

HOW COHESION MOTIVATION IN TASK GROUPS AFFECTS STATUS AND
INFLUENCE

by

JESSE K CLARK

(Under the Direction of DAWN T ROBINSON)

ABSTRACT

For this dissertation I developed and tested an elaboration of a social psychological theory that identifies mechanisms within small task groups that make some groups more inequitable than others. According to status characteristics theory individuals tend to rely on small pieces of information to make judgments about group members' competencies and skills. Groups routinely rely on readily available cues (e.g., gender, race, or age) to define the value of each members' contributions to the group. Although group members can counteract these judgments with contradicting information, that information is often unavailable or never introduced. The theory proposed in this dissertation asserts that how small task groups are formed can create situations where people will look past their prejudices and allow seemingly less valuable group members to have more influence. The consequence is that people with the power to influence the structure of small groups have the power to influence levels of inequality within the groups themselves. This new theory argues that future interaction and individual motivations mediate the effects of inequalities in small task groups. Specifically, the theory proposes that groups in which members are oriented to work together for long-

term success will be more motivated to treat group members more equitably than groups in which members are unconcerned about the long-term success of the group.

Furthermore, an expanded mathematical model provides new insights into estimating the effects of influence in small groups.

INDEX WORDS: status, cohesion, group processes, expectation states theory, status characteristics theory, social psychology

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JESSE K CLARK

B.A., University of North Carolina at Charlotte, 2006

M.A., University of North Carolina at Charlotte, 2008

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JESSE K CLARK

Major Professor: Dawn T. Robinson
Committee: Jody Clay-Warner
Justine E. Tinkler

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
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DEDICATION

For my parents, Kenny Clark and Pat Senter, without whom I would not be the man I am today.

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CHAPTER 1

INTRODUCTION

Power and status differences create observable patterns of influence in task small groups. When people come together to engage in a cooperative task, some group members have more influence than others. A number of theories within the group processes tradition of social psychology predict when these patterns will emerge, their causes, and their consequences. However, research within these traditions tends to focus on either short-term, cooperative decisions or long-term, individualistic decisions. For this dissertation, I observed how patterns of influence within task groups changed when group members believed they would be working together over a long period of time and believed that positive relationships increased chances of success. These long-term, cooperative groups I call *teams* to distinguish them from the two types of small groups typically studied within social psychology, task groups and exchange groups.

Task groups focus on accomplishing group goals. Juries (Strodbeck, James and Hawkins 1957), for example, discuss relevant issues in an attempt to draw conclusions about a case in order to come to a single agreement. Robert Bales and his colleagues (Bales 1950; Bales et al. 1951; Bales and Slater 1955) observed task groups in a laboratory setting. Their work categorizing the behavior of task group members later led to the creation of expectation states theory and status characteristics theory. Status characteristics theory (Berger et al. 1977a; Berger and Webster 2006; Berger, Cohen and Zelditch 1966) now dominates research on task groups. Status characteristics theory is a

branch of expectation states theory that focuses on understanding and predicting when people will develop expectations for group members' performances and act on those expectations. Status characteristics theory focuses on predicting and explaining how people infer expectations based on associating observable cues with culturally shared ideas about the competence of people exhibiting those cues (Berger et al. 1977a). For example, people generally expect college graduates to be better at most tasks than high school dropouts. In these situations, the theory proposes that group members will use all available knowledge to determine the best way to accomplish the group goal. This often involves deferring to presumably more competent members and rejecting the ideas of presumably less competent members. Research in status characteristics theory involves predicting when statuses communicated during group interaction create hierarchies of expected competence such that people higher in the hierarchy have more influence on the group. Once the hierarchies are established they tend to be stable across future interactions (Berger 2007). Consequently, most of the research has focused on understanding how these hierarchies form in as little as a single task group interaction.

In many situations, however, cooperation within a group takes the form of ongoing collaboration. These groups are unlike short-lived task groups such as juries. Rather, these groups engage in repeated attempts to acquire group goals. Examples include work teams or sports teams. I call this type of long-term task group a *team* to emphasize the sustained nature characteristic of these groups. Teams are important to distinguish because members have enduring relationships associated with attempts to accomplish sequential group tasks. This is different from short-lived task groups where agreement or disagreement will have no impact on future interaction. Team members

need one another to complete collaborative tasks and must maintain good relationships to perform effectively during future tasks. Members are characterized by both a desire to successfully accomplish a given task and maintain positive relationships to facilitate future interactions. Other groups, namely exchange groups, are also characterized by long-term relationships but are not focused on accomplishing a group task.

In exchange groups, individuals buy, sell, and trade goods with each other and are trying to maximize or increase their returns. Exchange theories (Willer 1999; Molm, Peterson and Takahashi 1999; Cook and Emerson 1978; Thibaut and Kelley 1959; Homans 1974; Blau 1964) focus on predicting how resources are exchanged between group members based on power structures. Group members with more power have more influence over the distribution of goods so that more powerful members tend to benefit more from trades than less powerful members. Furthermore, the theories predict who, within a network, will have more power and influence, and how exerting their power affects the network. These groups tend to endure over extended periods of time and revolve around rational actions (Cook and Emerson 1978; Willer 1999). Although teams are enduring groups in which members inevitably exchange resources at one time or another, teams are primarily defined by members' prolonged work to accomplish sequential group tasks and acquire associated rewards as a group.

Behavior in exchange groups may also be explained using an understanding of how emotions generated from exchange relationships create and maintain group cohesion (Lawler 2006). Lawler, Thye, and Yoon (2011) propose that there is more to social exchange than the goods that are traded. The process of exchanging goods and services generates emotions that lead to increased commitments to those relationships.

Consequently, people may often remain in an exchange relationship when the returns do not meet expectations because of their commitment to the relationship. Teams, similarly, operate with a dual motive. Members seek not only to accomplish the group goals but also to maintain positive working relationships with other group members. Team members adopt an institutionalized belief that having positive relationships with other group members increases the likelihood of task success at both current and future tasks. Adopting this belief, which I call being *cohesion motivated*, alters the situation and changes how group members respond to one another.

For this dissertation, I studied teams to better understand how cohesion motivation impacts patterns of influence in groups. Compared to short-lived task groups, I predicted that teams would have similar expectations for members' performance, but team members would agree more often. In other words, cohesion motivation would prompt team members to reduce disagreements even when members believed that their choices were more likely to lead to task success. This illustrates an important and yet unexplored aspect of status characteristics theory—changes to the situation itself can prompt changes in patterns of influence. If confirmed, this would provide avenues to better understand how policies and practices can combat social inequalities by focusing attention on situational dynamics in addition to personal characteristics. In this dissertation, I will describe how I elaborated status characteristics theory to predict behavior in teams. I will begin by reviewing status characteristics theory. I will follow this review with a discussion of conformity in groups and relevant research within social psychology. I will then discuss a set of propositions and the experiment I used to test hypotheses related to these propositions. I will detail the methods and procedures for

completing this experiment as well as the subsequent analysis. Finally, I will discuss what the results mean to both the current elaboration and future work on teams.

CHAPTER 2

LITERATURE REVIEW

Status characteristics theory explains how people use information to infer expectations within task groups (Berger et al. 1966; Berger et al. 1977a) making status characteristics theory an appropriate theory for studying teams. Status characteristics theory is related to several other research areas (Wagner and Berger 2002). I will focus this literature review first on power and prestige theory. Then I will detail status characteristics theory and how it predicts influence in groups. And before moving to the new propositions, I will discuss recent theoretical research related to conformity within teams— how wanting to work together affects influence in groups, the relationship between sentiment and status, and the link between social identity and group cohesion.

Power and Prestige Theory

Power and prestige theory begins with research by Robert F. Bales and colleagues (Bales 1950; Bales et al. 1951; Bales and Slater 1955). They conducted research at Harvard University using groups of undergraduates. The groups, often referred to as “Bales’ groups,” were small task groups composed of young white men undifferentiated in any relevant way. The groups were given a task to perform and allowed to freely interact over a short period of time while researchers observed the behaviors of individual group members. Each group demonstrated similar patterns of behavior. Although the group members had never met one another and had no preconceived notions of competence or skill, group leaders emerged very quickly. The leadership structure of the

group developed rapidly and remained stable over the lifespan of the group (Berger 2007). Furthermore, researchers could observe clear patterns of behavior that revealed the newly formed leadership structure. The leadership hierarchy and patterns of behavior were then transferred to future interactions whenever the same groups met for additional tasks.

One pressing question regarding Bales' groups was how did initially undifferentiated group members develop a leadership structure so quickly and consistently (Berger, Conner, and Fişek 1974)? To answer this question, Joseph Berger and his colleagues examined the groups' behavior patterns and distinguished four primary sequences of behaviors (Berger and Conner 1969; Berger and Webster 2006; Berger 2007). *Action opportunities* are chances given to or taken by members to perform. *Performance outputs* are attempts to solve problems. *Performance evaluations* are appraisals of performance outputs. And *communicated evaluations* are positive or negative reward actions that communicate performance evaluations. Berger argued that during interaction, group members' sought to increase their chances of success. As members communicated positive evaluations of performance outputs of other members, group members developed *performance expectations* (beliefs about the ability of a group member to contribute to the success of the group) for each member. The higher a person's performance expectations, the higher the group member is in an observable *power and prestige hierarchy*—a ranking of group members based on their performance expectations. This hierarchy emerged to both increase the group's success and legitimize patterns of inequality. Group members acted as if they believed that to be successful, they should follow the group members with more performance expectations.

Status Characteristics Theory

Rarely are groups composed of individuals similar on all characteristics. Groups are often composed of individuals who differ on characteristics such as age, race, level of education, and so forth. While power and prestige theory explains how power and prestige hierarchies form in homogenous groups, status characteristics theory (Berger et al. 1977a; Wagner and Berger 2002; Berger and Webster 2006) explains what happens in heterogeneous groups. Status characteristics theory proposes that group members use cultural information to make judgments about performance expectations. When inequalities exist within culture, characteristics that differentiate groups become markers for people to reference when predicting who will be more helpful at a group task. Markers that indicate which groups' members have higher or lower competencies are *status characteristics*. According to the theory, when group members differ on status characteristics, those characteristics become *salient* meaning that group members will use those characteristics to make judgments about which members are more or less competent. In other words, when task group members are motivated to achieve a group goal, members will use cultural knowledge of status characteristics to form performance expectations.

Status characteristics generally take two forms, *diffuse* or *specific*. Diffuse status characteristics are typically broad categorical distinctions such as gender or age that provide only general performance expectations. For example, in the United States, gender is a status characteristic such that men are expected to be more competent than women at most tasks. Group members believe, or at least act as if they believe, that being more competent at most tasks also means being more competent at the current task and so a

man's gender affords him more influence in the group. Specific status characteristics are more explicit. Where diffuse status characteristics are only generally related to any situation, specific status characteristics tend to be explicitly related and have more impact. Differences in math scores on a standardized test would function as a specific status characteristic to differentiate people when attempting to accomplish a mathematical task. However, if the task is unrelated to mathematics, math score differences become irrelevant. Diffuse status characteristics can also be rendered irrelevant to the task but group members must clearly demonstrate that the diffuse status characteristic is unrelated to any competency associated with accomplishing the task (this is also known as the *burden of proof* assumption).

Research in status characteristics theory tends to focus on diffuse status characteristics since these are most closely related to widespread societal inequalities (Ridgeway 1991). In general, research concerning status characteristics theory utilizes experimentation to observe changes in behavior resulting from subtle differences in the type and amount of information provided about partners. The typical situation is a task group where group members are attempting to accomplish a specific task where all members are *task focused* (i.e., motivated to successfully accomplish the task) and *collectively oriented* (i.e., to take into consideration the views and opinions of other members). This situation is denoted as S^* . The standard experimental situation (Berger 2007) establishes a common method of testing status characteristics theory in a laboratory setting. It creates a situation S^* and provides opportunities for group members to have action opportunities, give performance output, make performance evaluations, and to engage in communicated evaluations.

Cohesion Preferences

Task groups within the typical experimental setting are focused on solving the task at hand and future interaction is not assumed. Task group members can agree or disagree with their partners with no consequence beyond risking task success. I do not argue that future interaction is the essence of what characterizes a team. Indeed, data provided by Dr. Justine Tinkler suggest that expecting future interactions is not sufficient to produce changes in influence patterns in task groups. Teams not only expect future interactions to occur, they are also focused on maintaining positive relationships while solving the task at hand. When group members believe that maintaining positive relationships with other group members will increase the likelihood of future task success, they are *cohesion motivated*. When S^* is modified to include an expectation of future task interactions and cohesion motivation, the situation is denoted as S^c and task groups within S^c are teams. I predict that cohesion motivated group members will be more likely to accept influence than group members who are not cohesion motivated. In other words, team members would be more likely to conform to the beliefs of other group members than task group members who were not members of teams.

Three decades ago, Cecelia Ridgeway showed that motivation influences behavior in task groups (Ridgeway 1982). In her research, four person groups (three naive participants and one confederate) worked together on a joint task. The groups varied by gender composition (three same gendered participants and either a same or different gendered confederate), and the confederates expressed motivation for working with the group (either group- or self-motivated). Results indicated that when confederates expressed group-motivation their influence was higher than confederates who expressed

self-motivation. This research showed that low status group members could increase their influence simply by expressing a group-motivated attitude.

This research offers some insight into how motivations might alter status dynamics in task groups, but it does not capture the characteristics that I argue distinguish teams from one-shot task groups. First, these groups were task groups with only one member expressing cohesion motivation. In teams, all members are cohesion motivated. Second, Ridgeway's groups were short-term groups with no expectations of future interaction. Third, cohesion motivation was not part of the situation itself. Although Ridgeway found that expressing cohesion motivation increased the confederate's influence in the group, the burden of communicating that motivation was on the shoulders of the confederate. With teams, cohesion motivation is institutionalized and influences behavior from a higher social level without group members communicating their group-motivation.

Sentiment and Status

Another possible avenue for understanding the relationship between teams and influence in task groups is social cohesion. Social cohesion is the desire for group members to remain part of a group because they like one another. Recent studies (Driskell and Webster 1997; Bianchi and Lancianese 2007; Bianchi 2004) have examined the relationship between sentiment (i.e., liking a partner) and status. Results indicate that sentiment moderates performance expectations in rather nuanced ways. Driskell and Webster (1997) found that sentiment moderated influence only when a low status participant disliked a high status partner. In this situation, the participant was more likely to resist influence. Bianchi and Lancianese (2007; Bianchi 2004) found similarly nuanced

patterns of moderated influence. However, sentiment is not part of cohesion motivation. Team members need not like one another to successfully accomplish successive group goals or be cohesion motivated. While the affect theory of social exchange (Lawler 2006) suggests that successive positive interactions should create positive sentiments and commitment to the group, this dissertation research addresses cohesion motivation separately from these affective outcomes.

Social Identity and Cohesion Motivation

Group cohesion has a long history in psychology and sociology. Part of that history is a longstanding debate as to what group cohesion actually is and how it can be adequately measured (Evans and Jarvis 1980; Friedkin 2004; McPherson and Smith-Lovin 2002). Much of the literature identifies group cohesion as the property of a group (Festinger 1950; Lott and Lott 1965), social network (Markovsky and Lawler 1994), or exchange relationship (Lawler and Yoon 1993; Lawler 2001). Other work within sociology has conceptualized group cohesion into something more relevant to the current discussion—group cohesion as a social cognition. Particularly important to this line of research are the ideas of social identity theorists (Tajfel and Turner 2010; Turner 2010; Hogg 1992) who propose that the attraction of a person to a group is part of a mental process whereby people liken themselves to other group members. This focus on the cognitive aspect of group cohesion allows for broader application of theoretical concepts because it moves the group back into the person's imagination of the social world (Cooley 1902) and reduces the need to define groups in an objective fashion. Furthermore, conceptualizing group cohesion as a cognition facilitates incorporating group cohesion within status processes.

Recent research has attempted to link social identity processes to status characteristics theory (Barnum 2005; Barnum and Markovsky 2007; Kalkhoff and Barnum 2000). The most formal statement of this integration is presented in Barnum and Markovsky (2007). In short, the research presented in these articles demonstrates that social identities influence patterns of behavior in groups. Social identities (Billig and Tajfel 1973; Hogg 2006) are cognitions that associate a person with a group of people. The effect of this categorization is a preference for other members of the group and their ideas and opinions. Even trivial assignment into groups (Brewer 1979) produces observable in-group biases. One experiment (Kalkhoff and Barnum 2000) showed that social identity processes within task groups can produce effects similar to those created by status characteristics. Barnum and Markovsky (2007) explain this overlap by associating the social identities with perceived behavior patterns such that in-group preferencing is tantamount to perceiving the in-group partner as having the positive state of a behavioral interchange pattern. While relevant to the larger study of teams, this line of research focuses attention on the effects of in-group biases on groups characterized by members with social identity differences. However different team members may be, the dominant social identity process that defines the team as a single unit creates similarity between people thereby removing the sense of in-group and out-group.

CHAPTER 3

THEORY AND HYPOTHESES

Status characteristics theory provides a method of observing and predicting how much influence group members have over others in task groups and teams. In this dissertation, I investigated whether patterns of influence in teams would differ from patterns of influence in short-term task groups. Teams differ from other task groups in that team members believe that they will be working together on multiple tasks over time and members are *cohesion motivated*. Similar to social identity theorists, I propose that group cohesion is a cognitive process, and cohesion motivation is part of that process. Cohesion motivation is a social cognition where team members believe that maintaining positive relationships with group members increases the likelihood of success at tasks. When cohesion motivation is institutionalized and group members believe they will be working together in the future, these groups are *teams*. Ridgeway (1982) demonstrated that when individuals express group-oriented attitudes that they have more influence in task groups. For this dissertation I developed and tested a new mathematical model that incorporates elements of expected future interaction and changes to levels of cohesion motivation.

Status characteristics theory proposes that performance expectations influence peoples' behavior during group tasks. Performance expectations are theoretical constructs that can be observed by measuring group members' attitudes (Webster and Driskell 1983; Walker, Webster and Bianchi 2011). In two person groups where p is the participant and

o is the other group member, expectations are denoted as e_p (expectations for participant) and e_o (expectations for other group member). The difference of e_p and e_o (i.e., $e_p - e_o$) is the expectation advantage of p compared to o on a scale from -1 to 1. Additionally, researchers can observe the effects of differences in performance expectations by observing behaviors (Berger et al. 1977a). This involves creating a task group and observing how participants react when they disagree. For example, imagine that p and o are presented with a pair of images and asked to choose the image with the most white area. After making an initial choice, they are to discuss their choices and make final choices. If p and o make different initial choices, then they must decide not only which image has more white area, but who is more likely correct. P can either stay with the initial choice and reject o's influence or p can switch choices and accept o's influence.

The proportion of disagreements for which p chooses to stay with an initial choice is a measure of p's propensity to resist o's influence and is denoted as a $P(s)$ (i.e., "p of s" or "proportion of stay responses") score. When a participant's performance expectations are higher than the performance expectations of the other group member (i.e., $e_p - e_o > 0$), p's $P(s)$ will be higher than average according to the theory. If the participant's performance expectations are lower than the performance expectations of the other group member (i.e., $e_p - e_o < 0$), p's $P(s)$ will be lower than average according to the theory. When $e_p - e_o = 0$ then p and o are said to have no difference in performance expectations and the observed $P(s)$ scores for both p and o will be equal according to the theory.

A core element of status characteristics theory is an assumed cognitive process (Berger et al. 1977a; Berger 2007). The process begins with a task group where group

members are motivated to accomplish a group goal (i.e., they are working on a task where there is one positively evaluated state such as “success” and one negative evaluated state such as “failure”). Recognizing that it is legitimate and proper to utilize the opinions of all group members, they use any information available to predict whose ideas and opinions will best ensure the group’s success. Group members link cultural knowledge with personal characteristics to predict which group members will be the most valuable and contribute more to the group’s success and which members will be less valuable and contribute the least. They then prioritize the input of more valuable members over the input of less valuable members. This cognitive process motivates group members to treat one another as if culturally held beliefs about the relationship between competence, ability, and nominal characteristics are true thereby creating and maintaining inequity in groups.

Berger et al. (1977b) take this cognitive process and incorporate it into a useful model referred to as a path diagram. Path diagrams are useful for two reasons. First they illustrate the cognitive process by which people link themselves and other to task outcomes. Second, they provide a method of approximating the expectation advantage ($e_p - e_o$) of a person. To illustrate how the path diagrams work it is useful to reference the scope conditions and assumptions of the theory. As scope conditions are concerned, status characteristics theory is concerned with task groups in which people are collectively oriented to accomplish a given task for which there is a clear outcome (e.g., success or failure) and that the task involves some sort of skill (i.e., task success is not based on luck or chance). From this I have the first two elements of the path diagram. First, I have a task (T) for which I have a positive state (T+), which I might call success,

and a negative state (T-) which I might call failure. Second I have the skill (C*) instrumental to that task and the states of such skill (much skill C*+ and little skill C*-) are directly related to the task outcome states. Assuming I have at least a two person group consisting of a person (p) and another group member (o), where person p possesses the valued state of the specific status characteristic and the other group member o does not, the path diagram begins as in Figure 1 below.

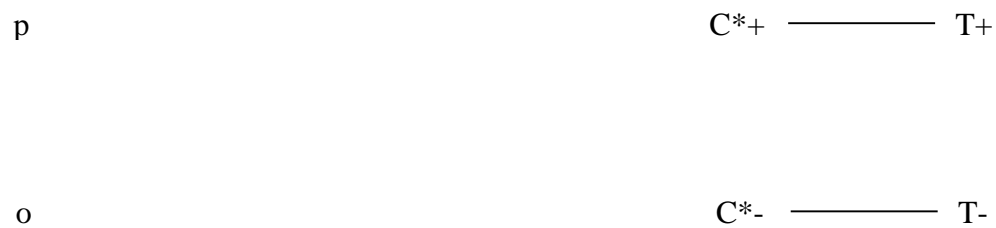


Figure 1. Initial Structure of the Task Group Situation

The lines or paths that connect the instrumental skill states (C*) to their relative task outcome states (T) represent the cognitive process of association. To complete the diagram I incorporate other assumptions of the theory. Within status characteristics theory researchers are primarily concerned with characteristics of individuals that take on cultural value and ultimately connect them to outcome states. Those status characteristics typically take ordinal values such that one state is considered a better state than another at a societal level. Holding a college degree is better than being a high school dropout. States that are recognized as important across a wide variety of settings (e.g., race, education, or gender) are considered diffuse status characteristics (D) while characteristics that are activity-focused in nature (e.g., math ability, physical strength, or aural skill) are considered specific status characteristics (C). Typically in these studies researchers observe people interacting with others who have different states of these

characteristics with one person having the positively evaluated state (D+) and the other having the negatively evaluated state (D-). Furthermore, because I know that each group member possesses one of two opposite states of the characteristic I connect the two with a negative association path (See Figure 2). Unless otherwise stated, all paths are positive. Note that I do not connect any other part of the diagram with this negative association path because this only occurs with explicitly possessed states. Generally people only know status characteristics and presume the rest of the connections are true.



Figure 2. Possession of a Diffuse Status Characteristic

To complete the path diagram I need one more cognition to link everything together. When people think about the situation, and recognize that people in the group have differentially evaluated states of a status characteristic, people presume generalized expectation states (Γ). Generalized expectation states are basically generalizations. When you think about who might be better at any given task, a high school dropout or a college graduate, you are likely referencing a general expectation of performance that is not specifically referencing a known skill. I might read the path diagram in Figure 3 as follows. P and o are working together to build a dog house (T). P is a college graduate (D+) and o dropped out of high school (D-). Although neither p nor o have any known carpentry or engineering skills (C*), college graduates seem to be better at figuring things out ($\Gamma+$) than high school dropouts ($\Gamma-$). Consequently, p will probably be more likely to

be able to understand and utilize the skills (C^{*+}) necessary to complete the task than o (C^{*-}). If I were o, I would probably listen to p more often since p is more likely to make sure the task is completed properly.

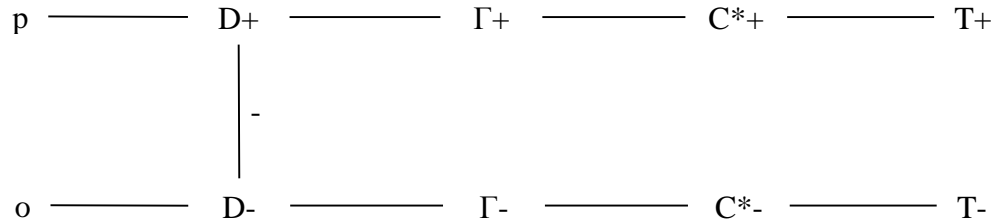


Figure 3. Basic Path Diagram with a Diffuse Status Characteristic

Although people do not necessarily make those explicit associations in their minds, the theory proposes that people at least act as if those are the presumptions they are making. In regards to specific status characteristics (C), the theory predicts that people connect specific status characteristic states to specific task outcome states (τ) and then to abstract task abilities (Υ) directly linked to task outcome states (T) as Figure 4 illustrates.

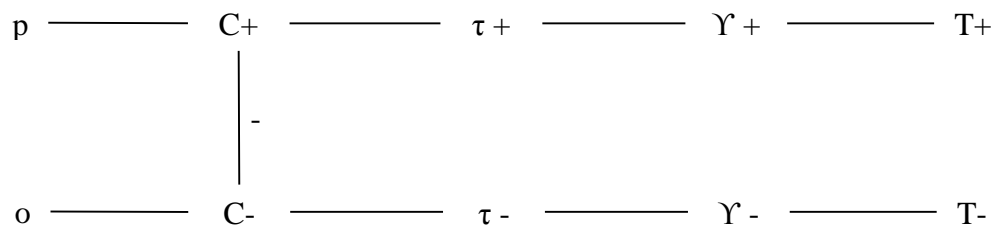


Figure 4. Basic Path Diagram with a Specific Status Characteristic

By describing the cognitive process and the theoretical conditions and assumptions in this fashion the theory provides a metric to predict expectation advantages ($e_p - e_o$). I begin by tracing paths from left to right (never backtracking) connecting p

and o to each possible outcome state. The length of the path is equal to the number of lines in the path. The value of the path (positive or negative) is the product of all included path signs and the sign of the path's outcome state. In the case of building the dog house, p has a positive path of length 4 connecting p to T^+ and a positive path of length 5 (the negative path between the diffuse status characteristics cancels the negative sign of the outcome state) connecting p to T^- . I call these paths $f(4)$ and $f(5)$ where $f(n)$ is a function of path length that tells us the strength of that path's association. Researchers have estimated the values for these paths (Fişek, Norman and Nelson-Kilger 1992; Berger et al. 1977b; Balkwell 1991) and I add them together to estimate the expectation advantage p has over o . I assume an attenuation effect such that not all new pieces of status information that create new paths have the same weight, and newer information has less weight. In the end I estimate expectation advantage by adding all the path values together and subtracting the products of those paths based on the following formula where i and j represent paths of length i and length j .

$$f(i \cup j) = f(i) + f(j) - f(i)f(j)$$

I will detail exactly how these path calculations work for predictive purposes during the analyses. Presently the fuller mathematical model is of more relevance. Assuming I can estimate expectation advantage ($e_p - e_o$) using the path diagrams I am left with two additional elements (Berger et al. 1977b) that I propose are altered when working with long-term task groups. The first is the average propensity to resist influence, m , and the second is the strength of the instantiation of the standardized setting, q . M functions as a baseline while q functions as a moderator for the effect of the status difference. If I were to regress observed $P(s)$ scores onto predicted expectation

advantage I would ordinarily recognize m to be the intercept or coefficient (α) while q would be the beta (β). Substituting the theoretical terms the final original equation takes the form.

$$P(s) = m + q(e_p - e_o)$$

The elaboration to status characteristics theory includes three additional elements that result in a slightly more complex mathematical model that I tested with an experiment for this dissertation. In this elaboration I propose that task focus and collective orientation are not simply scope conditions but can be incorporated into the predictive model. As Troyer and Younts (1997) demonstrated, when researchers allow scope conditions to be more than passive conditions in an experiment researchers can observe changes to the dependent variables directly related to variations in the strength of the scope conditions. While at a minimum they must exist for the theory to accurately predict behavior, this does not fundamentally exclude them from becoming more important, active parts of the theoretical model. The first scope condition is the desire to successfully complete the task (i.e., task focus). When this scope condition is encouraged, it amplifies the effect of any status difference (i.e., people will be more likely to listen to those with higher status and ignore others). The second scope condition is the desire to work together (i.e., collective orientation). When encouraged, it reduces the effect of any status difference (i.e., people will be more likely to listen to everyone equally). Furthermore, q is already explicitly assumed to be the mathematical element that captures the effects of task focus and collective orientation (Berger et al. 1977b). These alterations to the mathematical model are consistent with ideas presented by Troyer and Younts (1997) who directly motivated people to either get the correct answer (i.e., increased task

focus) or to agree with the partner (i.e., increased collective orientation). Since the two scope conditions, when activated, seem to produce the opposite effects on the effects of performance expectations I propose a ratio $\frac{t}{c}$ (t is the effect of task focus and c is the effect of collective orientation) that moderates q and captures the effects Troyer and Younts observed. The result is an alteration to the equation such that the model becomes

$$P(s) = m + q \left(\frac{t}{c} \right) (e_p - e_o)$$

The third additional element is what I call fear of loss of future rewards, f . In short, in long-term groups the possibility of losing future rewards when a group fails or works poorly together affects the observed rates of influence. I propose that there is symbolic value in agreeing with another person that communicates an acceptance of the other person's worth to the group. When one group member accepts another group member's influence, that decision doubles as gesture of respect. I propose that in long-term groups I can observe the effect of using such gestures to maintain the group as a reduction in the average propensity to resist influence, m . Since as the fear of loss of future rewards, f , gets higher, the average propensity to resist influence, m (i.e., m in the original equation), becomes smaller I propose that f moderate m in the following form.

$$P(s) = \frac{m}{f} + q \left(\frac{t}{c} \right) (e_p - e_o)$$

For this dissertation I am interested in observing the effects of cohesion motivation but doing so requires making numerous assumptions about how to activate cohesion motivation within an experimental situation. First, cohesion motivation only occurs in situations where a future interaction occurs. Second, cohesion motivation occurs when collective orientation is heightened so it will be important to overemphasize

the collective orientation cognition. This will be referred to as the *cognitive* element of cohesion motivation. Third, cohesion motivation occurs in situations where participants are accountable to one another. In other words, people recognize that their group members have a legitimate expectation of mutual cooperation so group members have a legitimate right to ask for an account of any group member acting against the group's best interests. I will refer to this as the *accountability* element of cohesion motivation. And fourth, in groups with high cohesion motivation group members often need one another in various ways. For example, sports teams need each other because each member is very good in particular situations—typically better than other members—and these teams need each other to earn more success long-term. This element I call *need*.

Hypotheses

Drawing from this mathematical model and its theoretical assumptions I tested in this dissertation research a three hypotheses. First, I proposed when people believe they are in long-term task groups working together on a series of tasks and felt their long-term success was contingent on maintaining the current group then the average propensity to resist influence would be lower compared to similar long-term groups where members are not concerned about maintaining the group.

Hypothesis 1: When people have high cohesion motivation, they will resist influence significantly less than people who have normal cohesion motivation.

To test this hypothesis I will use an ANOVA with cohesion motivation and status as factors that affect the arcsine square root transformed $P(s)$ scores. The arcsine square

root transformation is important here because it functions to normalize the variances of the $P(s)$ scores which are created through a binomial process. If the transformed $P(s)$ scores are significantly lower in the high cohesion motivation conditions than in the normal cohesion motivation conditions, then the hypothesis will be supported.

Second, groups that believed their long-term success was most directly related to their working together as a group (i.e., collective orientation outweighs task focus) would act on perceived status differences less often. This means that the average observed $P(s)$ scores for high status partners and low status partners would be closer together when groups are more collectively oriented compared to when they are equally collectively oriented and task focused. If true, I should see an interaction between status and cohesion motivation.

Hypothesis 2: Status and cohesion motivation interact such that cohesion motivation reduces the effect of status on creating a discrepancy in scores between high and low status groups.

In testing the first hypothesis with an ANOVA, I will observe the effect of the interaction of status and cohesion motivation on arcsine square root transformed $P(s)$ scores. If the interaction of the status and cohesion motivation factors is significant and the high cohesion motivation conditions are more similar in transformed $P(s)$ scores across status conditions, then the second hypothesis will be supported.

The third hypothesis is that regardless of observed patterns of influence in long-term task groups, perceptions of status will remain unchanged in the short term. In other

words, regardless of how people behave in long-term task groups, group members will be cognizant of status differences as if the group were a short-term task group. The importance of this hypothesis lies in the idea that, if supported, people resist influence at lower rates (presuming the first hypothesis is supported) in long-term task groups than in short-term task groups even when the same perceptions of status exist. To be clear, this is a null hypothesis and cannot be confirmed. However, in this dissertation I will test the alternate hypothesis to determine if a difference truly exists.

Hypothesis 3 (alternate): Cohesion motivation will have a significant effect on perceptions of status.

To test this alternate hypothesis I will use questions regarding participants' perceptions of their partners' assertiveness and sureness of self (Walker et al. 2011). Using an ANOVA I will examine the effects of the status and cohesion motivation factors on the arcsine square root transformed $P(s)$ scores and perceptions of status as an individual scale since the two questions are measuring the same construct (i.e., perceptions of status). If the cohesion motivation factor significantly affects perceptions of status then the alternate hypothesis is supported and the null hypothesis is rejected. However, while not confirmation, failure to disprove the null hypothesis, especially if the status factor has a significant effect on perceptions of status when the cohesion motivation factor does not, is evidence consistent with the third hypothesis.

CHAPTER 4

METHODS

To test the aforementioned hypotheses, I conducted an experiment. In this section I will describe the various stages of the experiment. I will begin by discussing the experimental conditions and sampling procedures. Then, I will discuss the standard experimental setting. I follow with a detailed explanation of how the standard experimental setting was implemented in this study.

