

SELF-HANDICAPPING

Socially Positive Behaviors as Self-Handicapping

Michael F. Wusik

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Danny K. Axson, Chair

Thomas H. Ollendick

Robert S. Stephens

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Abstract

Self-handicapping is a strategic measure taken to protect an individual's insecure positive reputation when future success is uncertain. Present literature operationalizes self-handicapping narrowly, focusing on socially negative behaviors such as drinking and procrastination. The current research sought to broaden the conceptualization of self-handicapping by considering socially positive behaviors. Eighty-nine female participants were given an impossible task allegedly targeting spatial reasoning ability and randomly assigned to groups based on feedback received (non-contingent success feedback vs. no feedback). Participants were then informed that they would be given time to practice and then retested. During their practice period, participants were given an opportunity to help a confederate. While few helped, participants who received *NCSF* spent significantly more time socializing than those who received no feedback. A second study evaluated the effectiveness of the previous manipulation. Fifty-eight females followed the same procedure as in study one and instead of practicing, they were asked to rate their performance during phase one, as well as their confidence regarding the upcoming task. Participants who received *NCS* (vs. no) feedback rated their performance on the target task significantly higher, but without a correspondingly high degree of confidence about replicating their performance. These findings suggest the study one manipulation was effective in creating an insecure positive reputation. The findings in these two studies suggest that behavioral self-handicapping among females may be more prevalent than

previously thought, and that the self-handicapping construct may indeed be in need of broader conceptualization. Suggestions for future research are noted in the General Discussion.

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Introduction

Socially Positive Behaviors as Self-Handicapping

An individual possessing an insecure positive reputation has a greater incentive to create situational outcomes ambiguous enough to protect their reputation from failure as well as strengthen the attributional implications of success. By hedging their bets, people with an insecure positive reputation are capable of attributing failure to some external obstacle while attributing any success to superior skill or talent. First described by Jones and Berglas (1978), self-handicapping is the process of strategically placing obstacles that will allow for explanation for failure when future success is uncertain. This muddies the attributional waters. The behaviors and statements executed prior to performance create special circumstances to ensure that the newly created barriers can explain potential failure while success, however unlikely, is an indication of superior ability.

It is important to note that, while seemingly similar, this strategy is conceptually different than excuse making, which takes place after the completion of a performance. Self-handicapping is also different than intentional failure. Those who self-handicap hedge their bets to protect against possible failure, while those who fail intentionally eliminate the potential of success altogether. It is an irony of self-handicapping that those who do so do not want to fail. By self-handicapping, however, they actually increase the chances of failure.

By implementing a self-handicapping strategy, an individual has more control over the circumstances of their evaluation as well as the ability to avoid accurate self-examination and protect self-esteem (Mello-Goldner & Wurf, 1997). Further, in the presence of an evaluative audience, an individual self-handicapping is capable of

managing their public impression (Kolditz & Arkin, 1982) through the manipulation of the situation and the attributions of their performance. Self-handicapping, then, proves to be an interesting intersection between self-presentation and behavioral attribution. To better understand the underlying attributional logic, we turn to Kelley's principles of discounting and augmentation (1971).

Discounting and Augmentation

The Discounting Principle suggests that the role of a given cause in a cause-effect relationship is discounted or diminished if other plausible causes are also present. In the face of failure, it is more likely that an observer will discount the attribution of failure to the actor's lack of ability due to the presence of other plausible explanations, protecting the actor's self-esteem. The Augmentation Principle suggests that if success occurs in the presence of known constraints, costs, or risks, the attributions made to a actor's ability are augmented because their good performance occurred despite these obstacles, enhancing their self-esteem

Consider a boxer in the months leading up to a fight. If the boxer loses the fight (effect) it is possibly attributed to his lack of talent (cause). However, if the boxer did not train as much as his opponent and subsequently loses the fight, there is another potential cause (lack of training), lowering the likelihood that he would be seen as failing due to his lack of talent. Further, consider that on the day of the match the boxer is claiming flu-like symptoms and family stress, two new causes (four total) are now part of an observer's model leading to the effect (his loss). Now consider the off chance that, in spite of his obstacles, the boxer wins the fight. An observer, weighting the discounting and augmentation principles, is likely to associate the boxer's success to high athletic

ability. This man, outmatched, undertrained, under the weather, and stressed, was still able to succeed in a difficult task; the augmentation principle suggests he will be seen as especially talented. Of course, again, the more likely outcome is a loss.

Behavioral and Claimed Self-Handicapping

Jones and Berglas (1978) defined self-handicapping as an “action or choice of performance setting” that leads to a change in the “dispositions that can be attributed to [an individual] – by themselves as well as by others.” In their first empirical study of self-handicapping, Berglas and Jones (1978) found that participants who received non-contingent success feedback on a multiple choice intelligence test (informed they answered 16 out of 20 questions correctly when only four out of the 20 questions were solvable) were more likely to select “performance-inhibiting” drugs prior to completing a second multiple choice intelligence test (the drugs themselves were placebos but the assumption of their effect was real). Berglas and Jones suggested that the non-contingent success feedback created doubt in the participant that they would be able to replicate their success and lowered their confidence for future success. Therefore, the participants self-handicapped in order to protect their prior success as well as create the plausible explanation that the drugs, not their ability, were causing their potential failure.

Jones and Berglas (1978) went on to suggest other behaviors such as procrastination, failing to sleep prior to an exam, lack of practice in athletics, and problematic drinking are all ways an individual may create barriers to future performances and muddy the attributional water. In each of these cases, the behavior serves as a buffer from potentially unfavorable information regarding an individual’s personal ability. Subsequent research supported the claims of Jones and Berglas,

identifying behaviors such as alcohol use (Gibbons & Gawddert, 1984; Tucker, Vuchinich, & Sobell, 1981), lack of effort (Rhodewalt, Saltzman, & Wittmer, 1984), excessive practice when extra practice is believed to be harmful (Smith, Hardy & Arkin, 2009) and the intentional inclusion of distracting stimuli (Rhodewalt & Davison, 1984; Brown & Kimble, 2009) among the many means of self-handicapping.

