RESPONSE LATENCY AS A STATUS CUE

by

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ABSTRACT

KAYLA DANIELLE RUSSELL PIERCE. Response latency as a status cue. (Under the direction of DR. LISA S. WALKER)

This research tests status cues theory, which is a theory in the expectation states research program. Status cues signal the status of an actor to others. Status cues theory predicts that in a status homogeneous group, status cues can create different performance expectations (Berger, Webster, Ridgeway, and Rosenholtz 1986). Actors with high performance expectations are given more opportunities to make contributions to tasks, and their contributions are more highly evaluated (Correll and Ridgeway 2006). Therefore, status cues can be used to create a hierarchy where none exists. I test this theory's prediction by using response latency as a status cue. Most researchers study status cues in cue gestalts, but I isolate response latency and test its strength independently. In a two condition experiment, I use the standard experimental situation to determine if low response latency (a high status cue) and high response latency (a low status cue) create different performance expectations. I found that there was not a significant difference between the performance expectations produced in the two conditions. Therefore, response latency alone did not create a hierarchy.

DEDICATION

To my sweetheart Richard for all of his reassurance and much needed comedic relief

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INTRODUCTION

Status cues signal the status of an actor to others (Berger, Webster, Ridgeway, and Rosenholtz 1986; Cashen 1996; Ridgeway 1985). They are rich sources of social information. Status cues can be possessions such as a designer watch or a class ring. Direct claims such as, "I'm very good at problem solving" or "I've been quickly promoted at every job I've taken" are status cues. Status cues can also be subtle behaviors such as body posture, speed of speech, spatial location, and eye gazing patterns (Berger, Webster, Ridgeway, and Rosenholtz 1986). Status cues are important because they can influence how people perceive each other and can possibly create and perpetuate inequalities within small groups. Because they are a powerful element of interaction, it is possible that they could be used to reduce micro level inequalities.

Status cues have been formally incorporated into the expectation states theory (EST) research program (Berger, Webster, Ridgeway, and Rosenholtz 1986). By using EST, researchers can examine how status cues correspond with the inequality structures of small groups, how status cues can create inequality in groups with no hierarchy, and the conditions under which status cues can be influential.

The purpose of the this research is to test EST's prediction that status cues can produce a status hierarchy in a group of status equals (Berger, Webster, Ridgeway, and Rosenholtz 1986). Using an experimental method, I tested to see if response latency functions as a status cue to create a status hierarchy.

BACKGROUND

Status Cues

Researchers categorized status cues into two independent dimensions, indicative and expressive (Berger, Webster, Ridgeway, and Rosenholtz 1986).  Indicative status cues are overt claims to status that explicitly label a person.  For example, saying "I am a doctor" is a direct claim to status.  Expressive status cues are more sublte, and as Goffman (1959) would say, they are "given off" during social interaction.  For example, a doctor can exhibit expressive status cues by using technical medical terminology or wearing a stethascope around his or her neck.  These status cues are implicit, unlike indicitive cues.

Status cues can also be divided into either task cues or categorical cues (Berger, Webster, Ridgeway, and Rosenholtz 1986).  Task cues give information about how well an actor will perform a task.  Thus task cues communicate an actor's level of competence. Verbal latency, eye gaze, loudness, fluency of speech, body postures and gestures, and seating position at a table can all be task cues (Ridgeway 1985).  In contrast, categorical cues signal an actor's belonging to a particular group.  Saying "I am a member of Alpha Chi Alpha" is a categorical cue, as is speaking with an ethnic accent (Berger, Webster, Ridgeway, and Rosenholtz 1986; Riches and Foddy 1989).

Expectation States Theory

EST is a well-established research program within sociology that predicts and explains the emergence of inequalities (Correll and Ridgeway 2006).  Scope conditions are the conditions under which a theory is argued to hold, and the scope conditions of EST are task focus and collective orientation.  People are task focused when they are

motivated to solve a problem, and they are collectively oriented when they deem it legitimate and necessary to consider the opinions of others in the group. Because each member cares about the outcome of the task, he or she will anticipate the quality of each member's contributions, including his or her own. These anticipants are called performance expectations (Correll and Ridgeway 2006).

Once performance expectations are established, they are usually stable for the duration of the interaction (Correll and Ridgeway 2006). Actors with high performance expectations are given more opportunities to make contributions to the task, and their contributions are more highly evaluated. They are also less likely to change their position during disagreements. In contrast, actors with low performance expectations are thought to be less competent, are given fewer opportunities to contribute, are evaluated more poorly, and are more likely to accept influence from others in the group (Correll and Ridgeway 2006). People are motivated to obtain high status because it affects their social interactions in a positive way (Ball and Eckel 1996).

Like status cues, actors use status characteristics to establish performance expectations. Status characteristics are attributes on which people differ and for which there is cultural value attached to one state that is higher (man, white) than another state (woman, black) (Correll and Ridgeway 2006). Status characteristics are one of the most fundamental concepts in EST because they can powerfully influence performance expectations. The addition of status cues into this theoretical frame has also strengthened our understanding of group inequalities. Some research suggests that status cues can function similarly to status characteristics (Riches and Foddy 1989; Sev'Er 1989). Furthermore, status cues have also been shown to buffer negative status characteristics

(Sev'Er 1989). Because people have more control over their status cues than they do their status characteristics, using appropriate status cues may be a logical way to change performance expectations and therefore reduce inequalities.

EST researchers developed two propositions that formally incorporated status cues into the EST framework (Berger, Webster, Ridgeway, and Rosenholtz 1986). These propositions created status cues theory, a theory within the EST research program (Berger, Wagner, and Webster 2014). These propositions incorporate the vast literature on nonverbal behavior and other status cues into a coherent theoretical frame (Berger, Webster, Ridgeway, and Rosenholtz 1986; Ridgeway 1985). These propositions are as follows:

1. In a group of status equals, status cue differences will generate correspondingly different performance expectations.

2. In a group with a status hierarchy, differentiated performance expectations will produce corresponding status cues.

The purpose of this study is to test the first proposition using the status cue response latency.

Status Cues and Expectation States Theory

Researchers have used status cues theory to explain how status cues correspond to the status hierarchy in groups. For example, Kimble (1981) found that women adjusted the volume of their speech according to the status' of the people in the group. They spoke louder when interacting with other women (status equals) than they did with men (status superiors). Thus, status characteristics produced corresponding status cues. Similarly, people adjust their verbal latency and the duration of initial eye contact to match their

relative status in a group (Dovidio, Ellyson, Keating, Heltman, and Brown 1988; Ridgeway 1985). High status and low status eye contact patterns adjust as the status structure of the group changes (Ellyson, Dovidio, Corson, and Vinicur 1980; Exline, Ellyson, and Long 1975). All of these findings support the second proposition of status cues theory.

Research findings have also supported the first proposition, that status cues alone can produce a status hierarchy in a group. Voice volume, voice tone, speech rate, number of hesitations, stumbles, speed of responses, eye gaze patterns, posture, and gestures are status cues that have been used to produce different performance expectations (Ridgeway 1987). Status cues are not limited to the way in which an actor speaks, but the substance of speech itself can act as a status cue (Shelly and Shelly 2009). Therefore, quantity and quality of speech can both be used secure a high status position.

The use of certain technologies can also function as a status cue and influence performance expectations (Treem 2013). People create higher performance expectations for individuals who use new technologies, though this type of status cue can shift rapidly because new technologies quickly become mundane. Status cues are not limited to what actors own or how they act. Status cues can also include physical appearance, as obesity has been shown to function as a status cue (Vartanian and Silverstein 2013).

Rashotte and Smith-Lovin (1997) found that status cues are more closely related to perceived influence than they are to actual influence, which is a measure of performance expectations. Their study investigated both status characteristics and status cues, and status cues were measured as a composite variable using participation, verbal latency and gazing behavior. These status cues interacted with gender and impacted

actual influence. Thus, the status cue verbal latency has been used to create actual influence. However, due to the design of the study, status characteristics and status cues were not randomly assigned. Therefore the strength of the relationship between status cues and performance expectations needs to be tested directly.

Usually several status cues are combined to create a composite status cue variable (Carli, LaFleur, and Loeber 1995; Hart and Morry 1996; Rashotte and Smith-Lovin 1997; Ridgeway 1987). During interactions, status cues are rarely found in isolation, but most likely function in clusters, called *cue gestalts* (Fişek, Berger, and Norman 2005). Fişek, Berger, and Norman (2005) differentiate between a *strong cue gestalt* and a *weak cue gestalt*. They define a strong cue gestalt as a group of status cues that indicate an actor does possess the relevant status element. In contrast, they define a weak cue gestalt as a group of status cues that indicate an actor is expected to possess the relevant status element. The difference is subtle but important. There is merit in studying multiple status cues simultaneously. Theoretically, combining several status cues should strengthen the manipulation (though there is point at which the information becomes redundant and adding a status cue will have no impact).

However, there is also value in isolating status cues so that their impact on performance expectations can be understood independently. According to Ridgeway (1985), understanding how status cues produce a status hierarchy is complex because it assumes that a prior value has been attached to specific status cues. This prior value can only be evaluated if each status cue is studied in isolation.

Ethnic accent is one status cue that has been investigated in isolation (Riches and Foddy 1989). In one study, participants believed they were working on a task with an

unseen partner.  During phase 1, the researchers staged a computer glitch in the partner's room, at which point participants heard their partner communicate to the research assistant with either an Anglo-Australian accent or a Greek-Australian accent.  The participant heard the conversation over an intercom.  During phase 2, participants could either reject or accept influence from their partner (measuring performance expectations). The ethnic accent manipulation successfully created differentiated performance expectations, supporting status cues theory's claim that status cues alone can create a status hierarchy.  To my knowledge, this is the only study that isolated a status cue and used it as an independent variable.

Response Latency

Response latency is the delay between a response opportunity and a response.  In interactions, response latency can follow a question, a command or a break in interaction. Response latency is similar to verbal latency, which is the delay between a response opportunity and a verbal response.  Verbal latency has been investigated more frequently in the status cues theory research (Conner 1977; Rashotte and Smith-Lovin 1997; Ridgeway 1985), and like most status cues, it has mostly been studied in a cue gestalt. While verbal latency is an important and frequently used status cue, response latency, which can be easily overlooked, is also an essential element of interaction.

For example, if a group of employees are given a problem to solve collectively, the employees have a response opportunity with several response options.  One employee could respond by dispersing materials, or by writing possible solutions on a nearby board. In a more extreme example, a team of firefighters could arrive at a burning house at the same time (a response opportunity).  If one firefighter enters the house first with no

regard for the flames, this quick response could have status value. The firefighter that enters the house first displays low response latency. While these responses are not verbal, they could function as status cues. With response latency, the act itself is not important. The timing of the act is what matters.

While response latency is an under-investigated status cue, it has been studied thoroughly by psychologists as a measure of cognition. For example, participants identify gender congruent words more quickly than they do gender incongruent words (Mills 1983). Another study found that happy faces are identified more quickly than sad faces (Kirita and Endo 1995), but this effect is modulated by race such that white people identity anger and sadness more quickly than they do happiness in black faces (Hugenberg 2005). Thus response latency is a useful tool for identifying schemas. Response latency has also been linked with confidence. Both response latency and confidence predict the accuracy of child reports (Ackerman and Koriat 2011).

However, little is known about the way in which response latency alone functions as a status cue. Logically, high response latency (a slow response) should function as a low status cue, and low response latency (a quick response) should function as a high status cue.

Present Research

This research tests the first proposition of status cues theory. Therefore, the independent variable will be the status cue and the dependent variable will be performance expectations. The specific status cue under investigation is response latency.