Conditions

The independent variables in this experiment are status and cohesion motivation. Status in this experiment is more specifically relative status during the first task. Status was manipulated by condition using education which is consistent with past research (Lovaglia and Houser 1996). There were three relative status states: high, equal, and low which identify the relative state the participant has in the group. Cohesion motivation is the second independent variable in this study and took two forms, normal and high. Normal cohesion motivation is the level of cohesion motivation typically observed in short-term task groups where group members are not interested in maintaining the group. High cohesion motivation is observed in task groups that work together over several tasks and believe that continuing to work together is vital for group success. A factorial design that crosses cohesion motivation by status results in six conditions for this study (See Table 1).

Table 1. Condition Numbers by Factorial Design

Relative Status of the Participant	Normal Cohesion Motivation	High Cohesion Motivation
High Status	1	2
Equal Status	3	4
Low Status	5	6

Population and Sample

Sampling procedures for experiments follow a different rationale than most sociological research. Convenience samples are appropriate for status experiments like this one (Zelditch 1969; Webster and Sell 2007). In status experiments, researchers assume people have the same cultural expectations of status orders in their mind and that these cultural expectations do not vary by race, gender, or other typical social categories—at least not in experimentally relevant ways. Experimental procedures optimally attempt to eliminate any measurement error by utilizing samples that are as homogenous as possible. Consequently, my convenience sample was restricted to the largest homogenous demographic I could access—white, undergraduate women. The reason for this is multifaceted. White, undergraduate women were the most likely group to volunteer for our research using our current research pool. Furthermore, many other status experiments have used homogenous samples with similar characteristics (Webster 2003) and this facilitates comparisons with other research projects. A sample size of approximately 25-30 participants per condition has been demonstrated to be sufficient when effect sizes are large enough to be theoretically relevant (Romney, Weller and Batchelder 1986; Webster 2003). With six conditions that meant I needed approximately 150 to 180 undergraduate women to participate.

Sample selection was completed with a voluntary research pool. Laboratory researchers routinely recruit undergraduates for research in three ways. Researchers go to classrooms and make announcements (Appendix A) inviting all undergraduates to enter into a research pool where they can sign up for research studies that fit into their schedule. Alternately researchers may provide similar research invitation flyers (Appendices B and C) to teachers and listserv administrators (e.g., student groups, sororities, fraternities) to distribute invitations electronically. The final method by which students are invited to participate is with flyers (Appendix D) posted on bulletin boards across campus. In general, all research participants experience the same invitations to participate and undergo the same procedures to sign up for studies.

For this experiment, I used SONA (2015) to manage the voluntary research pool. Participants received information about SONA through the announcements and flyers distributed during the recruitment phase. Students would access the SONA webpage and create an account that was indirectly linked to their University of Georgia IDs. This means that anyone who did not have a University of Georgia ID would not be eligible to volunteer for research. However, University of Georgia employees could, by virtue of having a University of Georgia ID, become part of the research pool as well. New users would then be asked to complete a short questionnaire (Appendix E) that contained demographic information. Once completed, participants could view all studies available to them.

To participate in the study, researchers would open timeslots in SONA to be viewed by participants. Once participants were in the SONA system they could view any and all timeslots for which they were eligible. Eligibility was constrained using

information collected by SONA's demographic questionnaire and SONA's eligibility system. I restricted access to participants who identified themselves as white women with an age of 18 or older who had not previously participated in any other experiments that involved deception. This meant that anyone who did not meet these demographic criteria would not be able to see any available research opportunities unless they were eligible for another study. During this study there were additional research opportunities available for just about all participants who were registered with SONA. Additionally, when researchers posted new timeslots (a weekly task) researchers would send an email announcement to eligible participants so that they would be aware of the new opportunities. Participants would be able to see timeslots for a study about Communication and Success—a two hour decision making study for payment of up to \$15.

The Standard Experimental Setting

According to status characteristics theory, when two people interact, they observe the characteristics of other group members and infer performance expectations that later influence behavior (Berger et al. 1977a). The standard experimental setting (Berger 2007) is an experimental paradigm that outlines the critical elements of an experiment that must be included in a test of status characteristics theory. In this section I will summarize the standard experimental setting before discussing exactly how I implemented it for this study. During the standard experiment, participants are paired with a partner or set of partners who work together on a joint task. Success is associated with a reward such as more pay or more chances to win a lottery so that participants are *task focused* and are interested in being successful at the task. Furthermore, the task is described as one in

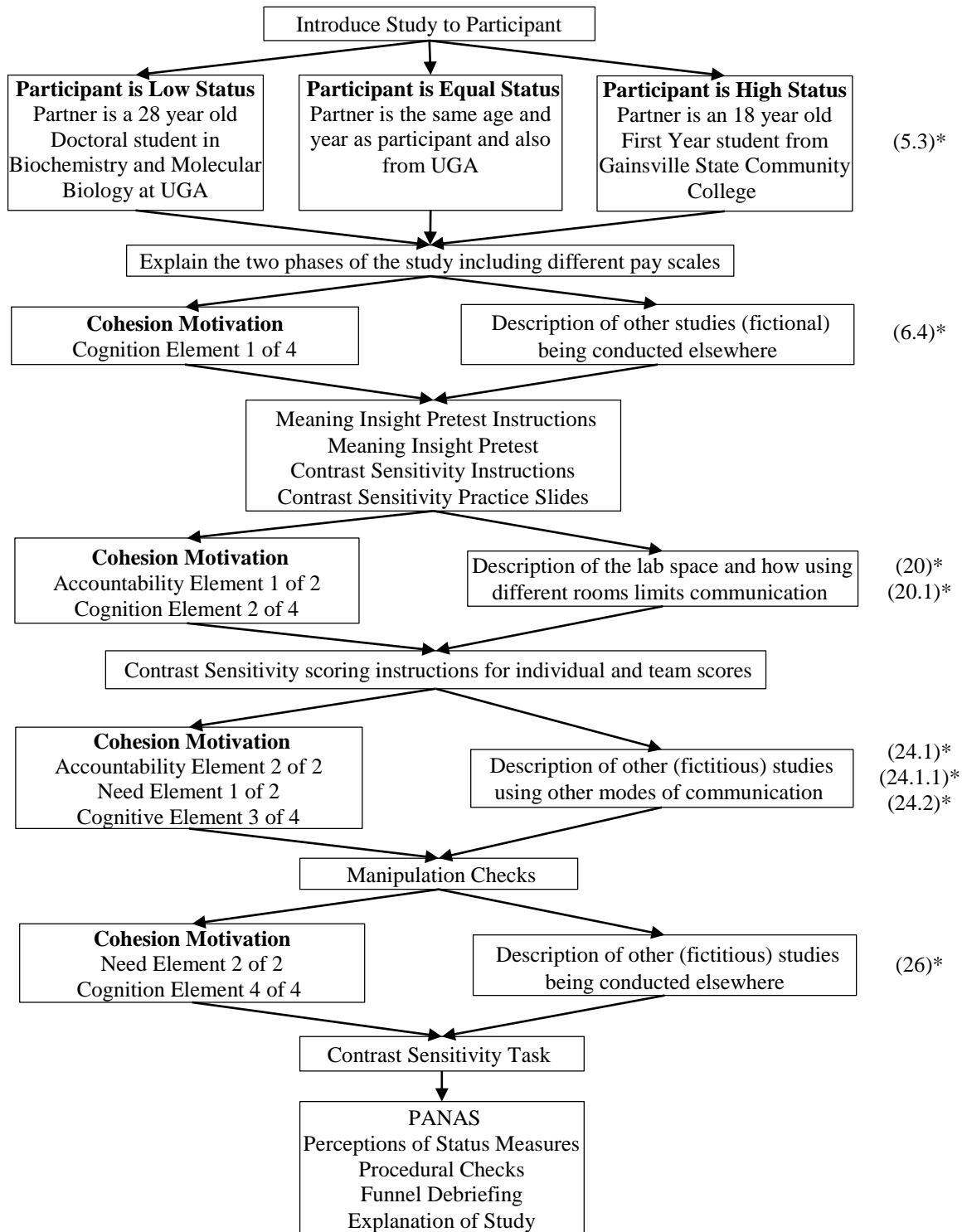
which it is important to listen to other group members because this can improve success rates. This creates *collective orientation*. The task is broken up into smaller subtasks for observation since each decision is an opportunity to observe influence. Participants are given only limited information about their partners. This information typically contains status information. This gives participants an opportunity to form performance expectations based on the relationship between these characteristics and cultural expectations.

The core task is always a fairly straightforward task but the answers are ambiguous. Participants answer a series of questions based on a prompt. Sometimes this includes ranking items or making choices about images. In these scenarios, the task is intended to create a situation where participants believe they are working together but for which there are no preconceived notions of competence. For example, in the Contrast Sensitivity Task, participants look at a pair of images similar to that of a checker board or crossword puzzle to determine which image has more white area. In fact, the images have been designed to be impossibly difficult so that participants are unable to actually distinguish a correct answer in the time allotted. During the experiment, participants make a preliminary, initial choice (i.e., an action opportunity and performance output) and are shown their partners' initial choice. At this point the participant has an opportunity to either change her response or stick with her initial choice (i.e., make a performance evaluation). After seeing her partner's choice, the participant makes a final choice. Each time participants and their partners make different initial choices, participants must decide in the final choice stage to either stick with their own initial choices (i.e., resist influence) or match their final choices to their partners' initial choices

(i.e., accept influence). It is within these final choices that researchers observe the participants' propensity to resist influence which is the primary dependent variable for most status experiments.

Current Experimental Situation

The standard experimental setting includes the aforementioned elements and it is the inclusion of those elements that make the setting standard. However, the implementation of the standard setting varies from study to study (Webster 2003). The current experimental situation is described in detail below. I include additional research measures and manipulation checks as well as new language and instructions to activate various levels of cohesion motivation in the experimental groups. I will discuss the current experimental situation in chronological order from the participants' point of reference to illustrate the critical elements of the experiment. The order is illustrated in Figure 5. Appendix F contains the majority of the text presented to participants and I have provided numbers in parentheses to the right of critical elements in Figure 5. These are provided as cross references to the exact wording of the manipulations.



*Reference to numbered slides located in Appendix F

Figure 5. Flow Chart Detailing Order of Critical Experimental Elements

Participant Arrival and Setup

Participants entered the lab and sat in an area labeled Waiting Area A. With the designation of the waiting area as “A” I intended to create the illusion that the lab was divided into multiple areas. This facilitated my needs when introducing the participant to her partner who was “in another part of the lab for privacy reasons.” In the waiting area, participants saw several doorways that indicated different parts of the lab were behind various doors. In reality, there was only one lab space for this study and all participants arrived in the same waiting area before being ushered into individual participant rooms. I ushered them to their rooms as soon as a room was available.

Before participants were ushered into the lab I setup a computer program that they would use throughout the study. The computer program was effectively the instrument for the study. Before participants arrived, I would assign them to a condition based on a balanced random assignment. For this study, a single participant was assigned to each condition before a condition was repeated in the assignment, but the order was randomized. The computer program handled administering all the critical elements of the study including providing instructions, administering questionnaires, and simulating the partner for the study, but researchers followed a guide (Appendix G). Since the partner for the study was simulated, I decided to use a random selection of three common names for the partner: Ashley, Brittney, or Christy. I used three names instead of only one to avoid participants and partners having the same name. I used the name provided during registration to verify that names did not match. To setup the program, I entered all

pertinent study information including the condition number and the selected name to be used throughout the study.

Introduction and Start of Study

After everything was setup and the participant arrived the researcher would step into the waiting room and greet the participant. All participants in the waiting area would be addressed but each would be ushered back individually. In the situation that multiple participants were expected to be in the waiting area, I made sure that the programs used by each participant were not setup with partners whose name matched any expected participant. After each participant was brought into the lab, she was seated in a small room with a single computer station. I gave participants a consent form (Appendix H) to read over in private, emphasized that everything was completely voluntary and that they could quit at any time, and I left the room. This allowed me to then usher in any additional participants—each of them being told that anyone they saw in the waiting area was part of a different study and would not be their partner today.

When the participant was ready to sign the consent form, she slid a “Call Researcher” card under her door. I asked participants if they had any questions and after answering their questions, we would sign the consent forms together. I informed each participant that she would be working with a partner on a decision making task and that her partner was currently in a different part of the lab for privacy reasons. I told them to wait and I would contact the other researcher to find out if they were ready to begin. I left the room and proceeded to repeat that process with any other participants. After at least two minutes had passed I returned to start the study for each participant.

To begin the study with each participant I would start by explaining she was Participant 1 and her partner was Participant 2. I hung a small sign that read “Participant 1”. All participants were “Participant 1”. I also noted what room number she was in by pointing to another sign that read “Room 1” up to room 4. I then noted her partner was in “Room 12” upstairs and I physically pointed and looked up for realism. At that point we were ready to start the program. I asked participants to wait until I left the room to click the start button.

Start of Computerized Portion of Study

For the majority of the study, participants worked alone on the computer (all text available in Appendix F). Early in the course of the dissertation study some questionnaires and elements were administered on paper or face-to-face rather than by computer. I will note which elements were included at which stage of the study as I come to them.

For the most part the computer program is a mixture of elements from two different implementations of the standard experimental setting with some minor aesthetic modifications. Most of the instructions, language, questionnaires, and design come from the program frequently used in studies at the University of North Carolina at Charlotte (Walker, Webster and Bianchi 2010) while the Contrast Sensitivity slides, the computer-only style and a few other additional elements come from Lisa Troyer’s program (Troyer 2000). The aesthetic improvements were basically updating the layout and button style from the gray buttons predominant in programs from the 1990’s (See Figure 6) to flat buttons you see more frequently on mobile phones and tablets (See Figure 7), especially

newer versions of Windows.

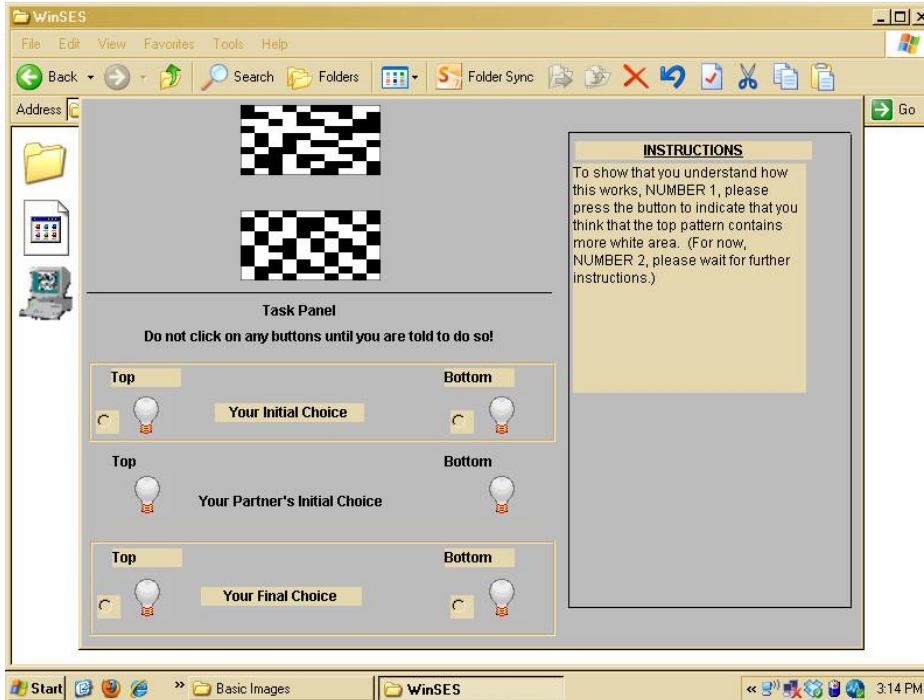


Figure 6. Screenshot of Troyer's WinSES Program

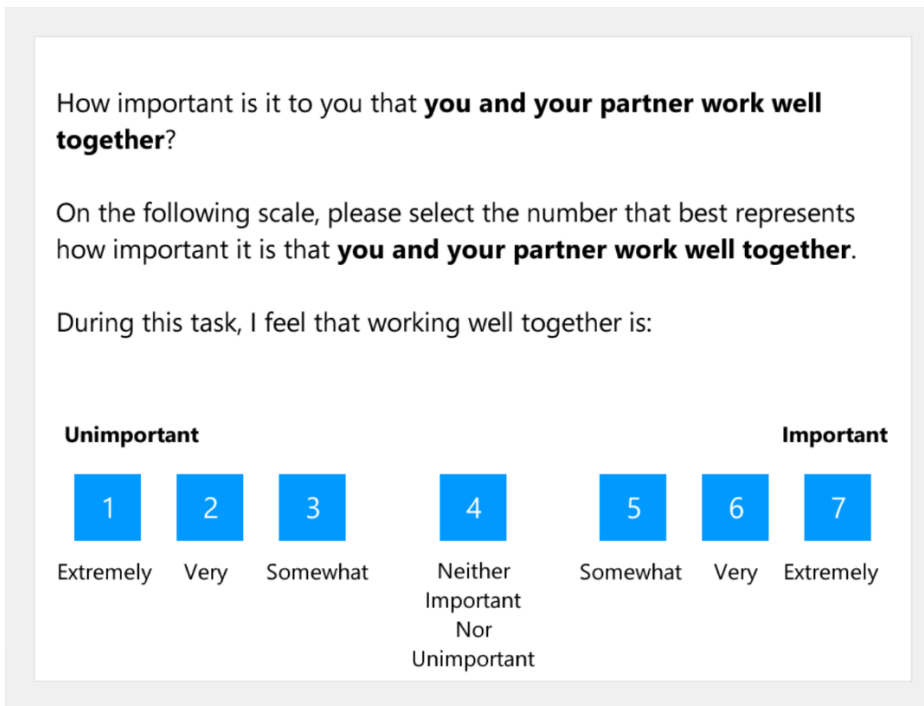


Figure 7. Example of Current Program's Questionnaire Interface

Participants began by clicking a button labeled “Connect to Network” which functioned primarily to add believability. After a brief waiting screen they were informed they were connected and needed to be assigned to a random condition. Every participant was “Participant 1” and placed in “Condition 3”. Following the condition assignment, participants were given an opportunity to introduce themselves to their partner. To maintain the illusion that the participant was real, the introductions were limited only to demographic information. I explained to participants that the limits to communication were a part of the experiment and that they may have more communication at a later point in the study if they were assigned to a condition with face to face interaction.

Status Manipulation

The demographic questionnaire and introduction phase constituted the primary status manipulation. Within this questionnaire, “Participant 2” was in room 12, white, non-Hispanic, and female just like the participant. The status manipulation was intended to mimic the status manipulation found in Lovaglia and Houser (1996). In the high status conditions (participant has higher status than the partner) the partner was presented as being 18 and from Athens Technical College or Gainesville State Community College. This meant the participant was typically older and had more education since the University of Georgia is a four year university and both Athens Technical College and Gainesville were community colleges. I chose community colleges instead of a high school as the status manipulation to increase believability. Athens Technical College was initially used until I discovered that some participants were attributing Contrast Sensitivity skill to their partners because it seemed like a technical task. The switch to Gainesville State Community College did not activate the same attributions. Although

Athens Technical College is a local community college, Gainesville State Community College is actually a fictional university intended to sound like Gainesville State College, a local college that recently became part of the University of North Georgia and subsequently became a four year university. The addition of “Community” in the name was intended to further emphasize that this was a lower status college while including the name “Gainesville State” was intended to maintain believability. In truth, participants who noted that Gainesville was now a four year college continued to recognize the University of Georgia as superior since the University of Georgia is the state’s flagship public university and Gainesville is widely regarded as the college you go to before you finish at the University of Georgia—especially if you have to take remedial classes or raise your grade point average to the University of Georgia’s standards.

When participants were introduced to their partners in equal status conditions their partners were very similar to them. The level of similarity included having the same age and being the same academic year. The only differentiating features, at this point in the study, were name, room number, and participant number.

The last status was low status where participants had lower status than their partners. In these conditions participants were introduced to partners who were older and more educated than they were. While most participants were undergraduates, in the low status conditions the partner was a 28 year old earning her Doctoral Degree in Biochemistry and Molecular Biology at the University of Georgia.

Immediately following the demographic questionnaire, participants were provided with a table that presented information about them and their partners side-by-side for

quick comparison. This simplistic design appeared to work quite well. No participant reported forgetting what characteristics distinguished herself from her partner.

Description of Two Tasks

In this study, I told participants they would be working on two tasks. During the first task communication would be highly restricted and all interaction would take place over the computer. In normal cohesion motivation conditions the second task would also be highly restricted and interaction would only take place over the computer in the same fashion as the first task. In high cohesion motivation conditions I told participants the second task would be conducted face-to-face. This discrepancy was intended to aid a sense of accountability.

The first task would be the Contrast Sensitivity Task and the second task would be the Meaning Insight Task. Each task would involve 25 decisions. Correct decisions would earn money while incorrect decisions would result in no earnings. During the Contrast Sensitivity Task each correct final decision would be worth 12 cents, and during the Meaning Insight Task each correct final decision would be worth 48 cents. All earnings would be pooled until the end of the study and then split equally. The purpose of making the Meaning Insight Task worth more money was to further activate cohesion motivation in the high cohesion motivation conditions. Additional elements, however, are needed to fully activate cohesion motivation in these situations and I will discuss those parts with the Meaning Insight Pretest scoring.

Following the task instructions which included the level of communication for each task, the name of the task, and the value of correct answers, I provided the first cohesion motivation manipulation—cognition. To activate a cognitive element for

cohesion motivation I told participants in the high cohesion motivation condition that simply wanting to work together would help them earn more money in the long term. I specifically told them that I had observed that when participants wanted to work together they typically earn more money even when they do not feel they are actually working well together. This cognitive element is repeated three more times during the study for emphasis as I considered this to be the primary method of activating cohesion motivation. Normal cohesion motivation conditions were given information about hypothetical conditions in which participants have more or less communication. The purpose of providing them additional, albeit frivolous, information was to maintain an equal amount of cognitive load on the participants in both normal and high cohesion motivation conditions.

Meaning Insight Pretest

Following the introduction of the cognitive manipulation for cohesion motivation conditions I gave all participants instructions for a Meaning Insight Pretest with a practice slide and the pretest to follow. The Meaning Insight Task is the second task for the study but I gave the Meaning Insight Pretest early in the study to avoid confusion created by mixing instructions for the two tasks. The purpose of providing the pretest was to activate the second cohesion motivation manipulation—need. Need occurs when the participant will need a person for a future task. During the Contrast Sensitivity Task, the participant may occupy the high or low status position but during the Meaning Insight Task in high cohesion motivation conditions the participant occupies the low status position. Although collective orientation creates a level of need inasmuch as working as a group creates better results, the need element puts participants in a more vulnerable

position. Here I made sure participants clearly knew that their partner would be a valuable asset during the second task. For normal cohesion motivation conditions the reverse is true and participants always occupied the high status position during task two. I also made sure to inform participants that this pretest was designed to eliminate any confusion about Meaning Insight ability. Regardless of age, education, race, gender, and so on the score given accounted for all these characteristics. If a participant had a higher or lower ability score than her partner, that meant the participant had a higher or lower chance of making correct decisions regardless of any other characteristic.

The Meaning Insight Task utilized in this study was provided by Dawn Robinson and Jody Clay-Warner from previous studies conducted at the University of Georgia. In this version of the Meaning Insight Task (or Pretest) participants see an English word and must choose which of the two Cherokee words the English word matches (Appendix D). The pretest consisted of 10 trials in which the participant made a decision and did not consult with her partner. To facilitate scoring differences, I told participants that their Meaning Insight ability was being measured in a nontraditional format similar to other computer assisted tests. If a participant answered correctly, the next question would be harder. Questions continued to get harder or easier depending on how well she performed. In reality, correct answers were not being documented and scores were assigned per condition. Scores would not be a count of correct answers but rather a number that represented their Meaning Insight ability. I gave participants instructions and a practice slide. Following the practice slide I gave them the full 10 item Meaning Insight Pretest. To help participants remember the scores and not overemphasize them I only presented the scores on two slides right before the Contrast Sensitivity Task.

Contrast Sensitivity Instructions

After the Meaning Insight Pretest I gave computerized instructions for the Contrast Sensitivity Task and a practice demonstration based on the instructions from the University of North Carolina at Charlotte program (Walker et al. 2010). For the Contrast Sensitivity Task I used the Contrast Sensitivity slides from Lisa Troyer's program (2000) but within the structure of the University of North Carolina at Charlotte's program (Walker et al. 2010). Troyer's program utilized the fuller 25 trial design (i.e., compared to the shorter 23 trial design used at the University of North Carolina at Charlotte) typically used in the paradigm (Webster 2003). However, I believed moving toward the more modern looking program used at the University of North Carolina at Charlotte would help increase the credibility of the study and thereby reduce suspicion. I found it difficult to tell participants this was a "new" study when the computer program was clearly from the years of the participants' infancy.

The Contrast Sensitivity Task utilized is better known as CS2 (Webster 2003). In the CS2 there are two slides each with approximately 50 white and 50 black rectangles arranged in a 10 by 10 checkerboard. The participant must choose which of the two, the top image or the bottom image, has more white space. This task was developed specifically for this research paradigm (Moore 1965). In reality there are only three patterns used throughout, but they are manipulated (i.e., rotated, flipped, and color-reversed with additional subtly alterations) to make them difficult to recognize. In most cases, a correct answer does, in fact, exist but participants are not given enough time to make that determination. More importantly, testing finds that participants have no preference for one image over another in these 25 pairs of images (Appendix J). This

means participants are as likely to choose the top image as they are to choose the bottom and they have no real idea which is correct.

In this study, participants were shown the two images with one positioned above the other on the computer screen. I gave participants 5 seconds to review the images before replacing the images with gray squares that read “Pattern 1[2] has more white space” and verbal and text instructions to make their initial choice now. Upon clicking one of the boxes to indicate their choice, a green arrow would appear on the left pointing toward their choice. On the arrow was a label that read “[Participant’s First Name]’s Initial Choice” and shortly thereafter a blue arrow would appear on the right that read “[Partner’s First Name]’s Initial Choice”. After a few moments the images would reappear for 5 more seconds and be replaced by gray boxes reading “Pattern 1[2] has more white space” along with audio and text prompts to make their final decisions now. Upon clicking the box indicating their decision a bright green border would appear around their choice. The screen would turn white and the next trial would then begin without the participant seeing either which answer was correct or what her partner chose as her final choice. An example of what participants see is provided in Appendix K. This is a deviation from both previous programs but is consistent with the previous paradigms and has no known theoretical relevance.

As I stated earlier, after the Meaning Insight Task, instructions were given for the Contrast Sensitivity Task and participants followed through a practice slide. After the practice slide several more final manipulations were administered prior to the Contrast Sensitivity Task. For the first accountability element of the cohesion motivation manipulations I gave participants different information per condition regarding reviewing

the Contrast Sensitivity answers. For normal cohesion motivation conditions I told participants they would not see the results of the Contrast Sensitivity Task until the end of the study. For high cohesion motivation conditions I told participants they would be able to see and review results from the Contrast Sensitivity Task right after it was completed. In high cohesion motivation conditions, the second task was to be a face-to-face task so I believed having participants begin the second task with a review of their performance during the first task would increase cohesion motivation. If participants appeared to ignore their partners' different initial choices throughout the first task, the participants would, hypothetically, have to give an account for their constant disagreement before the second task. I followed with a repeat of the cognition element of the cohesion motivation manipulation. I repeated to participants in high cohesion motivation conditions that they should want to work together.

Contrast Sensitivity Scoring

After the cohesion motivation manipulations, I gave participants instructions about the scoring for the Contrast Sensitivity Task. I intended these instructions to activate both task focus and collective orientation in the same fashion as the standard experimental setting. In fact, these instructions were based on the University of North Carolina at Charlotte program's instructions while the scores reflect the scoring of the 25 trial task found in Troyer's program. The instructions and scoring charts show that working together produces an average score higher than working alone. These instructions include charts that provide visual comparisons of the scoring for an individual and a group and highlight that individuals working alone score tend to score much lower than groups working together.

At the end of the scoring instructions I reminded participants about the review of correct responses. This is the second time that I discussed the reviewing of scores with participants but it was the last time that the accountability element was instantiated. I anticipated that early emphasis on face-to-face interaction during the second task along with knowledge of accountability for Contrast Sensitivity responses would be salient enough that each aspect of the element would not need to be repeated multiple times to produce the desired effect.

Meaning Insight Scoring and Pretest Scores

I then reminded participants about the Meaning Insight Pretest scoring. Specifically, I reminded them that scores were the only means of predicting who had more Meaning Insight ability and that Meaning Insight was completely unrelated to Contrast Sensitivity. I said scores ranged from 0 to 30. In normal cohesion motivation conditions I told the participants that they scored 22 while their partners scored 15 (i.e., participants had more Meaning Insight ability than their partners). In high cohesion motivation conditions I told participants that they scored 15 while their partners scored 22 (i.e., participants had less Meaning Insight ability than their partners). I intended this difference in scoring to further activate the need for partners in high cohesion motivation conditions.

Manipulation Checks

At this point in the study I would provide the manipulation checks (Appendix L). I asked how they felt they would do at the Contrast Sensitivity Task. The second question was how important was it for the two of them to work together. The third was if they felt there was any relationship between Meaning Insight and Contrast Sensitivity and why

they felt that way. These manipulation checks were added as a new element about a third of the way through the study.

Following the manipulation checks, participants were provided with a pair of summary slides. These summary slides reminded participants of critical elements moving forward. This included reminders about scoring and monetary values for correct answers—including the scores for the Meaning Insight Pretest. Additionally, in high cohesion motivation conditions, the slides reminded participants that wanting to work together as a group was important (the fourth and last instantiation of the cognition element of the cohesion motivation manipulation).

Contrast Sensitivity Task

The summary slides were the last set of instructions before the primary task—the 25 trial Contrast Sensitivity Task (Appendices J and K). During the task, participants would have 5 seconds to review a pair of black and white checkerboard images. After 5 seconds the images would disappear and be replaced with gray boxes containing labels such as “Pattern 1 has more white space”. The computer played an audio command and displayed instructions to make their initial choice now.

Participants would use the mouse to click on their choice and a green arrow would appear on the left pointing toward their initial choice. The computer would display the participant’s name on the arrow and read “[Participant’s First Name]’s Initial Choice”. On 5 of the 25 trials participants would agree on their initial choices. These were trials 1, 6, 13, 17, and 22. The results of these trials are ignored for data analysis since how participants respond to agreement is not relevant in this study. After making an initial choice, the program waits a brief, randomly selected period of time before displaying the

partner's initial choice. The partner's initial choice is displayed as a blue arrow pointing toward the participant's initial choice (agreement trails) or the opposite of the participant's initial choice (disagreement trails). Like the participant's arrow, the partner's arrow displays their name and the label "Initial Choice".

Following the initial choice the program waits a few seconds and displays the patterns again for 5 seconds. The arrows indicating the initial choices remain visible during the final decision phase. When the 5 seconds is up, participants are shown the decision making boxes again and the computer plays audio and displays text instructions to make their final choice now. Participants use the mouse to make their final decision and a green border appears around the pattern they selected to show the program received the participant's input. After three seconds the next trial began. The computer recorded the number of times the participant chose her own initial decision as her final decision when her partner chose the opposite pattern for the initial decision. This number divided by the total number of disagreements (i.e., 20) is the proportion of stay responses (i.e., $P(s)$ or "p of s score") and represents the participant's propensity to resist influence.

End of Session Questionnaires and Debriefing

Immediately following the Contrast Sensitivity Task researchers give participants a Positive And Negative Affective Scale (PANAS) instrument (Appendix M). During the early stages of the study the PANAS was administered in a paper-and-pencil form. About a third of the way through the study I computerized the PANAS and all future participants completed the PANAS on the computer. Previous studies had not included the PANAS but I was interested to see if cohesion motivation had any effect on emotions

and to verify that the disagreements during the Contrast Sensitivity Task were not causing excessive distress to participants.

Following the PANAS, participants completed a series of questions (Appendix N). Most of these questions were borrowed from the University of North Carolina at Charlotte instrument (Walker et al. 2010) but additional questions were added as manipulation checks. Questions included opinions of performance during Contrast Sensitivity, opinions of their partner, memory of instructions, and expectations for the second task. These questions were always administered via the computer.

Following the PANAS and first series of questions I conducted a more thorough final questionnaire (Appendix O). This was originally completed as a face-to-face interview with responses unrecorded but was computer administered after the first third of the study. The purpose of this questionnaire was to probe for suspicion and failure to meet scope and initial condition. If the participant did not believe she was interacting with another person or that the task was fake AND she decided she was not going to take the task seriously then that session was coded as having a suspicious participant. If the participant did not believe it was possible to make a correct decision or believed correct responses were irrelevant (i.e., a belief that everyone was going to get paid the same) and she stopped taking the task seriously then that session was coded as having a participant who was not task focused. If participants thought the task was a competition and started working against their partners or they believed their partners' responses were irrelevant and did not even account for their partners' disagreements then that session was coded as having a participant who was not collectively oriented. If the participant came into the study believing that because of preconceived notions of skill or incompetence at either

task then the session was coded as including a participant who lacked initial status equality. If the participant was really not paying attention and clearly forgot critical elements of the study (e.g., that you were working with a partner to earn money for correct answers) then the session was coded as including a participant who did not remember the instructions. All of these situations constituted failures to meet the scope or initial conditions and are typically grounds for excluding these sessions from the analysis.

The last part of the study before the debriefing involved a selective interaction questionnaire (Appendix P). In short, I asked participants if they wanted to continue working with their partner during the second task, if they preferred to work alone, or if they would like to quit and why they made that decision. During the first third of the study this was part of the face-to-face interview but later was computerized. I included this question to examine whether high cohesion motivation would increase the desire to work together during the second task compared to normal cohesion motivation conditions.

Following their response, I informed participants that there would be no second task, that the study was over, and that I would now explain the study more fully. Like the interview, this was completed in person during the first third of the study and by computer during the last two thirds. The debriefing (Appendix Q) informed participants about the true nature of the study, how the slides were impossibly difficult, that they were not actually working with a partner, and that I would pay them \$15, the maximum amount they could earn if the tasks were real. At the end of the debriefing I would ask the participant if she had any questions, ask her to sign a receipt form, and give her an envelope containing \$15. This was the end of the study.