Smith, Snyder, and Perkins (1983) suggested that self-handicapping isn't restricted to the behavioral domain. It was proposed that an individual may also claim symptoms, ailments, and complications as a form of self-handicapping. Smith et al. found that those who were led to believe that they were to be tested on social intelligence, and that their test could potentially be impacted by ailments, typically reported more performance hindering symptoms than those who did not have the connection between performance and ailment. Further studies found that claiming test anxiety prior to completing a test (Smith, Snyder, & Handelsman, 1982), claiming pain prior to a task (Mayerson & Rhodewalt, 1988; Uysal & Lu, 2010) and claiming significantly more traumatic events when believing that traumatic events impact test performance (DeGree & Snyder, 1985) are among several ways that individuals are able to claim handicaps as a means to protect their sense of competence.

Gender and Self-Handicapping

To the surprise of Jones and Berglas, female participants did not exhibit the predicted response to noncontingent success feedback as strongly as males. A similar lack of response was found in Berglas and Jones' (1978) replication study after making minor alterations to the delivery of noncontingent feedback. They postulated that this

gender discrepancy could be the result of females attributing their alleged success to luck more than males.

This pattern of gender discrepancy in behavioral self-handicapping has persisted across studies targeting a variety of behavioral self-handicapping strategies. Hirt, Deppe, and Gordon (1991), in a study examining trait self-handicappers, gender, and stress, found that only male trait self-handicappers showed evidence of behavioral self-handicapping (operationalized as procrastination). It was also found that both male and female trait self-handicappers self-reported handicaps significantly more than non-self-handicappers. Hirt, Deppe, and Gordon suggested that men are more willing than females to accept the associated risk of behaviorally self-handicapping, whereas males and females are willing to engage in the less risky claimed self-handicapping strategy.

Hirt, McCrea, and Boris (2003) also suggested that men and women do not expect the same attributional benefits of self-handicapping. They suggested that the failure of women is typically attributed to a lack of ability while the failure of men tends to be attributed to the lack of effort. Therefore, women do not behaviorally self-handicap because they have less incentive. They further suggested that women place a higher value on effort than men and therefore view behavioral handicapping more negatively than claimed self-handicapping.

McCrea, Hirt, Hendrix, Milner, and Steele (2008) developed *The Worker Scale* in an effort to explain gender differences in behavioral self-handicapping. Across a variety of effort based belief measures, McCrea et al. found that women place a higher value than men on effort, perceive effort as normative, view effort rather than ability as more important in others, and enjoy putting forth more effort.

A recent study by Uysal and Knee (2012) looked at the relationship between self-control, social desirability, and self-handicapping. Self-report measures targeting self-control, self-esteem, social desirability, and trait self-handicapping were distributed to 160 college students. Uysal and Knee found that women who scored higher on the social desirability scale, typically responding in a socially desirable way across 33 true-false items, were more likely to score low on a trait self-handicapping scale. Uysal and Knee also found that when they controlled for social desirability, gender was no longer a significant predictor of self-handicapping behavior. These findings support McCrea's suggestion that women place a higher value on effort over ability, implying that women potentially view effort as more socially desirable. Women, then, may not behaviorally handicap because the misplaced effort, or lack of effort (in the case of procrastination) is a socially undesirable behavior.

It appears that several plausible explanations exist to explain the persistent behavioral self-handicapping gender difference, though some of these explanations such as not expecting "ability credit" for success have difficulty accounting for why women seem to *claim* handicaps similarly to men.

A possibly related trend in gender differences has been observed in the business ethics literature. Regardless of intentions (Cohen et al, 2001; Singhapakdi, 1999), judgments (Christie et al, 2003; Fleischman & Valentine, 2003), or behaviors (Libby & Agnello, 2000; Ross & Robertson, 2003), it has been found in experimental situations that women present more ethically. However, when one controls for social desirability characteristics of a situation, gender differences diminish (Dalton & Ortegren, 2011). Dalton and Ortegren found that when they controlled for social desirability, gender was

no longer a significant predictor of ethical decision-making. They also found that participants who scored high on desirable responding and impression management scales had a greater likelihood of responding to the given scenarios more ethically. It can then be suggested that women, in some situations at least, may be especially sensitive to whether the focal behavior is socially acceptable. Applied to self-handicapping behavior, it is possible that women have been found to be less likely to self-handicap because the opportunities provided are typically socially unacceptable and undesirable. Considering that one can self-handicap in socially *desirable* ways considerably broadens the potential scope of self-handicapping research, generally and specifically in reference to gender.

The Current Study

Our current understanding of behavioral self-handicapping is narrowly focused on a number of behaviors that are typically considered self-destructive (e.g., use of drugs and alcohol), individual-focused (e.g., procrastination and lack of practice), and socially deviant. In each study, the self-handicapping behavior is typically traditionally discouraged. Engaging in such behaviors comes with an inherent risk. Zuckerman and Tsai (2005) identified three primary risks of behavioral self-handicapping. First, they argue that many self-handicapping behaviors are, in and of themselves, debilitating. Second, they argue that handicapping impedes performance that will ultimately impact well-being in a negative way. Third, to be caught self-handicapping could lead to a stronger attribution of failure paid to the individual's ability and, given the level of deviance typically associated with traditionally defined self-handicapping behaviors, could lead to damage to self-image far greater than the original (unhandicapped) failure would have produced.

What if a method of self-handicapping came with little to no social risk? What if one could successfully cloud the attributional picture without most of the risks typically associated with self-handicapping behaviors? Not only would self-handicapping be more tempting an option but, with the elimination of the inherently self-destructive or otherwise deviant element of the behavior, it also becomes difficult to identify and discourage. Positive behaviors such as helping, for example, are generally supported, promoted, and encouraged.

Broadening the conceptualization of self-handicapping behaviors to include otherwise positive actions could expand the potential import and reach of the phenomenon. It might also speak to the persistent failure to find evidence of behavioral self-handicapping among women.

Helping behaviors do not carry with them the inherent level of deviance of traditional self-handicapping behaviors. Further, to help is commonly viewed as a socially desirable behavior and is encouraged. The present study attempted to identify helping as a plausible and empirically supported self-handicapping strategy. The study used the same type of sample, college undergraduates, as most previous self-handicapping studies and followed the same general self-handicapping paradigm.

It was hypothesized that participants who received non-contingent success feedback on an unsolvable task would be more likely than those who do not receive feedback to engage in self-handicapping behavior via helping behaviors, if there is an anticipation of a subsequent performance that might reputationally threaten prior success. It is suggested that when receiving non-contingent success feedback on an unsolvable task for which future success is in question, the confidence in future successful

performance replication will be low and self-handicapping behaviors will be used to protect the individual from negative ability-based feedback. We used a staged practice session between initial feedback and a second task attempt to observe practice behaviors; during this time a helping-opportunity, the presence of an individual in need, was provided as an opportunity to self-handicap. Other, more traditional methods of handicapping such as procrastination and claims, were also assessed.