Performance expectations will be measured by the rejection of influence.

Rejection of influence is a well-validated measure of performance expectations in the EST tradition (Berger 2007). It will be operationalized as the proportion of disagreements resolved in favor of self, or P(s). Therefore, the higher an actor's performance expectations are for self relative to other, the higher that actor's P(s) will be.

Hypotheses

If a participant has a partner who displays high response latency [+ -], then that participant will be more likely to reject influence than a participant whose partner displays low response latency.

If a participant has a partner who displays low response latency [- +], then that participant will be less likely to reject influence than a participant whose partner displays high response latency.

METHODS

Experimental Design

I used a variant of the standard experimental situation, which is an experimental

design that was developed for EST (Berger 2007). This design controls for extraneous

variables and helps to create the scope conditions (task focus and collective orientation).

The manipulation occurred in phase 1, and data were collected in phase 2. Participants

were asked to work on a Meaning Insight (MI) task, which is a well-validated task that

has been used by other EST experimentalist (Berger 2007). The participants were

randomly assigned to one of two conditions. In both conditions, the participant worked

with a computer simulated partner. In the first condition [+ -], the partner exhibited high

response latency, a low status cue. In the second condition [- +], the partner exhibited

low response latency, a high status cue. The exact speed of the response latency in each

condition was determined by a pretest.

Sample

My sampling frame is female undergraduates at UNC Charlotte. This sampling

decision is based solely on availability. Undergraduates are highly accessible, and I used

females because other researchers in the UNC Charlotte Group Processes Lab were

recruiting males for a different study.

Though this is a convenience sample, this sampling decision is supported

theoretically. First, EST has two scope conditions (conditions under which the theory

holds), which state that people must be task focused and collectively oriented (Correll

and Ridgeway 2006). Participants are task focused when they are motived to succeed at

the task and collectively oriented when they find it necessary to consider their partners'

contributions. Therefore, under these two conditions, any participant qualifies for the study. Second, undergraduate populations have been used extensively for EST research (Rashotte and Smith-Lovin 1997; Riches and Foddy 1989; Sev'Er 1989; Walker, Webster Jr, and Bianchi 2011; Webster and Rashotte 2010). Therefore, this sampling method is appropriate. As with most experimental studies, the findings will not be generalizable. However, this research is designed to strengthen EST, and EST can be applied to any situation in which its scope conditions are met. Though my sample is not random, participants were randomly assigned to a condition.

Recruiting

Students were recruited from lower level courses at UNC Charlotte. After obtaining permission from professors, members from the Group Processes Team attended classes and read a recruitment pitch that invited students to participate in the study. The recruiting pitch can be found in APPENDIX A. While one member read the recruitment pitch, the other member(s) passed out recruitment slips and business cards.

Students were asked to fill out the recruitment slips if they were interested in being contacted for the study. On each recruitment slip, there was a place for the student's name, age, major, phone number, and email. At the end of the recruitment, all of the completed recruitment slips were collected from the students. I used these recruitment slips to screen participants. If a student indicated that she was older than 22 years old, her recruitment slip was shredded and she was not contacted. Otherwise, either a research assistant (RA) or I called her to schedule an appointment. During these calls, we screened participants who had participated in studies involving deception. A phone script for these calls can be found in APPENDIX B.

During the class recruitments, we also gave students business cards to keep. Each business card included a link. We told students they could schedule their own appointment online by accessing the link. An example of a business card can be found in APPENDIX C.

When a student accessed the link, she was required to answer several questions before she could book her appointment for the study. She was required to enter her name, age, phone number and email. The scheduling form also asked if she had ever participated in a sociology or psychology study. If she had, she was asked to give details about that study. This information enabled me to screen participants based on gender, age, and participation in studies involving deception. If an unqualified student scheduled an appointment, I emailed her and canceled her appointment.

Pretest

To effectively manipulate response latency in phase 1, I needed to pretest and determine how long it takes on average to complete the MI task used in phase 1. Because the MI task is completed on a computer, I pretested in a computer lab so several participants could complete the task at once.

Upon arriving to the computer lab, participants signed a consent form and heard an instructional script, which describes MI and the task. The pretest instructional script can be found in APPENDIX D. The participants completed 12 trials of the first version of the MI task (one non-English word and two English words). Then they were debriefed and paid $5.00. The explanation used for the pretest debrief can be found in APPENDIX E.

On average, it took the participants 14.9 seconds to complete each trial without a

timer (SD=8.2, N=15). Then, I added an 8 second timer to each trial and did a second pretest. With this adjustment, it took the participants 4.4 seconds on average to complete each trial (SD=.54, N=8).

I used the results from the second pretest to develop the response times of the simulated partner. For condition 1 [+ -], the simulated partner responded to the task in phase 1 at 7 seconds on average, and for condition 2 [- +] the simulated partner responded at 2.5 seconds on average. The responds times were varied, and the breakdown of the response times can be found in Table 1.

Table 1: Displayed response times of partner

|  | Condition 1 [+ -] | Condition 2 [- +] |
| --- | --- | --- |
| Slide 1 | 7.34 | 2.53 |
| Slide 2 | 6.72 | 1.98 |
| Slide 3 | 7.11 | 2.73 |
| Slide 4 | 6.56 | 3.10 |
| Slide 5 | 7.15 | 2.49 |
| Slide 6 | 7.06 | 2.97 |
| Slide 7 | 6.98 | 1.98 |
| Slide 8 | 6.82 | 2.79 |
| Slide 9 | 7.33 | 2.01 |
| Slide 10 | 7.12 | 2.90 |
| Slide 11 | 6.55 | 2.48 |
| Slide 12 | 7.38 | 1.91 |

Procedures

Upon arriving to the foyer of the Sociology Department of UNC Charlotte, each participant was escorted to the Group Processes Lab by a research assistant (RA). RAs were trained to purposefully avoid conversation during this transit. Each participant was seated in a room in the lab where she completed a consent form. After the consent form was completed, the experiment began. The consent form can be found in APPENDIX F.

Phase 1

Instructions.  Instructions for the study were delivered through a computer monitor.  Participants were told that they were being spoken to from the control room, and that they were about to watch a prerecorded instructional video.  This video explained the MI task.   The instructional script can be found in APPENDIX G.

Participants were told that MI is a newly discovered ability through which people can infer the meaning of non-Indo-European words, and that people who have this ability can make these inferences correctly.   In phase 1 they were told they would receive *one point* for selecting the correct answer.  In addition, they would receive a *bonus point* for being the first one to make the correct decision.  The point system is illustrated in Table 2.  The scoring system can be found in APPENDIX H.

Table 2: Point system

|                  | Correct Answer | Incorrect Answer |
|------------------|----------------|------------------|
| Quickest Response | 2 points       | 0 points         |
| Slowest Response  | 1 point        | 0 points         |

The instructional video told participants they were working with a partner located in another room. The partner's answers were actually computer generated, unknown to the participant.  According to the instructions, their partners' progress would be displayed in the "partner's progress box" at the upper right corner of the monitor.  When the partner made a selection, a "check" would appear in the box and a bell would sound.  They would be notified every time their partner made a decision. An 8 second timer was also displayed on the screen so the participants knew how much time they had left for each trial.  The timer also reinforced the quickness or slowness of their partners' responses. After every trial, the response times of both the participant and the partner were displayed

briefly on the screen.  The partner's response times, which were determined after pretesting, were computer generated.

Demo 1.  During the instructional video, an example of the task appeared on the screen.  In version 1 of the MI task, the participants were presented with one non-Indo-European word and two English words.  Their task was to select the English word that correctly matched the non-Indo-European word.  The purpose of the demo was to make the participants familiar with the task.  They engaged in a practice trial to ensure that they understood the instructions.  They were told the demo trial did not count toward their scores.

Meaning Insight Task 1.   After the demo, the task began.  There were 12 trials. In each trial the participants were notified as soon as the partner made a decision, though the partner's specific answers were unknown.  In condition 1, the partner responded slowly [+ -], and in condition 2 the partner responded quickly [- +].  Thus, latency was the status cue created during phase 1.

Phase 2

Instructions and Demo 2. After the first MI task, participants viewed a second instructional video to introduce them to the second MI task.  In version 2, there was one English word and two non-Indo-European words.  Their task was to select the non-Indo-European word that matched the English word. For the second task, they were told that exchanging information with a partner leads to more correct answers.  Thus, during the second task, participants were allowed to make an initial choice and to see the partner's initial choice before making a final decision.  They were told exactly when to respond, and they could not see the partner's response until they made their initial choice. Thus,

there were no bonus points and there was no partner's progress box. They were told only final decisions counted toward their final score. The scoring system for phase 2 can be found in APPENDIX H.

Meaning Insight Task 2. Next, the participants began the second MI task. There were 23 trials, 3 of which were agreement trials. The participants were told there were only 20 trials, and this information is reflected in the scoring system (APPENDIX H). During the second MI task, the acceptance or rejection of influence was measured, which is an indicator of performance expectations.

Questionnaire. After completing the second MI task, participants completed a questionnaire on the computer. This questionnaire served as a manipulation check and gave interviewers an idea about the perspectives of the participant. The questionnaire can be found in APPENDIX I.

Interview. After the questionnaire, either a member of the research team or I interviewed each participant. Interviewers ensured that the participants met the scope conditions, had no prior expectations, understood all instructions and were not suspicious. All interviews were audio recorded. An interview schedule can be found in APPENDIX J. After each interview, the interviewer completed an interview abstract, which summarizes the interview. An interview abstract can be found in APPENDIX K. If an interviewer was unsure if the participant qualified, I reviewed the audio recording and made the final decision as to whether the participant should be excluded from analysis. After each interview, the participants were debriefed and compensated $12.00. The explanation used for the debrief can be found in APPENDIX L.

I obtained approval from the UNC Charlotte Institutional Review Board before I recruited participants. To my knowledge, there were no human subject concerns. The data are stored on a computer in the UNC Charlotte Group Processes Lab, which is located in a locked room. Hard copies of participant consent forms and other identifiable information will remain in a locked cabinet according to UNC Charlotte's standards. Pilot

Using the graph version of EST, I calculated a predicted P(s) for each condition. I made the calculation as if the status cue response latency functions like a status characteristic, so the predicted P(s)'s for each condition are ambitious. The predicted P(s) for condition 1 [+ -] is .63, and for condition 2 [- +] it is .51.

The pilot test results can be found in Table 3. Although the observed P(s) mean for condition 2 is .56, if I exclude an outlier P(s) of .1, the observed P(s) mean for condition 2 becomes .65. This P(s) is strong and in the opposite direction from the prediction.

Table 3: Results from pilot test

| Condition | Predicted P(s) | Observed P(s) | SD | Difference (obs.-pred.) | N |
|---|---|---|---|---|---|
| 1 | .63 | .56 | .147 | -0.07 | 5 |
| 2a | .51 | .56 | .233 | 0.05 | 6 |
| 2b | .51 | .65 | .077 | 0.14 | 5 |

*Condition 2a represents all participants. Condition 2b excludes the outlier.

During the pilot test, participants were not given any information about the gender of their partner. I made the decision not to include gender information because I wanted to be able to include male participants if they became available. Therefore, participants were only told that their partner was another UNC Charlotte student. During the interviews, it quickly became evident that many of the participants in condition 2 were

assuming that their partner was male.  This assumption demonstrates the power of status cues.  It is possible that the female participants interpreted the quick response of their partner as a signal that their partner was high status and thus male.  However, if the participants (all female) assumed that their partners were male, I would expect their P(s) to be low because this assumption would couple a disadvantaging status characteristic with a disadvantaging status cue.  However, if MI were thought to be a feminine task based on the stereotype that women are better at word tasks, then this status assumption would have advantaged the female participants.