CHAPTER 5

ANALYSES AND RESULTS

In this study I was primarily interested in how cohesion motivation affected status relationships in long-term task groups. To be more specific, my independent variables were cohesion motivation and status. My primary dependent variables were the propensity to resist influence, opinions of partner's status, and decision to continue working as a group. In this section I will discuss the measurement and analysis of these variables as well as manipulation checks and other variables of interests. To be clear, I will begin by discussing characteristics of the sample and excluded participants. Next I will discuss the instantiation of the independent variables, manipulation checks, and procedure checks. I will then detail the analysis and results of the primary dependent variables. And I will conclude with results from additional variables of interest. After detailing all the results I will move into a discussion about what these results mean to the theory.

Descriptives

For this study our goal was 25-30 participants per each of the six conditions. Each participant was to be a white female undergraduate. I expected some sessions to be excluded since participants do not always create the situations appropriate for the theory to be tested within. In the end I had 159 participants of which 129 were included in the final analyses. There were 30 sessions in which the researchers decided it was appropriate to exclude the sessions and participant responses from the analysis. Of the 129 sessions

included in the analysis (See Table 2), participants were an average of 19.81 years old and 85.7% were in their Freshmen (31.7%), Sophomore (28.6%), or Junior (25.4%) year of college. Although I intended only to observe undergraduates, four students were master or doctoral students. However, I chose not to exclude them from analysis when their educational status was consistent with their experimental situation (i.e., their partner was automatically matched by age and education in equal status conditions or their partner was intended to have less age and education as in high status conditions).

Table 2. Counts of Included and Excluded Participants by Condition

Condition	Usable	Excluded	Total
1	22	5	27
2	22	9	31
3	22	2	24
4	21	1	22
5	21	7	28
6	21	6	27
Total	129	30	159

Sessions were excluded from analysis only when something about the participant or the participant’s cognitions created situations that did not meet the conditions of the study (See Table 3). I assumed that all sessions meet the conditions but when a participant reveals information that clearly indicate an alternative scenario the session was marked for exclusion. Four participants were visual minorities. This occurred when participants labeled themselves as “White” within SONA but the researcher was able to clearly identify them as non-Caucasian. Two participants were clearly Hispanic and two were clearly Arab. Four students had initial status differences. That means they came into the study expecting to do better (e.g., “I’m really good at tasks like this”) or worse (e.g., “My doctor says I have a problem distinguishing contrasts so I won’t do well at this”).

Two participants were not paying attention to the instructions (e.g., “I thought the first task was the Meaning Insight Task?”). Eight sessions were excluded because of unintended experimental errors. These included situations where participants were unfamiliar with Athens Technical College and equated it with Georgia Tech, where a Ph.D. student was placed in low status condition, or where a fire alarm ruined the session. Six sessions were excluded for suspicion where the participants did not believe there were correct answers during the Contrast Sensitivity Task or Meaning Insight Task. Interestingly, no participant expressed disbelief that her partner was real. Two sessions were excluded because the participant was not task focused (e.g., “I was just picking the top because I was in a hurry. My bus is coming in 15 minutes.”). And finally, four sessions were excluded because participants were not collectively oriented (e.g., “I wanted to see if I could get more right than her” or “I didn’t like her so I stopped looking at her choices”).

Table 3. Exclusion Counts by Reason

Reason Excluded	Number Excluded
Visual Minority	4
Initial Status Difference	4
Did Not Understand Instructions	2
Unintended Experimental Error	8
Suspicion	6
Lack of Task Focus	2
Lack of Collective Orientation	4

Additionally, I conducted the vast majority of sessions myself and I either supervised or reviewed all other sessions. Three researchers assisted with collecting. However, few sessions were conducted by assistant researchers in a completely

independent fashion. Consequently, there is no meaningful analysis of intercoder reliability or experimenter bias.

Manipulation Checks

I asked three questions as manipulation checks prior to the Contrast Sensitivity Task. The first manipulation check was intended to measure participants' perceptions of performance at Contrast Sensitivity from least (1) to most (7). Ideally I would have expected participants with high status ($M = 4.34$, $SD = .937$, $N = 32$) to believe they would perform better, on average, than low status participants ($M = 4.42$, $SD = .867$, $N = 33$). More specifically, I would expect that while there would be a difference in expected performance by status that the expected performance would not differ by level of cohesion motivation since Contrast Sensitivity was different than Meaning Insight. However, I found there was no significant difference by status ($p = .360$, 1-tailed t-test). I suspect that the issue here is a poorly worded question. The text of the question, "How well do you believe you will perform at the Contrast Sensitivity task?", does not clearly activate relative performance with the partner, and I believe a rewording of the question to activate perceptions of status would have produced the desired result. Unfortunately this question provides us with little information about the status manipulation.

The second manipulation check was a little more profitable. The second manipulation check asked participants on a scale from 1 (least) to 7 (most) about "How important is it to you that you and your partner work well together?". This is a measure of the cognitive element of the cohesion motivation factor. For this situation, I expected participants in the normal cohesion motivation condition ($M = 5.92$, $SD = .821$, $N = 48$) to report less importance than participants in the high cohesion motivation conditions (M

= 6.33, $SD = .625$, $N = 49$) This is true on average with a p-value of .003 for a 1-tailed t-test. This indicates the cohesion motivation manipulation was successful.

However, it was important to note whether or not participants were linking Meaning Insight Pretest scores and Contrast Sensitivity ability. If participants believed that Meaning Insight Pretest scores were related to Contrast Sensitivity then participants might act on those pretest scores as if they tell participants who is more likely to choose the correct answers at Contrast Sensitivity. When asked “Do you feel that there is any relationship between the Meaning Insight ability scores and making correct decisions during the Contrast Sensitivity task?” about 31% ($SD = .465$, $N = 97$) of participants responded “yes” (27% of normal cohesion motivated participants and 35% of high cohesion motivated participants). This is significantly different ($p = .000$, 1-tailed t-test) than 0. However, in a follow up question asking how they felt the two were related the responses were not as problematic as initially suspected. Participants routinely reported that they thought Meaning Insight Pretest scores and making correct Contrast Sensitivity decisions were related simply because they were intuitive, highly difficult, timed, and binary tasks. In other words, they believed the two were related not because people with more (or less) Meaning Insight ability would perform better (or worse) on Contrast Sensitivity but rather because the tasks appeared very similar in structure and nature.

Procedure Checks

A number of procedure checks occurred after the Contrast Sensitivity Task. The first was a restatement of the second manipulation check on the same 1 (least) to 7 (most) scale. I asked participants “How important was building a positive relationship with your partner?”. With means of 4.68 ($SD = 1.288$, $N = 65$) for normal cohesion motivated

groups and 5.06 ($SD = 1.180$, $N = 64$) for high cohesion motivated groups ($p = .039$, 1-tailed t-test) I can see the cognitive element of cohesion motivation was still working in a significant way after the Contrast Sensitivity Task. This suggests that the task itself did not adversely affect cohesion motivation.

When I asked participants “Do you believe your team’s interactions during the first task will influence your team’s interactions during the second task?” participants responded affirmatively 57.4% of the time. About 48% ($SD = .503$, $N = 65$) of participants in normal cohesion motivation conditions reported believing interactions in task 1 influence those in task 2 and about 67% ($SD = .473$, $N = 64$) of participants in high cohesion motivation conditions reported the same beliefs. With a 1-tailed t-test I find the means are statistically significant with a p-value of .013. Participants in high cohesion motivation conditions are more likely to believe their interactions in task 1 will influence those in task 2, and that is consistent with the accountability element of cohesion motivation.

However, participants appeared to be somewhat forgetful about when they would review the Contrast Sensitivity results. In normal cohesion motivation conditions participants would review answers at the end of the study (alone) while in high cohesion motivation conditions participants would review answers right before the second task (face-to-face). While 90% ($SD = .303$, $N = 50$) of participants in normal cohesion motivation conditions correctly remembered when they would go over the answers, only about 58% ($SD = .499$, $N = 50$) of participants in high cohesion motivation conditions remembered correctly ($p = .000$, 2-tailed t-test). To be clear, this question was not worded in a way that I could see if they remembered the format correctly (alone or face-

to-face). However, almost all participants (98%) correctly identified the way in which they would be interacting during task 2—over the computer or face-to-face. This means that even if participants in high cohesion motivation conditions failed to remember that they would be going over Contrast Sensitivity results before task 2, they likely believed whenever they went over the Contrast Sensitivity results they would do so face-to-face. This is further evidence that the accountability element of cohesion motivation was active in participants' minds.

Another procedure check was whether participants remembered how much correct answers were worth during the two tasks. In general, most participants (85%) said that the different monetary values for correct responses did not influence their Contrast Sensitivity Task decisions. However, the 15% ($SD = .363$, $N = 97$) of participants who believed the different monetary values influenced their decisions is significantly different than 0 with a p-value of .000. This means that while small, the differential valuation of correct answers had a significant effect on participants. This value might have been higher if more participants accurately remembered the monetary values. Very few participants ($M = 28\%$, $SD = .451$, $N = 100$) remembered the original valuations (12¢ each for task 1 and 48¢ each for task 2). However, 93% ($SD = .256$, $N = 100$) of participants remembered that task 2's correct answers were worth at least twice as much as correct answers during task 1. Neither cohesion motivation nor status have a significant effect on remembering the valuations.

This situation changes when I asked “Do you feel that these [differences in Meaning Insight ability] scores impacted your decisions during the Contrast Sensitivity task?”. Although not a direct restatement, this question is very similar to the third

manipulation check which asked if participants felt their Meaning Insight scores had any impact on making correct decisions during the Contrast Sensitivity Task. Participants typically remembered (75%) the Meaning Insight Pretest scores (22 for participant, 15 for partner in normal cohesion motivation conditions and vice versa for high cohesion motivation conditions). Even if they did not remember the scores exactly, 99% remembered who had the higher score and who had the lower score. While most participants reported before the Contrast Sensitivity Task that the Meaning Insight Pretest scores were unimportant to Contrast Sensitivity, here they frequently report that those scores actually had an effect. About 36% ($SD = .485, N = 50$) of normal cohesion motivation participants and about 62% ($SD = .490, N = 50$) of high cohesion motivation participants reported that the scores had an effect. The difference between the aforementioned means is significantly different with a p-value of .004 for a 1-tailed t-test. Where cohesion motivation had no effect in the third manipulation check, cohesion motivation is a significant factor in this procedure check. The Contrast Sensitivity Task influences high cohesion motivated participants to believe these scores matter after the task at about twice the rate reported before the task.

As a final check on procedures, I asked participants about the Meaning Insight Task. Since the task was based on a real language, Cherokee, and had correct responses, a person with a knowledge of Cherokee would have an initial status difference. They would know they were better at the task than their partner. Fortunately this never occurred. No participant was fluent in or familiar with the Cherokee language.

Primary Dependent Variables

The most important dependent variable in any expectation states study is the propensity to resist influence. In general, researchers seek to find new ways of overcoming status advantages by finding ways to impact the propensity to resist influence. In this study I proposed that increasing cohesion motivation had several different effects. Let me begin by briefly restating the new theoretical model and its parts before I discuss the hypotheses being tested.

In this study I proposed a new mathematical elaboration that included a few additional elements to the mathematical model. The original model proposed that the propensity to resist influence ($P(s)$) was equal to the average propensity to resist influence (m) plus the expected status advantage ($e_p - e_o$) of the participant over the partner multiplied by the effect of the experimental situation (q). I proposed that future interaction could moderate the average propensity to resist influence (m becomes $\frac{m}{f}$) and that the expectation advantage is moderated by a balance of task focus and collective orientation ($e_p - e_o$ becomes $\frac{t}{c}(e_p - e_o)$).

$$P(s) = m + q(e_p - e_o) \quad \rightarrow \quad P(s) = \frac{m}{f} + q\left(\frac{t}{c}\right)(e_p - e_o)$$

The measurement of the propensity to resist influence ($P(s)$) is standardized within this experimental paradigm. The Contrast Sensitivity Task provides participants with 25 situations to make decisions of which 20 are designed to be disagreements that must be resolved. The task is intended to be impossibly difficult such that even if a correct decision exists, participants are equally likely to choose either pattern. This means that when participants experience a disagreement, they have to base their decision not on

any objective knowledge of accuracy but on whose opinion matters more—mine or my partner’s. In any of the disagreement trials the participant may choose to stick with her own initial choice (resisting influence) or change her answer (yielding to influence). The $P(s)$ score is the proportion of disagreement trials in which the participant chose to stay with her own initial choice when making her final decision. This is the primary measurement of resisting influence in status characteristics theory as well as this study.

The first hypothesis is that the average propensity to resist influence (m) would be lower for high cohesion motivated participants compared to normal cohesion motivated participants. In short, high cohesion motivated participants would be more likely to let their partner have more “say” as a means of demonstrating that they valued their partner’s participation in the group. A straightforward method of testing this hypothesis is to observe the $P(s)$ scores in the context of a two-way ANOVA with status and cohesion motivation as fixed factors predicting $P(s)$. However, since $P(s)$ is observed as a series of binary responses I use the arcsine square root transformation to accommodate the binomial process and make the dependent variable appropriate for use in an ANOVA (See Table 4).

Table 4. Two-Way ANOVA with Status and Cohesion Motivation Predicting Arcsine Root Squared Transformed $P(s)$ Scores

Source	Type III Sum of Squares	Degrees of Freedom	Mean Square	F	p-value
Corrected Model	.777	5	.155	4.723	.001
Intercept	76.546	1	76.546	2325.293	.000
Status	.295	1	.295	8.973	.003
Cohesion Motivation	.426	2	.213	6.472	.002
Status X Cohesion Motivation	.051	2	.026	.778	.461
Error	4.049	123	.033		
Total	81.880	129			
Corrected Total	4.826	128			

Table 4 shows that both status and cohesion motivation have significant effects on $P(s)$ scores ($p = .003$ and $p = .002$ respectively). Furthermore, when I compare the average propensity to resist influence in normal cohesion motivation conditions ($M = .534$, $SD = .183$, $N = 65$) to that in high cohesion motivation conditions ($M = .443$, $SD = .169$, $N = 64$) I find that the two are in the predicted order. Consequently I reject the null hypothesis and conclude that cohesion motivation significantly lowers the average propensity to resist influence in long-term task groups.

The second hypothesis was that when participants were more cohesion motivated that they would be less likely to act on perceived status differences. The consequence would be that the observed status differences would be wider in normal cohesion motivation conditions compared to those in high cohesion motivation conditions. In other words, the difference in mean $P(s)$ scores for the high status-normal cohesion motivation condition and the low status-normal cohesion motivation condition would be higher than the difference in mean $P(s)$ scores for high status-high cohesion motivation condition and the low status-high cohesion motivation condition. Looking back at Table 4 we can see that while status and cohesion motivation both affect $P(s)$ scores, the multiplicative effect described by hypothesis two is not significant. I fail to reject the null hypothesis based on this data. The data do not support the idea that status and cohesion motivation interact to create significantly more equal rates of accepting and rejecting influence in high cohesion motivated groups compared to normal cohesion motivated groups.

The third hypothesis was that despite participants resisting influence less often (i.e., the first hypothesis was confirmed), participants with high cohesion motivation

would maintain the same level of status beliefs about their partner. Since this was a null hypothesis, I tested the alternate hypothesis that a difference did exist between the groups. To test this alternate hypothesis I asked participants about their opinions of their partner. These questions were borrowed from the standard program at the University of North Carolina at Charlotte (Walker et al. 2011) and asked participants about their beliefs about their partners' sureness of self and assertiveness on a scale from 1 (least) to 7 (most). Since both measures were predictive of the same construct (i.e., perceived status) I created a single scale using the sum of the two items (Cronbach's alpha = .703, new range 1 to 14). I then used another two-way ANOVA with status and cohesion motivation predicting perceptions of status (see Table 5).

Table 5. Two-Way ANOVA with Status and Cohesion Motivation Predicting Perceptions of Status

Source	Type III Sum of Squares	Degrees of Freedom	Mean Square	F	p-value
Corrected Model	57.833	5	11.567	4.582	.001
Intercept	12087.771	1	12087.771	4788.506	.000
Status	11.735	2	5.868	2.324	.102
Cohesion Motivation	37.262	1	37.262	14.761	.000
Status X Cohesion Motivation	8.247	2	4.123	1.633	.199
Error	310.493	123	2.524		
Total	12442.000	129			
Corrected Total	368.326	128			

Unfortunately, these data do not appear to support the hypothesis and provide some interesting results. Here I see that status, remarkably, has no effect on perceptions of status. Considering that the status measures have been validated previously (Lovaglia and Houser 1996), I decided to perform the ANOVA with only high and low status

participants included (see Table 6) since previous studies rarely collect data on equal status (Webster 2003).

Table 6. Two-Way ANOVA with Status (Excluding Equal Status) and Cohesion Motivation Predicting Perceptions of Status

Source	Type III Sum of Squares	Degrees of Freedom	Mean Square	F	p-value
Corrected Model	48.875	3	16.292	6.409	.001
Intercept	8060.420	1	8060.420	3170.901	.000
Status	10.950	1	10.950	4.308	.041
Cohesion Motivation	29.623	1	29.623	11.653	.001
Status X Cohesion Motivation	7.414	1	7.414	2.917	.092
Error	205.902	81	2.542		
Total	8301.000	85			
Corrected Total	254.776	84			

By adjusting this analysis to include only high and low status situations as is typical of status experiments I see that status has the expected effect. However, cohesion motivation still has a significant effect on perceptions of status, and I reject the null hypothesis (i.e., the third hypothesis). Disproving the null hypothesis in this case means that cohesion motivation has an unintended effect on perceptions of status. Furthermore, this rejection of the null hypothesis occurs regardless of the exclusion of equal status conditions.

Additional Dependent Variables Measured

In addition to aspects of status I chose to observe a few additional dependent variables in this study. First, I chose to observe how the study, or more specifically the Contrast Sensitivity Task, influenced participants' affective states. Second I asked participants if they would like to continue working with their partner during the second

task, work alone, or quit. Neither of these have an effect on the hypotheses being tested or on the theoretical model.

To observe how the study affected participants on an emotional level I asked participants to complete a Positive And Negative Affect Scale (Watson, Clark and Tellegen 1988) also referred to as PANAS. PANAS is a 20 item instrument in which participants are asked to rate how much they feel of a particular emotion on a scale of 1 (very slightly or not at all) to 5 (extremely). The 20 items can be divided into two subsets—one measuring positive affect and the other measuring negative affect. The measure of positive and negative affect is accomplished by the summation of the scores for items within each subsets. This means that scores range from 10 to 50 and since I had not hypothesized the relationship between cohesion motivation and emotion the significance tests are 2-tailed. Furthermore, I decided to look at the means by level of status to explore if status had an effect on emotion. Comparing the scores (see Tables 7 and 8) by cohesion motivation shows that there is very little difference of observed levels of affect (positive or negative) between normal and high cohesion motivation conditions. However, there is one caveat. Participants in low status conditions do vary by level of cohesion motivation. Participants in the low status-normal cohesion motivation condition report higher positive and lower negative affect compared to participants in the low status-high cohesion motivation condition. In fact participants in the low status-high cohesion motivation condition report being significantly more distressed, irritable, and scared and significantly less excited and active compared to participants in the low status-normal cohesion motivation condition. I suspect this is caused by the fact that participants in the low status-normal cohesion motivation condition are leaving a low status position

and moving into a high status position. But participants in the low status-high cohesion motivation condition are not only moving from a low status position to another low status position, they are going to be facing their partner face-to-face in the next situation and need to give an account of their actions.

Table 7. Mean Positive Affect Scores by Condition

	Normal Cohesion Motivation	High Cohesion Motivation	p-value ¹
High Status	25.7273	23.8636	.323
Equal Status	23.1364	25.1429	.325
Low Status	26.0952	21.8571	.043
Mean	24.9692	23.6250	.240

Note: Values range from 10 to 50

¹ p-values are calculated for 2-tailed t-tests

N = 21, 22 per condition

Table 8. Mean Negative Affect Scores by Condition

	Normal Cohesion Motivation	High Cohesion Motivation	p-value ¹
High Status	18.4545	17.9545	.800
Equal Status	17.5455	16.3333	.475
Low Status	16.8571	21.3810	.031
Mean	17.6308	18.5469	.409

Note: Values range from 10 to 50

¹ p-values are calculated for 2-tailed t-tests

N = 21, 22 per condition

Finally, I asked participants if they would like to continue participating in the study. At the very beginning of the study, and throughout the study, I overemphasized that participation was voluntary. I stated, even before handing participants the consent form, that they could quit at any time they desired. Within the consent form I told participants that they could quit at any time although it was not made clear they would receive \$15 upon deciding to quit. It was clear they would earn at least \$5 for any participation. At the end of the study I asked participants if they would like to work with their partner during the second task, work alone during the second task, or quit. Working

alone entailed completing the task but without their partners' input. Whatever they earned would still be pooled and split at the end of the study. It was not made clear how quitting would affect earnings. Very few people actually chose to work alone (See Table 9). Only about 3 people per condition and consistently 2-4 people in each condition chose to work alone except for in the equal status-high cohesion motivation condition where the singular dissenting participant chose to quit instead. A logistic model regressing decision to work together or work alone onto status and cohesion motivation yielded no significant predictors for this decision most likely due to so few people choosing to work alone or quit.

Table 9. Frequency of Selective Interaction Responses by Condition

Condition	Work With Partner	Work Alone	Quit Now
1	19	3	0
2	19	3	0
3	20	2	0
4	20	0	1
5	19	2	0
6	17	4	0
Total	114	14	1

Estimation of New Theoretical Parameters

Estimating the new theoretical parameters is important because doing so allows me to observe whether the data are consistent with the new theory. While the values for these theoretical parameters are post hoc, the methods of estimating them are a priori. This means that the new theory already specifies the expected direction of the values and if the observed values are inconsistent with the predicted directions that would be evidence to reject the new mathematical model. The average propensity to resist influence (m) and the power of the experimental situation (q) can be estimated by

regressing the $P(s)$ scores onto the predicted expectation advantage for participants. I'll discuss later how the new theoretical parameters for fear of loss of future rewards (f), task focus (t), and cohesion motivation (c) can be estimated.

First, calculating the expectation advantage involves making predictions about status structures and expectation states. Since I explicitly disassociated the specific status characteristic of Meaning Insight ability from the Contrast Sensitivity Task I presumed the path diagram in Figure 3 best represented the status structure during task 1.

Completing the paths for p and o I find the p has two positive paths $f(4)$ and $f(5)$ while o has two negative paths $f(4)$ and $f(5)$. Using the parameter estimates from Fişek et al. (1992) where $f(4) = .6321$ and $f(5) = .3175$ I find that $(e_p - e_o) = f(4 \cup 5) = .6321 + .3175 - (.6321)(.3175) = .36527$. When the participant has the low status (i.e., occupying o 's position) then p has an expectation advantage of $-.36527$ since the model is symmetric. Naturally, when statuses are equal there is no expectation advantage.

With these models I predicted expectation advantages of $.36527$ in high status conditions, $.00000$ in equal status conditions, and disadvantages of $-.36527$ in low status conditions. Regressing the $P(s)$ scores onto the expectation advantages provides the formula $P(s) = .488 + .168(e_p - e_o)$ where the average propensity to resist influence, m , is $.488$ and the strength of the experimental manipulations, q is $.168$. The observed and predicted models can be found following Table 10 below.

Table 10. Differences Between Observed and Predicted $P(s)$ Scores Based on Original Method of Estimating $P(s)$

Condition	$P(s)$ observed	$(e_p - e_o)$	$P(s)$ expected	$ Difference $
1	.602	.365	.549	.053
2	.470	.365	.549	.079
3	.561	.000	.488	.073
4	.464	.000	.488	.024
5	.433	-.365	.427	.006
6	.393	-.365	.427	.034

Because I observed differences in the propensity to resist influence I approximate the values of the new theoretical variables added to the mathematical model. In the expanded model, there are three new variables, fear of loss of future rewards, f , collective orientation, c , and task focus, t . To estimate these variables I must make some assumptions about the situations. More specifically, that m and q are constant across situations and that in the normal cohesion motivation conditions f and $\frac{t}{c}$ are both equal to 1 in the absence of the cohesion motivation manipulations. To begin I regressed $P(s)$ scores onto expectation advantage for normal cohesion motivation conditions which yielded the equation $P(s) = .533 + .230(e_p - e_o)$ or, more completely, $P(s) = \frac{.533}{1} + .230(\frac{1}{1})(e_p - e_o)$. For high cohesion motivation conditions the equation is $P(s) = .442 + .106(e_p - e_o)$. Borrowing the values of m and q from the normal cohesion motivation conditions and solving for f and c (t is held at 1 since task focus was not manipulated) the final equation for high cohesion motivation conditions is $P(s) = \frac{.533}{1.206} + .230(\frac{1}{2.170})(e_p - e_o)$. The values for f (1.206) and c (2.170) are in the theoretically expected directions with both f and c increasing in conjunction with an

increase in cohesion motivation. I also estimate a new set of expected $P(s)$ scores based on these values of f and c to improve the model (See Table 11).

Table 11. Differences Between Observed $P(s)$ Scores and Expected $P(s)$ Scores Based on New Expanded Equation

Condition	$P(s)$ observed	$(e_p - e_o)$	f	c	$P(s)$ expected	$ Difference $
1	.602	.365	1	1	.617	.015
2	.470	.365	1.206	2.170	.481	.011
3	.561	.000	1	1	.533	.028
4	.464	.000	1.206	2.170	.442	.022
5	.433	-.365	1	1	.449	.016
6	.393	-.365	1.206	2.170	.403	.010

Note: $m = .533$, $q = .230$, and $t = 1$

CHAPTER 6

DISCUSSION

These results provide some support for the theoretical model proposed in this dissertation. In this section I will begin by summarizing the results of the hypothesis tests. I will then discuss the implications of the results for the theory. This includes appropriate ways to interpret the data, and potential issues with the analysis and results. Also, I will discuss the possibility of an alternative explanation for the results (i.e., that I did not adequately disassociate Meaning Insight ability from Contrast Sensitivity).

For this dissertation I made three hypotheses. The first hypothesis was that cohesion motivation would reduce the average propensity to resist influence. This hypothesis was confirmed. The second hypothesis was that cohesion motivation and status would interact such that the discrepancy between observed rates of resisting influence would be greater in normal cohesion motivation groups compared to high cohesion motivation groups. In other words, that based on observed $P(s)$ scores, high cohesion motivation groups would be more equitable. However, the interaction was not significant in the model and I failed to disprove the null hypothesis. The third and last hypothesis was that perceptions of status would not be affected by cohesion motivation. I tested the alternate hypothesis that cohesion motivation had an effect on perceptions of status and I found that to be true. Cohesion motivation has a significant effect on perceptions of status in this data leaving me to reject the third hypothesis. Overall the fact that only the first hypothesis was supported by the data is disappointing, but the research

provides some evidence in support of the theory and clues to improve the theory and methods moving forward.

In this dissertation I proposed that I would likely see different patterns of influence in situations where people must work together over a long period of time on a series of cooperative tasks than in one-shot groups. What I observed was that heightened collective orientation becomes cohesion motivation. Aspects of cohesion motivation include heightened collective orientation, accountability, and need as well were cognitions that mimic the effects of a social identity while not necessarily becoming a social identity. Future interaction is necessary for cohesion motivation but is not sufficient. This study provides evidence for activating cohesion motivation and observing its effects in terms of resisting influence but since cohesion motivation is a theoretical construct it is not directly measurable.

At a conceptual level I understand that elements such as future interaction and collective orientation cognitions are necessary by definition, but I have not specified sufficient conditions for activating higher states of cohesion motivation within individuals. I believe that while I have shown one way of activating cohesion motivation this study does not allow me to determine exactly which elements (i.e., need, accountability, or cognition) used to elevate cohesion motivation are necessary or sufficient. Such was not the purpose of the study and this will need to be examined more closely in future research. Unfortunately, since cohesion motivation is a theoretical construct, there is no direct measure of cohesion motivation. Regardless of which elements are necessary or sufficient, there is evidence that cohesion motivation was successfully activated in participants. I see this as evidence that the cognitive element

was activated in higher reported rates of wanting to build a positive relationship with the partner and observed differences in propensity to resist influence. However, elements of need and accountability were not directly measured in this study.

Some of the issues I see throughout the study regarding the $P(s)$ scores may be occurring due to a floor effect. For example, the difference in $P(s)$ means between the high status-high cohesion motivation condition and the low status-high cohesion motivation condition is .077 and has a p-value of .062. The difference is quite small but approaches significance at the alpha of .05. The average $P(s)$ in the low status-high cohesion motivation condition was .39 meaning that on average a person resisted influence less than 4 out of 10 times. Although not part of the explicit theory, a floor effect would suggest that people have a level of self-confidence that would potentially limit their yielding to influence more than a certain rate. In other words, while $P(s)$ ranges from 0 (yields all the time) to 1 (resists all the time) the collective orientation cognitions (i.e., that people working together, valuing each other's opinions on some level, increases a team's score) shrinks that theoretical range and could raise the lower bound of $P(s)$ from 0 to something higher such as .25. The consequence of such a boundary would be that the closer a person comes to that lower boundary the more they are likely to resist influence as a consequence of collective orientation. In fact, if participants yielded or resisted influence 100% of the time a researcher might question the participant's collective orientation—why would a participant not make the same conclusions? While it is impossible to prove this idea to be true or false, it may help to explain why $P(s)$ scores in the low status-high cohesion motivation condition were not lower and the difference between mean $P(s)$ scores in the high status-high cohesion

motivation condition and the low status-high cohesion motivation condition was not significant. However, such a result would have been contrary to the second hypothesis of the study. Ultimately these floor effects are important only in a small number of cases. To overcome such floor effects, however, it would be prudent for researchers to collect data from additional participants whenever these floor effects are anticipated to increase statistical power.

In regards to status beliefs I see interesting patterns that are not as straightforward as I had hoped. I asked participants about their partners attributes in terms of sureness of self and assertiveness. With the inclusion of the equal status situations, status had an insignificant effect on perceptions of status. Furthermore, $P(s)$ scores for equal status participants are not significantly different from high status participants. I believe this was due to the fact that participants in equal status positions have over-inflated senses of self. The University of Georgia is the flagship university within the public university system in Georgia. As such, students at the University of Georgia have considerable pride in the fact of their acceptance to the university. This is supported further by the data which show equal status participants acting very similar to high status participants. In other words, even though participants had equal status, they behaved in ways that demonstrated a belief that they were, in fact, higher status than their partners.

When I exclude the anomalous equal status participants (status experiments typically include only high and low status factors) I see status has the expected effect on perceptions of status. However, cohesion motivation also has an unanticipated effect. Although not as straightforward as hoped, these results can be explained as anticipated when you consider the context. If you remember, these questions were asked after task 1

but before task 2 in the mind of the participants. This is the period within which participants have both a memory of their partner being of one status in the past and will have a different status in the future. This could produce results where participants make attributions by past status (i.e., the high status conditions have higher means than the low status conditions respectively) and attributions by future status (i.e., the high cohesion motivation conditions have higher means than the normal cohesion motivation conditions respectively). In other words, it is impossible to differentiate if participants are thinking about overall status, past status, or future status when discussing their perceptions of status. This temporal issue could create unanticipated effects that need to be considered in future studies potentially by adjusting the wording of the questions.

Although not theoretically relevant, I used measures of emotion to determine if the participants experienced any adverse emotions as a result of the Contrast Sensitivity Task. In general, participants reported their positive affect was 6.53 higher on average than their negative affect. In general, most participants reported the same rates of positive or negative affect regardless of status or cohesion motivation. However, participants in low status conditions, on average, reported significantly different levels of positive and negative affect. Participants in the low status-normal cohesion motivation condition reported higher levels of positive affect and about average levels of negative affect. Participants in the low status-high cohesion motivation condition reported the lowest positive and highest negative affect on average. Contextually I understand that participants in the low status-normal cohesion motivation condition are quite happy to be moving from their low status state during task 1 into a high status state in task 2. On the

other hand, participants in the low status-high cohesion motivation condition are stuck in a low status position so it is no surprise that they are the least happy and most unhappy.

Another interesting pattern I see in the data comes from questions related to how the Meaning Insight Pretest scores relate to the Contrast Sensitivity Task. I asked this question to participants before and after the Contrast Sensitivity Task. The first time I asked the question the wording was “Do you feel that there is any relationship between the Meaning Insight ability scores and making correct decisions during the Contrast Sensitivity task?” and responses were yes or no. The second time I asked the question with the wording “Do you feel that the scores you and your partner earned on the Meaning Insight Pretest had any impact on your decisions during the Contrast Sensitivity task?” and responses were yes or no. The first time the question was posed more vaguely than the second. About 31% of participants believed there was a relationship. When asked why they felt the two were related most participants discussed similarities between the tasks themselves. They pointed to the fact that the tasks required making judgements, relying on intuition, identifying patterns, and how you need to work together. Some of these responses could be interpreted as the formation of generalized expectation states or abstract task ability when you emphasize the similarities between the binary tasks. There are no significant differences between normal and high cohesion motivation conditions for the first question.

The same cannot be said for the second question. On average more people in high cohesion motivation conditions felt the Meaning Insight Pretest scores impacted their decisions during Contrast Sensitivity. If the two questions are tapping into the same idea then I can say that people are more likely to believe there is a relationship after the

Contrast Sensitivity Task compared to before the task. When asked in a follow up question why they felt that way people report a variety of reasons, participants reported that they felt unsure of themselves and that their partners were doing better than they were. They reported feeling anxious and frustrated by the disagreements. In order to resolve the disagreements, participants appear to have become convinced that the Meaning Insight scores they did not believe mattered actually mattered. Balkwell (1991) commented that participants often make “idiosyncratic” attributions during these experimental situations despite what they have been told or what they initially believe. This frames the alternate explanation for the observed results in this study—that differences observed between the normal and high cohesion motivation conditions are actually status differences created by a failure or inability to disassociate Meaning Insight from Contrast Sensitivity.