Study 1: Method

Participants

Eighty-nine female undergraduates from the Psychology recruitment pool at a large, southeastern university volunteered for a study advertised as “Novel Approaches to Understanding Performance,” focusing on visual and spatial reasoning and biases in intelligence testing. Participants were compensated with extra course credit.

Design

Participants were randomly assigned to one of two groups differing in the feedback received after the initial phase of the study, *Non-Contingent Success Feedback* and *No Feedback*. The tasks given to both groups were the same.

Procedure

Individual subjects were told they would be participating in a study regarding spatial reasoning and performance. The experimenter explained that the purpose of the study was to test a revised method of intelligence testing that assessed spatial reasoning performance more accurately and in a more gender-neutral way. Participants were informed that the current standard of intelligence testing shows differences between males and females on the spatial reasoning task. The use of intelligence as a tested construct was based both on its significance in the college population as well as its use in classic self-handicapping studies.

The study took place in two parts within a single experimental session. Part one consisted of an explanation of the study in which participants were told they were going to be tested on their performance on one of two spatial reasoning tasks from an intelligence test -- the traditional spatial reasoning assessment requiring the manipulation

of blocks to replicate an image, and a newly constructed spatial reasoning task requiring tracing an image. Participants were informed that, first, they were to complete abridged versions of each assessment to ensure they understood and were able to complete each task. It was explained that the participants were scored based on both the successful completion of each task as well as the amount of time spent solving the tasks. Participants were also told that in the interest of time they were to be randomly assigned a single task to complete in part two. It was explained that, due to the length of the unabridged version of each assessment, only completing one task was a more practical, less time consuming option. The experimenter added that for the sake of time and the full maximization of lab space, multiple participants were being run simultaneously, all performing different tasks.

The first task introduced was a block design task requiring the participant to replicate a white and red design using nine shaded blocks (each block having two sides all red, two sides all white, and two sides half red and half white; all blocks were of the same size). The experimenter explained what the block design task entailed. The experimenter then displayed a four-block design and manipulated four blocks to demonstrate how to replicate the design. Participants were then asked to demonstrate their ability to replicate the design. Upon successful completion, a series of three four-block designs followed by two nine-block designs were given to the participants with instructions to recreate the designs to the best of their ability as quickly as possible. These designs were arranged to increase in difficulty while still being solvable within the allotted time frame. The experimenter recorded time during each design but no time limits were enforced during the block design task.

Upon completion of the designs, the experimenter in the Non-Contingent Success Feedback group “scored” the task and referenced a percentile chart created for the experiment. Participants were told that their accuracy in design replication and the speed with which they completed the tasks were significantly above average across gender and projected to be in the 92nd percentile for the full version of the task. Participants were told that their success was across gender due to the cover story and the potentially heightened sense of success that would come from across-gender performance. The No Feedback group was not given feedback on the results of their performance.

Participants were then told that they were to be tested on another spatial relations task requiring them to trace a geometric figure without lifting their pen or retracing previously made lines. The participants were asked to give verbal confirmation that they understood the instructions and were given the chance to ask any clarifying questions. Upon confirmation, the experimenter administered a series of six geometric tracing tasks of increasing difficulty with instructions to solve the figures as quickly as possible. Within the series of items, figures 3 and 6 had no solution. The participants were informed that they would be given a total of 120 seconds to complete each geometric tracing task. To ensure some level of success, the time limit was only enforced for the impossible tracing tasks.

At the conclusion of the task, the experimenter referenced a second percentile chart (similar to the one used for the previous task). Participants in the Non-Contingent Success Feedback group were told that they performed above average across gender and based on their successful completion of the tasks in the allotted time they were in the 87th

percentile. Participants in the No Feedback group, like the block design, were not given feedback as to the success of their performance.

The experimenter then informed participants that in part two of the study they were going to be given the full, scored version of a spatial relation intelligence test. The participant was informed that they were going to be completing a longer series of the previously completed tasks with a similar degree of difficulty. They were reminded that in the interest of time only one full subtest of the spatial relation test was going to be administered. All participants were then “randomly” assigned to the geometric tracing task. By suggesting that we were testing each participant’s intelligence, as well as giving success feedback on impossible tasks, we hoped to create an “insecure success” expectation for the participant. Giving success feedback on a similar task (the block design) with a possible solution was done to increase the credibility of the feedback given for the tracing task. A participant receiving success feedback on a task that they feel confident they will be able to replicate may be more likely to find feedback for an unsolvable task to be more credible (regardless of how confident they are about the replication of their performance).

Between the two phases of the experiment there was a period of time in which participants were placed in a “waiting room”. They were told that while the experimenter prepared for the next phase of the experiment, as well as processed a new participant, they were free to practice their assigned task. The practice time and any helping behavior during this period constituted the primary opportunity for self-handicapping. Participants were informed that they were going to have about 10 minutes to practice for the study while in the waiting room.

Prior to leaving the phase one room, participants were given the *Brief Mood Introspection Scale* (BMIS, Mayer & Gaschke, 1988; Appendix E). If mood was significantly elevated due to success feedback, then participants may help someone as a response to their positive mood rather than their desire to self-handicap (Alter & Forgas, 2006).

Upon completion of the survey, participants were taken to an adjoining room. The experimenter gave the participant geometric tracing samples and a pen. All participants were given a set of samples that included: two previously viewed solvable figures, one previously viewed unsolvable figure, two new solvable figures, and one new unsolvable figure. A confederate was already in the room at the table practicing the block design task from phase one. The confederate's presence was previously explained to the participant in the initial phase of the study, stating that there were multiple participants being tested during the same period of time. Since the advertisement for the study specifically required participants to be female, the confederate was also female. It was also stated during the introduction to the study that the intelligence subtests would be randomly assigned. This allowed for explanation as to why two different tests were being practiced at the same time in the waiting room. The block design was chosen for its simplicity in instruction as well as its hands-on manipulation. Also, given the solvable nature of the task as well as the previously received success feedback, participants should have had some reasonable basis for assisting the confederate. If participants felt uncertain about their block design ability or did not find their success feedback credible, they may not have seen themselves in a position to assist somebody, as any attempt at assistance may have been perceived as more harmful than helpful. The choice of block design was

further justified because, much like the geometric figure task, practicing the task is assumed to have an effect on improved performance. However, the hands on manipulation and replication of the block design are different than the tracing aspect of the geometric figure task. The difference between the two prevented the chance that teaching the block design to the confederate was, in effect, the participant actually practicing while they taught/helped. Prior to leaving, the experimenter “checked in” on the confederate. The confederate voiced that she was experiencing frustration with the task. The experimenter responded with encouragement prior to his exit.