Interestingly the interviews from condition 1 did not reveal gender assumptions like those in condition 2.  Because the pilot test results for condition 2 were more extreme and in the opposite direction from EST prediction, I concentrated on addressing this problem.  While the pilot test results for condition 1 were also unpredicted, the SD was also larger.  Therefore, I concluded that a larger N would help this issue.

To address the participants' gender assumption in condition 2, I made three changes.  First, I ensured participants knew they were working with a female partner. As soon as each participant was seated in the lab, a RA told her that she would be working with a female partner.  This gender information was also repeated in the consent form and at the beginning of the computer program. Therefore, they were told that their partner was a female three times.

Second, there was a line in the consent form that said, "You will be working on a word-matching task."  After reviewing all of the pilot test interviews, I realized the participants were forming expectations about the task before they learned it was unrelated to other skills.  Therefore, I removed this line from the consent form.

Finally, I added two questions to the interview schedule.  These questions are marked with an asterisk in APPENDIX J.  I asked, "Do you remember the gender of your partner?" The answers to this question revealed that each participant did notice the new gender information.  Because the P(s)'s in condition 2 were so high (when we would expect them to be low), I wanted to know if the female participants were interpreting the MI task to be a feminine task.  Therefore, I also added the question, "Do you think gender influences a person's MI?"  Although I did not quantify and analyze the answers to this question, the responses to it were not particularly interesting.  Perhaps more interesting answers would have been produced if the participants believed they had been working with the opposite sex.

RESULTS

This research included 72 participants. There were 23 participants for the pretests and 11 participants for the pilot test. I determined that the data from condition 1 of the pilot test should be included in the final analysis, so five data points from the pilot test are included in the final results. Therefore, post pilot test data include 56 data points. There were 7 exclusions. I used interview abstracts and interview recordings to determine exclusions. I excluded 5 participants for not meeting scope conditions (4 for lack of collective orientation and 1 for lack of task focus). Furthermore, 1 participant was suspicious and 1 misunderstood the instructions. Therefore, 12.5% of the data were excluded.

I predicted the proportion of stay responses using the OLS model:

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

The empirical parameters m and q reflect the features of a particular experiment. M represents the tendency for the population to reject influence and q indicates the importance of expectations for the situation. For this study, I used m= 0.578 and q= 0.13907 to estimate the P(s) for condition 1 and m=.565 and q= 0.15345 to estimate the P(s) for condition 2.

Table 4 presents the predicted and observed P(s) for each condition. According to Fişek, Berger, and Norman (2005), a strong cue gestalt can function like a status characteristic. The term "gestalt" can be misleading because a gestalt can be one status cue such as ethnic accent (Riches and Foddy 1989). Therefore, I have included the predicted P(s) for a strong cue gestalt in Table 4.

However, in most situations we would not expect a status cue to function as strong as a status characteristic because a status cue is only a symbolic extension or indicator of a status characteristic (Fişek, Berger, and Norman 2005). Therefore, there may be a longer, weaker path from a status cue to a to task outcome. Using the situational graph structure for a weak cue gestalt (Fişek, Berger, and Norman 2005), I also include predicted P(s) for a weak cue gestalt in Table 4.

Table 4: Predicted and observed data

|  | Condition | Paths | Predicted P(s) | Observed P(s) | S.d. | Difference |
|---|---|---|---|---|---|---|
| Strong Gestalt | 1 | +4, +5 | .629 | .578 | .139 | -0.051 |
|  | 2 | -4, -5 | .509 | .565 | .153 | 0.056 |
| Weak Gestalt | 1 | +5, +6 | .599 | .578 | .139 | -0.021 |
|  | 2 | -5, -6 | .542 | .565 | .153 | 0.023 |
| Chi-square Model-fit | 1 |  | .579 | .578 |  | -0.001 |
|  | 2 |  | .565 | .565 |  | 0.000 |

It is evident that response latency functions more like a weak cue gestalt than a strong cue gestalt. However, the fit between the predicted P(s) of a weak cue gestalt and the observed P(s) of this research is not excellent.

An independent samples t-test indicates that there is no significant difference between the P(s) values of condition 1 and condition 2, $t(47)=0.311$, p-value=0.640. Therefore, I fail to reject the null for both of my hypotheses.

However, a chi-square model-fit test shows that the data are not significantly different from the predictions ($X^2=0.001$, df=1, p=0.977). Table 4 illustrates the predicted P(s) and the observed P(s) used in the chi-square model-fit test. According to the $G^2$, the model explains 99.5% of the variation in the data.

Furthermore, a series of t-tests reveal that the observed P(s) for each condition is not statistically different than the predicted P(s) for either the strong cue gestalt or the

weak cue gestalt. The p-values of each t-test reinforce the idea that when response

latency is isolated, it functions more like a weak cue gestalt than it does a strong gestalt.

The results of the t-tests can be found in Table 5.

Table 5: T-tests results by condition

|  | F | t | S.d. | p |
|---|---|---|---|---|
| *Independent Samples t-test* | | | | |
| C1 Observed P(s) and C2 Observed P(s) | .221 | 0.311 | | .640 |
| | | | | |
| *One Sample t-test* | | | | |
| C1 Observed P(s) and Predicted P(s) for Strong Gestalt | | -1.871 | .1391 | .074 |
| C2 Observed P(s) and Predicted P(s) for Strong Gestalt | | 1.756 | .1535 | .092 |
| C1 Observed P(s) and Predicted P(s) for Weak Gestalt | | -0.791 | .1391 | .437 |
| C2 Observed P(s) and Predicted P(s) for Weak Gestalt | | -0.798 | .1535 | .433 |

When I regress the observed P(s) on expectation advantage ($e_p$ - $e_o$) using the

grand mean .572, it results in a $R^2$ of 1 and a q of 0.018. The q resulting from this

analysis is unusually low. Thus, it appears that the effect of the manipulation was

extremely weak.

Although response latency did very little to influence P(s) values, the

manipulation was strong enough to influence other behavior. Though it is not the

dependent variable being measured in this research, it is worth noting that the participants

in condition 2 were influenced by their partner's response latency enough to dramatically

change their own response latency. To account for individual variance between

participants, I averaged each participant's response latency across the twelve trials.

Using these means, I calculated the means for each condition. In condition 1, the average

response time of the participants is 4.88 (SD=0.729, N=25), which is slightly higher than

the average of the second pretest (mean=4.4). In contrast, the average response time of

participants in condition 2 is 2.72 (SD=0.749, N=24). An independent samples t-test

(using the average response latency of each participant) reveals that the difference in response times between the two conditions is statistically significant.  The details of this finding can be found in Table 6.

Table 6: Response times

|  | Mean | S.d. | N | t (df) |
|---|---|---|---|---|
| Condition 1 | 4.88 | 0.729 | 25 | |
| Condition 2 | 2.72 | 0.749 | 24 | |
| Condition 1 ≠ Condition 2 | | | | 10.2333*** (47) |

***p<.001

It is evident that the manipulation was strong enough to be noticed by the participants because it was strong enough to influence their behavior.  However, response latency did not impact their likelihood of being influenced, which is a measure of performance expectations.

Because I am more interested in the participants' behavior than I am their perceptions, I am more concerned with the participants' P(s) values than I am their questionnaire responses.  However, each participant did answer a series of questions evaluating their performance expectations.  These questions can be found in Table 7.

A series of t-tests reveal that the participants in condition 1 and condition 2 did not indicate significantly different performance expectations on any of the questionnaire items.  This lack of differentiation between conditions is consistent with the observed P(s) values.  Question 1 refers to the participants' perceptions during phase1 and questions 2-4 refer to the participants' perceptions during phase 2.  Although questions 1 and 2 may seem redundant, they are both useful because they refer to different times in the study.

Table 7: Questionnaire results for performance expectations

| Items and response scales | Mean (S.d.) | $t$ C1$\neq$C2 |
|---|---|---|
| 1. Compared to you, how well would you estimate the other person did at these Meaning Insight problems? | | |
|    Condition 1: Poor 1 2 3 4 5 6 7 Well | 4.92 (0.91) | 1.0824 |
|    Condition 2: Poor 1 2 3 4 5 6 7 Well | 4.58 (1.25) | |
| | | |
| 2. How do you feel your own ability to solve Meaning Insight problems compares with that of your partner? | | |
|    Condition 1: I have more ability 1 2 3 4 5 6 7 She has more ability | 4.20 (0.82) | 0.2590 |
|    Condition 2: I have more ability 1 2 3 4 5 6 7 She has more ability | 4.26 (0.81) | |
| | | |
| 3. How would you evaluate your own performance on the Meaning Insight tasks? | | |
|    Condition 1: Poor 1 2 3 4 5 6 7 Good | 3.64 (1.29) | 0.0330 |
|    Condition 2: Poor 1 2 3 4 5 6 7 Good | 3.65 (1.27) | |
| | | |
| 4. How would you evaluate your partner's performance on the Meaning Insight tasks? | | |
|    Condition 1: Poor 1 2 3 4 5 6 7 Good | 4.76 (0.78) | 1.0977 |
|    Condition 2: Poor 1 2 3 4 5 6 7 Good | 4.48 (0.99) | |
| | | |
| Expectation advantage ($e_p$-$e_o$ based on questions 3 & 4) | | |
|    Condition 1 | -1.12 (1.27) | 0.9374 |
|    Condition 2 | -0.79 (1.18) | |

I argue that response latency did not influence performance expectations because when it is isolated it is too ambiguous to be interpreted consistently. In order to investigate this idea, I reviewed all of the interviews paying special attention to the question, "How did you interpret the bell?" Unfortunately, many participants responded by saying things like, "It made me feel rushed" or "It kept me focused." These answers did not help me determine how they perceived their partner. However in condition 1, when participants were honest enough to admit they had high performance expectations for themselves, they frequently suggested that their partner's slow response indicated incompetence.

Condition 2 was more complex. The results can be found in Graph 1. Some responded by saying they thought their partner was very good at the task (as predicted).

Graph 1: Interpretation of bell in condition 2
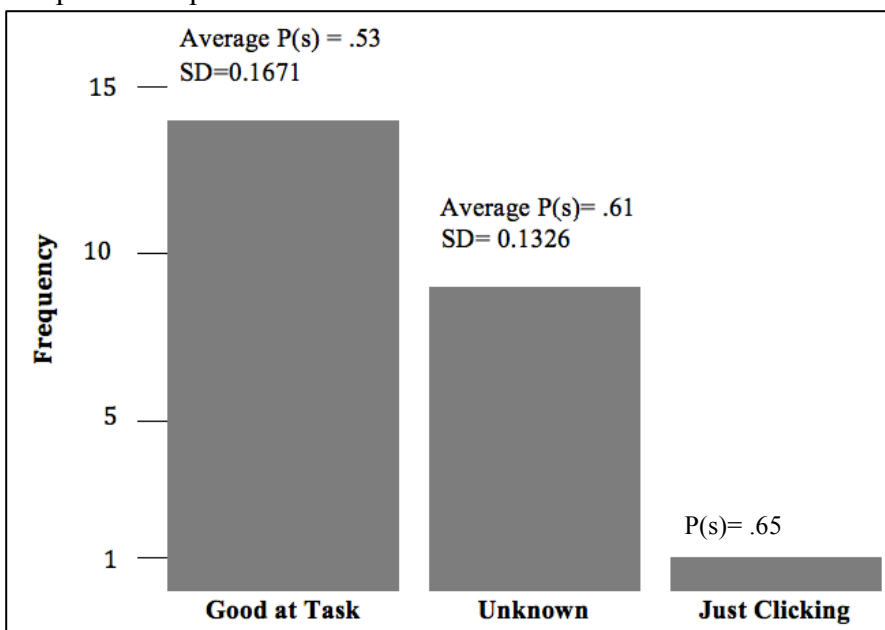


In contrast, many times the participant did not give information about what the bell said about her partner. One respondent admitted that she thought her partner was just clicking and not paying attention. Considering that the average response times of the partner in condition 2 was 2.5 seconds, this is a logical interpretation of the manipulation, and it could be the reason the average P(s) in this condition is too high. Of those who stated the response latency of their partner indicated competence, the average P(s) value was .53, which is just above the predicted P(s) for a weak gestalt.