A straightforward method of examining the hypothesis that observed differences in the propensity to resist influence during task 1 are the result of Meaning Insight Pretest scores acting as a second status is to re-estimate performance expectations that take this idea into account. To do this I assume that instead of having one diffuse status characteristic in operation during task 1 I now assume that there was one diffuse and one specific status characteristic in operation during task 1 (see Figure 8). This means that instead of three status states I have six as illustrated in Table 12 where participants have diffuse (D) and specific (C) statuses with high (+) and low (-) states. Estimating the expectation advantage (see Tables 12 and 13) means I must move from thinking about the situation as the simpler scenario with one diffuse status characteristics to the more

complex scenario where one diffuse and one specific status characteristic are in participants' minds as illustrated in Figure 8 below.

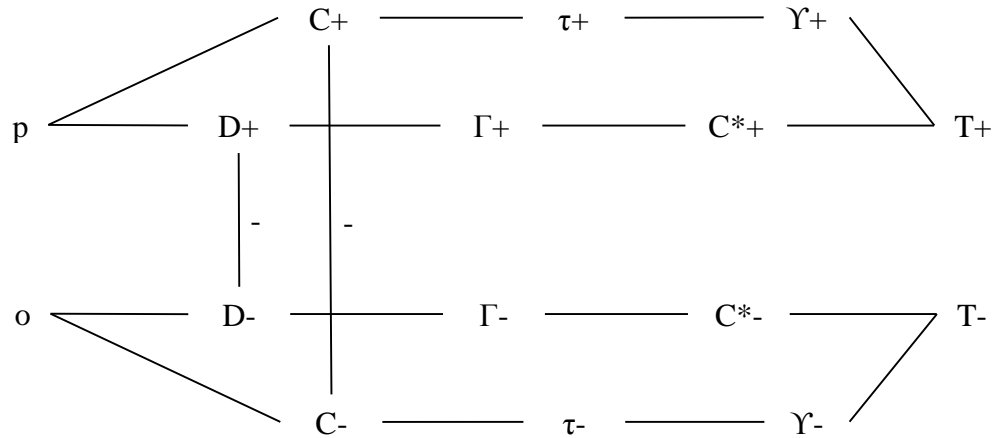


Figure 8. Path Diagram for Multiple Statuses Explanation

Table 12. Estimated Performance Expectation Advantages by Condition for Single Status Cohesion Motivation Model and Multiple Statuses Alternate Explanation Model

Condition	<u>Single Status Cohesion Motivation Model</u>		<u>Multiple Status Alternate Explanation Model</u>	
	Status of Participant	Expectation Advantage	Statuses of Participant	Expectation Advantage
1	D+	.365	D+C+	.663
2	D+	.365	D+C-	.000
3	D=	.000	D=C+	.365
4	D=	.000	D=C-	-.365
5	D-	.365	D-C+	.000
6	D-	.365	D-C-	-.663

Table 13. Differences in Observed and Expected $P(s)$ Scores for Single Status Cohesion Motivation Model and Multiple Statuses Alternate Explanation Model

Condition	<u>Single Status Cohesion Motivation Model</u>			<u>Multiple Status Alternate Explanation Model</u>	
	$P(s)$ Observed	$P(s)$ Expected	Observed – Expected	$P(s)$ Expected	Observed – Expected
1	.602	.617	.015	.589	.013
2	.470	.481	.011	.488	.018
3	.562	.533	.028	.544	.018
4	.464	.442	.022	.432	.032
5	.433	.449	.016	.488	.055
6	.393	.403	.010	.387	.006

By regressing the observed $P(s)$ scores onto the originally computed expectation advantages estimated with only a single status in mind I get the model $P(s) = .488 + .168(e_p - e_o)$ which yields an R-squared of .077 and an adjusted R-squared of .069 (see the Single Status Model of Table 14). When I include cohesion motivation which moderates the average propensity to resist influence (i.e., m) and an has an interactive effect as $\frac{t}{c}$ on the strength of the experimental situation (i.e., q) then I find the model's R-squared increases to .150 and the adjusted R-squared increases slightly to .130 (see the Status and Cohesion Model of Table 14). Now if I regress $P(s)$ scores onto the newly estimated expectation advantages based on multiple statuses this yields the model $P(s) = .488 + .153(e_p - e_o)$ which yields an R-squared of .136 and an adjusted R-squared of .129 (see the Multiple Status Model of Table 14). Both the Status and Cohesion and Multiple Status models fit the data much better than the Single Status model.

Table 14. Coefficients for Ordinary Least Squares Regressions of $P(s)$ on Performance Expectations and Cohesion Motivation for Single Status Cohesion Motivation Model and Multiple Statuses Alternate Explanation Model

Variables	Single Status Model	Status and Cohesion Model	Multiple Status Model
constant	.488***	.533***	.488***
$(e_p - e_o)$.168**	.230***	.153***
Cohesion Motivation		-.090**	
Cohesion Motivation X $(e_p - e_o)$		-.125	
R^2	.077	.150	.136
Adjusted R^2	.069	.130	.129

* $p < .05$; ** $p < .01$; *** $p < .001$

It is difficult to deny that there is evidence to support the multiple statuses model. It is only with the inclusion of the cohesion motivation and interaction terms (the effects of f and c respectively) that the Single Status model be improved to explain about the same amount of variance as the Multiple Status Model. The adjusted R-squareds suggest that when you consider parsimony, the two models are about identical in terms of explained variance. Consequently these models provide little insight into which explanation is more likely correct.

However, while this alternate explanation describes a failure of the manipulations, I argue that another possible explanation consistent with theory presented in this dissertation exists. When I consider that only a small percentage of participants said that Meaning Insight scores had any effect on making correct final decisions during Contrast Sensitivity I have a difficult time accepting the inclusion of a specific status to the situation. However, the second status need not be a specific status characteristic. Barnum and Markovsky (2007) discuss how social identities can create what is tantamount to a status difference. It is possible that my manipulations for the cognitive element of cohesion motivation created a social identity in high cohesion motivated groups. Future

studies should include additional measures to accommodate this possibility if the cognitive element is used as a manipulation.

CHAPTER 7

CONCLUSION

It is no surprise that wanting to work together as a group increases cooperation between group members. When people want to work together they make symbolic gestures that communicate their desires and hope their group members reciprocate. Teams that work well together recognize that each person is vital to the success of the group and do not make overt gestures that demonstrate that they do not value their teammates. While this may seem like common sense it is not necessarily always the case. Some groups work together simply to get a singular job done. “What do I care if you like me or not? As long as we get the job done, right? Then we never have to see each other again!” While this attitude may work for some tasks, people rarely have the opportunity to engage in tasks that do not involve some level of mutual need and long-term accountability. In this dissertation I presented an elaboration of status characteristics theory in which I attempt to bridge the theoretical gap between these one-shot groups and long-term teams.

For this elaboration I proposed that groups that work together over a long period of time have characteristics that short-term task groups do not. Groups have an expectation of future interaction and cooperation and I should observe in these groups symbolic gestures such as allowing others to have more influence. These groups may also tend to favor getting the task done or working together more than the other. For example, in high risk groups where failure at any one task could mean elimination (e.g., sports

teams) I might observe success oriented behavior where members place more of the spotlight on themselves when they know they are the best person for the job or on someone else when they know they have little skill. Alternately people may be more cohesion motivated such as in friend groups where people are still interested in accomplishing tasks and having fun but are more concerned with working together and getting along.

I have attempted in this research to activate the cohesion motivation part of the new elaboration and examine how it works in task groups. To accomplish this task, I utilized the elements of future interaction, need for one another, accountability to each other, and a heightened sense of collective orientation. There is evidence that the manipulations were successful at creating this idea within the minds of participants and I have observed the effects of cohesion motivation on their behavior—especially how they respond to disagreements. The results suggest that these individuals do give into influence more often and are less likely to act on status beliefs (i.e., ideas about who is ultimately more likely to be better at a task).

Beyond elaborating the theory and providing it with face validity, I am encouraged to know that people can be persuaded to act more equitably given the right circumstances. When groups are created, those with the power to define the group have the power to influence the equality of group interactions. In this study, I was able to create groups that acted on and acted against perceptions of status. In cohesion motivated groups people yielded more often, were more concerned about their partners' perceptions of themselves, and did so despite their own ideas that they might be better at the task than their partner.

I presented an alternative explanation for the results where observed levels of resisting influence were explained by incorporating additional information about status orders. However, this alternative explanation is not necessarily a refutation of the theory. On one hand it could be a complication of the experiment that invalidates the results. However, the manipulation checks demonstrated that cohesion motivation was properly activated. Consequently, even if alternative status structures help explain the results, there is no evidence that the activation of those status structures was not an outcome of cohesion motivation. In fact, on numerous occasions I told participants that the results of a pretest were not relevant to the primary task but while participants believed everything else I told them they may have chosen to incorporate those pretest scores into their expectations for their partner. If participants did chose to incorporate those pretest scores into their expectation states there is no evidence that such attributions were not the direct result of wanting to work together and build a positive relationship with their teammates. Of course, I cannot be sure at this point the exact nature of the minds of the participants but I conclude that cohesion motivation, as activated in this experiment, had positive effects on participants' behavior in terms of creating more equality.

Future research should seek to examine which elements incorporated into this experiment are necessary or sufficient to activate cohesion motivation in individuals. One potential avenue would be to reduce the need element and make status during the second task equal. Such equality during task 2 would provide an additional perspective on the manipulations by eliminating the competing explanation. In addition, the theory would benefit from observing the effects of increased success motivation. In groups with an imbalance of task focus and collective orientation in favor of more task focus should

provide additional data for improving the theoretical elaboration. Furthermore, past research could be reinterpreted in light of the new model to examine whether or not this new model would improve predictions. It is not clear if m , f , q , t , or c could be made constants. In general, researchers assume m and q capture experiment-specific effects. However, if I specify that those effects are actually the effects of f and $\frac{t}{c}$ I may find m and q become constants with f , t , and c more predictable variables in future research. With these parameters redefined within this context, this theoretical elaboration may allow researchers to create better fitting a priori models even when cohesion and success motivations are not activated.

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APPENDIX A
RECRUITMENT PITCH

[After being introduced by the professor.]

Thank you Professor _____.

Good Morning/Afternoon!

My name is _____. I am a researcher in the Laboratory for the Study of Social Interaction. We are affiliated with the Department of Sociology here at UGA. I am here today to interest you in participating in some of our research projects.

During the year, the Laboratory for the Study of Social Interaction conducts studies in a number of areas. For many of these studies it is necessary to pay students like yourselves to participate. Many studies we conduct involve group behavior – whether it be face-to-face, over computer networks, or video conferencing. Topics include such things as bargaining and negotiation, work-team problem solving, social expectations, and emotional response.

Because we often have many studies running simultaneously, I don't know exactly which studies you would be participating in. However, most of our studies last about an hour, are conducted right here on campus in Baldwin Hall, and participants are paid in cash as they leave.

All research conducted in the lab is approved by UGA's Institutional Review Board and most studies are funded by governmental agencies like the National Science Foundation. We tell you this so that you will know participation is both safe and of high scientific merit.

The forms we are handing out will guide you to an online sign-up service where you can obtain more detailed information about specific studies. All of our studies are completely voluntary and signing up with this website does not obligate you to participate in any way. Logging into this website you will allow you to find out more about our studies and to sign up for sessions that fit your schedule.

Finally, volunteering for research is in no way connected to this course. Your professor in this course will not know whether you decide to participate in a study and participation cannot affect your grade in this course.

Are there any questions before we leave?

(Be sure to thank students and professor before leaving.)

APPENDIX B

HANDOUT AND ONLINE POSTING TEXT

Research Participants Needed

Schedule sessions at ***your convenience and on campus***

The University of Georgia's Laboratory for the Study of Social Interaction (LaSSI) invites students to participate in various research projects. Participation typically entails between one and two hours of your time ***scheduled at your convenience***. You may participate in as many studies as you like *as long as each study is different*. Compensation is available.

The research takes place in the Department of Sociology's Laboratory for the Study of Social Interaction located in Baldwin Hall. Research topics include communication, group problem-solving, bargaining and negotiation, impression formation, decision-making.

No specific skills are necessary for you to qualify. If you wish to participate, please visit lassi.uga.edu/participate.htm to schedule a session at your convenience. For questions or more information, please contact lassi@uga.edu



APPENDIX C

BULK E-MAIL TO STUDENTS

<HEADER>

UGA Sociology Research Studies Pay \$10-15/Hour or More for Your Participation

<BODY>

The University of Georgia's Laboratory for the Study of Social Interaction (LaSSI) invites students to participate in various research projects.

Participation typically entails between one and two hours of your time scheduled at your convenience. You may participate in as many sessions as you like, but most studies limit the number of sessions for which you are eligible to participate. The research takes place in the Department of Sociology's Laboratory for the Study of Social Interaction in Baldwin Hall room G16. Research topics include communication, group problem-solving, bargaining and negotiation, impression formation, decision-making, and emotion.

COMPENSATION AND CONFIDENTIALITY

Most studies pay \$10 to \$15 an hour. The specific rate of pay will be given when registering for a session. Furthermore, all of our studies are approved by the UGA Institutional Review Board which oversees compliance to standards of ethical research. All studies are confidential and personal information will not be shared with any outside source without your written consent.

HOW TO PARTICIPATE

No specific skills are necessary for you to qualify.

If you wish to participate, please visit uga-soc.sona-systems.com in order to schedule an experiment at your convenience.

If you would like more information about the Laboratory for the Study of Social Interaction, please visit us online at lassi.uga.edu.

The LaSSI research team

lassi@uga.edu

APPENDIX D

RECRUITMENT FLYER

RESEARCH PARTICIPANTS NEEDED

The UGA Sociology Department's
Laboratory for the Study of Social Interaction
(LaSSI) invites YOU to
participate in social research!

- Studies take about one hour of your time.
- Signup online for sessions that fit your schedule.
- No specific skills are necessary to qualify.
- Visit lassi.uga.edu/participate.htm today!

Studies take place in the
Sociology Department's
Laboratory for the Study of
Social Interaction in
Baldwin Hall on North Campus.

Research topics include:
communication,
group problem-solving,
bargaining and negotiation,
impression formation, and
decision-making.



APPENDIX E

SONA REGISTRATION QUESTIONNAIRE

What is your major or majors?

Please specify your age.

- 17 or younger
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27 or older

Can you drive without glasses?

- Yes, with contact lenses.
- Yes, I can drive without glasses.
- No, I cannot drive without glasses.

Please specify your gender.

- Male
- Female
- Other

Please specify the race with which you most closely identify.

- American Indian and Alaska Native
- Asian
- Black or African American
- Native Hawaiian and Other Pacific Islander
- White
- Other or Interracial

APPENDIX F

PROGRAM ORDER AND INSTRUCTIONS

The instructions will be presented on the computer screen. The following script will be presented verbatim. This script has been adapted from that used during research presented in Walker et al. (2011) and(Troyer (2000)).

Program Instructions For Normal Cohesion Motivation Conditions

SLIDE 1

Welcome to the Laboratory for the Study of Social Interaction

Decision Making Study

[Connect to Network]

SLIDE 2

You are now connected to the network. Please click the button below when you are ready to proceed with the study.

[Next]

SLIDE 3

Thank you for participating today. Please make yourself comfortable.

We are members of a research team of social scientists who are interested in studying the impact of limited communication on performance at a series of complex tasks. Currently, we are focusing on two important perceptual abilities called Contrast Sensitivity and Meaning Insight.

We use these two abilities because they are completely unrelated with one another. This means that the results of back-to-back tasks that utilize these abilities can be interpreted independently.

[Proceed to Condition Assignment]

SLIDE 3.1

You have been randomly assigned to condition 3. In this condition, You will be working with a partner to solve problems to determine how methods of communication influence performance at a series of complex tasks. The first task utilizes an ability called "Contrast Sensitivity." The second task utilizes an ability called "Meaning

Insight." Your partner for the study is in another room like the one you are in, and one of the research assistants has explained the study to your partner just as it has been done for you. You and your partner will be working as a group to solve Contrast Sensitivity and Meaning Insight problems. We are handling today's study this way because of several recent studies, which have been done on the effectiveness of individuals working together as a team. For many kinds of problems, these studies indicate that individuals working together perform much more effectively than do individuals who work the same problems alone. For this reason, we will have you work with a partner as a team.

During the first task you will interact with each other only through the computer and communication will be highly restricted. Likewise, during the second task you will interact with each other only through the computer and communication will be highly restricted.

[Continue]

SLIDE 3.2

Most of what we know about how two-person teams solve problems comes from studies where the teams discussed problems and solutions to these problems face-to-face. However, due to globalization, telecommuting, and the popularity of social networking sites, it is becoming increasingly necessary for individuals to work together through computers to solve problems.

The highly restricted communication involved in this study involves the most minimal amount of communication. This may feel unnatural to you but is actually quite common. Often communication goes through a messenger so that you know the opinion of someone else but nothing more. During the first task you will also not know the Contrast Sensitivity ability level of your partner or yourself.

The second task will also be highly restricted but the task will be structured slightly differently. During the second task you will work on Meaning Insight problems and we will provide you with estimates of your Meaning Insight ability. This information may help you make better decisions during the second task.

[Go to Next Page of Instructions]

SLIDE 4

Therefore, the study we are conducting today involves a pair of situations in which the partners do not discuss possible solutions to problems face-to-face, but rather communicate their choices through computers.

With highly restricted communication we anticipate that participants will have more difficulty making decisions than in situations where communication is more open. Your team's results will be compared with those of other teams to estimate how much different forms of communication impact the team's score.

Furthermore, we use two different tasks because we are working with two different levels of communication. In the first task, you and

your partner have no knowledge of your relative abilities regarding Contrast Sensitivity. In the second task, your abilities will be communicated to each other and you will know from the pretest your Meaning Insight abilities.

You and your partner will now have the opportunity to introduce yourselves to one another by means of the computer system over which you are now receiving these instructions.

[Go to Next Page of Instructions]

SLIDE 5

Let's demonstrate how the computer system works by introducing you to each other. On the next page, we will ask you to indicate your room number for the study and share some information about yourself. After you do this and click on the "Send Information" button at the bottom of the page, this information will be combined into a profile and sent to your partner. When your partner has completed the information and clicks the button, you will see information about your partner. Click on the button below marked "Go to Next Page of Instructions" now to do this.

[Go to Next Page of Instructions]

SLIDE 5.1

Please answer questions with a single left-click of the mouse or with the Enter key where appropriate.

As you answer questions, the panel to the right will fill in with the information you enter. Use the "Back" and "Forward" buttons below to navigate back to questions you wish to change.

When you have answered all the questions, the "Send This Information" button on the right will become available. When the information on the right is filled in correctly, please click "Send This Information" to proceed.

[Begin Questionnaire - Each question presented individually and in sequence.]

Please identify your room number: (1 to 15)
Please identify your participant number: (1 to 5)
Please type your first name and press Enter: (free response)
How old are you today? (18 to 35+)
Which do you identify as? (Hispanic, Non-Hispanic)
What race do you primarily identify as? (White/Caucasian, Black/African American, Asian, Arab, Indian, Hispanic, Other)
What gender do you identify as? (Male or Female)
What is your academic standing? (First Year...Fifth Year or More, Master's Student, Doctoral Student)
Please enter the name of the school you are currently attending and press Enter (free response)

[After answering every question, the following message is presented to participants prompting

them to confirm responses before moving forward]

You have reached the end of the survey. Please review the information to the right. This information will be saved in our records and shared with your partner.

If any part of the Participant Summary is incorrect, please click the "Revise Responses" button on the right. You can then use the Back and Forward buttons to navigate to the question you need to correct. All current responses will remain unchanged unless you provide another response.

If the information to the right is correct, please click the "Send This Information" button on the right to proceed.

[Send Information (only available when fields are completed.). "Back" and "Forward" buttons available for editing responses.]

SLIDE 5.2

Please be patient. It may take a few moments for both of you to enter the information.

[Waiting Icon, no timer]

SLIDE 5.3

<PARTICIPANT'S NAME> and <ASHLEY>, thank you for waiting. Please write down the following information on the information sheet we provided. you are finished, please click the button labelled "Continue Instructions" to proceed.

[Note: Partner's name is either Ashley, Brittney, or Christy. This is assigned randomly during setup and when a participant's name begins with the same first letter as the randomly assigned name, another name is chose from the alternates]

<-----where participant has more status ----->

	<PARTICIPANT'S NAME>	<ASHLEY>
Room:	...	12
Participant:	1	2
Age:	...	18
Ethnicity	...	Non-Hispanic
Race:	...	White
Gender:	...	Female
Academic Status:	...	First Year
School:	...	Gainsville State Community College

<-----where participant has equal status ----->

	<PARTICIPANT'S NAME>	<ASHLEY>
Room:	...	12
Participant:	1	2
Age:	...	<same as P1>
Ethnicity	...	Non-Hispanic
Race:	...	White

Gender: ... Female
 Academic Status: ... <same as P1>
 School: ... UGA

<-----where participant has lower status ----->
 <PARTICIPANT'S NAME> <ASHLEY>
 Room: ... 12
 Participant: 1 2
 Age: ... 28
 Ethnicity ... Non-Hispanic
 Race: ... White
 Gender: ... Female
 Academic Status: ... Doctoral Student
 School: ... Biochemistry and
 Molecular Biology, UGA

[Continue Instructions]

SLIDE 6

Because the two of you will be working as a group today, we want to give both of you as much information as possible about the study today.

As we mentioned before, we are interested in studying how different methods of communication affect performance at a series of complex tasks. Today, your team will work together on two separate tasks. During both tasks, communication will be highly restricted so that you will interact with each other only through the computer. See the chart below:

	Task 1	Task
2	Communication Highly Restricted	Communication Highly Restricted

[Continue Instructions]

SLIDE 6.1

The tasks that you will be working on for each part of the study will be different and are unrelated to one another. In this condition, the first task will involve utilizing a skill called Contrast Sensitivity. The second task will involve utilizing Meaning Insight. See the chart below:

	Task 1	Task
2	Communication Highly Restricted	Communication Highly Restricted
	Contrast Sensitivity	Meaning Insight

[Continue Instructions]

SLIDE 6.3

Because the tasks are very different, the money you will be able to earn during each task are different as well. Each task will involve 25 decisions. During the first task, each correct final decision will be worth

12 cents. During the second task, each correct final decision will be worth 48 cents. Since both of you will be making decisions and contributing to the team score, the first task will allow your team to earn up to \$6.00 and the second task will allow your team to earn up to \$24.00. The most your team can earn is \$30.00 so if you both answer all questions correctly, you will each earn \$15. However, if you answer many questions incorrectly, you will each receive no less than \$5 each. See below:

Task 1	Task 2
Communication Highly Restricted Contrast Sensitivity 12 Cents Each (\$6.00) (\$24.00)	Communication Highly Restricted Meaning Insight 48 Cents Each

[Continue Instructions]

SLIDE 6.4

Similar studies being conducted at other universities are investigating different aspects of decision making groups. In this study we are primarily interested in the level of communication. Other research focuses on answering additional questions. These include questions about the order and length of the tasks as well as point values. For example, in this study we are using monetary values, but another study is using research participation credit similar to how the Psychology Department requires a certain number of hours worth of research credit for their classes.

[Continue Instructions]

SLIDE 6.4.1

Before we begin the Contrast Sensitivity task we will first administer the Meaning Insight Pretest. We have found that the fatigue associated with computerized tasks like the Contrast Sensitive task negatively impacts the results of ability tests like the Meaning Insight Pretest. In order to get accurate results, we must administer the pretest before the Contrast Sensitivity test.

This pretest will help us predict your level of Meaning Insight ability. The Meaning Insight Pretest is particularly useful because it provides a method of accounting for individual variability. In other words, if someone's education, life experiences, or natural aptitudes influence their Meaning Insight ability in any way then this test will capture those effects. This means that when we move to the second task, the Meaning Insight Pretest score is the best method of determining a person's Meaning Insight skill and their ability to make correct decisions during the Meaning Insight test.

After the pretest is complete, we will move on to the Contrast Sensitivity task's instructions. We will discuss the results of the Meaning Insight Pretest after those instructions. We've found that delaying the presentation of the results aids the long term memory of participants.

[Continue Instructions]

SLIDE 6.4.2
MEANING INSIGHT PRETEST

The Meaning Insight Pretest will proceed as follows. A series of slides will be presented on your monitor. Each slide consists of an English word at the top and a pair of Cherokee words at the bottom just like the sample below.

<Meaning Insight Demo Slide>

[Continue Instructions]

SLIDE 6.4.3
For each slide, choose the Cherokee word you believe has the same meaning as the English word. This is not a typical test where your score is based on a count of your correct answers. Like many other computer assisted tests, the difficulty of the slides will change based on your responses. If you answer correctly, the next slide will be more difficult. If you answer incorrectly, the next slide will be less difficult. Your final score is an estimate of your Meaning Insight ability on a range from 0 (lowest ability) to 30 (highest ability).

You will have 5 seconds to consider each slide. After you have studied a slide for 5 seconds, we will ask you to make your choice. Use the mouse to indicate your choice by positioning the cursor over the Cherokee word of your choice and clicking the left mouse button. When you make a choice, a green border will appear around the word you have chosen and your choice will be recorded. Then the slide will fade and the next set of words will appear on your computer screen.

[Continue Instructions]

SLIDE 6.4.4
Just for practice, we would like each of you to make a choice on this slide. That is, place the cursor over one of the Cherokee words and click the left mouse button. When you have made your choice, a green border will appear around the word you have chosen. This pretest includes 10 slides similar to the one you now see. Please click the "Begin Pretest" button when you are ready to begin the Meaning Insight Pretest.

[Begin Pretest]

SLIDE 6.4.4.1

After you have made your choice, the next slide will be shown. You will not be able to change your choice.

Please note that like Contrast Sensitivity, Meaning Insight is a perceptual skill unrelated to any academic skill or aptitude. The Cherokee language has developed differently than most common languages so it is useful for estimating this ability. We emphasize this because many people incorrectly believe that their experience learning a language is related to Meaning Insight and they are surprised that their scores differ from their expectations. In other words, education and language proficiency typically have no bearing on a person's Meaning Insight ability.

When you are ready to begin, click "Begin Meaning Insight Pretest" below.

[Begin Meaning Insight Pretest]

SLIDE 6.4.5

We are now ready to begin the Meaning Insight Pretest. Please wait while the test is prepared.

[Waiting Icon for about 10 seconds then proceed]

<<<MEANING INSIGHT PRETEST>>>

SLIDE 6.4.6

This completes the Meaning Insight Pretest. Your scores have been noted and we will present the results to you after the next set of instructions.

Please remember that these results are useful for the second task only.

A high

or low Meaning Insight ability score has no bearing on a person's ability to

choose correct answers during the Contrast Sensitivity task. As we stated

earlier, fatigue associated with the Contrast Sensitivity task negatively

impacts the Meaning Insight Pretest scoring so it is important to administer this pretest before the Contrast Sensitivity test.

[Continue Instructions]

SLIDE 6.5

Let us now turn your attention to the Contrast Sensitivity task.

First, Contrast Sensitivity is a perceptual ability which is not necessarily related to specialized skills an individual might possess, such as technical or artistic ability. It is entirely possible that a person might be a very skilled artist, but not have very much Contrast Sensitivity ability. This means that individuals who do poorly in art or math may in fact be quite accurate in making Contrast Sensitivity judgements.

[Continue Instructions]

SLIDE 7

At the present time, social scientists are not sure what the origins of Contrast Sensitivity are or how judgements about Contrast Sensitivity are impacted by methods of communication. This is one reason why we are conducting today's study. We are interested in learning more about Contrast Sensitivity Ability.

During this part of the study, you and your partner will be working with a set of Contrast Sensitivity problems that look like the one shown on the next screen.

[Continue Instructions]

SLIDE 8

These problems require you to use your Contrast Sensitivity ability.

We will ask you to examine two patterns, like the ones below, and select which of the two patterns contains the greater amount of WHITE area. This task is a way of evaluating people's ability to use Contrast Sensitivity to solve problems.

<CONTRAST SENSITIVITY DEMO SLIDE>

[Continue Instructions]

SLIDE 8.1

You will probably find that some of these slides are very difficult to judge. This is because the difference in the amount of white area between the two patterns is sometimes quite small. However, there is a right and a wrong answer to each and every slide, and we have found that persons with high Contrast Sensitivity consistently choose more correct answers than those with low Contrast Sensitivity.

It is also the case that persons with high levels of Contrast Sensitivity ability may not be completely aware of how it is that they choose the right answer. They seem to be operating on the basis of very slight, almost intuitive cues and feelings. However, it is best to be cautious; guesses that are based on first impressions may often be incorrect.

[Continue Instructions]

SLIDE 9

As we mentioned earlier, we are interested in how methods of communication impact how effectively individuals and groups use their Contrast Sensitivity ability to solve problems. We have observed that in many situations, such as when a doctor diagnoses a difficult illness, individuals are called upon to make decisions that must be correct. That is, if the doctor does not make the right diagnosis, the patient might die. Social scientists refer to this kind of situation as a Critical Choice situation.

In Critical Choice situations, when the person is concerned only with the correctness of the decision, he or she will often seek all the information and advice from others that is available. Because the

most important thing in a Critical Choice situation is to be right, individuals will not care whether they or others first realize what the appropriate decision is, so long as the decision is the correct one. It is clear then, that exchanging information with others can often lead to more correct decisions than an individual could make working alone.

[Continue Instructions]

SLIDE 9.1

In this study, we are interested in examining this kind of teamwork situation in greater detail. Consequently, we are going to give the two of you the opportunity to exchange information with each other as to what each of you think is the correct answer for each problem before you make your final decisions. You will use the mouse to make decisions on the computer screen and this information will be shared with your partner.

[Continue Instructions]

SLIDE 10

This is how it will work.

First, we will present a pair of patterns on the screen. After you have each studied the patterns for five seconds, you will each be asked to make an initial choice as to which pattern contains the greater area of WHITE -- Pattern 1 (top) or the Pattern 2 (bottom). This initial choice will let your partner know whether you think that the top figure or the bottom figure contains the greatest area of white. You will each indicate this choice by clicking the box on your screen that corresponds to the pattern you believe has the most white space.

The next screen of instructions illustrates this. The instructions will be displayed at the top of the screen.

[Continue Instructions]

SLIDE 11

Look at the two boxes below. After you have examined the patterns for five seconds, these boxes will replace the patterns. You will use them in solving the Contrast Sensitivity problems.

<CONTRAST SENSITIVITY PATTERN SELECTION DEMO>

[Continue Instructions]

SLIDE 11.1

You express your initial choices about which pattern contains more WHITE area by clicking either the top box labelled "Pattern 1 has more white space" or the bottom box labelled "Pattern 2 has more white space." <PARTICIPANT'S NAME>, a green arrow will appear to the left of your choice. <ASHLEY>, a blue arrow will appear to the right of your choice. When you have made your initial choice, your arrow will appear and your initial choice will be communicated to your partner. However, you will only be able to see your partner's initial choice after you

have made your own initial choice.

Let's go through a practice trial, so that you can try this out. When you and <ASHELY> have both clicked on the button below ("Go to Practice Round"), you will see a screen with a picture of a Contrast Sensitivity problem. You will have five seconds to study the picture. Once you begin viewing the problem, do not click on anything until you see instructions on your screen asking you to do so.

[Continue Instructions]

SLIDE 12

We must wait until both of you are ready to begin the demonstration. Please be patient and watch your screen. We should be ready to proceed in just a few moments. Please turn your attention to the top of the screen where the instructions will appear shortly.

[Waiting Icon]

SLIDE 13

To show that you understand how this works, we will now conduct a practice round.

When the counter below reaches 0, the practice round will begin. As in all trials, two patterns will be shown on the screen. After five seconds, the patterns will be replaced with boxes.

For this practice round, please do not click anything until instructed to do so.

[Visible counter counting down from 30]

SLIDE 13.1

<No instructions. Patterns displayed for 5 seconds and then move to slide 13.2>

<CONTRAST SENSITIVITY DEMO SLIDE DISPLAYED>

[Automatically Proceed in 5 Seconds]

SLIDE 13.2

<PARTICIPANT'S NAME>, it is your turn first.

<PARTICIPANT'S NAME>, please click the box to indicate that you think that Pattern 1 (top) contains more white area. (For now, <ASHLEY>, please wait for further instructions.)

automatically [a green arrow appears to the left of Pattern 1 after Participant 1 clicks the box. The arrow is titled "<PARTICIPANT'S NAME>'s Choice." The program proceeds to slide 14]

SLIDE 14

Thank you. Your partner will not find out what you chose until after BOTH of you have made your own initial choices. Likewise, you will not find out what your partner has decided until you both have made your initial choices. Therefore, regardless of who makes the first choice, you can find out the other person's opinion only after you have each made your own initial choice.

<ASHLEY>, please click "Next" to continue.

[Next button displayed for 15 seconds]

SLIDE 15

<ASHLEY>, it is now your turn. Please click the bottom box to indicate that you think Pattern 2 (bottom) contains more white area.

[after clicking the box, a blue arrow appears on the right indicating "<ASHLEY>'s Choice"]

SLIDE 16

As you both can now see, arrows to the left and right are now visible. A green arrow on the left should point to Pattern 1 (top), <PARTICIPANT'S NAME>'s initial choice. A blue arrow on the right should point to Pattern 2 (bottom), <ASHLEY>'s initial choice.

Each of you should now be able to see both your own opinion and that of your partner displayed in front of you. These arrows should indicate that the two of you disagreed this time, since <PARTICIPANT'S NAME> chose Pattern 1 and <ASHLEY> chose Pattern 2.

[Continue Instructions]

SLIDE 17

During the slide series, after each of you has received information on the other person's opinion, you will have 5 more seconds to decide which is the correct answer. You should each restudy the slide and carefully evaluate your partner's advice. You should use this advice if it helps you make the right decision. When you have made your final choice, you will indicate your decision by clicking the box corresponding to your final decision. At this stage, the boxes are for making final choices only, and they register only your own decision.

When the timer reaches 0, the final choice phase will begin.