Once the experimenter left, the confederate continued to practice her assigned task while continuing to display non-intrusive frustration. Non-intrusive frustration included physical displays of anxiety, sighs of frustration, or frequent, temporary signs of quitting. The confederate did not directly engage the subject and did not display any of this frustration in a way that was distracting to the subject.

Observations, drawn from video, were made based on the ways in which the subject used the 10-minute break. Behavioral observations were made based on whether the subject assisted the confederate, engaged with the confederate (without directly helping), practiced her task, or engaged in other tasks during this practice time.

After five minutes (i.e., half-way through the 10 minute practice period), the experimenter returned to collect the confederate. A second set of observations was taken to observe how the participant utilized the remaining portion of her time.

At the end of the full 10-minutes, the experimenter collected the participant and brought her back to the testing room. Once there, the participant was given a self-report survey containing possible factors that could inhibit poor performance during the

upcoming assessment (Appendix D). Participants were told that this was to better assess any elements that might impact the assessment of their intelligence as well as conditions that might hinder or contaminate the results of the study.

Upon completion of the survey, the participants were informed that they were not to be tested again on the spatial relation task and that the study was completed. Prior to debriefing regarding the true nature of the study, a suspicion probe was used to determine if the cover story was successful. Participants were then informed of the true nature of the study, as well as encouraged not to disclose this information to others.

Measures

Brief Mood Introspection Scale

The *Brief Mood Introspection Scale* (Appendix E) is a 16-item self-report survey that assesses mood on four dimensions – pleasantness, arousal, positivity, and negativity (Mayer & Gaschke, 1988). Cronbach's alpha reliabilities are generally quite satisfactory, ranging from $r = 0.76$ to 0.83 . The BMIS has been used within a variety of literatures and has been found to be a quick and reliable assessment of mood (Ainsworth & Maner, 2012; Miller, Zielaskowski, Maner, & Plant, 2012; Molden et al, 2012 among several others)

Survey of Claimed Self-Handicapping

At the end of the practice period, participants were given a survey that served as an opportunity to self-report handicaps (i.e., claimed self-handicapping), which is yet another avenue by which self-handicapping may occur (Appendix D). The survey was constructed specifically for this study but was based on items drawn from previous research on self-handicapping. There is no current standardized measure of claimed self-

handicapping. Previous self-handicapping studies have found that female participants are more likely to claim handicaps rather than exhibit self-handicapping behaviors. From this survey, we were able to compare the participants' report of self-handicapping with the actual observed self-handicapping behaviors during the waiting period.

Record of Participant Behavior

Observations, drawn from video, were made based on the ways in which the subject used the 10-minute break. The first set of behavioral observations was made while the participant was with the confederate. These observations were based on whether the subject assisted the confederate, engaged with the confederate (without directly helping), practiced her task, or engaged in other tasks during this practice time.

A second set of behavioral observations was made while the participant was alone in the practice room. These behaviors were based on how long the subject practiced her task as well as how long she engaged in other activities or did nothing (avoiding all tasks; Appendix C). This was done to observe whether the participant self-handicapped in a more traditional way (e.g., procrastination, avoidance) or practiced their task upon the removal of the helping opportunity.

Record of Confederate Behavior

Three different female confederates were used in the study¹. To ensure standardization of the frustration behavior, a prewritten script (appendix A, B) of frustration displays was used. To further ensure standardization, video was taken to assess deviations from the script as well as to allow blind coders to observe the confederate and rate the degree of frustration displayed.

Inter-rater Agreement

Confederate Behavior

Two coders, blind to condition, rated the behavior of the confederates based on two global scales: degree of frustration and how distracting the confederate was to the participant. The degree of frustration was based on a four-point scale anchored by the frequency and variety of behaviors displayed by the confederate. An interrater reliability analysis using Krippendorff's alpha was performed to determine consistency among the raters. The two coders showed good agreement ($\alpha = .88$) in their rating of frustration. The level of distraction was based on a four-point scale anchored by the frequency of noise-causing behaviors (e.g. pen clicking, toe tapping, loud sighs) as well as the number of times the participant looked at the confederate in response to a behavior. The two coders showed good agreement ($\alpha = .89$) in their rating of distraction. Differences between ratings were resolved by averaging coder ratings.

Participant Behavior

Two coders also rated the behaviors of the participant throughout their 10-minute practice period. Specific guidelines were enforced to assist each coder with the identification of certain behaviors (e.g., practice identified as tracing the figure with the pen or finger, helping identified as specifically asking if the participant "needs/wants help"). An interrater reliability analysis using Krippendorff's alpha was performed to determine consistency among the raters. There was high agreement between the coders' record of time spent practicing both with ($\alpha = .97$) and without ($\alpha = .99$) the confederate. Participants were considered to be practicing if they were placing pen to paper in a meaningful manner (e.g. tracing the figure rather than doodling), were tracing the paper with their finger, or showing other signs of practicing. There was high agreement

between the coders when recording time spent helping ($\alpha = .99$). Time spent helping was recorded when the participant asked the confederate if they required help as well as any subsequent help that was given. There was excellent agreement between coders for recording the time spend engaged with the participant (not helping, $\alpha = .94$). Engagement with the confederate was recorded throughout the duration of any verbal interaction with the confederate. There was excellent agreement between coders for recording the time spent texting ($\alpha = .94$), which was recorded any time the participant typed on or looked at their phone. Excellent agreement was also achieved for recording the time spent practicing the other, non-target task ($\alpha = .95$), recorded throughout the duration of time that the participant spent attempted to solve block designs.

Study 1: Results

Part One

Block Design and Tracing Task A t-test indicated that, as expected, there was no significant difference for total time spent on solvable tasks between those who did not receive feedback and those who received non-contingent success feedback (*table 1*), nor did the two groups differ in time spent on any individual solvable task (*table 1*).