When I discovered that there was a pattern in the P(s) results based on how participants interpreted the bell, I divided the questionnaire results into the three interpretation categories--good at task, unknown, and just clicking. These results can be found in Table 8.

There was a significant difference in how participants rated their own MI ability based on how they interpreted the bell. An independent samples t-test indicates that the

Table 8: Condition 2 questionnaire results

| Items and response scales | Mean (S.d.) | $t$ Good at task $\neq$Unknown |
|---|---|---|
| 1. Compared to you, how well would you estimate the other person did at these Meaning Insight problems? Poor 1 2 3 4 5 6 7 Well | | |
| *Interpretation of Bell:* | | |
| Good at task | 4.71 (1.33) | 0.6921 |
| Unknown | 4.33 (1.22) | |
| Just Clicking | 3 | |
| 2. How do you feel your own ability to solve Meaning Insight problems compares with that of your partner? I have more ability 1 2 3 4 5 6 7 She has more ability | | |
| *Interpretation of Bell:* | | |
| Good at task | 4.29 (0.73) | 0.0951 |
| Unknown | 4.25 (1.04) | |
| Just Clicking | 4 | |
| 3. How would you evaluate your own performance on the Meaning Insight tasks? Poor 1 2 3 4 5 6 7 Well | | |
| *Interpretation of Bell:* | | |
| Good at task | 4.21 (1.12) | 3.0250** |
| Unknown | 2.75 (1.04) | |
| Just Clicking | 3 | |
| 4. How would you evaluate your partner's performance on the Meaning Insight tasks? Poor 1 2 3 4 5 6 7 Well | | |
| *Interpretation of Bell:* | | |
| Good at task | 4.64 (1.01) | 0.6186 |
| Unknown | 4.38 (0.92) | |
| Just Clicking | 3 | |
| Expectation advantage ($e_p$-$e_o$ based on questions 3 & 4) | | |
| *Interpretation of Bell:* | | |
| Good at task | -0.43 (1.22) | 2.1514* |
| Unknown | -1.44 (0.88) | |
| Just Clicking | 0 | |

*p<.05, **p<.01, ***p<.001

participants who interpreted the bell to mean their partner was good at the task evaluated

themselves more highly than those in the unknown category, t(20)=3.0250, p=0.007. This

finding is counterintuitive. I would expect those who assumed their partner was

competent to form low performance expectations for themselves. However, it is possible

that these participants were more likely to become competitive and therefore rated

themselves more highly.  Interestingly, there was not a significant difference in how the participants evaluated their partner.

There is also a significant difference in the expectation advantages of these two categories, $t(21)=2.1514$, p-value=0.0432.  Although both categories had negative expectation advantages (indicating a disadvantage), those in the unknown category were significantly lower than those in the good at task category.  Again, it is possible that the participants who interpreted their partner's quick response to signal competence were more likely to become competitive and rate themselves more highly.  However, this finding contradicts with the observed P(s) values.  Based on the observed P(s) values, I would expect the expectation advantage to be lowest for the good at task category.

Recall bias is another explanation for this discrepancy. For example, because many of the participants in the good at task category were certain that their partner was better at the task, they may have used more automatic cognitive processing to answer questions 3 and 4 (Vaisey 2009).  In contrast, it is likely that participants in the unknown category had to use more deliberative cognitive processing in order to justify their responses to questions 3 and 4 (Vaisey 2009).  This deliberative processing may have made them more likely to doubt their own ability.

Although the findings within condition 2 are not straightforward, the way in which subgroups form is interesting.  A participant's interpretation of the bell, or lack thereof, influenced her self-evaluation and her expectation advantage significantly. While it is unclear how those in the unknown category interpreted the bell, it is evident that there was inconsistency of interpretation within the condition.  This inconsistency could be one reason that I failed to reject the null for both of my hypotheses.

DISCUSSION

Status cues can be a powerful source of social information, and we know that at least one status cue, ethnic accent, can be as powerful as a status characteristic (Fişek, Berger, and Norman 2005; Riches and Foddy 1989). However, Ridgeway (1985) says that oftentimes status cues occur naturally in gestalts. Gestalts have been investigated more in the literature, and perhaps there is a reason for this pattern.

The one status cue that has been studied in isolation is ethnic accent, which is a categorical cue. Perhaps categorical cues are more directly linked to task outcomes than task cues, though there is not near enough evidence in the literature to make this conclusion. In fact, it is logical to reason that the path from a task cue to a task outcome is shorter than the path from a categorical cue to a task outcome because in a collectively oriented task focused group, there should be a heightened sensitivity to task relevant information. Though EST researchers know that the burden of proof complicates this oversimplification.

There is benefit in isolating and weighing the impact of each status cue (Ridgeway 1985), and although I failed to reject the null for both of my hypotheses, my lack of significant findings is theoretically and empirically useful. The interviews for this research reveal that response latency is noticeable in interaction. The adjusted response times of the participants in condition 2 indicate that it is powerful enough to influence behavior, or at least the response latency of others in the group. However, when isolated it may not function as a status cue because it is too ambiguous to interpret. Coupled with other status cues, research has shown that it can impact performance expectations

(Rashotte and Smith-Lovin 1997), but its distinctive contribution to the gestalt should be investigated in future research.

In this research, I followed the pattern of previous work on verbal latency and assumed that high response latency would function as a low status cue and low response latency would function as a high status cue. However, this interpretation of response latency may be oversimplified.

It is possible that an actor's interpretation of a status cue is dependent on the status of the person emitting the cue. For example, if a distinguished professor is working on an task with graduate students, a long pause may reinforce the professor's high status. The way in which the low status graduate students patiently await the professor's inputs may imply that the professor is in control and superior. In contrast, a long pause from a graduate student may signal incompetence. Status cues theory does not address this idea. Currently, the propositions of status cues theory are as follows (Berger, Webster, Ridgeway, and Rosenholtz 1986):

1. In a group of status equals, status cue differences will generate correspondingly different performance expectations.
2. In a group with a status hierarchy, differentiated performance expectations will produce corresponding status cues.

I have developed a third proposition for status cues theory to address the status position of the actor emitting the status cue. The third proposition is as follows:

3. In a group with a status hierarchy, the status of an actor will influence the way in which his or her status cues are interpreted.

I plan to test the third proposition in future research.

Contributions

   This research is useful for two reasons. First, it isolates response latency as a status cue, weighing its impact on interaction. Verbal latency, which is similar to response latency, has been investigated in the literature, but it has been a part of a cue gestalt (Carli, LaFleur, and Loeber 1995; Rashotte and Smith-Lovin 1997; Ridgeway 1985) or is used as a dependent variable (Conner 1977). Thus, this is the first research to isolate response latency and use it as an independent variable.

   Second, this research tests status cues theory. Though the first proposition of the theory has been tested and supported (Riches and Foddy 1989), it needs to be tested with different concrete variables (Berger, Wagner, and Webster 2014). This research clearly indicates that not all status cues are powerful enough to create performance expectations when operating alone.

   Status cues theory predicts that status cues can produce corresponding performance expectations in a group of status equals (Berger, Webster, Ridgeway, and Rosenholtz 1986). However, the theory does not claim that each status cue has the strength to create a status hierarchy by itself. Therefore, the theory is still supported.

Limitations

   One limitation of this study is the sample size. For the final analysis, my N=49. In order to find significant results for a weak cue gestalt, I need a N almost double the size of the one reported here. However, I feel that a larger N would still not produce significant results because I think that response latency is too weak and ambiguous to create performance expectations alone.

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APPENDIX A: RECRUITMENT PITCH

Good morning.  I am _____ from the Department of Sociology here at UNC Charlotte. I am here today to interest you in participating in some of our paid research studies.

During the year, the Sociology Department conducts studies in a number of areas, and for most of these studies it is necessary to hire students like yourselves to help us. I can tell you that students that have helped us in the past have found it to be an interesting as well as rewarding experience. It's a chance to learn something about yourselves and to see how this type of research is conducted.

Although this is not a permanent job, you will be paid for your time, about $12.00 per hour.  Groups this semester will be conducted right here at the University.

What I would like to do now is hand out these short forms and business cards. The forms will give us your name and phone numbers so that we can get in touch with you.  Filling out this form does not obligate you to anything.  We'll get in touch with you later to see if you are still interested.  If you are too busy then and are no longer interested, we'll take your name off our scheduling list and that will be it.  However, we can't even get in touch with you if we don't have your phone number, so I encourage everyone to fill out a form.

The business card is for you to keep.  On each business card is a web link.  To participate in this study, simply go to this web link, which will allow you to schedule an appointment.  This way, you can schedule a time that is most convenient for you. Do you have any questions I can answer?

(Be sure to thank students and professor)

APPENDIX B: PHONE SCRIPT

Hello, may I speak with [first and last name] please?

Hello, _____ my name is _____, and I am calling from the Department of Sociology here at UNC Charlotte. A while ago you indicated an interest in participating in our paid research studies, and I am calling to find out if you are still interested.

- IF NO: Say: "We will remove your name from the file." Thank him/her.

- IF CONFUSED OR DOES NOT REMEMBER: Say: "Remember you filled out a form in class."

- IF INTERESTED: Say: "Good, I need a little more information for our files."
  - Your age is _____ [from the recruiting form], right?
  - And what is your major?

Have you ever participated in any sociological or psychological studies?

- IF YES: Could you tell me about it? [If it was a deception study, tell him/her this completes the information you need right now and that you will put his/her name in the file to be scheduled at a later date. Thank him/her and hang up. Then, discard the recruiting and scheduling forms].

- IF NO: OK, we have an opening on _____ at _____ for 1 hour. It pays $12 for your participation.
  - **IF NO: Then, how about _____ at _____?**
  - IF NO: Well, what times are best for you? [As soon as you find an appropriate time, stop and place him/her in it].

Now, let me tell you how to get here. Do you have a pencil? [Wait while he/she gets one.]

We are on the fourth floor of the Fretwell building. This is the building behind the Friday business building near the large faculty/student parking deck. The Sociology Department is on the fourth floor beside the elevators, which are just off the atrium.

Is that clear? [Wait while she repeats the directions. If she makes any errors, repeat the directions.]

Great, then we will see you on _____ at _____. Thank you. Goodbye.

APPENDIX C: BUSINESS CARD FOR RECRUITMENT
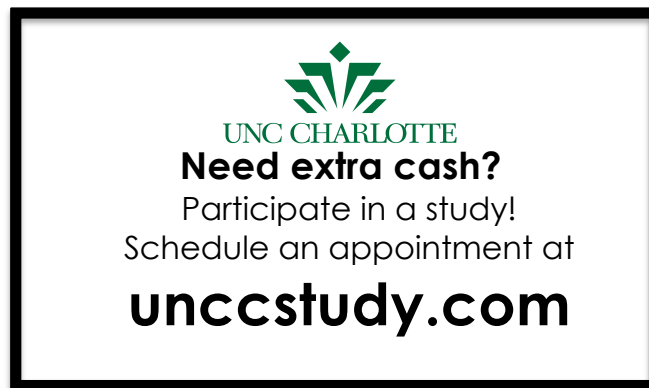
APPENDIX D: PREST INSTRUCTIONAL SCRIPT

Thank you for joining us today.  We think you'll find this to be an interesting as well as a rewarding experience. Please make yourselves comfortable.