[Visible timer going from 30 to 0]

SLIDE 18

<no instructions. patterns are displayed for 5 seconds in conjunction with initial choice arrows and then replaced with boxes.>

[Automatically Proceed in 5 Seconds]

SLIDE 19

Now, both of you should go ahead and make a final choice by clicking one of the boxes below. You may click whichever box you wish. When you make your final choice, a frame will appear around your final choice and the frame will be the same color as your arrow. <PARTICIPANT'S

NAME>, you will see a green frame. <ASHLEY>, you will see a blue frame.

Go ahead and do this now.

[After Clicking, Program automatically proceeds
after 3 seconds]

SLIDE 20

As you both can see, you will NOT see your partner's final choice in today's study. After both members of your team have made their final decisions, they will be recorded, and the arrows, patterns, and frames will disappear. Then, the next Contrast Sensitivity problem will appear on the screen.

You will not see each other's final decisions until after the study is completed. At the end of the study we will give you and your partner a report of the correct answers and your team score. You will be able to determine how each of you responded to each question, the money you earned for each decision, and how much money each of you contributed to the team's score. You will have time to review these results by yourself after you are finished with the study.

[Continue Instructions]

SLIDE 20.1

Because this is condition 3 and communication is highly restricted for both the first and second tasks, you will most likely not see your partner when the study is completed. This lab is divided into several sections throughout the building. Because we are interested in how communication influences decision making, we have each of you participate in different sections of the lab so that there is no prior interaction. This helps us ensure that the amount of communication is truly restricted in conditions like the one you are now in.

[Continue Instructions]

SLIDE 21

Now we will explain our scoring procedures for the Contrast Sensitivity Task.

As we have explained, you will be working together on 25 Contrast Sensitivity slides. Once a slide appears on your screen, you will have five seconds to make your initial choices as to which pattern contains the greater area of white. Then, after you see your partner's choice, you will have five more seconds in which to make your final choices.

Each time that a team member makes a correct final decision, the team will earn 12 cents. If both team members make the correct final choice, the team will earn 24 cents. If an individual makes an incorrect final decision, then that person's final decision adds nothing to the team score for that trial. Your team score will consist of the total amount of money earned for each correct final decisions made by both of you. Since there will be 25 trials, the maximum score your team can achieve during the first task is \$6.00. This means that you both have equal responsibility for your team score.

[Continue Instructions]

SLIDE 21.1

Each correct final decision will be worth 12 cents. Since the most correct final decisions your team can make during the first task is 50, the most money your team can earn is \$6.00. This money will be divided equally between each team member. During the second task you will have more opportunities to earn more money. During the Meaning Insight task each correct final decision will be worth 48 cents.

On the next screen, we will show you the pattern of scores that has been compiled from previous studies involving Contrast Sensitivity ability.

[Continue Instructions]

SLIDE 22

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

Because not all studies use money, scores here are counts of correct final decisions.

First, we have found that when individuals work alone to solve Contrast Sensitivity problems, 0 to 10 correct final decisions is a poor performance. 11 to 15 represents an average performance, and 16 to 25 is clearly a superior performance.

Individuals can improve their scores substantially if they are given the opportunity to see another person's initial choice before having to make a final decision.

[Continue Instructions]

SLIDE 23

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

In today's study, we are interested in seeing how well you can work together as a team. When people work together as partners, it has been found that a team score falling between 0 and 26 constitutes a very poor team performance. A team score of 27 to 32 is below average performance. Scores of 33 to 40 represent an average team

performance. 41 to 47 correct final decisions represents an above average score. And 48 to 50 correct final decisions clearly represents a superior team performance.

[Continue Instructions]

SLIDE 24

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

As you can see from these standards, it has been demonstrated that teams working together are able to perform more effectively than two individuals working independently. For example, an individual with average ability working on these problems alone could expect to get between 11 and 15 correct. Thus, you might expect that two individuals working together might each get between 11 and 15 correct for a total score between 22 and 30. However, as the team results show, the average team score is quite a bit higher -- between 33 and 40. This is because two people working together as a team, and exchanging information with each other can do better than two individuals working alone.

[Continue Instructions]

SLIDE 24.1

The second task you and your partner will be doing today will be the Meaning Insight task. Meaning Insight is a perceptual ability unrelated to Contrast Sensitivity. People who have a high level of Contrast Sensitivity may have either low or high Meaning Insight. It is not uncommon for people with high Contrast Sensitivity to have low Meaning Insight and vice versa.

We tell you this so that you are not confused with the Meaning Insight pretest score. Although you have taken the pretest first, this should not be misunderstood as having any bearing on your or your partner's ability to choose correct answers during the Contrast Sensitivity test.

As with the first task, you will have opportunities to share your decisions on the second task. More money will be available during the second task. Details regarding the second task will be given to you after the first task is complete.

[Continue Instructions]

SLIDE 24.1.1

Your Meaning Insight Pretests have now been scored and the results are presented below. Scores range from 0 to 30 with 0 being almost no Meaning Insight ability and 30 being the highest level this pretest measures. The lower a person's Meaning Insight ability, the more likely their choices will be incorrect and the higher a person's Meaning Insight Ability, the more likely their choices will be correct.

Participant	Name	Meaning Insight Ability
1	<PARTICIPANTS NAME>	22
2	<ASHLEY>	15

[Continue Instructions]

SLIDE 26

Before we begin the Contrast Sensitivity Problems, we would like to summarize a few points...

5. During the pretest, <PARTICIPANT'S NAME> scored 22 and <ASHLEY> scored 15. These scores reflect the relative Meaning Insight ability for each of you. While helpful during the Meaning Insight task, these scores are unrelated to a person's capacity to correctly solve Contrast Sensitivity problems.

6. Remember: There is no relationship, as far as we can see from past studies, between technical, mathematical, and artistic abilities, and either Contrast Sensitivity or Meaning Insight.

7. Remember: We are interested in how well the two of you can work together as a team. You should not hesitate to change your initial choices if it helps you to make the right decision for your team.

8. Remember: Most research using these tasks has been conducted using individuals. This is one of several new studies being conducted around the country utilizing these tasks in group situations.

9. Finally, please hold your choices until you see instructions indicating that you should make your selection. Then, make your choice as soon as possible after you have been instructed to do so.

[Continue Instructions]

SLIDE 27

We must wait until both of you are ready to begin solving Contrast Sensitivity problems. Please be patient.

In a few moments, the first Contrast Sensitivity panel will appear on your screen. After a few seconds, it will disappear, and you will be prompted when it is time to enter your choice....

[Waiting Icon]

POST-CS

SLIDE 28

This part of the study is now complete. While the first task is still fresh on your mind, we would like to ask you some questions.

[Next]

Program Instructions For High Cohesion Motivation Conditions

SLIDE 1

Welcome to the Laboratory for the Study of Social Interaction

Decision Making Study

[Connect to Network]

SLIDE 2

You are now connected to the network. Please click the button below when you are ready to proceed with the study.

[Next]

SLIDE 3

Thank you for participating today. Please make yourself comfortable.

We are members of a research team of social scientists who are interested in studying the impact of limited communication on performance at a series of complex tasks. Currently, we are focusing on two important perceptual abilities called Contrast Sensitivity and Meaning Insight.

We use these two abilities because they are completely unrelated with one another. This means that the results of back-to-back tasks that utilize these abilities can be interpreted independently.

[Proceed to Condition Assignment]

SLIDE 3.1

You have been randomly assigned to condition 3. In this condition, You will be working with a partner to solve problems to determine how methods of communication influence performance at a series of complex tasks. The first task utilizes an ability called "Contrast Sensitivity." The second task utilizes an ability called "Meaning Insight." Your partner for the study is in another room like the one you are in, and one of the research assistants has explained the study to your partner just as it has been done for you. You and your partner will be working as a group to solve Contrast Sensitivity and Meaning Insight problems. We are handling today's study this way because of several recent studies, which have been done on the effectiveness of individuals working together as a team. For many kinds of problems, these studies indicate that individuals working together perform much more effectively than do individuals who work the same problems alone. For this reason, we will have you work with a partner as a team.

During the first task you will interact with each other only through the computer and communication will be highly restricted. During the second task you will interact with each other face-to-face and communication will not be restricted.

[Continue]

SLIDE 3.2

Most of what we know about how two-person teams solve problems comes from studies where the teams discussed problems and solutions to these problems face-to-face. However, due to globalization, telecommuting, and the popularity of social networking sites, it is becoming increasingly necessary for individuals to work together through

computers to solve problems.

The highly restricted communication involved in this study involves the most minimal amount of communication. This may feel unnatural to you but is actually quite common. Often communication goes through a messenger so that you know the opinion of someone else but nothing more. During the first task you will also not know the Contrast Sensitivity ability level of your partner or yourself.

The second task will also be highly restricted but the task will be structured slightly differently. During the second task you will work on Meaning Insight problems and we will provide you with estimates of your Meaning Insight ability. This information may help you make better decisions during the second task.

[Go to Next Page of Instructions]

SLIDE 4

Therefore, the study we are conducting today involves a pair of situations in which the partners do not always discuss possible solutions to problems face-to-face, but rather communicate their choices through computers.

With highly restricted communication we anticipate that participants will have more difficulty making decisions than in situations where communication is more open. Your team's results will be compared with those of other teams to estimate how much different forms of communication impact the team's score.

Furthermore, we use two different tasks because we are working with two different levels of communication. In the first task, you and your partner have no knowledge of your relative abilities regarding Contrast Sensitivity. In the second task, your abilities will be communicated to each other and you will know from the pretest your Meaning Insight abilities.

You and your partner will now have the opportunity to introduce yourselves to one another by means of the computer system over which you are now receiving these instructions.

[Go to Next Page of Instructions]

SLIDE 5

Let's demonstrate how the computer system works by introducing you to each other. On the next page, we will ask you to indicate your room number for the study and share some information about yourself. After you do this and click on the "Send Information" button at the bottom of the page, this information will be combined into a profile and sent to your partner. When your partner has completed the information and clicks the button, you will see information about your partner. Click on the button below marked "Go to Next Page of Instructions" now to do this.

[Go to Next Page of Instructions]

SLIDE 5.1

Please answer questions with a single left-click of the mouse or with the Enter key where appropriate.

As you answer questions, the panel to the right will fill in with the information you enter. Use the "Back" and "Forward" buttons below to navigate back to questions you wish to change.

When you have answered all the questions, the "Send This Information" button on the right will become available. When the information on the right is filled in correctly, please click "Send This Information" to proceed.

[Begin Questionnaire - Each question presented individually and in sequence.]

Please identify your room number: (1 to 15)
Please identify your participant number: (1 to 5)
Please type your first name and press Enter: (free response)
How old are you today? (18 to 35+)
Which do you identify as? (Hispanic, Non-Hispanic)
What race do you primarily identify as? (White/Caucasian, Black/African American, Asian, Arab, Indian, Hispanic, Other)
What gender do you identify as? (Male or Female)
What is your academic standing? (First Year...Fifth Year or More, Master's Student, Doctoral Student)
Please enter the name of the school you are currently attending and press Enter (free response)

[After answering every question, the following message is presented to participants prompting them to confirm responses before moving

forward]

You have reached the end of the survey. Please review the information to the right. This information will be saved in our records and shared with your partner.

If any part of the Participant Summary is incorrect, please click the "Revise Responses" button on the right. You can then use the Back and Forward buttons to navigate to the question you need to correct. All current responses will remain unchanged unless you provide another response.

If the information to the right is correct, please click the "Send This Information" button on the right to proceed.

[Send Information (only available when fields are completed.). "Back" and "Forward" buttons available for editing responses.]

SLIDE 5.2

Please be patient. It may take a few moments for both of you to enter the information.

[Waiting Icon, no timer]

SLIDE 5.3

<PARTICIPANT'S NAME> and <ASHLEY>, thank you for waiting. Please write down the following information on the information sheet we provided. you are finished, please click the button labelled "Continue Instructions" to proceed.

[Note: Partner's name is either Ashley, Brittney, or Christy. This is assigned randomly during setup and when a participant's name begins with the same first letter as the randomly assigned name, another name is chose from the alternates]

```
<-----where participant has more status ----->
                <PARTICIPANT'S NAME>      <ASHLEY>
Room:           ...                       12
Participant:    1                         2
Age:            ...                       18
Ethnicity       ...                       Non-Hispanic
Race:           ...                       White
Gender:         ...                       Female
Academic Status: ...                     First Year
School:         ...                       Gainsville State
                                                Community College
```

```
<-----where participant has equal status ----->
                <PARTICIPANT'S NAME>      <ASHLEY>
Room:           ...                       12
Participant:    1                         2
Age:            ...                       <same as P1>
Ethnicity       ...                       Non-Hispanic
Race:           ...                       White
Gender:         ...                       Female
Academic Status: ...                     <same as P1>
School:         ...                       UGA
```

```
<-----where participant has lower status ----->
                <PARTICIPANT'S NAME>      <ASHLEY>
Room:           ...                       12
Participant:    1                         2
Age:            ...                       28
Ethnicity       ...                       Non-Hispanic
Race:           ...                       White
Gender:         ...                       Female
Academic Status: ...                     Doctoral Student
School:         ...                       Biochemistry and
                                                Molecular Biology, UGA
```

[Continue Instructions]

SLIDE 6

Because the two of you will be working as a group today, we want to give both of you as much information as possible about the study today.

As we mentioned before, we are interested in studying how different methods of communication affect performance at a series of complex tasks. Today, your team will work together on two separate tasks. During the first task, communication will be highly restricted so that you will interact with each other only through the computer.

During the second task, you will work face-to-face with your partner and communication will not be restricted. See the chart below:

	Task 1	Task 2
	Communication Highly Restricted	Communication Not Restricted

[Continue Instructions]

SLIDE 6.1

The tasks that you will be working on for each part of the study will be different and are unrelated to one another. In this condition, the first task will involve utilizing a skill called Contrast Sensitivity. The second task will involve utilizing Meaning Insight. See the chart below:

	Task 1	Task 2
	Communication Highly Restricted	Communication Not Restricted
	Contrast Sensitivity	Meaning Insight

[Continue Instructions]

SLIDE 6.3

Because the tasks are very different, the money you will be able to earn during each task are different as well. Each task will involve 25 decisions. During the first task, each correct final decision will be worth 12 cents. During the second task, each correct final decision will be worth 48 cents. Since both of you will be making decisions and contributing to the team score, the first task will allow your team to earn up to \$6.00 and the second task will allow your team to earn up to \$24.00. The most your team can earn is \$30.00 so if you both answer all questions correctly, you will each earn \$15. However, if you answer many questions incorrectly, you will each receive no less than \$5 each. See below:

	Task 1	Task 2
	Communication Highly Restricted	Communication Not Restricted
	Contrast Sensitivity	Meaning Insight
	12 Cents Each (\$6.00)	48 Cents Each (\$24.00)

[Continue Instructions]

SLIDE 6.4

Although the tasks are unrelated to each other, we have found that

simply wanting to work well together during the first task may positively influence the overall score of the group. Recent studies have indicated that teams whose members are committed to the group's long term success have higher scores at the end. This means that group members who express a strong desire to work well together tend to earn more money during the overall task. Surprisingly, these groups earn more money regardless of how team members feel their group is performing during each task.

[Continue Instructions]

SLIDE 6.4.1

Before we begin the Contrast Sensitivity task we will first administer the Meaning Insight Pretest. We have found that the fatigue associated with computerized tasks like the Contrast Sensitive task negatively impacts the results of ability tests like the Meaning Insight Pretest. In order to get accurate results, we must administer the pretest before the Contrast Sensitivity test.

This pretest will help us predict your level of Meaning Insight ability. The Meaning Insight Pretest is particularly useful because it provides a method of accounting for individual variability. In other words, if someone's education, life experiences, or natural aptitudes influence their Meaning Insight ability in any way then this test will capture those effects. This means that when we move to the second task, the Meaning Insight Pretest score is the best method of determining a person's Meaning Insight skill and their ability to make correct decisions during the Meaning Insight test.

After the pretest is complete, we will move on to the Contrast Sensitivity task's instructions. We will discuss the results of the Meaning Insight Pretest after those instructions. We've found that delaying the presentation of the results aids the long term memory of participants.

[Continue Instructions]

SLIDE 6.4.2

MEANING INSIGHT PRETEST

The Meaning Insight Pretest will proceed as follows. A series of slides will be presented on your monitor. Each slide consists of an English word at the top and a pair of Cherokee words at the bottom just like the sample below.

<Meaning Insight Demo Slide>

[Continue Instructions]

SLIDE 6.4.3

For each slide, choose the Cherokee word you believe has the same meaning as the English word. This is not a typical test where your score is based on a count of your correct answers. Like many other computer assisted tests, the difficulty of the slides will change based on your responses. If you answer correctly, the next slide will be more difficult. If you answer incorrectly, the next slide will be less difficult. Your final score is an estimate of your Meaning Insight ability on a range from 0 (lowest ability) to 30 (highest ability).

You will have 5 seconds to consider each slide. After you have studied a slide for 5 seconds, we will ask you to make your choice. Use the mouse to indicate your choice by positioning the cursor over the Cherokee word of your choice and clicking the left mouse button. When you make a choice, a green border will appear around the word you have chosen and your choice will be recorded. Then the slide will fade and the next set of words will appear on your computer screen.

[Continue Instructions]

SLIDE 6.4.4

Just for practice, we would like each of you to make a choice on this slide. That is, place the cursor over one of the Cherokee words and click the left mouse button. When you have made your choice, a green border will appear around the word you have chosen. This pretest includes 10 slides similar to the one you now see. Please click the "Begin Pretest" button when you are ready to begin the Meaning Insight Pretest.

[Begin Pretest]

SLIDE 6.4.4.1

After you have made your choice, the next slide will be shown. You will not be able to change your choice.

Please note that like Contrast Sensitivity, Meaning Insight is a perceptual skill unrelated to any academic skill or aptitude. The Cherokee language has developed differently than most common languages so it is useful for estimating this ability. We emphasize this because many people incorrectly believe that their experience learning a language is related to Meaning Insight and they are surprised that their scores differ from their expectations. In other words, education and language proficiency typically have no bearing on a person's Meaning Insight ability.

When you are ready to begin, click "Begin Meaning Insight Pretest" below.

[Begin Meaning Insight Pretest]

SLIDE 6.4.5

We are now ready to begin the Meaning Insight Pretest. Please wait

while the test is prepared.

[Waiting Icon for about 10 seconds then
proceed]

<<<MEANING INSIGHT PRETEST>>>

SLIDE 6.4.6

This completes the Meaning Insight Pretest. Your scores have been noted and we will present the results to you after the next set of instructions.

Please remember that these results are useful for the second task only.

A high

or low Meaning Insight ability score has no bearing on a person's ability to

choose correct answers during the Contrast Sensitivity task. As we stated

earlier, fatigue associated with the Contrast Sensitivity task negatively

impacts the Meaning Insight Pretest scoring so it is important to administer this pretest before the Contrast Sensitivity test.

[Continue Instructions]

SLIDE 6.5

Let us now turn your attention to the Contrast Sensitivity task.

First, Contrast Sensitivity is a perceptual ability which is not necessarily related to specialized skills an individual might possess, such as technical or artistic ability. It is entirely possible that a person might be a very skilled artist, but not have very much Contrast Sensitivity ability. This means that individuals who do poorly in art or math may in fact be quite accurate in making Contrast Sensitivity judgements.

[Continue Instructions]

SLIDE 7

At the present time, social scientists are not sure what the origins of Contrast Sensitivity are or how judgements about Contrast Sensitivity are impacted by methods of communication. This is one reason why we are conducting today's study. We are interested in learning more about Contrast Sensitivity Ability.

During this part of the study, you and your partner will be working with a set of Contrast Sensitivity problems that look like the one shown on the next screen.

[Continue Instructions]

SLIDE 8

These problems require you to use your Contrast Sensitivity ability.

We will ask you to examine two patterns, like the ones below, and select which of the two patterns contains the greater amount of WHITE area. This task is a way of evaluating people's ability to use Contrast Sensitivity to solve problems.

<CONTRAST SENSITIVITY DEMO SLIDE>

[Continue Instructions]

SLIDE 8.1

You will probably find that some of these slides are very difficult to judge. This is because the difference in the amount of white area between the two patterns is sometimes quite small. However, there is a right and a wrong answer to each and every slide, and we have found that persons with high Contrast Sensitivity consistently choose more correct answers than those with low Contrast Sensitivity.

It is also the case that persons with high levels of Contrast Sensitivity ability may not be completely aware of how it is that they choose the right answer. They seem to be operating on the basis of very slight, almost intuitive cues and feelings. However, it is best to be cautious; guesses that are based on first impressions may often be incorrect.

[Continue Instructions]

SLIDE 9

As we mentioned earlier, we are interested in how methods of communication impact how effectively individuals and groups use their Contrast Sensitivity ability to solve problems. We have observed that in many situations, such as when a doctor diagnoses a difficult illness, individuals are called upon to make decisions that must be correct. That is, if the doctor does not make the right diagnosis, the patient might die. Social scientists refer to this kind of situation as a Critical Choice situation.

In Critical Choice situations, when the person is concerned only with the correctness of the decision, he or she will often seek all the information and advice from others that is available. Because the most important thing in a Critical Choice situation is to be right, individuals will not care whether they or others first realize what the appropriate decision is, so long as the decision is the correct one. It is clear then, that exchanging information with others can often lead to more correct decisions than an individual could make working alone.

[Continue Instructions]

SLIDE 9.1

In this study, we are interested in examining this kind of teamwork situation in greater detail. Consequently, we are going to give the two of you the opportunity to exchange information with each other as to what each of you think is the correct answer for each problem before you make your final decisions. You will use the mouse to make decisions on the computer screen and this information will be shared with your partner.

[Continue Instructions]

SLIDE 10

This is how it will work.

First, we will present a pair of patterns on the screen. After you have each studied the patterns for five seconds, you will each be asked to make an initial choice as to which pattern contains the greater area of WHITE -- Pattern 1 (top) or the Pattern 2 (bottom). This initial choice will let your partner know whether you think that the top figure or the bottom figure contains the greatest area of white. You will each indicate this choice by clicking the box on your screen that corresponds to the pattern you believe has the most white space.

The next screen of instructions illustrates this. The instructions will be displayed at the top of the screen.

[Continue Instructions]

SLIDE 11

Look at the two boxes below. After you have examined the patterns for five seconds, these boxes will replace the patterns. You will use them in solving the Contrast Sensitivity problems.

<CONTRAST SENSITIVITY PATTERN SELECTION DEMO>

[Continue Instructions]

SLIDE 11.1

You express your initial choices about which pattern contains more WHITE area by clicking either the top box labelled "Pattern 1 has more white space" or the bottom box labelled "Pattern 2 has more white space." <PARTICIPANT'S NAME>, a green arrow will appear to the left of your choice. <ASHLEY>, a blue arrow will appear to the right of your choice. When you have made your initial choice, your arrow will appear and your initial choice will be communicated to your partner. However, you will only be able to see your partner's initial choice after you have made your own initial choice.

Let's go through a practice trial, so that you can try this out. When you and <ASHELY> have both clicked on the button below ("Go to Practice Round"), you will see a screen with a picture of a Contrast Sensitivity problem. You will have five seconds to study the picture. Once you begin viewing the problem, do not click on anything until you see instructions on your screen asking you to do so.

[Continue Instructions]

SLIDE 12

We must wait until both of you are ready to begin the demonstration. Please be patient and watch your screen. We should be ready to proceed in just a few moments. Please turn your attention to the top of the screen where the instructions will appear shortly.

[Waiting Icon]

SLIDE 13

To show that you understand how this works, we will now conduct a practice round.

When the counter below reaches 0, the practice round will begin. As in all trials, two patterns will be shown on the screen. After five seconds, the patterns will be replaced with boxes.

For this practice round, please do not click anything until instructed to do so.

[Visible counter counting down from 30]

SLIDE 13.1

<No instructions. Patterns displayed for 5 seconds and then move to slide 13.2>

<CONTRAST SENSITIVITY DEMO SLIDE DISPLAYED>

[Automatically Proceed in 5 Seconds]

SLIDE 13.2

<PARTICIPANT'S NAME>, it is your turn first.

<PARTICIPANT'S NAME>, please click the box to indicate that you think that Pattern 1 (top) contains more white area. (For now, <ASHLEY>, please wait for further instructions.)

[a green arrow appears to the left of Pattern 1 after Participant 1 clicks the box. The arrow is titled "<PARTICIPANT'S NAME>'s Choice." The program automatically proceeds to slide 14]

SLIDE 14

Thank you. Your partner will not find out what you chose until after BOTH of you have made your own initial choices. Likewise, you will not find out what your partner has decided until you both have made your initial choices. Therefore, regardless of who makes the first choice, you can find out the other person's opinion only after you have each made your own initial choice.

<ASHLEY>, please click "Next" to continue.

[Next button displayed for 15 seconds]

SLIDE 15

<ASHLEY>, it is now your turn. Please click the bottom box to indicate that you think Pattern 2 (bottom) contains more white area.

[after clicking the box, a blue arrow appears on the right indicating "<ASHLEY>'s Choice"]

SLIDE 16

As you both can now see, arrows to the left and right are now visible. A green arrow on the left should point to Pattern 1 (top), <PARTICIPANT'S NAME>'s initial choice. A blue arrow on the right

should point to Pattern 2 (bottom), <ASHLEY>'s initial choice.

Each of you should now be able to see both your own opinion and that of your partner displayed in front of you. These arrows should indicate that the two of you disagreed this time, since <PARTICIPANT'S NAME> chose Pattern 1 and <ASHLEY> chose Pattern 2.

[Continue Instructions]

SLIDE 17

During the slide series, after each of you has received information on the other person's opinion, you will have 5 more seconds to decide which is the correct answer. You should each restudy the slide and carefully evaluate your partner's advice. You should use this advice if it helps you make the right decision. When you have made your final choice, you will indicate your decision by clicking the box corresponding to your final decision. At this stage, the boxes are for making final choices only, and they register only your own decision.

When the timer reaches 0, the final choice phase will begin.

[Visible timer going from 30 to 0]

SLIDE 18

<no instructions. patterns are displayed for 5 seconds in conjunction with initial choice arrows and then replaced with boxes.>

[Automatically Proceed in 5 Seconds]

SLIDE 19

Now, both of you should go ahead and make a final choice by clicking one of the boxes below. You may click whichever box you wish. When you make your final choice, a frame will appear around your final choice and the frame will be the same color as your arrow. <PARTICIPANT'S NAME>, you will see a green frame. <ASHLEY>, you will see a blue frame.

Go ahead and do this now.

[After Clicking, Program automatically proceeds after 3 seconds]

SLIDE 20

As you both can see, you will NOT see your partner's final choice in today's study. After both members of your team have made their final decisions, they will be recorded, and the arrows, patterns, and frames will disappear. Then, the next Contrast Sensitivity problem will appear on the screen.

You will not see each other's final decisions until after the first task is completed, and you have moved to the groups room for the face-to-face task. At that point we will give you and your partner a report of the correct answers and your team score. You will be able to determine how each of you responded to each question, the money you earned for each decision, and how much money each of you contributed to the team's score. You will have time to review and discuss these results with your partner before we begin the second task.

[Continue Instructions]

SLIDE 20.1

As we mentioned earlier, recent research suggests that teams that want to work well together have higher final team scores than teams who are not concerned about working well together. In teams that want to work well together, group members report that they are more committed to the long term success of the group compared to other teams. We tell you this so that you will have the best chance to earn the most money. The relationship between group cohesion and higher team scores appears to exist even when group members felt they didn't work well together during the first task. In other words, the research suggests that simply being concerned about working well together increases the final team score regardless of individual perceptions of how well the team is performing.

[Continue Instructions]

SLIDE 21

Now we will explain our scoring procedures for the Contrast Sensitivity Task.

As we have explained, you will be working together on 25 Contrast Sensitivity slides. Once a slide appears on your screen, you will have five seconds to make your initial choices as to which pattern contains the greater area of white. Then, after you see your partner's choice, you will have five more seconds in which to make your final choices.

Each time that a team member makes a correct final decision, the team will earn 12 cents. If both team members make the correct final choice, the team will earn 24 cents. If an individual makes an incorrect final decision, then that person's final decision adds nothing to the team score for that trial. Your team score will consist of the total amount of money earned for each correct final decisions made by both of you. Since there will be 25 trials, the maximum score your team can achieve during the first task is \$6.00. This means that you both have equal responsibility for your team score.

[Continue Instructions]

SLIDE 21.1

Each correct final decision will be worth 12 cents. Since the most correct final decisions your team can make during the first task is 50, the most money your team can earn is \$6.00. This money will be divided equally between each team member. During the second task you will have more opportunities to earn more money. During the Meaning Insight task each correct final decision will be worth 48 cents.

On the next screen, we will show you the pattern of scores that has been compiled from previous studies involving Contrast Sensitivity ability.

[Continue Instructions]

SLIDE 22

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

Because not all studies use money, scores here are counts of correct final decisions.

First, we have found that when individuals work alone to solve Contrast Sensitivity problems, 0 to 10 correct final decisions is a poor performance. 11 to 15 represents an average performance, and 16 to 25 is clearly a superior performance.

Individuals can improve their scores substantially if they are given the opportunity to see another person's initial choice before having to make a final decision.

[Continue Instructions]

SLIDE 23

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

In today's study, we are interested in seeing how well you can work together as a team. When people work together as partners, it has been found that a team score falling between 0 and 26 constitutes a very poor team performance. A team score of 27 to 32 is below average performance. Scores of 33 to 40 represent an average team performance. 41 to 47 correct final decisions represents an above average score. And 48 to 50 correct final decisions clearly represents a superior team performance.

[Continue Instructions]

SLIDE 24

<IMAGE OF TEAM AND INDIVIDUAL SCORES>

As you can see from these standards, it has been demonstrated that teams working together are able to perform more effectively than two individuals working independently. For example, an individual with average ability working on these problems alone could expect to get between 11 and 15 correct. Thus, you might expect that two individuals working together might each get between 11 and 15 correct for a total score between 22 and 30. However, as the team results show, the average team score is quite a bit higher -- between 33 and 40. This is because two people working together as a team, and exchanging information with each other can do better than two individuals working alone.

[Continue Instructions]

SLIDE 24.1

The second task you and your partner will be doing today will be the

Meaning Insight task. Meaning Insight is a perceptual ability unrelated to Contrast Sensitivity. People who have a high level of Contrast Sensitivity may have either low or high Meaning Insight. It is not uncommon for people with high Contrast Sensitivity to have low Meaning Insight and vice versa.

We tell you this so that you are not confused with the Meaning Insight pretest score. Although you have taken the pretest first, this should not be misunderstood as having any bearing on your or your partner's ability to choose correct answers during the Contrast Sensitivity test.

However, unlike with the first task, you will have opportunities to discuss your decisions during the second task. More money will be available during the second task. Details regarding the second task will be given to you after the first task is complete.

[Continue Instructions]

SLIDE 24.1.1

Your Meaning Insight Pretests have now been scored and the results are presented below. Scores range from 0 to 30 with 0 being almost no Meaning Insight ability and 30 being the highest level this pretest measures. The lower a person's Meaning Insight ability, the more likely their choices will be incorrect and the higher a person's Meaning Insight Ability, the more likely their choices will be correct.

Participant	Name	Meaning Insight Ability
1	<PARTICIPANTS NAME>	15
2	<ASHLEY>	22

[Continue Instructions]

SLIDE 24.2

Although skill is important, skill is not the only thing that matters for group performance. Our research has shown that wanting to work well together helps improve team scores.

Groups whose members report a higher sense of commitment to their team members during the first task tend to earn high scores in the second task and higher final scores. We suspect this is because members of these groups place more value on other team members' input compared to teams unconcerned with working well together. We tell you this because the second task you will be doing today will provide many more opportunities to increase your overall score (i.e., the sum of your scores from task one and two).

In many situations, teams that felt they were doing poorly during the first

8. Remember: Recent studies suggest that when team members are genuinely interested in working well together, their final team score tends to be higher -- even when team members do not feel they are performing well.

9. Finally, please hold your choices until you see instructions indicating that you should make your selection. Then, make your choice as soon as possible after you have been instructed to do so.

[Continue Instructions]

SLIDE 27

We must wait until both of you are ready to begin solving Contrast Sensitivity problems. Please be patient.

In a few moments, the first Contrast Sensitivity panel will appear on your screen. After a few seconds, it will disappear, and you will be prompted when it is time to enter your choice....

[Waiting Icon]

POST-CS

SLIDE 28

This part of the study is now complete. While the first task is still fresh on your mind, we would like to ask you some questions.

[Next]

APPENDIX G

EXPERIMENTAL PROCEDURES

Laboratory Portion

1. Research assistant(s) scheduled on SONA to run the session arrive at about **30 minutes** prior to the sessions start time.
2. As you walk in, make visible the **Study In Progress** sign.
3. Open the key safe using the code [REDACTED].
4. Open and **unlock all doors** and return the key to the key safe, mixing up the numbers after it has been closed.
5. Turn on all **lights** in the waiting room, participant rooms, hallway, and control room.
6. Plug in the **fan** and turn it on low.

Participant Rooms (Repeat for both rooms 2 and 3 even if not in use)

1. Turn the **lights** on.
2. Ensure the monitor is on and **wake up** the computer (use the mouse or start typing password).
3. **Log into** the computer (username: Researcher; password [REDACTED]).
4. Ensure that the **volume** on the computer is set to about 3.5 tick marks. Volume in Windows at max.
5. Ensure that there is **no pen** in the room.
6. Make sure the **Call Researcher** card is in the room and on the left side of the desk.
7. Ensure **no bugs** are on the floor. Kill and dispose of any you find. Bug spray is in the control room.
8. Be sure to **unlock** the door handle and close it completely so you can open the door again without a key.

Control Room

1. Ensure that the monitors on the control computer and internet computer are on and wake up the machines (move mouse or login). NOTE: If another study is running or will be at any time during your session, use the Second Control station.
2. Ensure that the printer is powered on and has the right color paper in tray 3 and none in tray 1.
3. Login to the controller and the internet pc using the username and password provided above
4. Ensure that the Z: drive is connected to the controller and accessible via My Computer.