All participants were capable of solving each of the block designs. Nineteen percent of participants quit or were otherwise unable to solve one of the solvable tracing tasks ($n_{\text{no feedback}} = 11$, $n_{\text{non-contingent success}} = 6$). It is plausible that these participants took the non-contingent success feedback differently than those who were able to complete all solvable tracing tasks. Being told you were successful on a test despite failing to solve two of the tasks is more plausible than being told you were successful despite failing to solve half of the tasks. Additionally, it is possible that participants who abandoned the task prior to successful completion were not taking the task as seriously or possessed some traits that made them distinct from those who solved all of the tasks. To examine whether this might have impacted results, primary analyses were examined in two ways, with all participants and with non-finishers excluded. Because results were similar, subsequent reports use the full sample.

Brief Mood Introspection Survey The BMIS was scored on four mood subscales: Pleasant-Unpleasant, Arousal-Calm, Positive-Tired, and Negative-Relaxed. No significant differences were found between experimental groups based on any of the subscales (*table 2*).

Behavioral Handicapping

Few participants chose to help the confederate during the practice period ($n = 4$ of 89) and the length of time spent helping by group was not significant (*table 3*). It is possible that non-contingent success feedback (NCSF) participants may have handicapped not by helping, but by spending more time engaging more broadly with the confederate. Indeed, there was a significant effect for group assignment ($t(87) = -2.19$, $p < .05$). Participants who received non-contingent success feedback spent more time engaging with the participant ($M = 10.90$, $SD = 15.08$) than those who did not receive feedback ($M = 5.18$, $SD = 8.84$).

The existence of differences in engagement does not necessarily mean that there was a difference in practice. To directly look at that, we compared the differences between the two groups based on time spent practicing while with the confederate. There was no significant difference between the time spent practicing (*table 3*) for the no feedback group ($M = 279.54$, $SD = 27.09$) and the non-contingent success feedback group ($M = 263.86$, $SD = 49.19$). Although mean differences were in the predicted direction ($p < .07$), the null results make it difficult to conclude that engagement with the confederate was being utilized as a self-handicapping behavior (*figure 1*). It is possible that other factors, such as part one performance, significantly interacted with group assignment and could aid in the explanation of participant behavior (see *Exploratory Analyses*).

When the confederate was removed from the practice room, the participants were placed in a more traditional self-handicapping situation. We then examined whether they self-handicapped in a more traditional way (e.g. procrastination) after removing the

original self-handicapping opportunity (the confederate). A t-test revealed no significant differences between the groups (*table 4*). Participants were also timed for how long they spent texting on their cell phone, as well as how long they spent working on the block design (non-target task) while alone. A t-test indicated that there was no significant group difference in the time spent texting or practicing the non-assigned task (*table 3*).

Claimed Self-Handicapping

A t-test of degree of total claimed handicaps (produced by summing responses to individual items) indicated that there was no significant difference between the handicaps claimed by those in the control group and those who received non-contingent success feedback. There were also no significant differences when individual items were examined (*table 5*). The claimed self-handicapping survey showed acceptable internal consistency ($\alpha = .77$).

Exploratory Analyses

Given that the time spent practicing in the confederate's presence was not significantly different between the two groups, it becomes less clear whether the time spent engaging with the confederate could be considered self-handicapping. To explore practice behavior more closely, we next examined whether participants might have taken the feedback differently based on their part one performance. While the feedback delivered was not contingent on actual performance, the incongruence between feedback and performance was not the same for all participants. Participants who were faster on the part one tasks were "closer" to their delivered (success) feedback than those who performed slower. It is possible that these fast participants had more reason to be confident in their ability and less reason to handicap than those who were slower.

A regression analyses (*table 6-8*) was run to examine the effect of the interaction between group assignment and speed of part one performance on practice with the confederate. The interaction between group assignment and centered performance was a significant predictor of practice while the confederate was in the room ($b = -.190$, $SE = .065$, $t = -2.931$, $p < .01$; *figure 2*). A similar interaction was not found when participants were practicing alone. Given this interaction, we next probed to find out at what level of performance did group assignment significantly predict time spent practicing. The interaction was probed at the mean of performance speed ($M = 282.91$). Given the size of the standard deviation (nearly two full minutes), coupled with the interesting question of “How do participants do when they are only slightly slower/faster than average,” the interaction was also probed at one half standard deviation above the mean ($M + 66.35 = 349.26$) and one half standard deviation below the mean ($M - 66.35 = 216.56$). Participants who displayed average performance spent significantly less time practicing than controls when they received non-contingent success feedback ($b = -.17$, $SE = .06$, $t = -2.71$, $p < .01$). When participants performed slower than average, receiving non-contingent success feedback versus no feedback still predicted significantly less time spent practicing with the confederate ($b = -32.54$, $SE = 9.49$, $t = -3.43$, $p < .01$). Feedback was not a significant predictor of time spent practicing when participants performed faster than average ($b = -7.28$, $SE = 8.98$, $t = -.81$, $p = n.s.$). These findings suggest that the slower a participant performed on part one and received success feedback, the less time they spent practicing while someone else was in the room.

It is interesting that this interaction between performance and feedback was not found when participants practiced alone. It is possible that practice fatigue set in during

the later portion of the practice period and all participants, regardless of part one performance, were responding more to that fatigue rather than to any self-handicapping motivation.

We also explored changes in practice time between the two parts (with and without confederate) of the practice period. If fatigue or boredom played a part, one might expect that both groups would show a decrease in practice when the confederate was removed. This was the case for control participants, who spent significantly more time practicing with the confederate in the room ($M = 279.54$, $SD = 27.09$) than alone ($M = 239.06$, $SD = 84.24$), $t(44) = 3.12$, $p < .01$. Participants in the non-contingent success feedback group, however, did not significantly differ in their practice times with the confederate ($M = 263.87$, $SD = 49.19$) compared to alone ($M = 255.50$, $SD = 64.98$), $t(43) = .99$, $p = \text{n.s.}$

Study 1: Brief Discussion

The first question addressed in the study was whether an individual who received non-contingent success feedback on an impossible would be more likely to help a person in need than someone who received no feedback. While all participants who helped had received non-contingent success feedback prior to helping, the sum of the helping behavior did not progress much farther than asking if the confederate needed help, and all subsequent assistance was very brief. However, when participants were given success feedback that was not contingent on their actual performance, they did spend significantly more time socializing with a frustrated confederate. While this was not a predicted difference, it does suggest the possibility that self-handicapping behavior was occurring.