My name is _____, and I will explain the task you will be working on today.  Please pay careful attention to the instructions.  We are members of a research team of social scientists studying differences in several basic abilities. The abilities we are studying today are generally *unlike* any of the more usual types of skills or aptitudes. This makes them interesting because it is difficult to predict beforehand how well someone will do at these tasks. Today we will be studying one specific type of ability.

Within the past few years, social scientists have found in their studies that individuals *differ* in their ability to understand unfamiliar words and symbols.  That is, we have found that when *some* individuals are presented with unfamiliar words or symbols, they are quickly able to understand and grasp the meaning or significance of these words or symbols.  Other people do not seem to have this ability to the same extent.  This ability, to quickly grasp and understand the meanings of unfamiliar words and symbols, is what social scientists call *Meaning Insight.*

At this time, we do not know all of the reasons why some individuals possess more Meaning Insight than others, although we believe it is related to background, training, and possibly to innate capacities.

One of the interesting things we do know is that Meaning Insight is *not* necessarily related to *specialized skills* that an individual might possess, such as reading ability, mathematical skills or grades in classes.  Those individuals with high mathematical or verbal skills may have low Meaning Insight, and those with low mathematical or verbal skills may often have high levels of Meaning Insight.  Meaning Insight appears to be an entirely new kind of ability, one that is *unrelated* to most of the other skills and abilities that have been studied.

Because of the importance of Meaning Insight, social scientists are engaged in an extensive set of studies to determine the factors that influence how much Meaning Insight an individual may possess.  Researchers at UNC Charlotte are particularly interested in studying how individuals use their Meaning Insight and other abilities to solve problems.

Today we will ask each of you to take a test of Meaning Insight.  This test has been used widely and with considerable success in high schools, military organizations, and hospitals.  It has been shown to be an excellent indicator of the level of an individual's Meaning Insight.  That is, this test distinguishes those who have this ability from those who do not. The form of the test we will use has been specially prepared for college students.

Each problem consists of one word from a non-Indo-European language at the top of the screen, followed by two English words at the bottom of the screen.  *One* of the words at the bottom has *exactly the same meaning* as the non-English word at the top. Your task is to determine, in each case, *which* English word has the same meaning as the non-English word. Your answers to these slides will enable us to measure the level of Meaning Insight that each of you possess.

As each slide appears, read the non-English word and sound it to yourself. Think about impressions and feelings it may call to mind. Try to associate the non-English word with any other words or parts of words that may help you determine its meaning. After you have done that, choose the English word that you think is *closest in meaning* to the non-English word at the top of the monitor. After you have studied the slide, make your choice for that slide.

In previous studies, people with high Meaning Insight identify the correct choice, and people with low Meaning Insight identify the incorrect choice. The goal of the task is to select the *correct choice.* Use the mouse to indicate your choice by clicking on the word you choose. When you make a choice, a blue border will appear around the word you have chosen.

Let's try this out. I will present a demonstration slide (via PowerPoint) so that you can become familiar with the test.

[GO TO VISUAL: DEMO SLIDE #1 VIA POWERPOINT]

In this sample problem, the non-English word is ZEL-KOM. Sound it to yourself: ZEL-KOM [PAUSE]. Now turn to the English words: THIEF and HORSE. If THIEF seems more correct, you would position the cursor over the word THIEF and click on it using the mouse. If HORSE seems more correct, you would position the cursor over the word HORSE and click on it. That is, select the English word you have chosen. When you have made your choice, a blue border will appear around the word. [PAUSE.] In this sample, the correct answer is HORSE.

In this task, there will be 12 Meaning Insight problems. The procedure for all of the problems will be as I have just demonstrated.

At this time we do not have all the answers as to why some people do better at the Meaning Insight task than others. They seem to be operating on the basis of very slight, almost intuitive, cues and feelings. However, be careful. Guesses, based on first impressions, may often be incorrect.

Please work independently. Do not look at the choices of other people. Concentrate on solving the problems on your own.

After you have completed the task, please remain seated. When everyone has finished the task, I will give you further instructions.

Now we are ready to begin the Meaning Insight test. Before we begin, let me summarize several important points.

- First, you are going to be asked to work on a set of 12 Meaning Insight problems. The form of the test has been prepared for students of your level.
- For each slide, your task is to decide which English word at the bottom, the one on the left or the one on the right, is closer in meaning to the non-English word at the top of the screen.
- When you have completed the task, please remain seated until I give you further instructions.

Please remember that this is not an easy task. We suggest you study the slides carefully and respond promptly. Your task will begin now.

[PRETEST PROGRAM BEGINS]

APPENDIX E: PRETEST EXPLANATION

Now that everyone is finished, I'd like to explain our study more fully to you. Hopefully, I am about to answer any questions you have. If you have questions at the end, please be sure to ask them, for I want you to understand all about our study.

Today you participated in the pre-test of this study. Other UNCC students will complete the actual study. We will use the data that was collected today to build the rest of the study. In the study, the participants will complete the same Meaning Insight task that you completed today, but they will do so with a partner. In this study, the main goal is to understand how these partners work together to resolve disagreements.

Today, we were most interested in how quickly you responded to the slides. It does not matter if you finished first or if you finished last. We simply needed to know how long it takes, on average, to complete this Meaning Insight task. Therefore, today we were most interested in how long it took all of you to complete the task.

As far as Meaning Insight is concerned, you can see now that we are not primarily interested in measuring anyone's Meaning Insight. We are interested in how people resolve disagreements and how their response times influence this resolution process. In fact, there is no such thing as Meaning Insight. 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 non-English words in all the slides you viewed were unrelated to the English words. If you found it difficult to come to a decision about some of the slides, that is the reason—there are no correct answers. 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 your response times, not in your answers to the slides. As I said, there are actually no correct answers to Meaning Insight slides, and they do not actually measure any ability.

We use Meaning Insight slides because it is unlikely that anyone who comes in here has ever seen anything like them, 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 Meaning Insight we have something that's new to everybody.

We do not want anyone to leave here with misconceptions. That is why I am 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.

[Pause. Any questions?]

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, the fact that there are no answers to the slides.

- If they've heard that Meaning Insight isn't a real ability, they won't pay attention to the task...
- If someone knew there were no answers to the slides, s/he wouldn't concentrate on solving the problems, and our work would be wasted...
- 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.

AFTER GETTING THE PLEDGE, CONTINUE:
Good!  I'm glad to hear that you'll help us out! (Etc.)

This is no great secret.  If you found this interesting, and I hope you did, there's no ban on discussing it with your parents, or friends off campus.  But not with the other people here on campus, 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 me 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 click a lot of buttons. That is true, and it doesn't hurt anything.

Well, if you have no other questions, I'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.

APPENDIX F: CONSENT FORM

**Consent Form**
*DECISION-MAKING IN PARTNERSHIPS*

Project Title and Purpose
    This is a research project entitled, "Decision-Making in Partnerships."  The purpose of this
    study is to investigate decision-making processes in partnerships.

Investigator(s)
    Kayla Pierce, Master's Candidate in Sociology, UNC Charlotte

Overall Description of Participation
    You will be interacting with a female partner over the computer.  You will not meet her, but
    you will work with her on a computer task.  The task will be presented on a computer screen.
    About 40 individuals will participate in this study.  After you complete the task, you will
    complete a questionnaire on the computer. Then you will be interviewed by a member of the
    research team.  This interview will be audio recorded.

Length of Participation
    Your participation in this study consists of one session of approximately 1 to 1½ hours.

Risks of Participation
     This study has no reasonably foreseeable risks to you.  The project may involve risks that are
    currently unforeseeable.

Benefits of Participation
    You will be reimbursed $12 as compensation for your time and any inconvenience to you.  The
    benefit to society is that this study will increase our understanding of decision-making.

Eligibility
    You may participate in this project if you are at least 18 years old and currently an UNC-
    Charlotte undergraduate.

 "Volunteer" Statement
    You are a volunteer. Your decision to participate in this research is completely
    voluntary.  You may refuse to participate, and if you agree to participate you can stop
    at anytime. If you refuse to participate or choose to stop, you will not be penalized and
    you will not lose any benefits to which you are otherwise entitled.

Privacy Statement
    Any information about your participation, including your identity, is completely confidential.
    The following steps will be taken to ensure this confidentiality.  Names will not be attached

to the data in computer data files.  Names will not appear in any reports or publications stemming from this study.  Original data with names attached are kept locked in the group processes laboratory.

Statement of Fair Treatment and Respect

UNC Charlotte wants to make sure that you are treated in a fair and respectful manner. Contact the university's Research Compliance Office (704-687-1871) if you have questions about how you are treated as a study participant.  If you have any questions about the project, please contact Kayla Pierce (334-750-4173).

Confidentiality Statement

Any information about your participation, including your identity, is completely confidential. The following steps will be taken to ensure this confidentiality: Names will not be attached to the data in computer files or appear in any reports or publications stemming from this study. Original data with names attached are kept locked in the group processes laboratory.

Approval Date

This form was approved on 1/14/15, for use for one year.

Participant Consent

I have read the information in this consent form.  I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction.   I am at least 18 years of age, and I agree to participate in this research project.  I understand that I will receive a copy of this form after it has been signed by me and the principal investigator of this research study.

_____  _____

Participant Name (PRINT)                                                    DATE


_____

Participant Signature


_____  _____

Investigator Signature                                                          DATE

APPENDIX G: INSTRUCTIONAL SCRIPT


Thesis Procedures Phase 1

[DR. GORDAN]

Welcome to the Laboratory for Social Research.  We'd like to thank you for being able to join us today.  I am Dr. Philip Gordon, and I'm speaking to you from the control room in the Laboratory.  I will be your host for today's study.  We think you'll find this to be an interesting as well as a rewarding experience. Please make yourselves comfortable. In today's group, there will be 2 participants.  Both of you are students here at UNC Charlotte.

Our work today will be divided into two phases or parts.  In each phase you will be asked to solve problems. Right now, both of you are about to view a recorded instructional video.  Please pay careful attention to the instructions.


[VIDEO BEGINS: DR. GORDAN]

Hello again. During this instructional video, I will explain the task you will be working on today.  We are members of a research team of social scientists studying differences in several basic abilities.  We're studying these abilities in various groups in different parts of the country, and at the same time, we are standardizing the results of our findings.  The abilities we are studying today are generally *unlike* any of the more usual types of skills or aptitudes.  This makes them interesting because it is difficult to predict beforehand how well someone will do at these tasks. Today we will be studying one specific type of ability.  I will explain more about the nature of this ability in a few minutes.

Much of our knowledge of work teams comes from studies of discussion groups. In those studies, investigators have observed groups whose members talk face-to-face about possible solutions to problems.  Now, technology has created a new type of group. Members of these groups do not discuss problems face-to-face, but rather, they communicate using computers. We are interested in studying these kinds of groups. We and other social scientists are conducting a large number of studies to learn how groups using technology can work as effectively as face-to-face groups who work on similar problems.  Today you are participating in one of these studies.

Now let me tell you about the task you will be working on.  Within the past few years, social scientists have found in their studies that individuals *differ* in their ability to understand unfamiliar words and symbols.  That is, we have found that when *some* individuals are presented with unfamiliar words or symbols, they are quickly able to understand and grasp the meaning or significance of these words or symbols.  Other people do not seem to have this ability to the same extent.  This ability, to quickly grasp

and understand the meanings of unfamiliar words and symbols, is what social scientists call *Meaning Insight.*

At this time, we do not know all of the reasons why some individuals possess more Meaning Insight than others, although we believe it is related to background, training, and possibly to innate capacities.