5. On the internet pc, login to SONA using your username and password and go to the Study timeslots page.
6. From the filing cabinet, drawer 2, pull out the clipboard with the receipts.

Program Setup and Participant Assignment

1. Open the Study Logs spreadsheet (link on desktop of controller) and fill in the white columns. Go ahead and assign the participants to different rooms--I suggest organizing people alphabetically by first name as this will make it easier to remember which participant has been assigned to which room.
2. Use the Condition Assignments and Partner's Name Assignments tabs to fill in the blue columns. Go ahead and assume that all participants will be showing up and assign condition numbers and partner names accordingly.
 - a. Names should not match in any way. To ensure that this does not happen confirm the following
 - i. No part of the participant's name is the same as the Partner's name (e.g., first, middle, or last name)
 - ii. Participant's name is not a shortened form of the partner's name nor is it an alternative spelling (e.g., no Ashley with Ashleigh or Brittany with Britt)
 - iii. Participant and partner's name should not even begin with the same letter or letter sound (e.g., no Christy with Crystal)
 - b. When the names match in any way, simply pick the next name on the list.
3. Go to each room and login to the computers and open the SCM Study link on the desktop to start the program. Setup the program based on what you entered into the log sheet. Alternately you may use remote desktop connections to setup the computers from the control room. In that event, you will need to go into the participant rooms and log back in before you can start the session.
4. Check that the information on the right is correct **before clicking Start Experiment**. If you did not verify the information before you started or if you know the information was incorrect, press CTRL+Q to quit and then setup the program again.
5. Repeat for each participant who may show up.
6. In the wall pockets above the lock box, put a Participant 1 sign in each room you will be using to help keep track of who has not yet begun the study.
7. Close the door as leave the participant room.
8. Be sitting in the control room, listening for and ready to run participants, 15 minutes prior to the session's start time.

Participant Portion

1. Listen for participants to open the waiting room door.
2. If participants show up early, you should bring them into the lab as soon as possible but **no more than 10 minutes early**.
3. Grab two consent forms and compose yourself into an emotionless but friendly demeanor. Use the mirror to make sure you don't look weird.

4. Make a mental note of which participants you are expecting and which rooms they are assigned to.
5. Open and close the control room door and walk to the waiting room door.
6. In one quick sequence, open the door, make eye contact with the participant, give a small and brief smile while breaking eye contact and closing the door.
7. In a normal tone, ask the participant if she is here for a study.
 - a. ***Hi, are you here for a study?...Great, what is your first and last name?...***
8. If you are expecting them,
 - a. ***[if correct] Excellent. My name is [Your Name] and I will be assisting you during today's study.***
 - i. *[if they have any food or drinks] No script here. If she is eating, tell her you can wait until the session start time to begin but that she can't bring open food or drink containers into the lab. So no cups or soda cans but cups with lids and straws are fine.*
 - ii. ***Please grab your things, follow me, and close the door quietly behind you.***
 - b. ***[if you are not expecting them] Ok, let me double check our schedule. What study are you here for?...***
 - i. *[Different Study] Ok, someone should be with you in a moment.*
 - ii. *[Same Study] Alright, I'll be right back in a moment. [go back to the control room and find their name and tell them when they are actually scheduled.]*
9. Walk the participant to their assigned room, stand in front of your chair (this communicates that you will be using the chair at some point and for them not to put their stuff in the seat), and motion for her to have a seat in front of the computer.
 - a. ***Please have a seat here. [Wait for them to get fully settled before giving any more instructions]***
10. Close the door.
 - a. ***Please silence your cell phone and put it away for the duration of the study.***
 - b. ***I have two identical copies of a consent form that I'm going to leave with you to read over. I'll give you some privacy to do so. When you've finished reading the form, slide the "Call Researcher" card under the door. I'll come back, knock on the door, and come in. Then I will answer any of your questions. I'll bring a pair of pens and we'll sign the consent forms together.***

- c. *Just to be clear, your participation today is completely voluntary and even though you are already here you are not obligated to participate in any way.*
11. Give the participant two copies of the consent form (**no pen yet**) and leave the room closing the door completely behind you.
 12. Go to the control room but leave the door open so you can see when they slide out the card.
 13. Fill in the green columns on the Session Logs sheet.
 14. Fill in the Condition Assignment and Partner's Name Assignment to indicate that those participant numbers, condition numbers, and partner names have been used in the session.
 15. Within SONA, find the participant's session and click Modify on the right. At the bottom, select the option noting that the participant participated and click Update Sign-Ups.
 16. When you see the "Call Researcher" card, **grab 2 pens** and walk out to pick the card up, knock on the door, and walk into the participant room closing the door behind you. NOTE: Don't wait for them to acknowledge your knocking, just go in.
 - a. *Do you have any questions? [Answer any questions as vaguely as possible and give "I don't have that information" type responses when asked for specifics about the study or that depends on how the session progresses]*
 17. Sign the first consent form and hand a pen to the participant. Then repeat for the second form.
 - a. *I'll sign the forms first. After you've signed, I'll keep both forms until the end of the study [sign a form and slide the form to the participant with a pen on top] Alright, please print your name here, sign, and then date [pointing to each field as you say so] and do this for both copies.*
 18. After they sign, take both consent forms and the pen.
 - a. *Thanks. I'll hold onto these for the now. When the study is over I'll give you a copy to take home with you. As you saw in the consent form, you will be working in a group today. For privacy reasons your partner is upstairs in another part of the lab. I'll send the other researcher a message and let them know you are ready and we will begin when they let me know they are ready too.*
 19. Leave the room and close the door. Go to the control room, open it, and close the door (be obvious).
 20. Wait about 2 minutes, open and close the door, and return to the participant room. Knock twice and enter and close the door behind you.

21. NOTE: When you are running multiple participants it may be difficult to remember who has started the study and who has only signed a consent form. I suggest using the Participant 1 signs in the wall pockets to help your remember who has not yet begun the actual study.
22. Say the partner is ready and give the password.
 - a. ***Alright, your partner is also ready to begin. Today you and a partner will be working on a pair of tasks. You will be Participant 1 [Hang Participant 1 sign] and your partner will be participant 2. You are in currently in room 1/2/3/4 [Point to room number sign making sure the participant looks at the room number sign you point to] and your partner is in room 12 upstairs [Point up]. Please use the mouse to click the screen once, nothing will happen, and then type the password “3001” and wait for the computer to catch up with us. [Wait for them the program to advance. Repeat instructions if necessary.]All instructions will be presented on the screen after you Connect to the Network but please wait until I am out of the room to begin.. Periodically you will be asked to slide the “Call Researcher” card under the door and I’ll come back to help with the next part.***
 - b. ***If you need me for anything just slide the “Call Researcher” card under the door.***
23. Leave the room closing the door behind you.

No-Show Procedures

1. If a participant does not arrive within 10 minutes of the start time then they are a no show. If they show up over 10 minutes late (even if you have time to run them), tell them that we had to start the study without them but that they should be able to reschedule on SONA if they are still interested in participating.
2. Within SONA, find the participant’s session and click Modify on the right. At the bottom, select the option noting that the participant is an Unexcused No-Show and click Update Sign-Ups.
3. On the Session Logs sheet, delete everything you entered for that participant in the blue columns. Us the No Show assignments to assign a new participant number and under Participated enter “N” for no. Fill in the columns on the No Show Assignment sheet to indicate that the participant number has been used.

The Waiting Portion

1. Close the door to the control room and peek out periodically to check if they slide the Call Researcher card.

2. The study is pre-programmed so there should be little required of you while it is in progress. Wait patiently for the participant to slide the Call Researcher card under the door or for the end-session printouts.
3. Open the Money tab of the Study Logs file.
4. Unlock the mailbox and remove the envelopes.
5. Count the number of envelopes and remove the envelopes you need for your session. If multiple participants show up, go ahead and take out the number of payments needed for all participants. Go ahead and put them on the receipt clipboard.
6. Write the date and exact time on the Money Log.
7. Note the Type as “W” for withdrawal.
8. Write in the Description the participant numbers you are withdrawing payments for.
9. Under Starting Count, write the number you actually found in the mailbox.
10. Under Ending Count, write the number you are actually putting back into the mailbox.
11. Then type your initials.
12. On the receipt sheet, move the privacy sticky note down to cover any past participant’s signatures.
13. Mark the receipt form with the printed names of the participants and the \$15 amount but leave the item number blank. **Note: Do not have participants print their own name. You print it, they sign it.**

Payment and Ending the Session

1. Wait for the participant to slide the card under the door. A printout may prompt you that a participant is ready.
2. Grab one of her signed consent forms, the receipt clipboard, and some money.
3. Go to the door, pick up the sign, knock, and enter.
4. Ask her if she has any remaining questions and answer them.
5. Return one consent form to her, give her a pen, and ask her to sign the receipt.
6. Pay her \$15
7. Thank her for participating and escort her back to the waiting room. On the receipt sheet, move the privacy sticky note down to cover any past participant’s signatures.
8. Repeat for any other participants.
9. Go back to the room and press “1” and then close the program with CTRL+Q

Paperwork and Close

1. Grab the Participant 1 signs and the other signed consent forms and file them in the cabinet.
2. If you got any end-session printouts, throw them away.
3. File any completely used forms in the cabinet as well as emptied packets.
4. **Most recent** forms should be placed at the **front** of the file folder.

5. Let Jesse know if any Receipt form is full and file the form in the Receipts to turn in folder.
6. Close any open programs on any computers. NOTE: If your participant did not show up, DO NOT ADVANCE THE PROGRAM, just click CTRL+Q.
7. Leave the computers and their monitors on.
8. Unplug the fan.
9. Turn off the lights in the participant rooms and lock all doors as you exit the lab.

APPENDIX H

CONSENT FORM

UNIVERSITY OF GEORGIA CONSENT FORM Group Information and Success

Researcher's Statement

We are asking you to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. This form is designed to give you the information about the study so you can decide whether to be in the study or not. Please take the time to read the following information carefully. In order to make this study a valid one, some information about this study will be withheld until completion of the study. Please ask the researcher if there is anything that is not clear or if you need more information. When all your questions have been answered, you can decide if you want to be in the study or not. This process is called "informed consent." A copy of this form will be given to you.

Principal Investigators:

Sociology

Dr. Dawn T Robinson
Department of Sociology

sodawn@uga.edu
706-542-2421

Jesse Clark
Department of

jkclark1@uga.edu
706-372-0643

Purpose of the Study

The purpose of this study is to examine how limited amounts of communication can affect success at a series of group tasks. Over the past ten years, businesses have noticed a strong trend away from traditional forms of communication such as face-to-face and telephone interactions. Current and especially younger employees have demonstrated a preference for text messaging and other forms of succinct, technology mediated communication. Over the past several years, sociologists have been examining how short forms of communication help and hinder success at different types of task. This study is a continuation of this line of research. You have been selected for participation because of your status as a university student.

Study Procedures

If you agree to participate, you will be asked to ...

- Read a series of instructions and provide a little information about yourself to be exchanged with a partner.
- Complete a Meaning Insight assessment that involves making choices on 10 different pairs of words.

- Work with a partner, either in the same room or via computer, on a Contrast Sensitivity Task that involves judging pairs of black and white slides.
- Complete a set of questions about your experiences in the Contrast Sensitivity Task. These will include questions about how you feel and about how you and your team performed.
- Answer some additional questions regarding the Contrast Sensitivity Task on the computer. This questionnaire will involve more detailed questions about the task and provide an opportunity for you to give more detailed feedback.
- Work with a partner to complete a Meaning Insight Task that involves making decisions on 25 pairs of words from a language neither you nor your partner know. The mode of communication varies by study but may include face-to-face or computer mediated interaction.
- Complete a short set of questions about your experiences in the Meaning Insight Task. These will include questions about how you feel and about how you and your team performed.
- Answer some additional questions regarding the Contrast Sensitivity Task on the computer. This interview will involve more detailed questions about the task and provide an opportunity for you to give more detailed feedback.
- Read a debriefing where further information about the study will be provided and any additional information you request will be provided.
- Your total participation in this study should take up to 1.5 hours.

Risks and discomforts

- We do not anticipate any risks from participating in this research.

Benefits

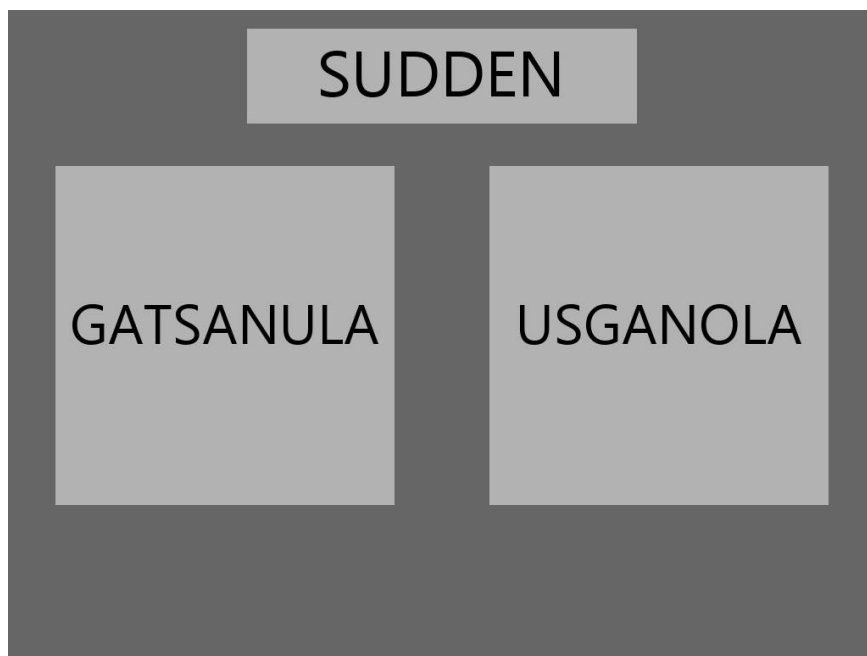
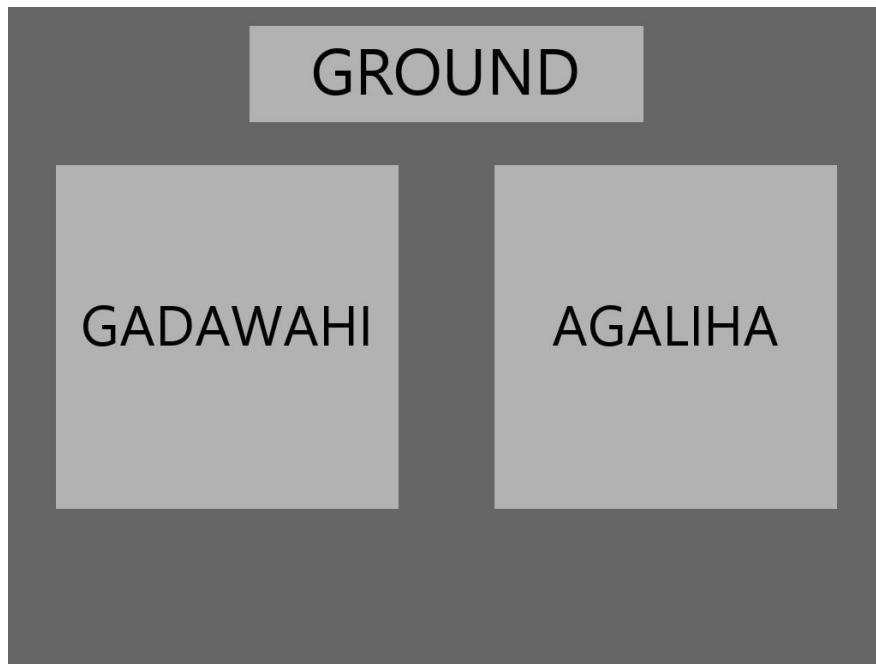
- We expect participants to directly benefit from this study by experiencing scientific research and learning how sociological theories concerning abstract concepts are tested in laboratories and can be applied to the real world.
- We expect society to benefit through the anticipated expanse of knowledge and businesses to benefit from the additional information we gather regarding task performance and communication.

Incentives for participation

You will receive between \$5 and \$15 for participating today. Your exact pay will be based on your team's performance at the series of tasks. Correct responses by team members will add money to a pool. At the end of the study, that pool will be divided evenly between team members. If the team performs poorly, you will earn no less than \$5 for your participation.

APPENDIX I

MEANING INSIGHT PRETEST



INFANT

USDIGA

UTANV

TODAY

SUNALAYI

TALINEIGA

PLENTY

YELIQUO

KANIGIDV

ALONE

UWASA

UDVHISDI

DRUM

AHULI

DETALASTI

QUIET

DOHIYI

GELAHVSGA

FAR

INVHIYU

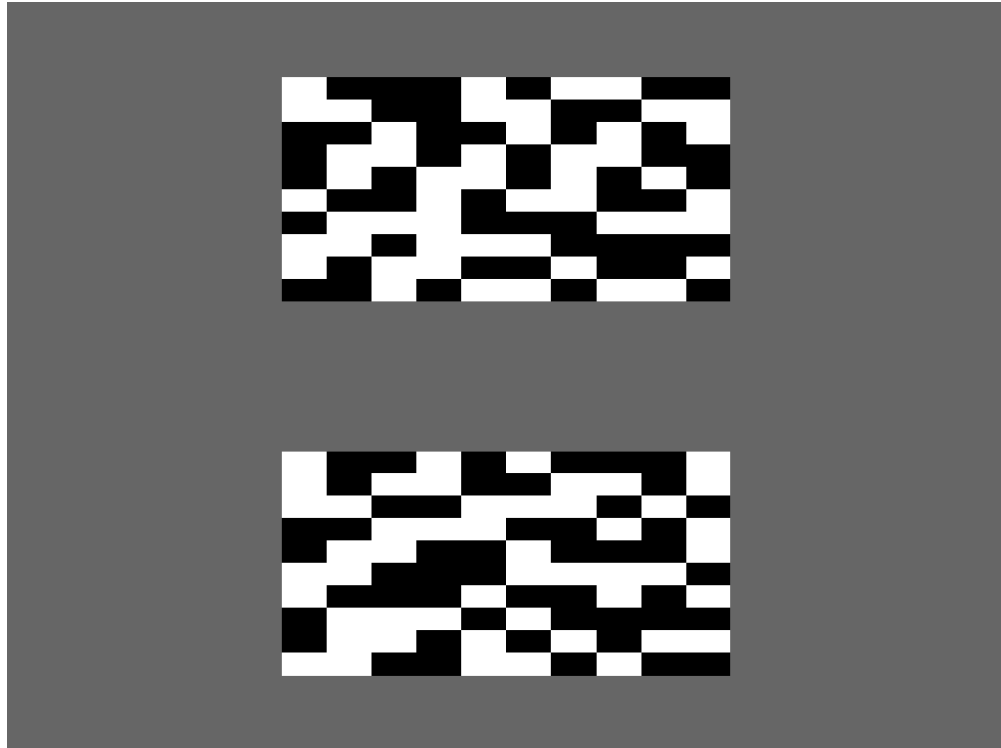
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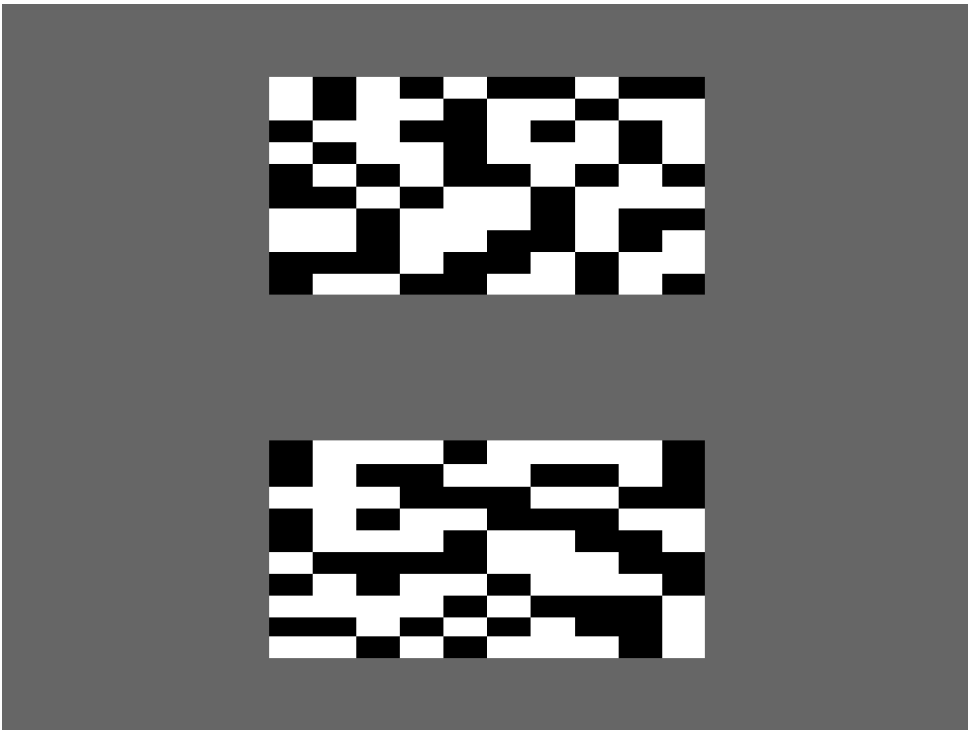
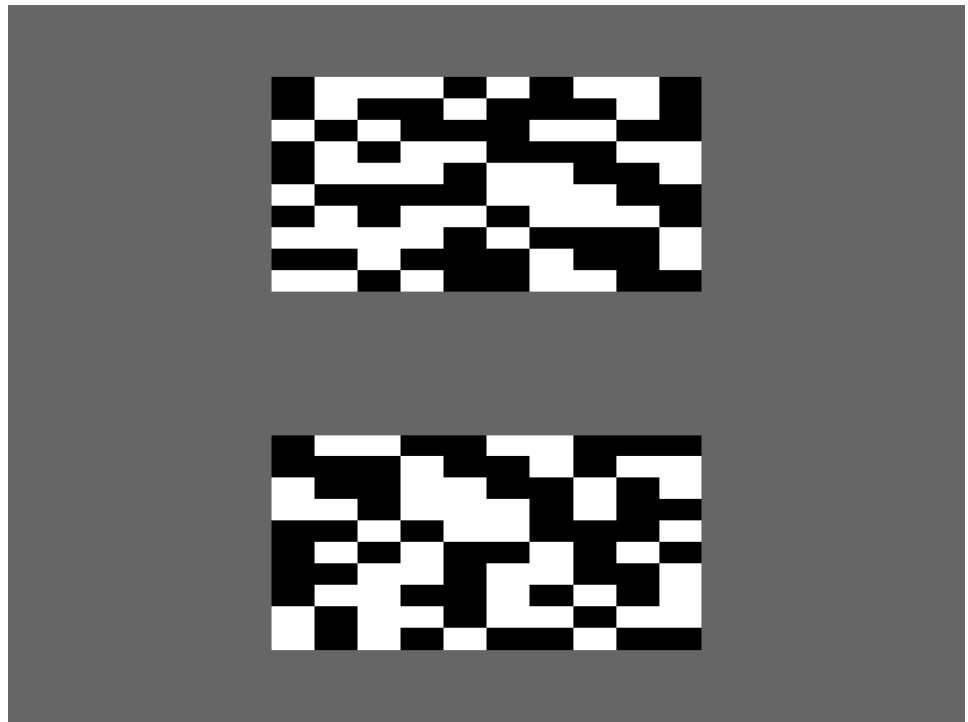
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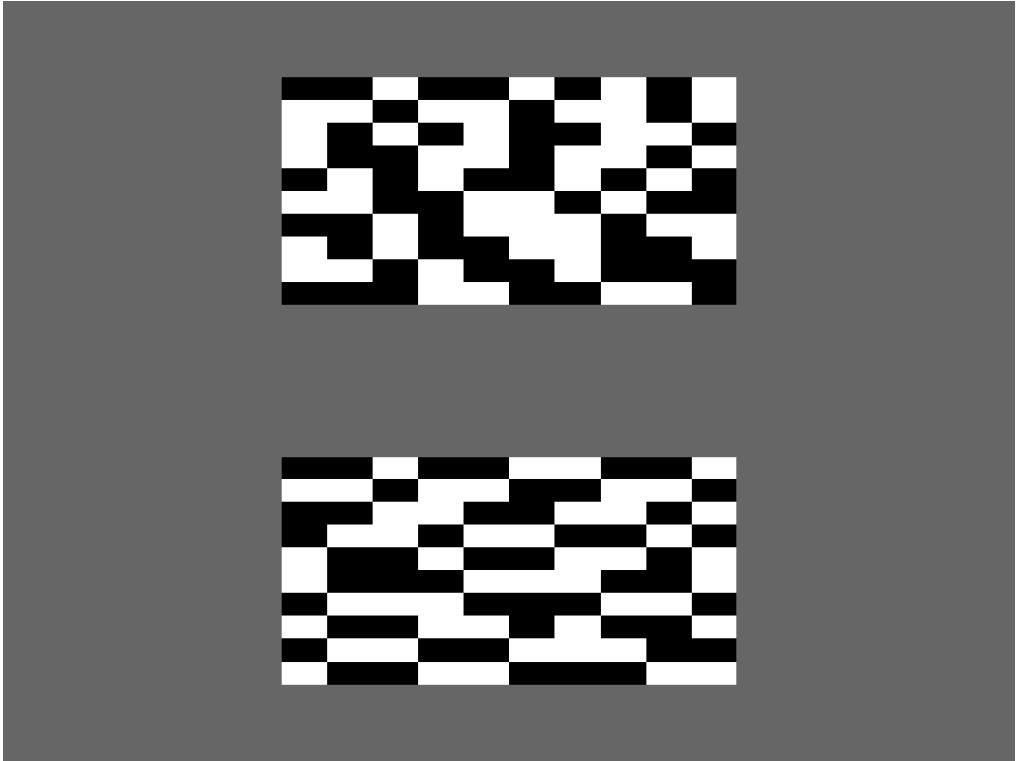
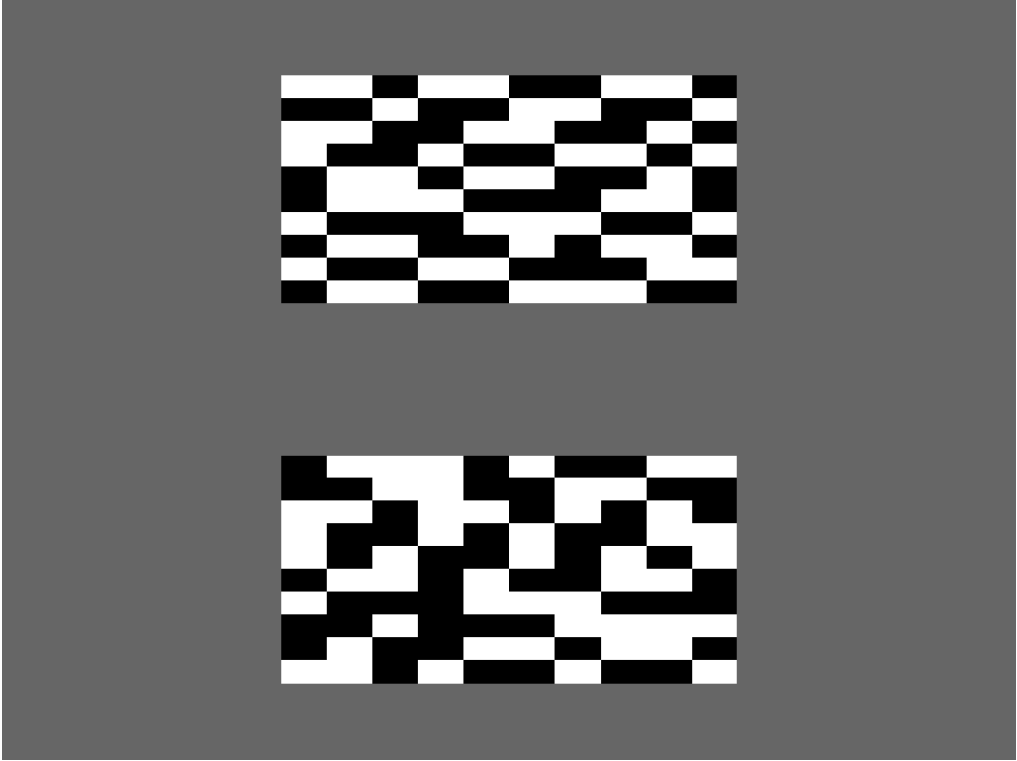
GIGAHAI

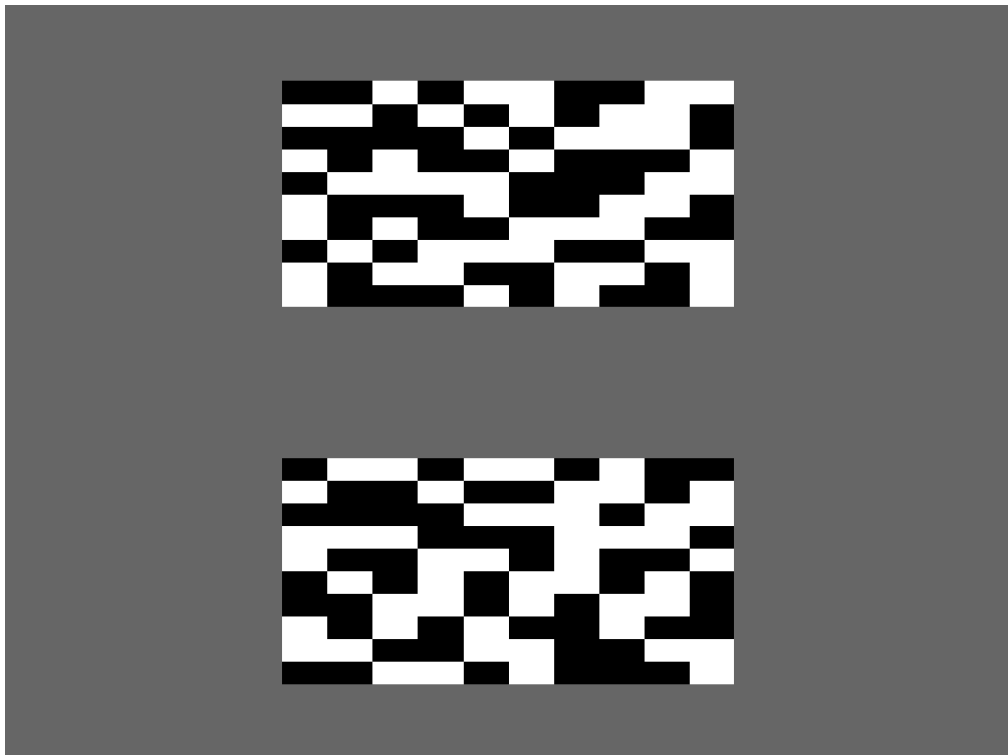
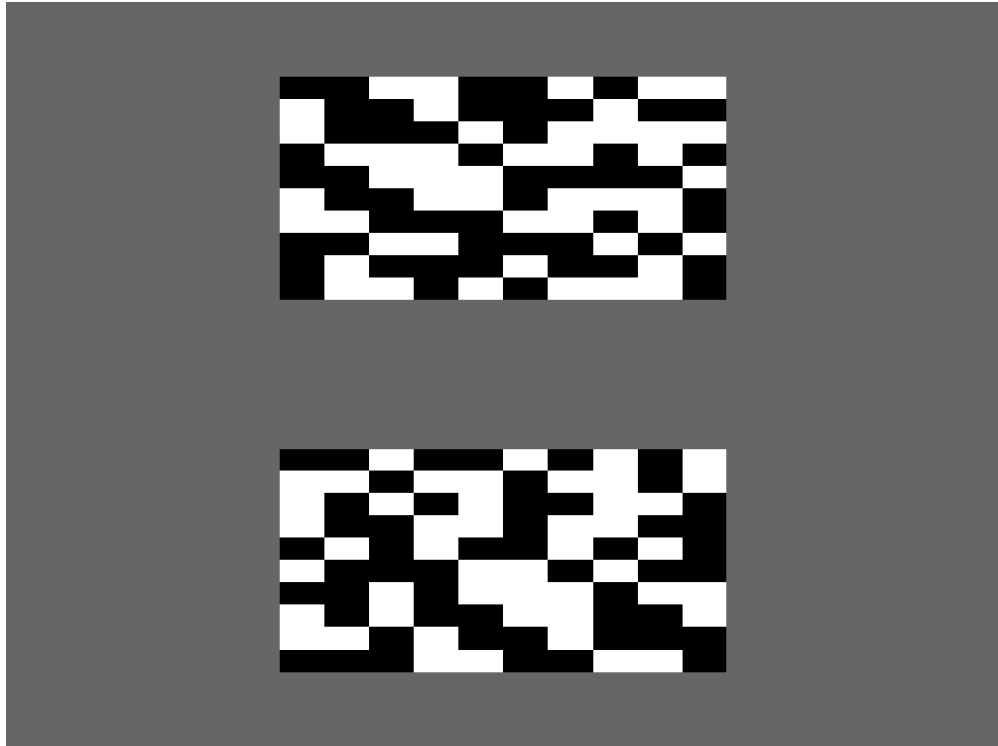
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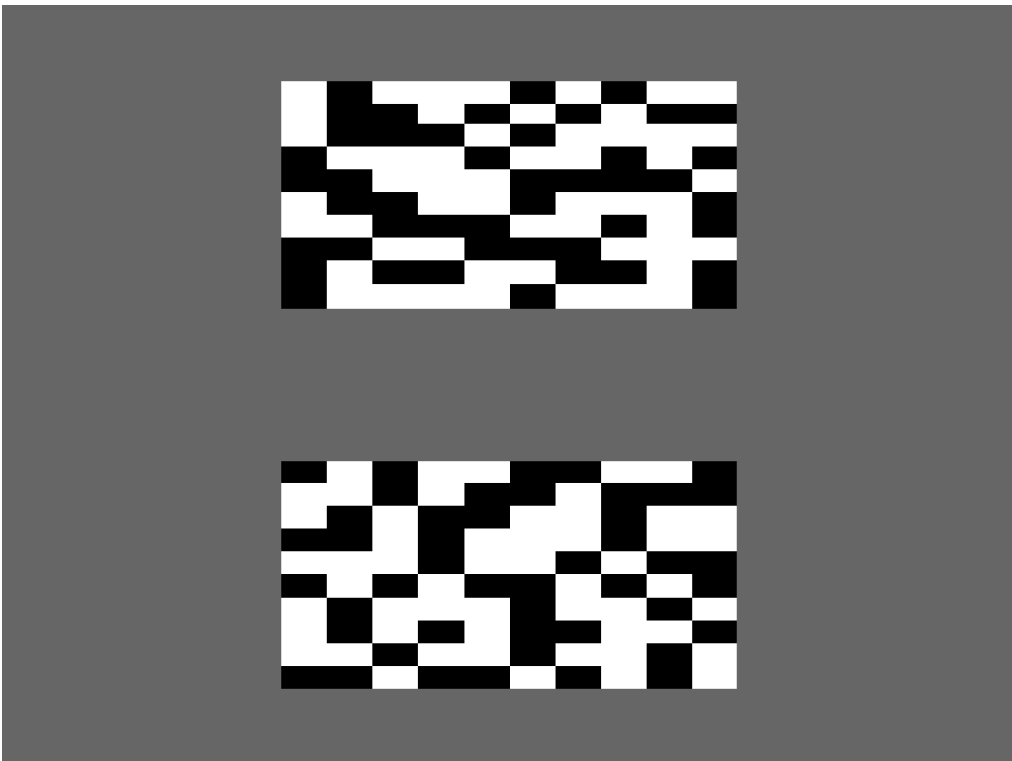
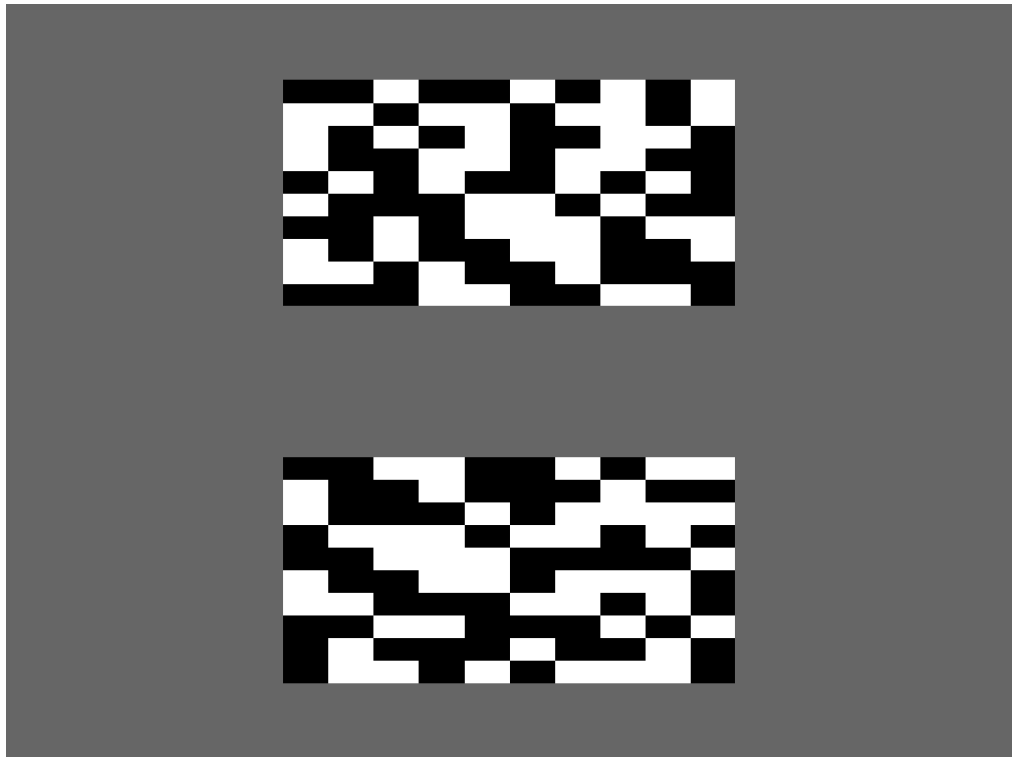
APPENDIX J
CONTRAST SENSITIVITY SLIDES