This interpretation is strengthened when considering the significant interaction between group assignment and total performance during phase one of the study. When participants received unwarranted success feedback, their total performance time during phase one significantly predicted the amount of time spent practicing while with the confederate. The slower a participant was during part one (and thus, we might speculate, the less confident they were about repeating the “successful” performance during phase two) the less they practiced while they were in the presence of the confederate. This effect was not evident when the confederate (i.e., the social self-handicapping opportunity) was removed.

When participants were engaging with the confederate, the nature of their conversations were not light, casual, or random. Overwhelmingly, participants requested to switch tasks, reported feeling confused/frustrated towards the task, and expressed their

inability to solve the puzzles. Even though subjects were not directly helping, it is plausible that they were commiserating with the confederate to make the obviously suffering confederate feel better. Mood data did not indicate that subjects in the non-contingent success feedback group were more frustrated than those in the no feedback group. So, observing these subjects expressing previously unreported frustration with the confederate adds credence to the argument that these participants might have been sympathizing with the frustration of the hapless confederate.

At least one aspect of the study complicates the interpretation of these findings as supporting self-handicapping. To avoid the possibility that a manipulation check given after phase one could reactively undermine the manipulation, participants were not assessed for their level of confidence going into the practice period. Thus, we are unable to establish that participants believed the success feedback *and* were unconfident in their ability to repeat their performance, which, conceptually, are necessary preconditions for self-handicapping. Absent a manipulation check, one possible alternative explanation for study one is that participants who received the noncontingent success feedback believed not only that they did better than most but also that they were more than able to replicate their performance. Though this did not seem to be the case based on anecdotal observation, it is at least possible that participants practiced less and engaged more because they believed that they were going to do well when re-tested and, therefore, felt compelled to take the opportunity to socialize.

Manipulation Check Study

To determine more directly how feedback was received in part one, a second study was conducted replicating part one of the first study. At the conclusion of part one

(shortly after feedback was delivered), a questionnaire was administered to determine the perceived success and confidence in future performance of the participants. It was hypothesized that the participants who received non-contingent success feedback would report greater success but lower (or at least not higher) confidence in their future performance than those who received no feedback.

Study 2: Methods

Participants

Fifty-eight female undergraduates from the SONA pool at a large, rural university volunteered for a study advertised as “Novel Approaches to Understanding Performance,” focusing on visual and spatial reasoning and biases in intelligence testing. Participants were compensated with extra credit towards their grade. Advertisement information was identical to study one.

Design

The design was identical study one. Participants were randomly assigned to either a non-contingent success or no feedback condition. **Procedure**

The first phase of study two followed the same procedure as the first phase of study one. Participants were given the same information and tasks as in study one.

Upon completion of part one, participants were taken to an adjoining room. The waiting room was the same room, with same layout, as study one. A confederate was at the table practicing the block design task from part one. The same confederates were used as in study one.

Shortly after leaving the waiting room (10 to 15 seconds), the experimenter returned and informed the participant that one additional survey had to be administered. The participant was given the manipulation check (Appendix J) and then the Self-handicapping Scale (Jones & Rhodewalt, 1982) (Appendix I). The Self-handicapping Scale is an individual difference measure developed to measure individuals' tendency to employ excuses or create handicaps as a means to protect one's self-esteem. Upon completion of the surveys, the participants were informed that they would not be tested again on the spatial relations task and that the study was completed.

Measures

Manipulation Check Survey In order to examine how the subjects received the feedback delivered (or not delivered), a manipulation check survey was administered. The manipulation check survey consisted of six questions. Two questions asked the subjects to rate their performance on the block design as well as on the tracing task. Subjects were also asked to rate their confidence in performance “as well or better” if retested on the block design and the tracing task. These four questions were on a scale of zero to ten. Subjects were then asked to estimate the number of items that they would be able to solve in part two (out of thirty possible items) as well as estimate the speed of their retest performance on a scale of zero to ten (zero indicated much slower than peers, five indicated average speed, and ten indicated much faster than peers).

The Self-Handicapping Scale (SHS) (Jones & Rhodewalt, 1982) The Self-handicapping Scale is an individual difference measure developed to measure individuals’ tendency to employ excuses or create handicaps as a means to protect one’s self-esteem. While the SHS has been found to significantly predict the likelihood that an individual will utilize a self-handicapping strategy, we were interested in investigating whether the SHS was able to predict reported confidence and performance. If somebody is more likely to employ excuses or create handicaps to protect their self-esteem, it is plausible that they do so due to chronically low confidence.

Study 2: Results

Part One

Block Design and Tracing Task As in study one, a t-test indicated that there were no significant differences for time spent on any solvable task between the no-feedback and non-contingent success feedback groups, nor was there a significant difference for the total time spent on solvable tasks between the two groups (*table 9*). Moreover, the average total time spent on solvable tasks for subjects in study two ($M = 246.88$, $SD = 143.02$) did not significantly differ from subjects in study one ($M = 285.45$, $SD = 135.29$), $t(145) = -1.65$, $p = n.s.$

Brief Mood Introspection Survey The BMIS was scored on four mood subscales: Pleasant-Unpleasant, Arousal-Calm, Positive-Tired, and Negative-Relaxed. There were no significant differences between experimental groups on any of the four subscales (*table 10*), nor did participants differ in mood by condition between the two studies (all t s ns).

The Manipulation Check

We were interested in determining if non-contingent success feedback participants believed they had been successful during part one and if they had low confidence in replicating that success. Participants who were told they did above average on the focal tracing task rated their performance ($M = 6.52$) significantly higher than participants who did not receive feedback ($M = 4.34$; *table 12*). Self-handicapping should occur only when people believe they have been successful but are not confident about repeating that success. Therefore, in addition to perceived success during part one, we also assessed perceived confidence about subsequent performance. Despite differences in

perceived success in part one, there was no significant difference found between the reported confidence of the no feedback group ($M = 5.90$, $SD = 1.99$) and those who received NCSF ($M = 5.03$, $SD = 1.82$), $t(56) = 1.72$, $p = n.s.$ The absolute value of confidence for the no feedback group was found to be significantly above the midpoint ($t(28) = 2.42$, $p < .05$). Subjects who received NCSF did not give an absolute confidence rating that was significantly above the midpoint ($t(28) = .10$, $p = n.s.$). Additionally, we were interested in the relative difference in confidence for those who received NCSF. A paired samples t-test revealed that subjects who received NCSF reported significantly higher confidence on the block design ($M = 8.45$, $SD = 1.59$) than on the tracing task ($M = 5.03$, $SD = 1.82$), $t(28) = 8.84$, $p < .01$.

