpret, judge, and behave in the world.

Association style is also related to a variety of personality characteristics and is called upon to inform new judgments and decisions. Both Analytic and Holistic style perceivers have positive qualities, and it appears that neither group is better than the other. While cognitive styles involve how we perceive, manipulate, and apply information to drive decisions and actions, personality traits refer to patterns of thoughts, feelings, and behaviors that distinguish people from one another in terms of basic tendencies. Pat Smith, lead NASP research analyst, discusses implications about cognitive associations and their relation to personality traits and characteristics. Highlights from NASP's recent studies and data are reported in this issue.

Data & Findings, cont.

How does your home state compare to others?



Findings from recent polls and data projections reveal that the current U.S. population is about evenly split between the two association types. When it comes to the future outlook for Maryland vs. other US states, projections predict that the percent of people in Maryland will decline, while other states will increase[continued on page 30].

Note that the group identifying avatars were programmatically assigned based on participants' responses to demographic questions (and were randomly assigned for out-group partners). Avatars were displayed next to each task partner throughout the experiment. Examples of the home state icons/avatars used in the

study can be seen above (they were all round circles with a state flag design). Participants' avatars were based on their self-reported home state; In-group (fictitious) partners were assigned the same avatar, and out-group (fictitious) partners were randomly assigned to be one of the remaining 49 U.S. states (e.g., Texas in the news article example above).

Manipulation of status for these home state group categories was consistent with the design from Study 1 (but with home state avatars/labels instead of minimal Holistic/Analytic group icons). See Appendix B for status manipulation ("Live Tracker" and group leader ribbon).

Appendix D: Supplemental Information for Study 3

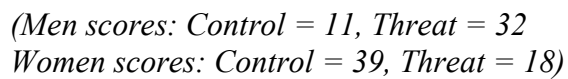
Gender Identity Scale and Threat Manipulation

Gender Identity Survey											
Please fill out the following survey on gender identity. This survey has been used for decades as a method for classifying individuals with respect to their gender attitudes. Once you have finished, the program will quickly calculate your score and give you feedback. Please answer the questions that follow as well as you can. Do not skip questions. If you are unsure of an answer, please give the answer that seems best to you. For each of the following words, please pick a number from the following scale that best indicates how well you think the word describes yourself: <table><tr><td><i>Never or Almost Never True</i></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td><i>Always or Almost Always True</i></td></tr></table>		<i>Never or Almost Never True</i>	1	2	3	4	5	6	7	8	<i>Always or Almost Always True</i>
<i>Never or Almost Never True</i>	1	2	3	4	5	6	7	8	<i>Always or Almost Always True</i>		
1. Self-reliant _____	2. Yielding _____										
3. Helpful _____	4. Defends own beliefs _____										
5. Cheerful _____	6. Moody _____										
7. Independent _____	8. Shy _____										
9. Conscientious _____	10. Athletic _____										
11. Affectionate _____	12. Theatrical _____										
13. Assertive _____	14. Flatterable _____										
15. Happy _____	16. Strong personality _____										
17. Loyal _____	18. Unpredictable _____										
19. Forceful _____	20. Feminine _____										
21. Reliable _____	22. Analytical _____										
23. Sympathetic _____	24. Jealous _____										
25. Has leadership abilities _____	26. Truthful _____										
27. Sensitive to the needs of others _____	28. Willing to take risks _____										

29. Understanding _____	30. Secretive _____
31. Makes decisions easily _____	32. Compassionate _____
33. Sincere _____	34. Self-sufficient _____
35. Eager to soothe hurt feelings _____	36. Conceited _____
37. Dominant _____	38. Soft spoken _____
39. Likable _____	40. Masculine _____
41. Warm _____	42. Solemn _____
43. Willing to take a stand _____	44. Tender _____
45. Friendly _____	46. Aggressive _____
47. Gullible _____	48. Inefficient _____
49. Acts as a leader _____	50. Childlike _____
51. Adaptable _____	52. Individualistic _____
53. Does not use harsh language _____	54. Unsystematic _____
55. Competitive _____	56. Loves children _____
57. Tactful _____	58. Ambitious _____
59. Gentle _____	60. Conventional _____

The following is your score on the gender identity survey. It has been placed on a 0 to 50 index from “Masculine” to “Feminine.” Those lower on the scale have more masculine gender identities, those higher have more feminine gender identities.

Below is a line graph of average score for men and women on the Gender Identity Survey. We have indicated your score with an “X” on the line.