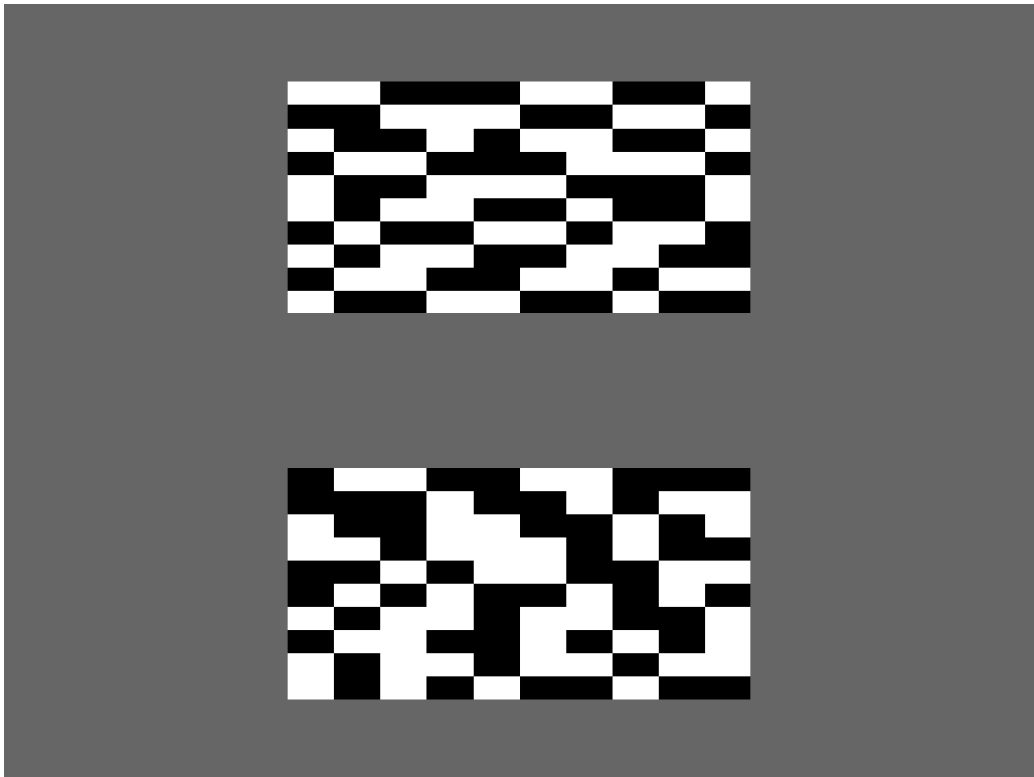
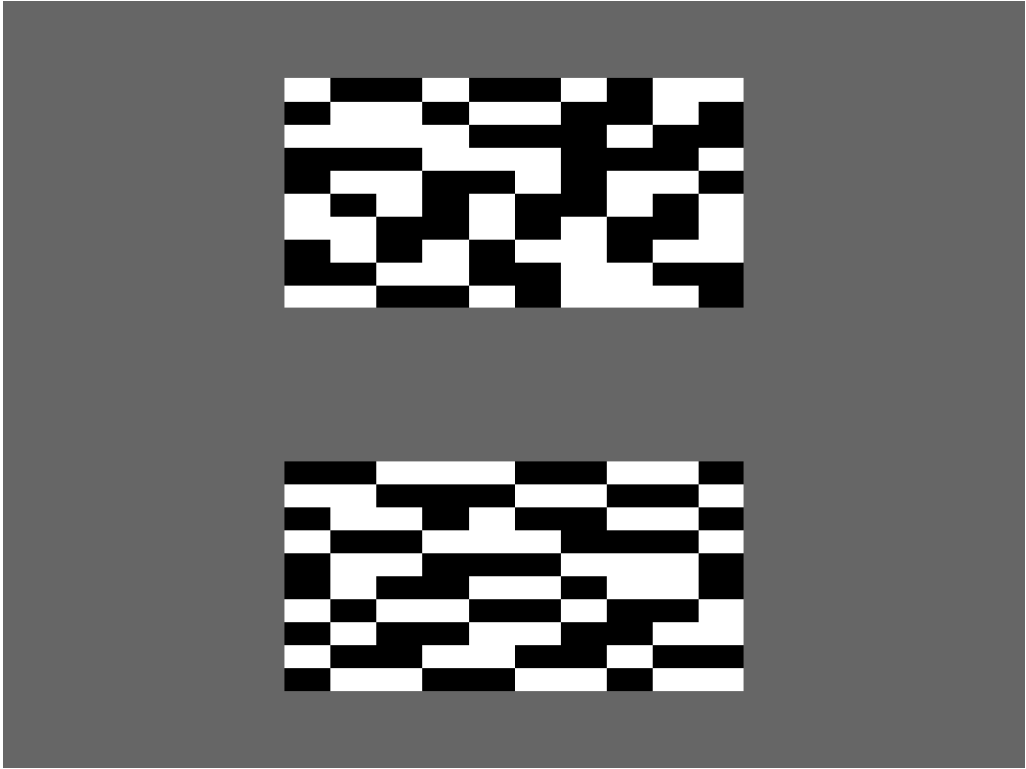


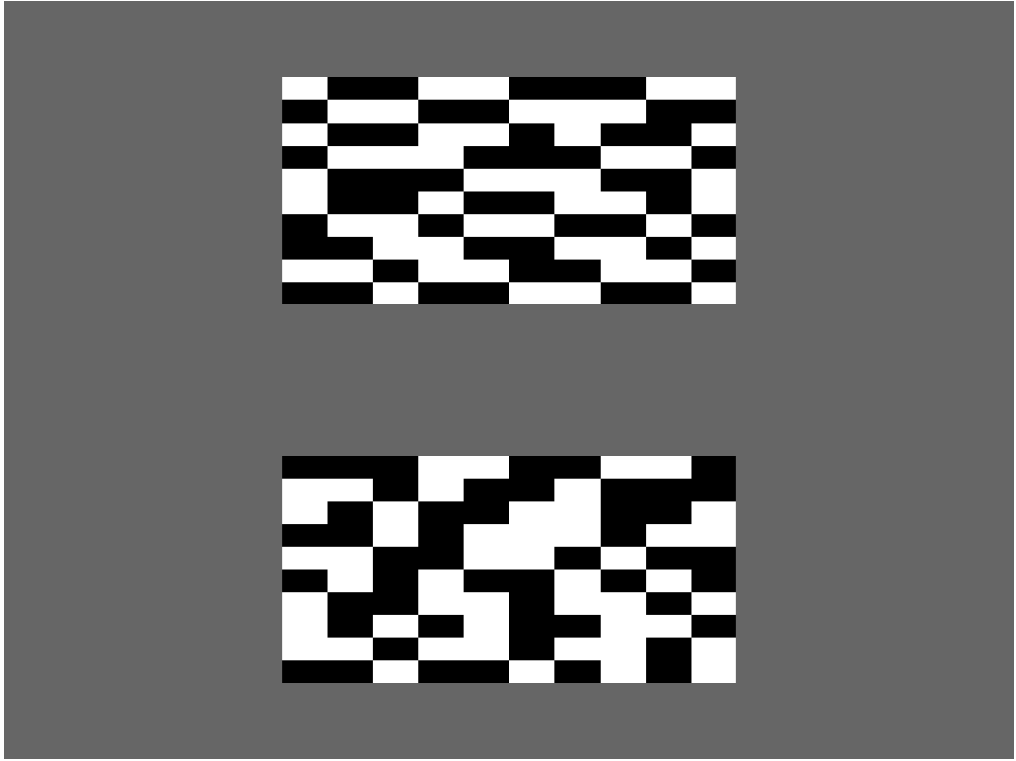
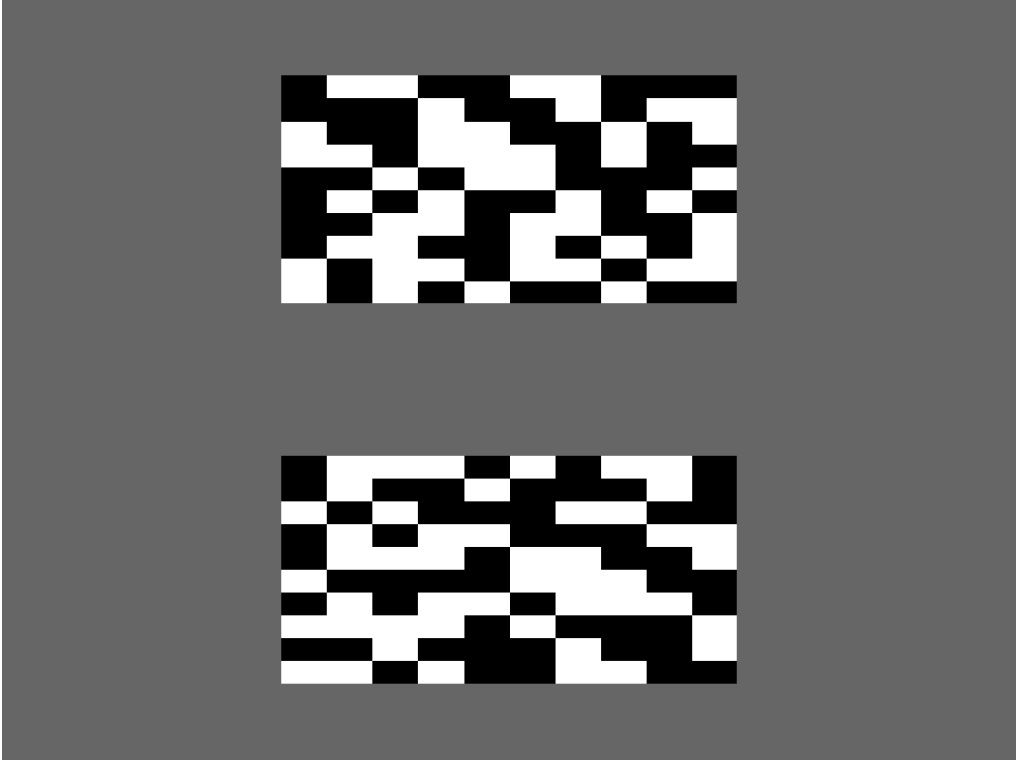


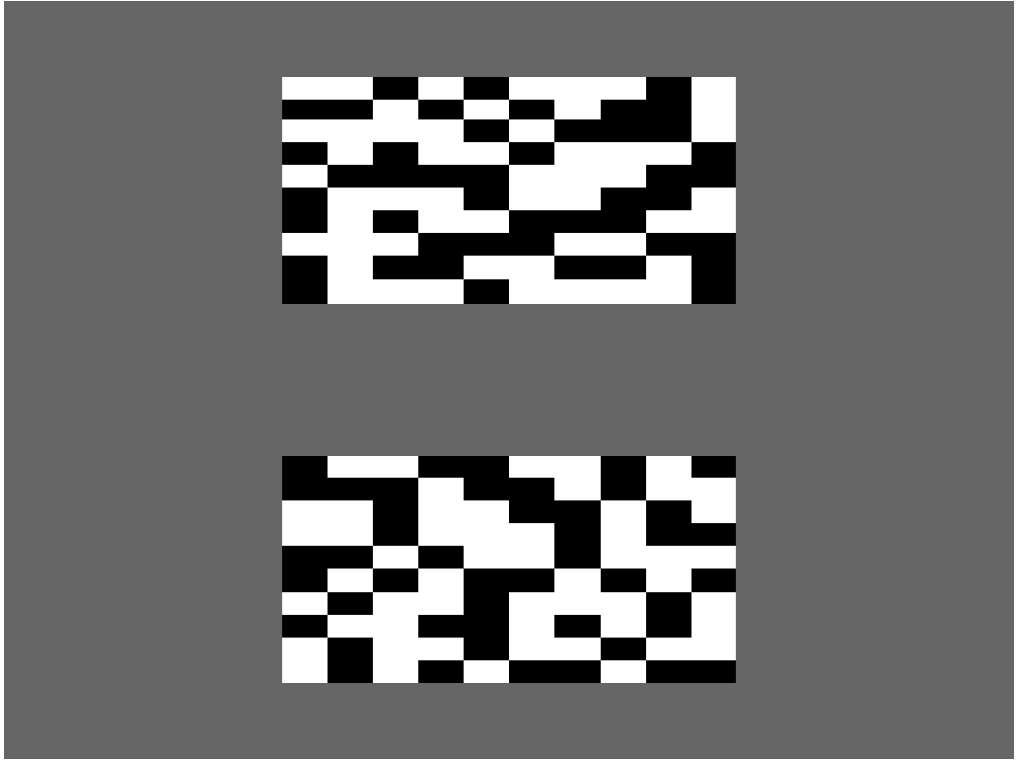
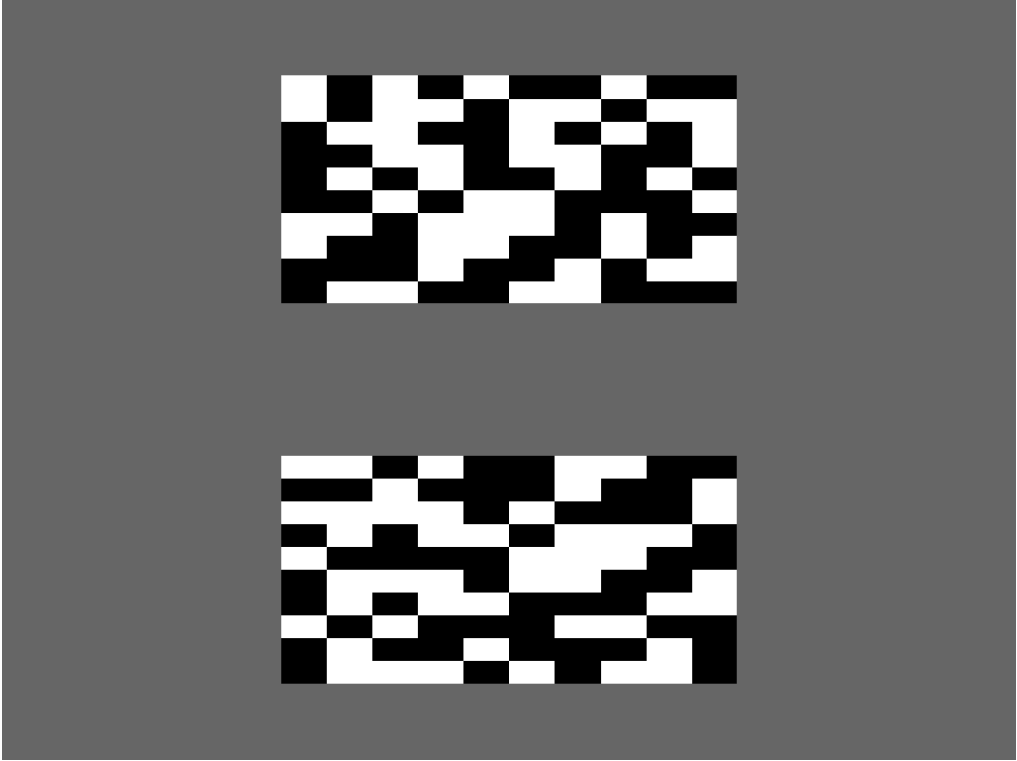


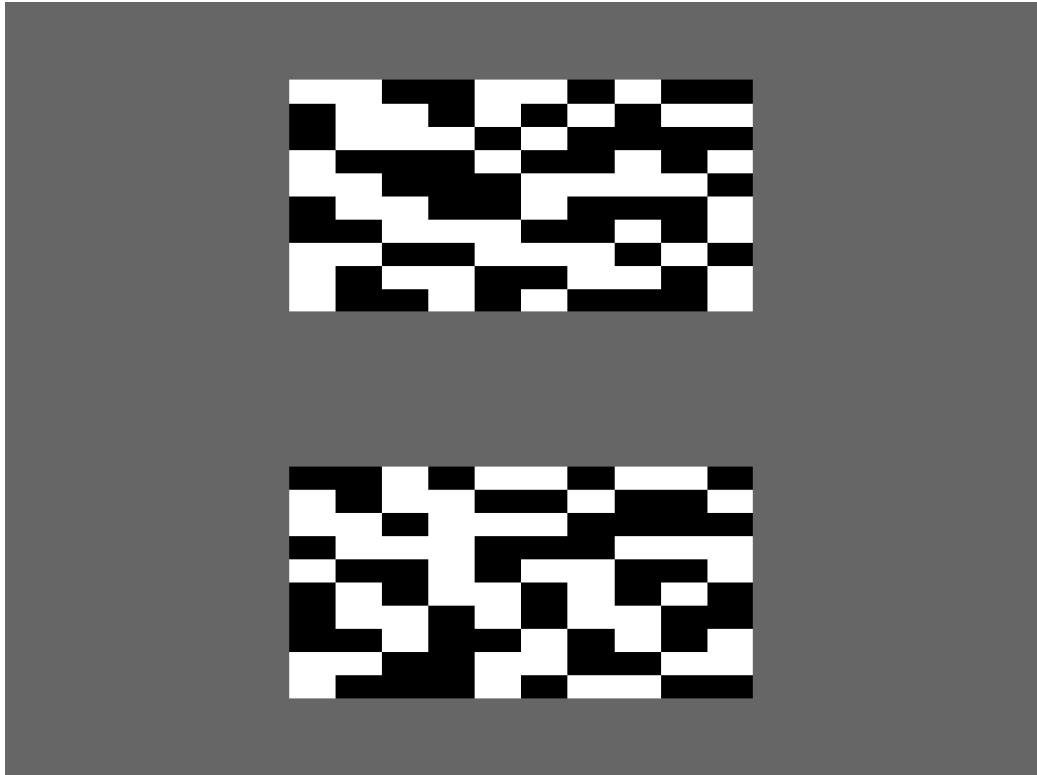
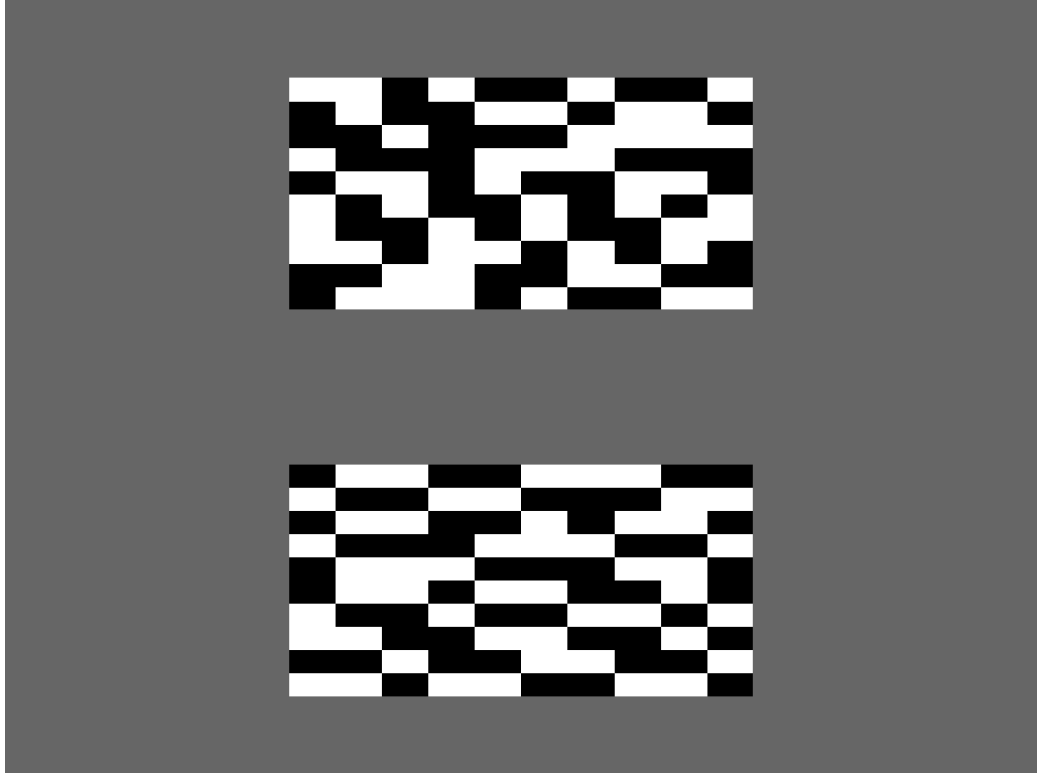


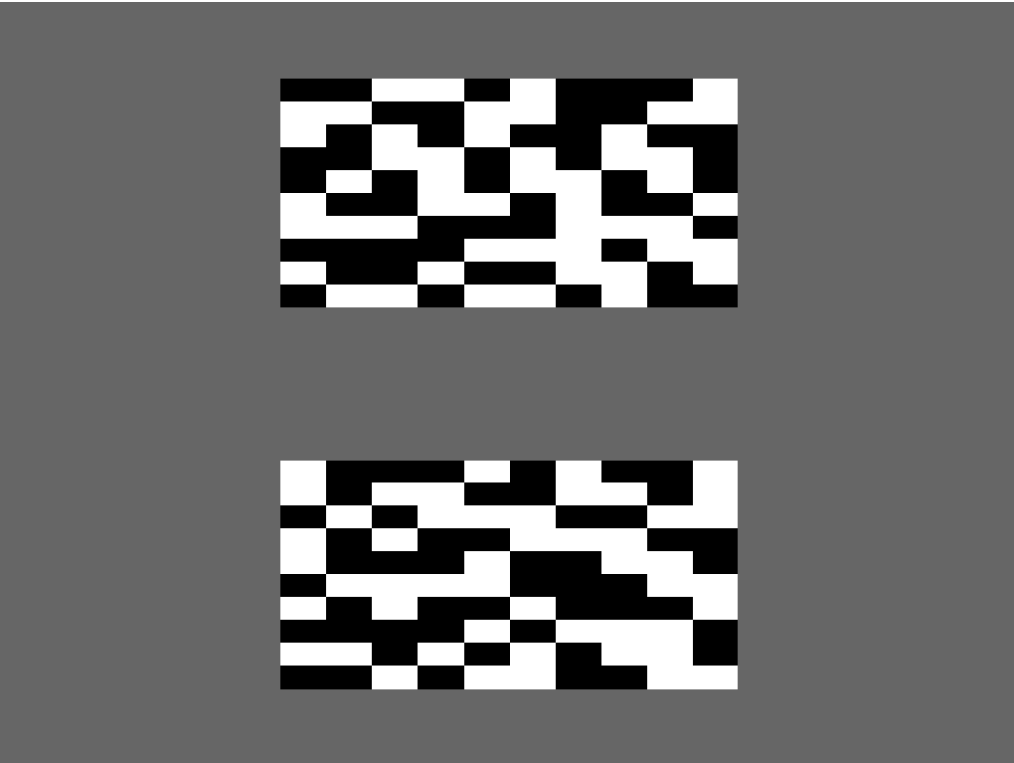
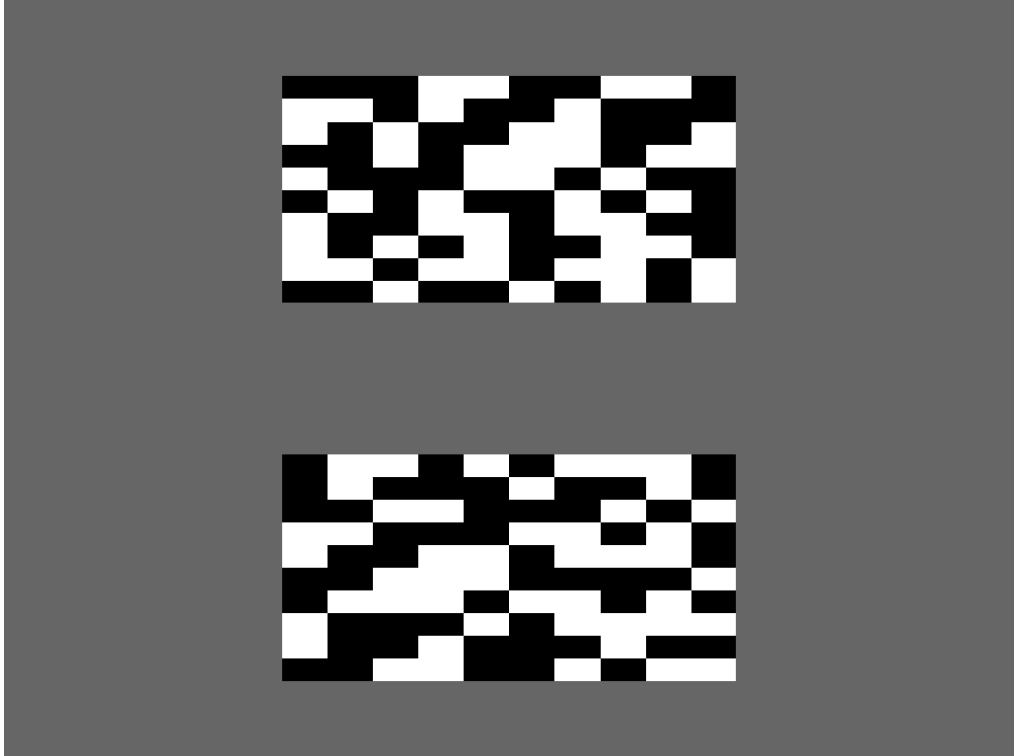


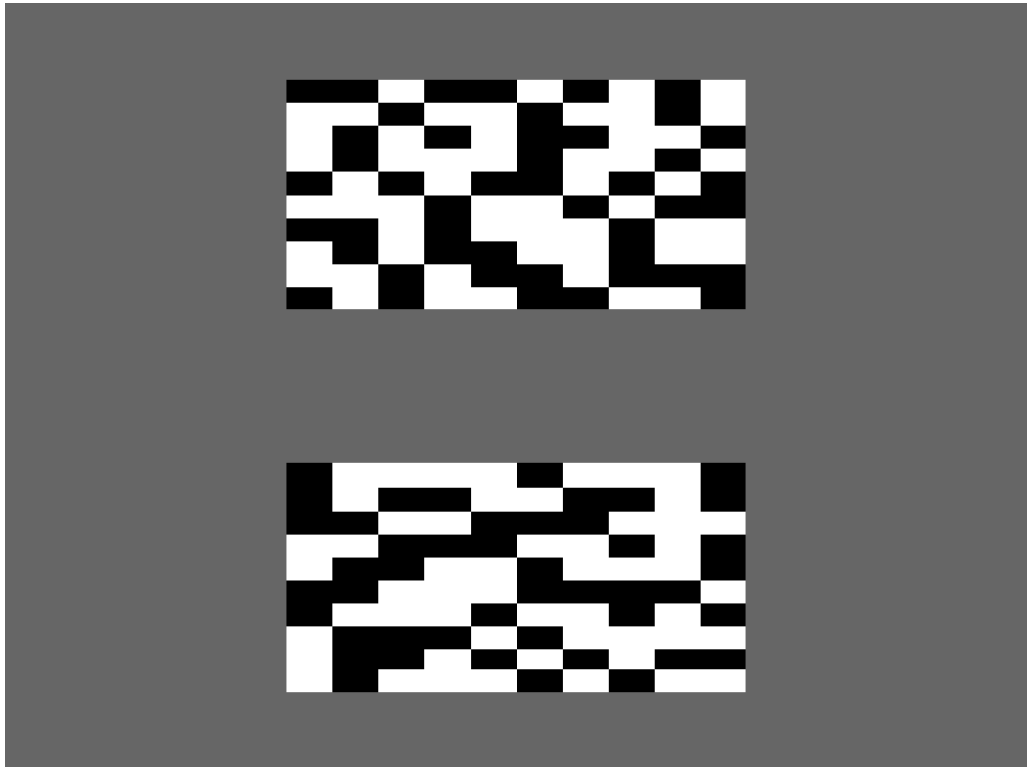
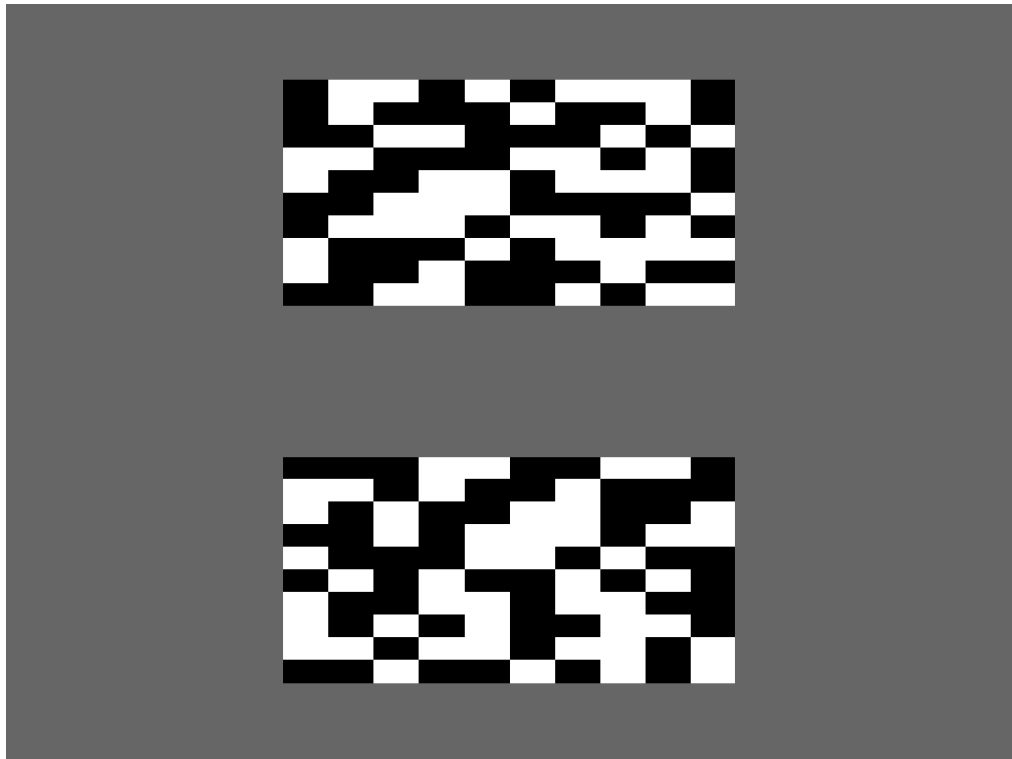