To further evaluate confidence, participants were asked to estimate the number of items they would successfully complete during their retest period. Despite differences in perceived success in part one, there were no apparent differences in their estimates of puzzles solved or speed during retesting compared to others. Participants in the no feedback and the non-contingent success feedback group both estimated that they would perform at slightly slower to average speed during retesting (No Feedback: $M = 4.55$, $SD = 1.72$; Non-Contingent Success Feedback: $M = 5.03$, $SD = 1.38$). Finding that NCSF subjects thought that they would be of average speed despite receiving previous feedback suggesting otherwise is further evidence of lower confidence. Despite the feedback given, as well as the previously reported belief that they performed above average, NCSF subjects did not appear to think that they would be any faster than their peers on the tracing task.

Self-Handicapping Scale (SHS) Participants were given the self-handicapping scale, an individual difference measure developed to identify those who are more likely to self-handicap. Participants in the two groups did not differ significantly based on their responses on the SHS (*table 11*), as one would expect given random assignment. Additionally, there was no significant interaction between SHS and group assignment in predicting confidence on the tracing, perceived success during part one, estimated number of puzzles solved or estimated speed above and beyond the effect of group assignment.

Study 2: Brief Discussion

Study two estimated how participants in study one received the feedback given as well as what effect that feedback had on how confident they were to do that well (or better) on part two. The purpose of the manipulation in study one was to create an insecure positive reputation that would elicit self-handicapping behaviors. Based on the results of study two, subjects who received the manipulation believed they had a positive reputation (performing above average). However, these subjects did not appear confident that they would be able to protect their reputation. Subjects who received NCSF estimated that they would display average speed during retest despite reporting that they performed above average on part one. The relative confidence in NCSF subjects potential future block design performance was significantly higher than their confidence in their future tracing task performance and the absolute level of confidence in their future tracing was not significantly above the midpoint (as opposed to controls who reported confidence that was significantly above the midpoint). Subjects who received no feedback reported a level of confidence similar to subjects who received NCSF. However, they did not possess a positive reputation to protect.

This is similar to a basketball player being told that they did well in a game despite being unable to score any points. Even though they have received success feedback on their performance, that player is unlikely to believe that they did well (or even that others believe that they did well) and even less likely to have an insecure positive reputation regarding their basketball ability. While their confidence may be low going into the next game, their belief about their ability will also be low. Self-handicapping (by not practicing for example), then, would do nothing to protect their

reputation because there is no reputation there to protect and, therefore, would not be an attractive option. If they were to play poorly, and then self-handicap, their poor performance could just as easily be attributed to their low ability, as it would be to whatever method of self-handicapping they utilized because both are reasonable, logical options that are consistent with the outcome. Compare this with a player who does play well, receives success feedback, and then has an insecure positive reputation. Self-handicapping (by not practicing) in this scenario is a more plausible option. If this player were to do poorly in the next game lack of practice would be more likely to be attributed to their performance than their ability. We as the audience “know” that this person is good at basketball. It is then easier to believe that this person is still good and that their lack of practice is what caused their poor performance.

Study two was conducted to directly address the possible alternative explanation that subjects in study one’s NCSF group were confident, or overconfident, and thus felt no need to practice. The findings from study two support that the practice session patterns from study one might reflect self-handicapping. While there is some support that subjects who received non-contingent success feedback were placed in a situation where they had a positive reputation but were not confident in their ability to protect that reputation, there is little to no support for the alternative explanation.

General Discussion

The present findings provide initial evidence that self-handicapping behavior may not exclusively reside within the narrow confines with which it was previously understood. While previous behavioral self-handicapping research focused on behaviors that are traditionally considered self-destructive, individual-focused, and socially deviant, the results of study one provide some support for the idea that one could successfully cloud the attributional picture without the risks typically attributed to self-handicapping behaviors. When given the opportunity, participants in study one who received non-contingent success feedback on an impossible task spent significantly more time socializing than those who received no feedback on their performance. When the social opportunity was removed, the two groups showed similar practice behaviors.

Study two added support to these findings by demonstrating that within a group similar to that of study one, receiving non-contingent success feedback created a positive reputation (reporting that they did well on the task) that was loosely held (lack of correspondingly high confidence in replication). These results, taken together, suggest that participants in the non-contingent success feedback group may have been socializing as a way to self-handicap. Should they have been retested, these participants might have been able to attribute failure to their distracting socializing (or the inability of the other person to help them) as well as to use that same socializing to augment any success.

The initially hypothesized results, that subjects who received non-contingent success feedback on an unsolvable task would be more likely than those who do not receive feedback to engage in self-handicapping behavior through selection of helping behaviors, did not materialize. While the current results are consistent with self-

handicapping, they were not predicted. Moreover, the results found were small in magnitude. For all these reasons, the handicapping results bear replicating and should be taken with an appropriate degree of caution.

Gender and Coping

While the expansion of self-handicapping conceptualization is on its own, interesting, it also speaks to the persistent gender difference found in the self-handicapping literature. Previous self-handicapping studies have been generally unable to find evidence of behavioral self-handicapping among women. The present study, however, found evidence consistent with self-handicapping behavior in an all female sample. By offering a social opportunity for self-handicapping, female participants in the current study were given an option that was perhaps more palatable than what is typically offered in self-handicapping studies. A similar gender trend has been found within the coping literature.

Self-handicapping can be conceptualized as a specific coping strategy. By engaging in a self-handicapping behavior, one is expending effort to solve a problem and is seeking to minimize or tolerate stress. The stress in self-handicapping studies is the stress of an insecurely held positive reputation, the fear of damage to self-esteem, and the worry of not living up to others' (as well as own) expectations.

Within the coping literature, there are two primary physiological and subsequent behavioral responses to stress, *fight-or-flight* (Cannon, 1932) and *tend-and-befriend* (Taylor et al, 2000). The *fight-or-flight* response is characterized as behaving in an individualistic, problem-focused or problem-avoidant way. This was once the dominant conceptualization of our biobehavioral responses to stress. Taylor and colleagues (2000)

challenged the appropriateness of applying the *fight-or-flight* response universally, arguing that stress research was overly focused on males and had a difficult time applying the traditional response to females universally. Their alternative, *tend-and-befriend*, was characterized as a behavioral response that was emotion-focused and prosocial.

Subsequent research has found that, while these stress responses are not gender exclusive, men are more likely to employ a *fight-or-flight* response while women rely more on the *tend-and-befriend* pattern of behaviors (Turton & Campbell, 2005).