One of the interesting things we do know is that Meaning Insight is *not* necessarily related to *specialized skills* that an individual might possess, such as reading ability, mathematical skills or grades in classes. Those individuals with high mathematical or verbal skills may have low Meaning Insight, and those with low mathematical or verbal skills may often have high levels of Meaning Insight. Meaning Insight appears to be an entirely new kind of ability, one that is *unrelated* to most of the other skills and abilities that have been studied.

Because of the importance of Meaning Insight, social scientists are engaged in an extensive set of studies to determine the factors that influence how much Meaning Insight an individual may possess. Researchers at UNC Charlotte are particularly interested in studying how individuals use their Meaning Insight and other abilities to solve problems. In today's study, you and your partner will work together on two different but related sets of Meaning Insight problems.

In the first part of today's study, we will ask each of you to take a test of Meaning Insight. This test has been used widely and with considerable success in high schools, military organizations, and hospitals. It has been shown to be an excellent indicator of the level of an individual's Meaning Insight. That is, this test distinguishes those who have this ability from those who do not. The form of the test we will use has been specially prepared for college students.

Each problem consists of one word from a non-Indo-European language at the top of the screen, followed by two English words at the bottom of the screen. *One* of the words at the bottom has *exactly the same meaning* as the non-English word at the top. Your task is to determine, in each case, *which* English word has the same meaning as the non-English word. Your answers to these slides will enable us to measure the level of Meaning Insight that each of you possess.

As each slide appears, read the non-English word and sound it to yourself. Think about impressions and feelings it may call to mind. Try to associate the non-English word with any other words or parts of words that may help you determine its meaning. After you have done that, choose the English word that you think is *closest in meaning* to the non-English word at the top of the monitor. After you have studied the slide, make your choice for that slide.

In previous studies, people with high Meaning Insight identify the correct choice, and people with low Meaning Insight identify the incorrect choice. The goal of the task is to select the *correct choice.* Use the mouse to indicate your choice by clicking on the word you choose. When you make a choice, a blue border will appear around the word

you have chosen. This is how you will know your choice has been communicated to the control room.

 [SECTION ON PARTNER'S PROGRESS BOX: CONDITIONS 1 AND 2 ONLY]

You can view your partner's progress on the task by viewing the Partner's Progress Box at the upper right hand corner of the screen.  After your partner has made a choice, you will be notified by a bell sound.  A green check mark will also appear inside the box.  Therefore, as soon as your partner has made a choice, you will be notified by the bell and the green check mark.

A timer will also be displayed on the screen, indicating how much time you have left to make a choice.  Because it is important for you to answer correctly, the timer will help you monitor your time.  When the timer is up, you will have run out of time.  If you do not make a choice within your time frame, your choice will not contribute to your individual score.

When both of you have made your choices for a slide, your choices will be recorded. Both of your response times will also be displayed temporarily on the screen. You will be able to see how quickly you made a decision and how quickly your partner made a decision. After you and your partner's response times have been displayed on the screen, the slide will fade and the next Meaning Insight problem will appear.
[END OF ADDITIONAL SECTION FOR CONDITION 1 AND CONDITION 2]


Let's try this out. I will present a demonstration slide so that you can practice with this procedure. These slides will not count on your individual score. They are just for the purpose of becoming familiar with the test. [GO TO VISUAL: DEMO SLIDE #1]

In this sample problem, the non-English word is ZEL-KOM.  Sound it to yourself: ZEL-KOM [PAUSE].  Now turn to the English words: THIEF and HORSE.  If THIEF seems more correct, position the cursor over the word THIEF and click on it using the mouse. If HORSE seems more correct, position the cursor over the word HORSE and click on it. That is, select the English word you have chosen. When you have made your choice, a blue border will appear around the word. Then, your response time and your partner's response time will appear temporarily on the screen.  [PAUSE.] Please make your decision now.[1]  In this sample, the correct answer is HORSE.


[RETURN TO DR. GORDAN]

In this phase, there will be 12 Meaning Insight problems.  The procedure for all of the problems will be as we have just demonstrated.

At this time we do not have all the answers as to why some people do better at the Meaning Insight task than others.  They seem to be operating on the basis of very slight, almost intuitive, cues and feelings.  However, be careful.  Guesses, based on first

impressions, may often be incorrect.  So that you will have some idea of how well others have done at this task, we have prepared a set of standards. Ms. Mason, will you explain the standards to them, please?

[MS MASON, PHASE 1]      [DR GORDAN NODS TO MS. MASON]

Yes, certainly, Philip.

As Dr. Gordan has just told you, you are about to work on a set of 12 Meaning Insight problems.  This form of the test has been devised especially for students of your age group. For each slide, your task is to tell which of two English words is closer in meaning to the non-English word.  When you make your choice for each slide, that choice will then be communicated to the control room. For each slide, we will record whether your answer is correct or incorrect.

The goal of the first Meaning Insight task is to maximize your individual scores.  You will receive one point for selecting the correct answer.  In this form of the Meaning Insight test there will be 12 problems, and each correct answer will add one point for your individual score.

Furthermore, we will record which of you was the first person to respond.  You will receive a bonus point for being the first to respond, if your answer is correct.  If you are the first to respond, but your answer is incorrect, then you receive 0 points.  This graph will illustrate the scoring system. [DISPLAY POINT SYSTEM]

As you can see, only correct answers receive points.  If you select the correct answer and are the quickest to respond, you will receive 2 points.  If you select the correct answer, but are the slowest to respond, you will only receive 1 point.

The maximum possible individual score is 24. The minimum, of course, is 0. Each of the 12 Meaning Insight slides are worth 2 points, 1 point for correctness, and 1 bonus point for quickness.  Therefore, people with the highest Meaning Insight will be able to select the correct answers.

So that you can see how well others have done at this test, we have prepared the set of standards on this board [POINT].  This test has been administered to students of your level in this part of the country and elsewhere.  The standards are based on these studies. [LOOK AT THE CHART.]

As you can see,  [POINT] a score of 14 to 17 points is a usual or *average* score. Actually, *16* is the *most* typical score.  Fourteen or 15 is getting a little low and 17 is getting a little high. [POINT]  Eighteen to 21 points is an unusual occurrence and indicates an *above average* performance. [POINT]  Twenty-two to 24 points is a rare occurrence and clearly indicates a *superior* performance. [POINT.  PAUSE] Eleven to 13 points is also an unusual occurrence and it indicates a *below average* performance. [POINT]  Zero to 10 points is a rare occurrence, and it indicates a *poor* performance.

In general, the characteristics of this task are that it is usual to score in this area [POINT], 14 to 17.  That is, people with *average* ability will achieve 14 to 17 points.

[POINT] It is unusual to score in this area, 18 to 21. [POINT] People with *above average* ability will score between 18 and 21 points. A score of 22 to 24 points is a rare occurrence. [POINT] People with *unusually high* ability will score in this category. [POINT. PAUSE.] Scores of 11 to 13 points also are somewhat unusual. People with *below average* ability will score in this category. [POINT] Finally, scores in this region—0 to 10—are rare. People who have *unusually low* ability will score here.

You also can see that, although a person might expect to get 5 or 6 correct out of 12 by merely guessing, that would lead to a *poor individual score* of 10 or 11 points. [POINT] The average individual score is 14 to 17, so we find that *most* people score consistently better than they would if they were merely guessing. [POINT] You will not receive your individual scores until the end of the study.

Are the scoring and standards clear? [PAUSE AND LOOK AT DR. GORDAN]


[DR. GORDAN]

Thank you. Now we are ready to begin the Meaning Insight test. Before we begin, let me summarize several important points.

- First, you are going to be asked to work on a set of 12 Meaning Insight problems. The form of the test has been prepared for students of your level.
- For each slide, your task is to decide which English word at the bottom, the one on the left or the one on the right, is closer in meaning to the non-English word at the top of the screen.
- You will maximize your individual score by selecting the correct answer faster than your partner. Only correct answers receive points.
- We will keep track of your individual scores on this task and report them to you after the task is completed.

[INSERT FOR CONDITIONS 1 & 2]

- Your partner's progress can be observed in the Partner's Progress Box in the upper right hand corner. You will be notified when your partner has made a choice by a bell and a green check mark. Your response time and your partner's response time will appear temporarily on the screen after each trial.

[END OF INSERT FOR CONDITIONS 1 & 2]


Please remember that this is not an easy task. We suggest you study the slides carefully and respond promptly. Your task will begin now.

[INSTRUCTIONAL VIDEO STOPS. PHASE 1 PROGRAM BEGINS]

[END OF PHASE 1]

[DR. GORDAN]

Now we are ready to begin the second part of today's study. In this part, the two of you will be working on a second set of Meaning Insight problems. This set of problems is different from the ones that you worked on in the first set. However, these slides measure the same ability as the first set, and we have found that people generally do about equally well on the two sets. One of the things we are interested in learning is whether that will be true in today's group. At this time, you will both view a second instructional video.

[VIDEO BEGINS: DR. GORDAN]

During this instructional video, I will describe your next Meaning Insight task. In this task, each slide will contain *one English* word and *two non-English* words. The English word will be at the top of the screen, and the two non-English words will be at the bottom of the screen. Your task for these slides is to determine, in each case, which word you think is *closest in meaning* to the English word at the top of the monitor. People who score well on the first set of problems usually score well on the second, and vice-versa.

There are several differences in the way the two of you will work on this task. First, this set of Meaning Insight problems will contain *one* English word and *two* non-English words. This time, you will decide which *non-English* word is *closest in meaning* to the English word at the top of the monitor. Second, during this task you will be able to exchange information with your partner before you make a final decision. Third, in this set of problems there will be no timer or bonus points. Each of you will be given the same amount of time to make your decisions. Finally, during this task you will earn points for one team score, not two individual scores.

As we have said, we are interested in how individuals and groups use their Meaning Insight ability to solve problems together as a team. Exchanging information with each other on these problems, and considering another person's choices, often leads to *more correct* answers than a single person could make working alone.

We are studying this kind of team situation in our work today. Therefore, we are going to allow you to make an *initial choice* between the two non-English words and to exchange this information with each other before making your final decision. Since we are *only* interested in your making the correct final decision, you should not hesitate to change your initial choice in order to make a correct final decision. The goal is to maximize your *team score*.

First, we will present a problem on the screen. You may study the problem for 5 seconds; then we will ask each of you to make an *Initial Choice* as to which non-English word you think is *closest in meaning* to the English word at the top of the monitor. That

is to say, each of you will first make a *preliminary choice* between the two non-English words.  This is for the purpose of letting the *other person* know what *you* think is the correct choice.  You will indicate this choice by using the mouse to click the button beneath the non-English word you want to select, on the row labeled *Your Initial Choice.* This will be the *upper* row of buttons beneath the non-English words. When you make your initial choice, the button you have chosen will become *green.*

Also when you make your initial choice, that choice will be communicated to your partner, and you will be able to see your partner's initial choice on your monitor. That is, a *green light* will appear on the row labeled *Partner's Initial Choice.* However you will not receive information on the other person's initial choice until *after* you have made your *own* initial choice.

After you both have viewed each other's initial choices, you will have five more seconds to restudy the slide before we will ask for your *final decision*. You will not see your partner's final decisions. However we will keep track of each person's final decisions.

I will now demonstrate how this will work by presenting a slide on your computer monitor. This slide *will not count* on your team's Meaning Insight score. It is just for the purpose of becoming more familiar with the procedure. As I said, you will have 5 seconds after the problem appears before we will ask you to make your initial choice. After both of you have made your initial choices, you will have 5 more seconds before we will ask you to make your final decisions. All right, here comes the demonstration slide. Study it, and then make your initial choice and your final choice when we call for them.