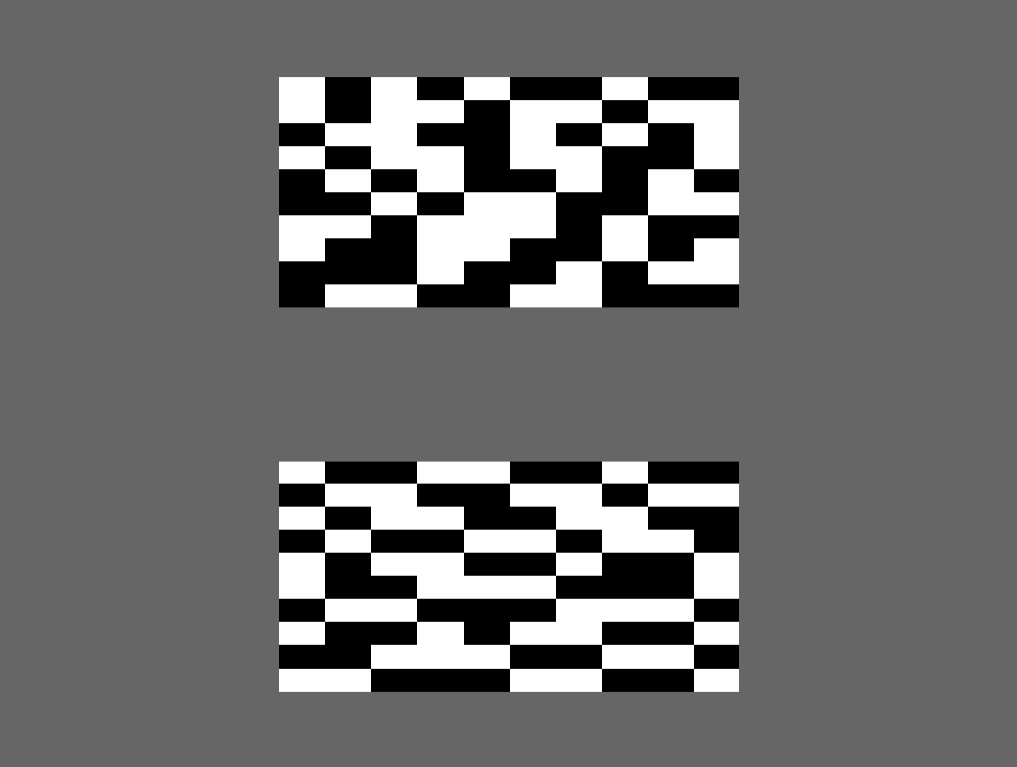
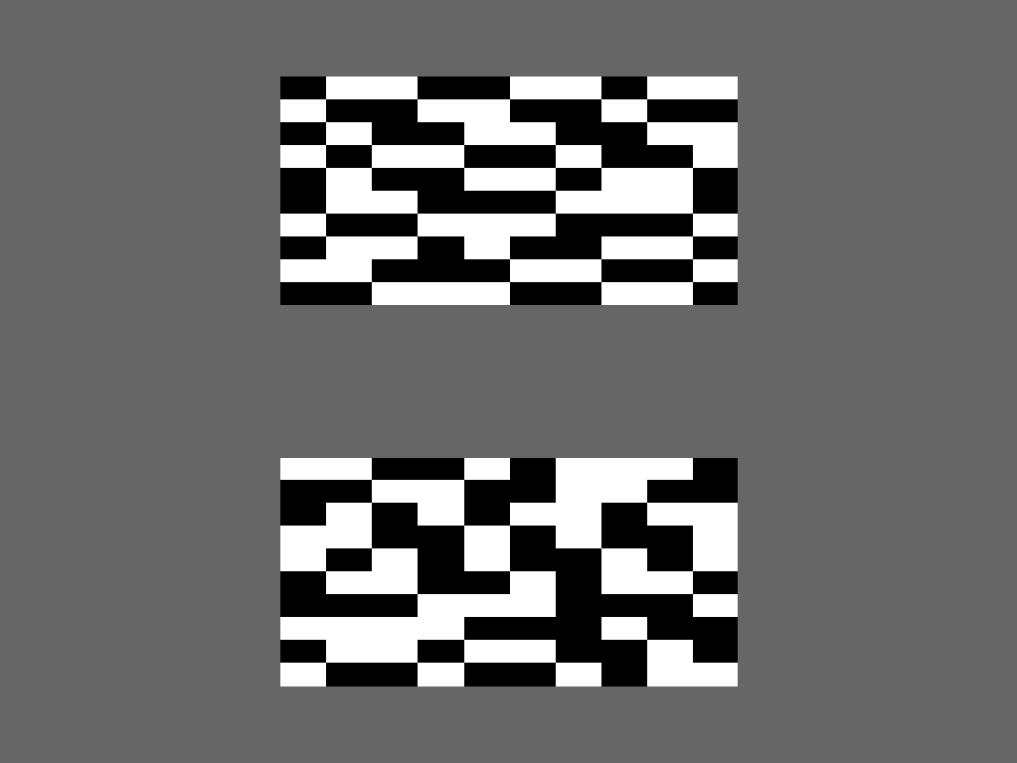


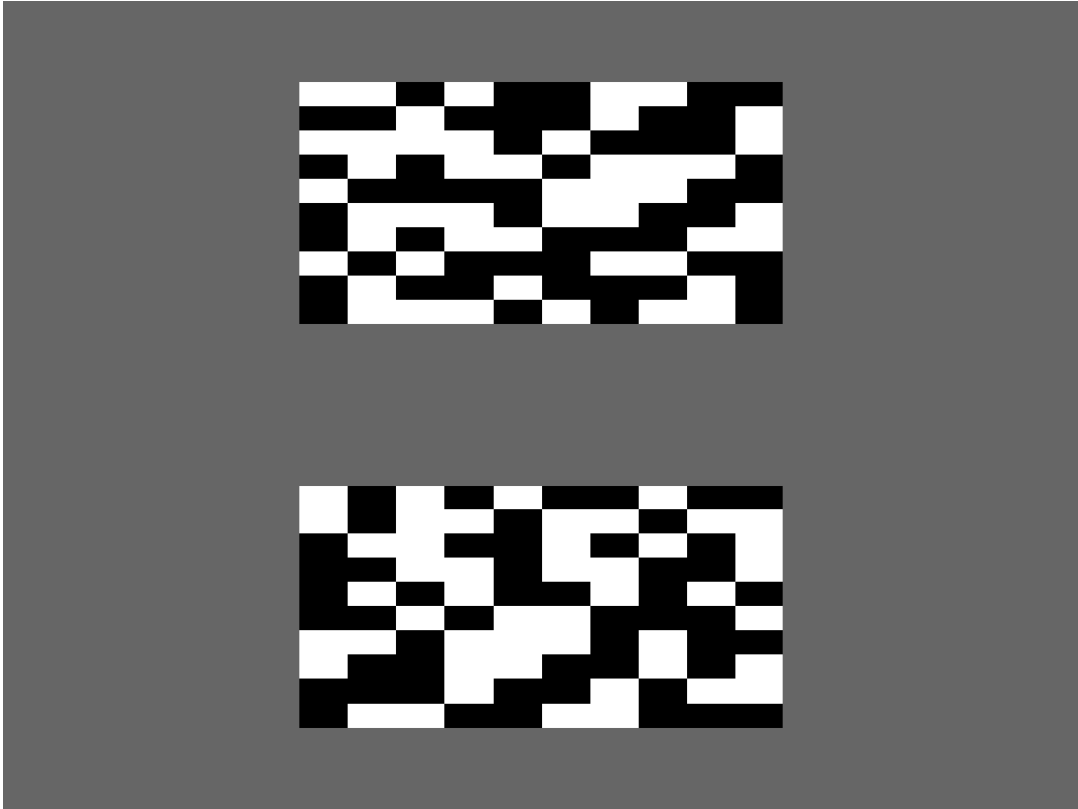






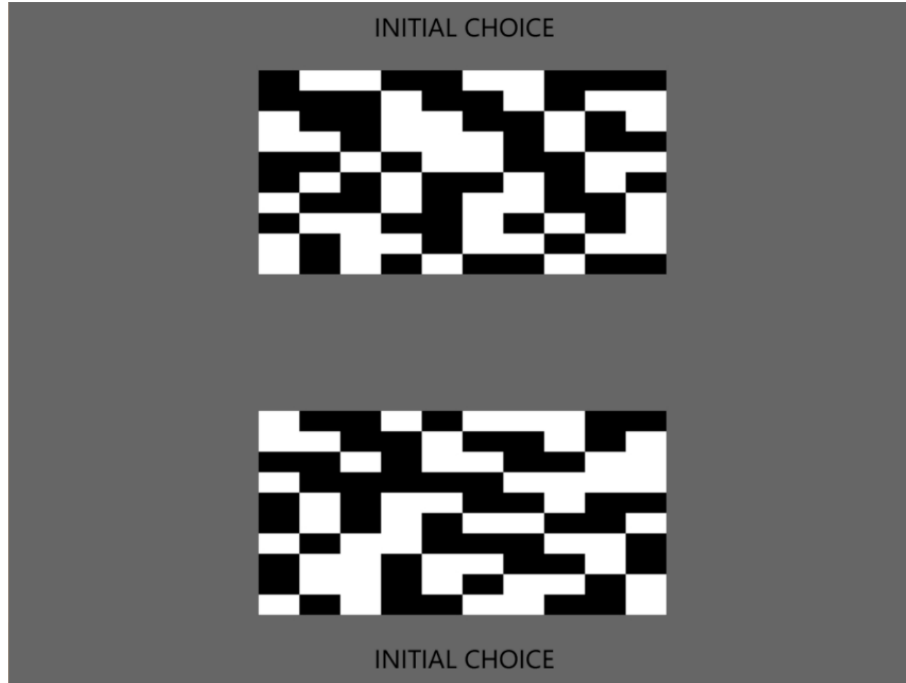






APPENDIX K

CONTRAST SENSITIVITY RESPONSE EXAMPLE



INITIAL CHOICE

Pattern 1
Has More
White Area

Please Make Your Initial Choice Now...

Pattern 2
Has More
White Area

INITIAL CHOICE

INITIAL CHOICE

Jesse's
Initial Choice

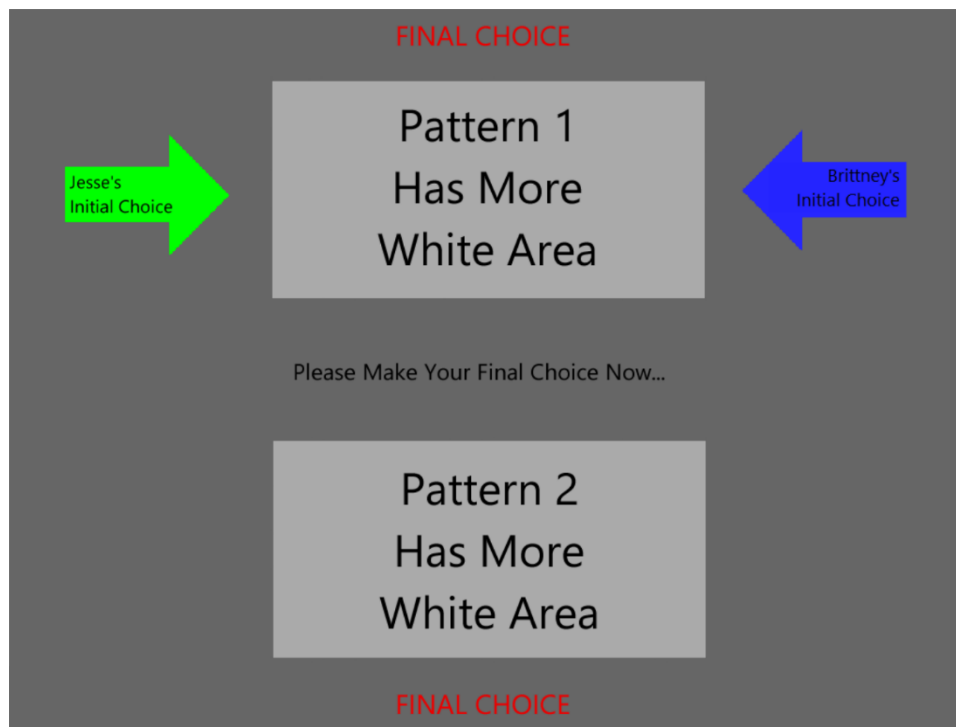
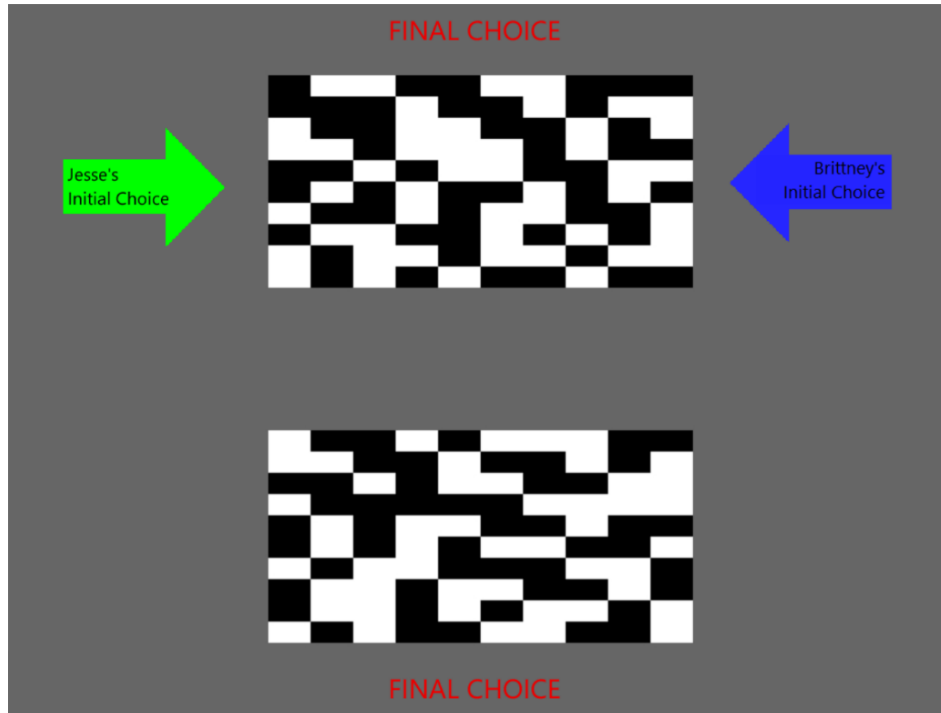
Pattern 1
Has More
White Area

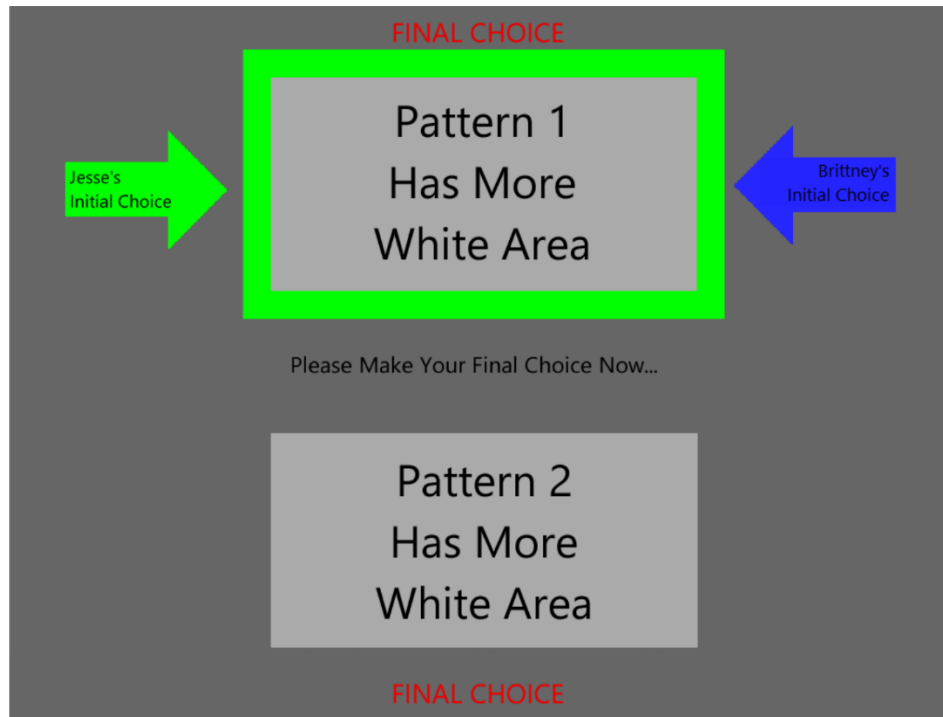
Brittney's
Initial Choice

Please Make Your Initial Choice Now...

Pattern 2
Has More
White Area

INITIAL CHOICE





APPENDIX L

PRE-CONTRAST SENSITIVITY MANIPULATION CHECK

Before we begin the Contrast Sensitivity task, we have a few questions to ask you.

1. How well do you believe you will perform at the Contrast Sensitivity task? Poor to Good
2. How important is it to you that you and your partner work well together? Unimportant to Important
3. Do you feel that there is any relationship between the Meaning Insight ability scores and making correct decisions during the Contrast Sensitivity task? Yes or No
 - a. If yes, Why and how do you believe the two are related? Free Response
 - a. If No, Why do you believe the two are unrelated? Free Response

APPENDIX M

PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

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

_____ interested	_____ irritable
_____ distressed	_____ alert
_____ excited	_____ ashamed
_____ upset	_____ inspired
_____ strong	_____ nervous
_____ guilty	_____ determined
_____ scared	_____ attentive
_____ hostile	_____ jittery
_____ enthusiastic	_____ active
_____ proud	_____ afraid

APPENDIX N

POST CONTRAST SENSITIVITY QUESTIONNAIRE

1. What room number are you in? 1-15
2. How important were your own initial choices in making your final choices?
Unimportant to Important
3. How important were your partner's initial choices in making your final choices?
Unimportant to Important
4. How important was your partner's impression of you when making your initial and final choices? Unimportant to Important
5. How important was getting the correct answer? Unimportant to Important
6. How important was sticking with your own choice when your partner disagreed with you? Unimportant to Important
7. How important was building a positive relationship with your partner?
Unimportant to Important
8. When you and your partner made different initial choices, how important was it to you to change your choice to agree with your partner? Unimportant to Important

In this section we will ask you to try to estimate what kind of person your partner seems to be. That is, we are interested in impressions you may have formed regarding your partner.

9. When I think about how sure my partner is of herself, I think that she probably is:
Sure of self to Unsure of self
10. When I think about how assertive my partner is, I think that she probably is:
Unassertive to Assertive
11. When I think about how likable my partner is, I think that she probably is:
Unlikable to Likable

12. When I think about how fair my partner is, I think that she probably is: Unfair to Fair
13. When I think about how reasonable my partner is, I think that she probably is: Unreasonable to Reasonable

The next set of questions ask about your overall assessment of your performance on the Contrast Sensitivity slides.

14. How difficult did you find the Contrast Sensitivity problems? Easy to Difficult
15. How accurately do you think the Contrast Sensitivity test you just took represents your true Contrast Sensitivity ability? Inaccurately to Accurately
16. How satisfied are you with how well you did on this set of Contrast Sensitivity problems? Dissatisfied to Satisfied
17. How would you evaluate your own performance on the Contrast Sensitivity task? Poor to Good
18. How would you evaluate your partner's performance on the Contrast Sensitivity task? Poor to Good
19. How do you feel your own ability to solve Contrast Sensitivity problems compares with that of your partner? Partner has more to I have more
20. How satisfied are you with what your group accomplished as a group on the Contrast Sensitivity Task? Dissatisfied to Satisfied
21. Suppose you were asked to solve another set of 25 Contrast Sensitivity problems in which you would be working alone without seeing anyone else's answers. How well would you expect to do if working alone? 0-25
22. Suppose your partner was asked to solve another set of 25 Contrast Sensitivity problems in which they would be working alone without seeing anyone else's answers. How well would you expect your partner to do if working alone? 0-25
23. Taking everything into consideration, how satisfied are you with your participation in this study so far? Dissatisfied to Satisfied

The final set of questions ask about your expectations for your team on the second task.

24. How well do you believe you and your partner worked together at the Contrast Sensitivity task? Very Poorly to Very Well
25. How well do you believe you and your partner will work together at the second task? Very Poorly to Very Well
26. What kind of skills do you expect will be necessary for the second task? Free response
27. Who do you believe will be better at the second task? Me vs. My partner
 - a. Why? Free response
28. Can you write, speak, or translate any Cherokee? Yes or No
 - a. [if Yes] Please describe your level of proficiency with the Cherokee language. Free response.
29. Do you believe your team's interactions during the first task will influence your team's interactions during the second task? Yes or No
 - a. Why or why not? Free response
30. How many cents were each correct final decision worth during the Contrast Sensitivity task? 0-25
31. How many cents will each correct final decision be worth during the Meaning Insight Task? 0-50
32. Did the different values for correct answers influence how you made your Contrast Sensitivity decisions? Yes or No
 - a. If Yes, How did the different values affect how you made your decisions? Free response
33. At what point in the study will you see your scores for the Contrast Sensitivity Task? After the first task or at the end of the study
 - a. If after the first task, How do you feel about reviewing these results with your partner?
 - a. If at the end of the study, How do you feel about reviewing these results without your partner?
34. On the Meaning Insight Pretest, what was your score? 0-30
35. On the Meaning Insight Pretest, what was your partner's score? 0-30
36. Do you feel that these scores impacted your decisions during the Contrast Sensitivity task? Yes or No
 - a. Please explain. Free Response

37. How will you and your partner communicate during the Meaning Insight Task?
Over the Computer or Face-to-Face

APPENDIX O

POST CONTRAST SENSITIVITY INTERVIEW

While the first task is still fresh in your mind, we would now like to ask you a few final questions about yourself and your participation in the first part of the study. Please read each question carefully and write your response in the space provided.

Click on the “Continue” button when you are ready.

1. So far, what do you think of the study? (free response)
2. Have you ever done anything like this? (yes/no)
 - a. (if yes) Please elaborate. (free response)
3. Have any of your friends or classmates participated in these studies? (yes/not that I am aware of)
 - a. (if yes) Did they tell you anything about it? (yes/no)
 - B. (if yes) What did they tell you about it? (free response)

Let us ask you about the other person in your team today. Click on the “Continue” button when you are ready.

4. Before you found out about your partner did you wonder who it might be? (free response)
5. Do you remember any of what [Partner’s Name] told you about herself? (yes/no)
 - A. (if yes) What do you remember about [Partner’s Name]? Please be as detailed as possible. (free response)
6. Did your partner remind you of anyone you know? (yes/no)
 - a. (if yes) Who did [Partner’s Name] remind you of and in what way? (free response)
7. Were you able to form any impressions of [Partner’s Name] before you began the first task? (yes/no)
 - a. (if yes) What impressions did you form about [Partner’s Name]? (free response)

Next we would like to ask you some questions about the Contrast Sensitivity slides you worked on. These are the two-pattern slides where you exchanged initial choices and then made final decisions. Click on the “Continue” button when you are ready.

8. Before you began working on the Contrast Sensitivity slides—after you had seen the sample slide but before you began the actual test—at that time, did you have any feeling about how well you might do at that test? (free response)

9. Suppose a researcher had come in here just before you began and asked “How well do you think you are going to do at this?” What would you have told him/her at that time? (free response)
 - a. Why is that? (free response)
10. Was there anything that seemed to give you a clue as to how well you might do? (yes/no)
 - a. (if yes) What was that? (free response)
 - b. (if yes) Why did that seem relevant? (free response)
11. Can you tell me in as much detail as you can remember, how you made your initial choices to the Contrast Sensitivity slides? (free response)
12. After you made your initial choice, then what did you do? (free response)
13. Did you look at your partner’s initial choice? (free response)
14. Did you re-study the slide? (free response)
15. As you went through the series, did you change the way you made your initial choices? (yes/no)
 - a. (if yes) How did you change the way you made your initial choices? (free response)
16. How did you make your final decision to the Contrast Sensitivity slides? (free response)
17. As you went through the series, did you change the way you made your final decisions? (yes/no)
 - a. (if yes) How did you change the way you made your final decisions? (free response)

Now we would like to ask you some questions about how you felt you and your partner were performing during the Contrast Sensitivity task. Click on the “Continue” button when you are ready.

18. While you were working on the Contrast Sensitivity slides, did you think about how well your team was doing? (yes/no)
 - a. How did you feel your team was doing and why? (free response)
19. Were you able to form any idea about how well you, yourself, were doing? (yes/no)
 - a. (if yes) How so? (free response)
20. Were you able to form any idea about how well your partner was doing? (yes/no)
 - a. (if yes) How so? (free response)
21. Did it seem as if your partner was doing better than you, less well than you, or about the same as you? (Better than me/About the same as me/Worse than me)
 - a. Why did you feel [Partner’s name] was doing [Q21’s response]? (free response)
22. Did the slides seem to get easier or harder as you went through the set? (Easier/Harder/No Change)

- a. (if Easier or Harder) Do you have any idea why they seemed to get [Q22's response]? (free response)
23. Do you believe it was helpful to work with another person on this set of slides? (yes/no)
24. Do you feel you probably did better or worse working with her than you would do alone? (better/worse)
- a. Why is that? (free response)
25. Of the 25 slides, about how many did you look at your partner's initial choice before making your final decision? (free response)
- a. Why is that? (free response)
26. Did you try to see how she made her initial choices? (free response)
27. Did your strategy change as you were working through the problems? (yes/no)
- a. (if yes) Why did you change your strategy? (free response)
- b. (if yes) How did your strategy change? (free response)
28. Was there ever a time when you made an initial choice...and your partner disagreed with it...and you THOUGHT that your partner was probably right...BUT you stayed with your initial choice anyway? (yes/no)
- a. (if yes) When? (free response)
- b. (if yes) About how many times did you do that? (free response)
- c. (if yes) Why did you do that? (free response)
29. The results indicate that you and your partner disagreed quite a bit in your initial choices. Do you have any idea why? (free response)
30. About how many times did you disagree? (0 to 25)
31. What did you do when you found [Partner's Name] was disagreeing with you so frequently? (free response)
32. Did you wonder how the disagreements looked to her? (free response)
33. Did you come to any conclusions about what she was probably thinking? (yes/no)
- a. (if yes) What did you conclude? (free response)
34. Did you come to think that you or your partner was more likely to be making the correct initial choices? (yes/no)
- a. (if yes) Who? (Me/[Partner's Name])
- b. (if yes) Why did you feel [Q34A's response] were more likely to be right? (free response)
- c. (if yes) When did you begin to feel that way? (free response)
35. How many correct final decisions would you estimate you made on the 25 slides? (0 to 25)

36. And suppose you had to estimate how many correct final choices your partner made?(0 to 25)
- a. So at this point you think you probably did (a bit worse than/a bit better than/exactly the same as) [Partner's name] did?
 - b. (if no) Please elaborate. (free response)
37. If you were to take another Contrast Sensitivity test, how many do you think you would make correct? Pick a number.... (0 to 25)
38. How many do you think [Partner's name] would make correct? (0 to 25)
- a. So you think you would do (a little worse than/a little better than/exactly the same as) [Partner's name] did?
 - b. (if no) Please Elaborate (free response)

APPENDIX P

SELECTIVE INTERACTION QUESTIONNAIRE

1. As we stated at the beginning of the study, your participation is completely voluntary. Unless asked, most participants will simply continue the study even if they would rather do something different. So we would like to ask you what you would like to do next. You may choose to continue as planned, continue but work alone—that is, you will not interact with your partner at all for the remainder of the study but, as with the Contrast Sensitivity task, the money you earn will be added to a pool that will be divided equally at the end—or you may choose to quit the study altogether. What would you like to do? (Work with Partner, Work Alone, Quit the Study).
2. Please tell me why you made that decision? (Free Response)

APPENDIX Q

DEBRIEFING

The study is now complete. There will be no second task. Now we'd like to explain our study more fully to you. If you have any questions at the end, please be sure to ask me, because we want you to understand all about our study.

The problem we're studying today is the problem of the resolution of disagreements. We're interested in finding out, when people disagree, who's likely to be right, who's likely to be listened to, whether the right person is likely to be listened to, what factors affect that, and how they affect it. Furthermore, we are interested in finding out how people will resolve disagreements if they believe they will be working together with their partner on a future task.

We're studying this problem in a sociological laboratory, which is what these rooms are, because in the social sciences, as in most fields, it is practically impossible to study any single phenomenon in nature where it occurs. For example, in chemistry: a chemist is unable to study chemical reactions in nature, because there's no such thing as a pure chemical in nature. If a chemist wants to find how they combine and react with each other, he or she has to come into the laboratory where there are pure chemicals. Or, a physicist doesn't study gravity by going out and watching cars roll down a hill. A physicist works in a laboratory with weights rolling down inclined slopes, to isolate the phenomenon he or she is interested in, and eliminate all the extraneous factors that would obscure and confuse the issue.

This is even more the case in human interaction. For any single process you might want to study, there are going to be other processes occurring at the same time, and those other processes may obscure the process you are interested in. In our case, if we're interested in studying how people resolve their disagreements, we can't study it by finding two people arguing on a street corner and taking notes on what they say. They could be arguing because one of them doesn't like the color of the shirt the other one's wearing, or they could be arguing about something that one of them knows he's good at, and the other's no good at. So we come into the laboratory, where we can isolate the process we're interested in, and simplify it a bit.

Also, the laboratory facilitates our study in a number of ways. The most important is that it can guarantee that we will have something to study. As we mentioned, we're interested in studying how people resolve their disagreements. But before we can do that, obviously they have to disagree. We are not particularly interested in the disagreements themselves, but if people don't disagree, we wouldn't have anything to study. However, by studying the problem under laboratory conditions, we can guarantee

that we'll have something to study because we can create as many disagreements as we need. The way we create them is electronically, with the computers that you and the other person were using. So, what we're saying is that you and your partner were not actually disagreeing as often as the computer told both of you that you were. When a selection was made, for most slides the computer is programmed to select the pattern opposite from your choice and present it as your partner's choice.

The reason for this is simply efficiency. If two people came in here and worked on slides together, chances are they would not disagree all the time. Since we're only interested in how people resolve their disagreements, we might have to wait a long time until we get the number of disagreements we need. That could take hours, and it would be a waste of our time and your time. So you can see it's important that we have something to study, and how this method avoids waiting around for the disagreements to happen naturally.

Just as the agreements and disagreements were programmed into the computer, so was everything else about your partner. In other words, your partner today was not real. Everything presented to you about your partner was programmed into the computer before you began participating today. We do this for three main reasons. First, since we do not need two people at a time to participate, individuals can participate when it is most convenient for them. Second, we never need to cancel a session because a partner did not show up. And third, we can ensure that every participant in a given condition receives the same information about their partner. This allows us to not only complete the study more quickly but also to ensure that your experience is as problem-free as possible.

As far as Contrast Sensitivity is concerned, you can see now that we are not primarily interested in measuring anyone's Contrast Sensitivity. In fact, there is no such thing as Contrast Sensitivity. The slides are there for a reason, though, and that is to give people something to make judgments about and to resolve disagreements. There are no right or wrong answers to any of the slides. The patterns in all the slides you viewed were exactly half black and half white. If you found it difficult to come to a decision about some of the slides, that is the reason—here are no answers to the slides. The set of slides you viewed today was designed to be impossibly difficult. We need to have a situation where there is no objective basis for making a choice. We are interested solely in the resolution of disagreements, not in correct answers.

We use Contrast Sensitivity because it is unlikely that anyone who comes in here has ever seen anything like it, so no one has an idea of how well he or she can do this type of thing. If we used arithmetic problems instead, some people would know they're good at that type of problem, and others would know they aren't. The same thing is true for vocabulary words, or any of the usual types of problems. But with Contrast Sensitivity, we have something that's new to everybody.

We do not want anyone to leave here with misconceptions. That is why we are explaining this to you now, as we explain it to everyone who helps us with the study. It is important to us that everyone understands everything about our study before they leave

here. Because the first task is not real and you are not participating in the second task, your compensation today will be the maximum you could have earned--\$15.

Now that I've explained this to you, I think you can see that it is important for our work that when people come in here, they not know too much about the study; for example, that there are no answers to the slides, and especially the fact that the disagreements aren't real.

- If they've heard the disagreements aren't real, they won't be resolving disagreements, they'll be ignoring them . . .
- If someone learned the details of the study, you can see that we wouldn't be able to study how s/he resolves disagreements in this situation...
- If you told someone about the study who hadn't participated yet, it would spoil it for that person and for us...

So I hope you'll keep confidence with us, and not discuss this at all with the other people who'll be coming in here.

This is no great secret. If you found this interesting, and we hope you did, there's no ban on discussing it with your parents, or friends off campus. But, please, not with the other people here, for then you'd be wasting their time as well as ours, and spoiling the experience for them. It would make it impossible for us to complete our study of disagreement resolution, and it would deprive them of a chance to see how social science research is carried on, and a chance to learn a bit about themselves.

We've had good cooperation with people on this. Some have told us they'd asked their friends what it was like here, but their friends didn't tell them anything; just "wait and see for yourself. "You can say the same thing to friends of yours who haven't been here yet. But if you have to say something, tell them this: you look at slides and push a lot of buttons. That is true, and it doesn't hurt anything.

We'd like to thank you for your time, and tell you that it was valuable to us. If we're going to study how people resolve disagreements, we need people who come in and help us, just as you did today. And now we'd like to pay you for your time. Now that you know what the study is about you may elect to have your data withdrawn from the study. If you are concerned about how your data may be used or want your data withdrawn from the study, please discuss this with the researcher who will provide you with more information.