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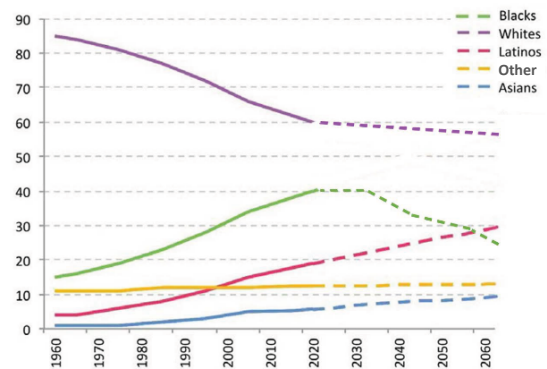
The majority of Americans will be Non-Black in about 25 years...

Many recent social and political events sparked interest in changes to the social and demographic make-up of the population. Researchers from the National Association of Social Psychologists (NASP) recently emphasized the importance of knowing the results of such cutting-edge research. The team of scientists have been analyzing data from the U.S. Census Bureau in order to predict likely future trends of our country's population. Major findings are reported here. The graph reports the current U.S. population trends and projections broken down by race/ethnicity.

Results depict a stable picture: the racial/ethnic composition of the country is generally expected to look as it does today. While Whites are expected to hold the majority, one surprising finding from the research has raised attention: **This threatening result predicts a significant decline in population size for Black/African Americans** (see Graph).

[Continue reading at publisher website]

Percent of U.S. Population by Race/Ethnicity



Sources: U.S. Census Bureau and University of Virginia Population Study Center, 2023.

**Low-status identity threat (i.e., black participants)*

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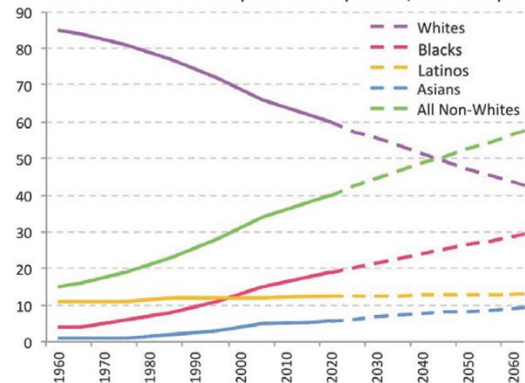
The majority of Americans will be Non-White in about 25 years...

Many recent social and political events sparked interest in changes to the social and demographic make-up of the population. Researchers from the National Association of Social Psychologists (NASP) recently emphasized the importance of knowing the results of such cutting-edge research. The team of scientists have been analyzing data from the U.S. Census Bureau in order to predict likely future trends of our country's population. Major findings are reported here. The graph reports the current U.S. population trends and projections broken down by race/ethnicity.

Results depict a dramatic decline in the share of White people, from over 85% of all Americans in 1960 to just 44% in the year 2060. Most importantly, projection shows the White (Non-Hispanic) residents becoming a numerical minority between 2040 - 2045. **This threatening result predicts a significant decline in population size for White Americans** (see Graph).

[Continue reading at publisher website]

Percent of U.S. Population by Race/Ethnicity



Sources: U.S. Census Bureau and University of Virginia Population Study Center, 2023.

**High-status identity threat (i.e., white participants)*

Insider Intelligence

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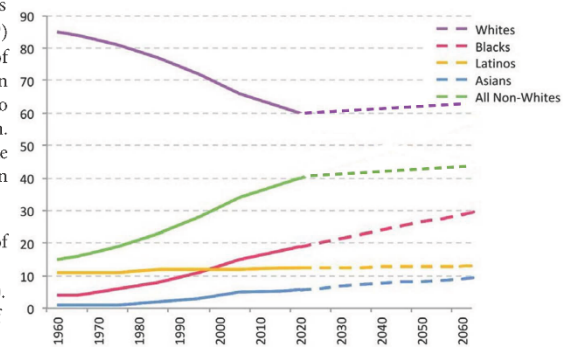
The majority of Americans will be the same race/ethnicity in about 25 years...

Many recent social and political events sparked interest in changes to the social and demographic make-up of the population. Researchers from the National Association of Social Psychologists (NASP) recently emphasized the importance of knowing the results of such cutting-edge research. The team of scientists have been analyzing data from the U.S. Census Bureau in order to predict likely future trends of our country's population. Major findings are reported here. The graph reports the current U.S. population trends and projections broken down by race/ethnicity.

Results depict a clear picture: the racial/ethnic composition of the country is expected to look very similar to how it does today (projections based on estimates from years up to 2023). There is no threat to your demographic group in terms of experiencing any sort of significant change in composition.

[Continue reading at publisher website]

Percent of U.S. Population by Race/Ethnicity



Sources: U.S. Census Bureau and University of Virginia Population Study Center, 2023.

**Control condition (i.e., no threat to high- or low-status racial identity)*

References

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