[GO TO VISUAL: DEMO SLIDE #2]

[RETURN TO VIDEO: DR. GORDAN]

In this form of the Meaning Insight test, there will be 20 slides. The procedure for all of them will be as you have just seen.

*This is important:* The *only* answer that *counts* on your team's Meaning Insight Score is your *final decision.*  Initial choices are for the purpose of exchanging *opinions* on the correct answer before you make your final decision.  You should not hesitate for any reason to change your initial choice in order to make a correct final decision.  Let me repeat: Try to make as many correct final decisions as you can, and do not worry whether your initial choices and final decisions are the same. Let me *caution* you, however, to make your initial choice with care, so as to provide your partner with the best information you can.

So that you can see how well other students like yourselves have done with this set of problems, we have prepared a set of standards. We have found that if a person is given the opportunity to see another person's initial choice before making a final

decision, that person can improve his or her score markedly. Consequently, each of you will first make an initial choice as to what you think is the correct answer and exchange this information with each other before you make a final decision. However, only final decisions are recorded for your team's Meaning Insight score. Ms. Mason, will you explain the standards for the second Meaning Insight test, please?

[MS. MASON]

Let me explain how we score final decisions. [GESTURES] Each time a person makes the correct final decision, the team will receive one point. If both of you make the correct final decision, the team receives two points. If an individual makes an incorrect final decision, then that final decision adds nothing to the team's score for that trial. In this form of the Meaning Insight task, there will be 20 problems. That means the maximum possible team score is 40. The minimum, of course, is 0.

So that you can see how well others have done on this task, we have prepared the standards on this chart. [POINT] This task has also been administered to college students of your level here and elsewhere. The standards are based on those studies.

 [LOOK TO THE CHART]

In this situation, we have found that [POINT] a team score of 22 to 29 points is a usual or *average* score. Actually, 25 is the *most* typical score. [POINT] Thirty to 35 points is an unusual occurrence and indicates an *above average* team performance. [POINT] Thirty-six to 40 points is rare and clearly indicates a *superior* team performance. [POINT. PAUSE] Eighteen to 21 points is unusual and indicates a *below average* team performance. [POINT] Zero to 17 points is a rare occurrence, and indicates a *poor* team performance.

As before, guessing does not really help. Although a person might expect to get some of the problems correct by merely guessing, that would lead to a *poor* team score**.** [POINT] The average team score is 22 to 29 points, so we find that most teams score consistently better than they would if the team members were merely guessing. [PAUSE]

Is everything clear?

[DR. GORDAN]

Thank you. Now that the scoring system has been reviewed, let me repeat several important points before we begin.

- You are going to work on a set of 20 Meaning Insight problems. Only final decisions will count on your team's Meaning Insight score.
- After you have made your initial choice and seen your partner's initial choice, you can re-study the slide and consider your partner's initial choice. Then you will make your final decision for that slide. You will not see your partner's final decisions in this phase.

Now, here are the slides.

[PRESENT MI2 PROGRAM]

[DR. GORDAN]

All right, now we would like each of you to fill out a short questionnaire. The questionnaire asks about several aspects of this group and the tasks you have just completed. In a minute, questions will appear on the computer monitor regarding your participation. When a question appears on the monitor, carefully read it and select the answer that best represents your experience in this study today. You will use the left mouse button, the same way you did for the Meaning Insight problems, to click on your answers. When you choose your answer, your choice will be recorded and the next question will appear. There is no time limit answering these questions. Please take your time and think about your answers before making your choices.

[PRESENT QUESTIONNAIRE 1]

[DR. GORDAN]

Now we would like to talk with each of you individually regarding your thoughts and feelings about the study. Please wait a moment and someone will be in to speak with you.

[END]

APPENDIX H: SCORING SYSTEM

Meaning Insight
Phase 1
(12 Problems)

| Team Score | Interpretation |
|---|---|
| 22-24 | Superior (Rare) |
| 18-21 | Above Average (Unusual) |
| 14-17 | Average (Usual) |
| 11-13 | Below Average (Unusual) |
| 0-10 | Poor (Rare) |

Meaning Insight
Phase 2
(20 Problems)

| Team Score | Interpretation |
|---|---|
| 36-40 | Superior (Rare) |
| 30-35 | Above Average (Unusual) |
| 22-29 | Average (Usual) |
| 18-21 | Below Average (Unusual) |
| 0-17 | Poor (Rare) |

APPENDIX I: QUESTIONNAIRE

**Opening screen:**

Meaning Insight Questionnaire
STRICTLY CONFIDENTIAL
Please click "begin" when you are ready.

**First instructional screen:**
This section of questions asks about the FIRST set of Meaning Insight problems.  This first set of Meaning Insight problems included the "Partner's Progress Box" and it displayed you and your partner's response times.

Please read the following questions carefully, and take your time answering them.  There is no time limit for these questions.

1. How accurately would you estimate that these tasks measure a person's true level of Meaning Insight?
   On the following scale, please select the number that represents how accurate you think the Meaning Insight tasks measures are.
   I think that the Meaning Insight tasks are:

|  | Inaccurate |  |  |  | Accurate |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Neither | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2. How difficult did you find the first set of Meaning Insight problems?
   On the following scale, please select the number that best represents how difficult you found the Meaning Insight problems.
   I found the problems to be:

|  | Easy |  |  |  | Difficult |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Neither | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

3. How sure of himself or herself do you think your partner was?
   On the following scale, please select the number that represents how sure your partner was of himself or herself.
   When I think about how sure my partner was of himself or herself, I think that he or she was probably:

| Extremely | Unsure of Self Very | Somewhat | Neither sure or unsure | Somewhat | Sure of Self Very | Extremely |
|-----------|------|----------|--------|----------|------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4. How assertive was your partner?
   On the following scale, please select the number that represents how assertive your partner was.
   When I think about how assertive my partner was, I think that he or she was probably:

| Extremely | Unassertive Very | Somewhat | Neither assertive nor unassertive | Somewhat | Assertive Very | Extremely |
|-----------|------|----------|--------|----------|------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

5. Compared to you, how well would you estimate the other person did at these Meaning Insight problems?
   On the following scale, please select the number that represents how well you estimate the other person did on the Meaning Insight problems.
   Compared to me, I think the other person did:

| Extremely | Poorly Very | Somewhat | Neither | Somewhat | Well Very | Extremely |
|-----------|------|----------|---------|----------|------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Second instructional screen:**
This section of questions asks about the SECOND set of Meaning Insight problems. In the second set of Meaning Insight problems, you were asked to make an initial choice and then a final decision.

6. How important were <u>your own initial choices</u> in making your final choices?
On the following scale, please select the number that best represents how important <u>your own initial choices</u> were in making your final choices.
In working the Meaning Insight problems, my initial choices were:

|  | <u>Unimportant</u> |  |  |  | <u>Important</u> |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Nether important nor unimportant | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

7. How important were <u>your partner's initial choices</u> in making your final choices?
On the following scale, please select the number that best represents how important <u>your partner's initial choices</u> were in making your final choices.
In working the Meaning Insight problems, my partner's initial choices were:

|  | <u>Unimportant</u> |  |  |  | <u>Important</u> |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Nether important nor unimportant | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. How important was getting the correct answer?
On the following scale, select the number that best represents the importance of getting the correct answer.
In working the Meaning Insight problems, getting the correct answer was:

|  | <u>Unimportant</u> |  |  |  | <u>Important</u> |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Nether important nor unimportant | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

9. How important was sticking with your own choice when your partner disagreed with you?
On the following scale, please select the number that best represents how important it was to stick to your own choice when your partner disagreed with you.
Sticking with my own choice was:

|  | <u>Unimportant</u> |  |  |  | <u>Important</u> |  |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Nether important nor unimportant | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

10. When you and your partner made different initial choices, how important was it to you to change your choice to agree with your partner?
On the following scale, select the number that best represents how important changing your choice to agree with your partner was.
 Changing my choice to agree with my partner was:

| | <u>Unimportant</u> | | | | <u>Important</u> | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Nether important nor unimportant | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Final instructional screen:**
The final set of questions asks about your overall assessment of your performance on the Meaning Insight problems.  Please answer the following questions regarding your assessment.

11. How would you <u>evaluate your own performance</u> on the Meaning Insight tasks?
On the following scale, select the number that best represents how you would <u>evaluate your own performance </u>on the Meaning Insight tasks.
I evaluate my performance as:

| | <u>Poor</u> | | | | <u>Good</u> | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Neither good nor poor | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

12. How would you <u>evaluate your partner's performance</u> on the Meaning Insight task?
On the following scale, select the number that best represents how you would <u>evaluate your partner's performance </u>on the Meaning Insight task.
I evaluate my partner's performance as:

| | <u>Poor</u> | | | | <u>Good</u> | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Neither good nor poor | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

13. How do you feel your own ability to solve Meaning Insight problems compares with that of your partner?
On the following scale, select the number that best represents how you feel your own ability to solve Meaning Insight problems compares with that of the other participant.
I believe our abilities compare this way:

| | I have more ability | | | | My partner has more ability | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | My partner and I have equal ability | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

14. Suppose <u>you</u> were asked to solve another set of 20 Meaning Insight problems in which you would be <u>working alone</u> without seeing anyone else's answers. How well would you expect to do if working alone?
On the following scale, please select the number that represents how many Meaning Insight problems <u>you</u> would expect to get correct if <u>working alone</u>.
I would expect to get _____ correct out of 20.

| 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13-14 | 15-16 | 17-18 | 19-20 |

15. Suppose <u>your partner</u> was asked to solve another set of 20 Meaning Insight problems in which <u>he or she would be working alone</u> without seeing anyone else's answers. How well would you expect him or her to do if working alone?
On the following scale, please select the number that represents how many Meaning Insight problems you would expect <u>your partner</u> to get correct if <u>working alone</u>.
I would expect my partner to get _____ correct out of 20.

| 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13-14 | 15-16 | 17-18 | 19-20 |

16. If you were to work on another set of Meaning Insight problems, would you prefer to work <u>by yourself</u> or <u>with a partner</u>?
On the following scale, please select the number that represents how you prefer to work.
I would prefer to:

| | Work by Myself | | | | Work with a Partner | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Does not matter | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

17. If you were to work on another set of Meaning Insight problems with a partner, would you prefer to work <u>with this person</u> or <u>with a different person</u>?
On the following scale, please select the number that represents your preference of a partner.
I would prefer to:

| | <u>Work with</u> <u>**another**</u> <u>**Partner**</u> | | | <u>Work with</u> <u>**this**</u> <u>**Partner**</u> | | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Does not matter | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

18. Taking everything into consideration, how satisfied are you with your participation in today's study?
On the following scale, please select the number that best represents how satisfied you are with your participation in today's study.
Overall, I am _____ with my participation in today's study.

| | <u>Dissatisfied</u> | | | | <u>Satisfied</u> | |
|---|---|---|---|---|---|---|
| Extremely | Very | Somewhat | Neither satisfied nor dissatisfied | Somewhat | Very | Extremely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

APPENDIX J: INTERVIEW SCHEDULE

Response Latency Interview Schedule

**Ask permission and start recording.**

This is group number _____ on (date), starting at (time), and your name is _____.

1.  Well _____, what did you think of the study?

2.  Have you ever done anything like this before?

3.  Have any of your friends or classmates participated in these studies?
    a.  Did they tell you anything about it?
    b.  What did they tell you about it?

4.  Did you experience any technical difficulties?

5.  Were the instructions clear?

6.  Before you came up here, did you wonder what the study would be like?
    a.  Did you come to any conclusion about the study before you came up? What was it?
    b.  Did you think it might be like anything you had done before?

7.  If I had come in right before you started working on the slides and asked you at that point how well you thought you would do on the Meaning Insight task, what would you have said?

8.  Do you remember the gender of your partner? *
    a. Did you think your partner was a male or a female?

### (*"INDIVIDUAL"* MEANING INSIGHT PORTION OF STUDY)

Now I'd like you to think back to the first set of slides.  This set of slides had one non-English word and two English words.  It also had the partner's progress box.

9.  What was your strategy for success during the first set of MI trials?

10. How much attention did you pay to the Partner's Progress Box?
   a. Did you notice the bell and/or checkmark during each trial?
      i.  (If no), why?
      ii. (If yes), how did you interpret it?*
   b. Did the bell and/or checkmark (indicating that your partner had made a decision) motivate you?
   c. Did it distract you?

11. On average who do you think responded quicker, you or your partner?
   a. How many times do you think you were the first to respond?
   b. How many times do you think your partner was the first to respond?

12.  Did you feel competitive toward your partner?
   a. What made you feel like this?
   b. What did you do when you felt like this?
   c. When did you begin to feel this way?

13. What was more important to you--being the first to answer or being correct?

### (*"TEAM"* MEANING INSIGHT PORTION OF STUDY)

Next I would like to ask you some questions about your work in phase 2. In phase 2, you were presented with one English word and two non-English words. You also exchanged initial choices with your partner before making a final decision.

14.  Can you tell me, in as much detail as you can remember, how you chose your **Initial Choices** for the slides?
   a. Did the slides seem to get easier or harder as you went through the series?
   b. Do you have any idea why that was?

15. Now can you tell me, in as much detail as you can remember, how you made your **Final Choices** to the slides?
   a. AFTER you made you initial choice, then what did you do?
   b. Did you look at the other person's choice?
   c. Did you restudy the slide?
   d. Did you try and see how he/she got her initial choice?

16.  Did your strategy change as you were working through the problems?  Why?
   a.  How did it change?

17. Did you find it helped you to see the other person's choices?
    a. Do you think you would have done better at the slides if you had worked at them alone? Why is that?

18. 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?
    a. When?
    b. How many times did you do that?
    c. Why did you do that?

19. Did you feel competitive toward your partner?
    a. What made you feel like this?
    b. What did you do when you felt like this?
    c. When did you begin to feel this way?

20. Did your reasons for picking your final choices change while you were working through the problems? Why?

21. I noticed the two of you seemed to disagree quite a bit in your Initial Choices. Do you have any idea why?
    a. How many times did you disagree?
    b. What did you do when you found the other person was disagreeing with you so much?
    c. Did you wonder how the disagreements looked to her?
    d. Did you come to any conclusions about what she was thinking? What did you conclude?
    e. Did you come to think that one or the other of you was more likely to be right? Which one? Why? When did you begin to feel that way?

22. How many correct **final** decisions would you estimate you made?
    a. Suppose you had to pick a number, what would it be?
    b. And suppose you had to estimate how many correct final choices the other person made?
    c. So at this point do you think you probably did a bit better/worse than she did?

23. If you were to do **another** Meaning Insight task, how many do you think you would make correct? Pick a number out of 20….
    a. How many do you think she would make correct?

    b.  So do you think you would do a little better/worse than her?

24. What kind of background is necessary to do well on MI?
    a.  Who has that kind of background?
    b.  What about you?  Do you have that kind of background?

25. What kinds of skills are necessary to do well on MI?
    a.  Who has those skills?
    b.  What about you?  Do you have those skills?

26. What kinds of experiences are necessary to do well on MI?
    a.  Who has had those experiences?
    b.  What about you?  Have you had those experiences?

27. Do you think that gender influences a person's MI ability?*
    a.  Who do you think does better, men or women?
    b.  Why?

**(CHECK QUESTIONNAIRE FOR CONSISTENCY)**

APPENDIX K: INTERVIEW ABSTRACT

**Response Latency Interview Abstract**

Interviewer: _____

Participant: _____     Room No.: _____

Group No.: _____     Time: _____     Date:_____

**Condition:**    **1 (+ -)**        **2 (- +)**        **3 (-- --)**                P(s):_____

**Suspicion:** In your best judgment, was he/she suspicious?        NO        **YES**
If not NO, explain.

                                                                                                    **UNSURE**

**Task Focus:** Was he/she task focused in **Ph 2**?        YES        **NO**
If not YES, identify the area(s) of concern.

                                                                                                    **UNSURE**

**Collective Orientation:** Was he/she collectively oriented in Ph 2?    YES        **NO**
If not YES, identify the areas of concern

                                                                                                    **UNSURE**

**Initial Conditions:** Were the following conditions met? Explain any NO answers.

1. Understood all instructions?                                    **NO**            YES

2. Believed the response latency of partner in Ph 1?    **NO**            YES

3. Believed the disagreements in Ph 2?                      **NO**            YES

**Activation Relevance:** Explain any no answers

   1.  Did he/she perceive relevance of response latency to MI?      **NO**       YES


**Questionnaire:** Explain any large contradictions in questionnaire responses.


**Any other information of interest?** (E.g., some peculiar behavior in lab, prior beliefs about the study, overall affective responses to the study)


**Taking everything into consideration, would you include**      YES      **NO**

**this person's data in the sample?** If not YES, identify specific
areas of trouble, with related data.              **UNSURE**

APPENDIX L: EXPLANATION

**Response Latency Explanation**

Well, _____, I have been asking you a lot of questions. Do you have any you would like to ask me at this point?

PAUSE. OFTEN HE WILL ASK HIS SCORE ON THE TEST. TO THAT OR ANY QUESTION REPLY THAT YOU THINK IT WILL BE COVERED IN WHAT FOLLOWS, BUT IF IT ISN'T, HE SHOULD FEEL FREE TO ASK AGAIN.

Then I'd like to explain our study more fully to you. As I go along, if there's anything I don't make clear, I want you to interrupt and ask me about it. If you have any questions at the end, be sure to ask them. I 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's likely to be listened to, what factors affect that, and how they affect it.

Now, we study this problem in a sociological laboratory, which is what these rooms are, because in the social sciences, as in most other fields, it is practically impossible to study any single phenomenon in nature where it occurs. For instance, in chemistry: a chemist cannot 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 a laboratory where there are pure chemicals. Or a physicist doesn't study gravity by going out and watching cars roll down a hill. He or she works in a laboratory with weights rolling down inclined slopes, to isolate the phenomenon of interest, 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 phenomenon you might want to study, there are going to be several other processes occurring at the same time, and those other processes are going to cover up, or obscure, any results you might hope to get. In our case, if we're interested in studying how people resolve their disagreements, we can't study that 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 t-shirt the other guy's wearing, or they could be arguing about something that one of them knows he's good at, and the other's not good

at.  So we come into a laboratory, where we can isolate the processes we're interested in, and simplify things.

Also, a 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 I said, we're interested in studying how people resolve their disagreements.  But before we can do that, obviously they have to disagree.  We're not particularly interested in what they're disagreeing about, but clearly if people don't disagree, we won'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 computer terminals that you and the other person were using.  So, what I'm saying is that you and your partner were not actually disagreeing as often as the computers told both of you that you were. For most of the slides in Phase 2, the computer told you that your partner disagreed with your initial choice. And it told him that you disagreed with his initial choices. If it seemed like you disagreed a lot, that's the reason. And it looked just as strange to him as it did to you. **The response times of your partner were also created electronically.**

PAUSE.  GO OVER THIS UNTIL YOU SEE SIGNS OF UNDERSTANDING.

The reason for this arrangement is simply efficiency.  If we had two people come in here and work on the slides together, chances are they would only disagree about half the time, or they might hardly ever disagree.  But as I said, we're interested in how people resolve their disagreements, so we might have to wait a long time until we get the number of disagreements we need.  This might take hours, and it would be a waste of our time, and your time, and also the government's money, since they're funding this study.  So you can see it's important for us to be sure we'll have something to study, and the way we avoid just waiting around for the disagreements is to create them with the machines that you used.

PAUSE FOR UNDERSTANDING

As far as Meaning Insight is concerned, you can see now that we are not primarily interested in measuring anyone's Meaning Insight.  In fact, there is no such thing as Meaning Insight.  The slides are there for a reason, though, and that is to give people something to make judgments about and to resolve disagreements about.  There is no right or wrong answer to any of the slides.  The non-English words in all the slides you viewed were unrelated to the English words. If you found it difficult to come to a decision about some of the slides, that is the reason. There 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.  In other words, what we are interested in is solely the resolution of disagreements, not the answers to the slides.

In the first set of slides, the response times that you saw on the screen did not reflect the response times of your partner.  These response times were created electronically.  Many times when people are called upon to resolve disagreements with someone, they have an idea of how well each of them can do the task. That is the purpose of the first set of slides: to give each person an idea of how well his or her partner was doing based on response times.  However as I said, there are actually no correct answers to Meaning Insight slides, and they do not actually measure any ability.

We use these slides because it's unlikely that anyone who comes in here has ever seen anything like them, so no one has any idea of how well he can do this type of thing.  If we used arithmetic problems instead, some people would know they're good at solving them, and others would know they aren't.  The same is true for vocabulary words or any of the usual types of problems.  But with Meaning Insight, we have something that's new to everybody.  It is important for the study that people believe the ability is real, but we want to tell you as soon as possible that those slides do not really reflect any abilities you have or the other person might have.

I think you can see the reason we couldn't tell you these things before you judged the slides.  If you had known there were no correct answers to the slides, you wouldn't have paid much attention to them, or tried to get the right answers.  Then the disagreements wouldn't have meant anything to you, and you wouldn't have bothered with resolving them.  But as I said before, that's what the whole study is about—how people resolve their disagreements—so it's important for the study that they take the task seriously, and really try to resolve those disagreements, just as you did today.  But, by the same token, we don't want anybody to leave here with any misconceptions or misunderstandings about the study, so it's important that we explain all those things just as soon as we can.  You've helped us by participating in the study—now we want you to know exactly what it's all about.  And it is now being explained to the other person, just as I am explaining it to you.

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

Obviously, if someone has heard the disagreements aren't real, he won't be resolving disagreements; he'll be ignoring them . . .

If someone knew there were no answers to the slides, he wouldn't be able to resolve disagreements, and our work would be wasted. ...

If someone were to find out about the disagreements before he came here, he would ignore them instead of resolving them. ...

If someone knew about details of the study, that would deprive him or her of a chance to participate, to see what the study is like, and perhaps to learn a bit about how social interaction proceeds….

If someone from this campus knew about the study ahead of time, you can see that we wouldn't be able to study how she resolves disagreements in this situation. ...

If you told someone about the study who hadn't participated yet, it would spoil it for him 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. ...

AFTER GETTING THE PLEDGE, CONTINUE: Good!  I'm glad to hear that you'll help us out! (Etc.)

This is no great secret.  If you found this interesting, and I hope you did, there's no ban on discussing it with your parents, or in email with people off campus.  But not with the other people from UNC Charlotte, for then you'd be wasting their time as well as ours, and spoiling the experience for them.

We've had very good cooperation with people here and at other schools on this.  Some have told me they'd asked their friends what it was like up 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.  Or you could tell them that you look at slides and communicate through computers, which is true, and doesn't hurt anything.

If you have no further questions, then I'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, then it's necessary that people come in and resolve disagreements, just as you did today.  And now I'd like to pay you for your time.

NOTE:	This is a simple explanation. It is designed for the usual case in which the participant is not hostile, does not feel badly, and is not very inquisitive.  You should be ready to amplify any of the points, and to deal with any other topic that h