Classic coping studies have also found that women, compared to men, were more likely to utilize emotion-focused coping techniques (focusing on changing one's emotional reaction) (Billings & Moos, 1981, 1984; Carver, Scheier & Weintraub, 1989; Ptacek, Smith & Zanas, 1992; Rosario, Shinn, Morch, & Huckabee, 1988). An emotion-focused coping style follows a similar behavioral pattern as the *tend-and-befriend* response to stress, focusing on the emotional components of the problem but, importantly, in a typically prosocial way. Additionally, women have also been found to be more likely than men to use techniques such as crying, seeking help, and/or dwelling on the source of their problem (rumination) (Ashel, Sutarso, & Jubenville, 2009; Garnefski et al, 2004; Howerton & Gundy, 2009). Males, on the other hand, have been found to externalize their responses to stress (e.g., substance abuse, aggression) more often and tend to be more problem-focused and individualistic than women (Rosenfield, 1999).

Traditional self-handicapping research has followed a similar path as the coping literature. When narrowly focusing on problem-focused and individualistic behaviors (e.g. substance use, avoidance), self-handicapping research has rarely found effects for

women. The current study, however, offered a coping opportunity that allowed participants to be more prosocial (e.g. talking with the confederate) as well as emotionally focused (e.g. focusing on the difficulty of the task, asking for help, asking to switch tasks). Similar to findings within the coping literature, the tendency to self-handicap in this more social way may not be restricted to females. Future research with males would be important in order to explore the relationship between gender and self-handicapping strategy across the newly expanded range.

Self-handicapping via social outlets also suggests a possible downside to the tend-and-befriend response to stress. It may come at an inherent cost that heretofore has been less appreciated. We may tend and befriend as an avoidant strategy. While self-handicapping through social outlets provides a buffer from stress, as well as support from peers, it also serves as an opportunity to provide plausible reason for potential future failure.

Limitations and Future Research

In addition to caveats previously noted regarding the need for replication, the present study contained other limitations worth noting. Methodologically, participants were only in the practice room for a total of ten minutes (half of those spent with the confederate). While we were able to find a significant difference in practice and socializing, most participants spent the great majority of their time practicing. This could possibly be due to the implied expectation that participants were supposed to be practicing. Additionally, for the first five minutes, the participants witnessed another “participant” toiling away at their assigned task. This persistent practice (and accompanying frustration) could have added additional encouragement that participants

should be practicing and any deviation from that expectation would be wrong and frowned upon. In short, we may have given participants inadequate time for more clearly evident self-handicapping to occur. It would be interesting, then, to increase the length of time that participant and confederate spend together. Knowing that there would likely be little difference between practice behaviors of female participants while alone (given the findings of this study as well as previous procrastination research), a future version of this paradigm that focused strictly on social practice with an increased duration of time spent together may yield interesting results. It is likely that participants, regardless of group, will eventually cease practicing during an extended practice period. Future research could look to identify the difference in persistent practice between groups as well as how time is spent when the duration of time is significantly increased.

The content of participants' conversations was not coded. To ensure consistency between confederates, they were encouraged to minimize conversations with participants. Confederates were instructed to respond politely (albeit with a tinge of frustration) but not make any overt attempts to extend the conversation. It is possible that the frustration displayed might have discouraged more interaction beyond a brief overture. A future direction of research looking at the content of conversation, as well as specific patterns in conversation, might yield meaningful results. Anecdotal evidence from these two studies suggests that, typically, participants were voicing frustration with the tasks and, at times, asking for help from the participants. Retraining confederates to have standardized responses to a wider range of comments, complaints, and questions from the participants would allow a researcher to study the content and quality of socializing between participant and confederate. Another possibility is that future studies could drop the use of

confederates altogether and see what happens when a pair of subjects are practicing together with different tasks. From this, we could examine if socializing or helping is displayed more in NCSF dyads versus controls or in mixed situations.

Individual Differences

In the present study we chose to induce self-handicapping situationally in order to manipulate directly the presumed circumstances most likely to lead to the phenomenon (i.e., insecure success experience). In all likelihood, there are individual differences that relate to a person's propensity to self-handicap. The current literature relies on the Self-Handicapping Scale (SHS; Jones & Rhodewalt, 1982) to identify individuals who chronically self-handicap. However, this measure has never undergone a rigorous psychometric analysis. Other possible individual differences could include trait anxiety and perceived fraudulence (a construct also found to predict the Imposter Phenomenon), among others.

Similar individual difference research could also be conducted to determine not just whether but how one might self-handicap. Some possible differences include the *Masculine/Feminine Gender Role Stress Scale* (Eisler & Skidmore 1987, Gillespie & Eisler, 1992), as well as an individual's responses to and perception of sexual stereotypes. In each case (and more generally), the prediction would be that people would be more likely to choose a particular avenue to self-handicap if the available option is congruent with the individual difference dimension in question (e.g., perceived gender norms).

Clinical Implications

Possible clinical implications of this research were hinted at from previous discussion of the coping literature. Other clinical implications may rest on individual

differences in people's tendency to engage in these more socially "appropriate" outlets for self-handicapping. Although we included the standard individual difference measure of self-handicapping in study two, it was not administered in study one, so we do not know its possible relationship to novel behavioral displays of handicapping. Moreover, it is not clear that the standard measure is adequate, because it, like the broader self-handicapping literature, is biased toward negative displays, and thus may be relatively insensitive to what we are examining. What qualities make an individual more likely to utilize this method of self-handicapping? What other forms of "positive" handicapping might be prevalent? Are there "positive" forms that are more prevalent among males? Further research on the individual differences that contribute to self-handicapping, and possible revisions to the Self-handicapping Scale, may yield findings both theoretically rich and clinically informative.

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Endnote

1. Confederate Quality Assurance

Three female confederates were used throughout the study. Confederate A ran the most participants ($N = 42$) while confederates B ($N = 33$) and C ($N = 14$) ran the remainder. Distribution of confederates by experimental condition did not differ significantly.

The confederates were rated on their level of visible frustration as well as the degree of distraction inflicted on the participant. Level of frustration was determined based on the variety and frequency of behaviors displayed from a list of predetermined “frustration behaviors.” Confederate A was rated as significantly more frustrated than both Confederate B ($t = 2.903$, $p < .01$) and Confederate C ($t = 4.012$, $p < .01$). Confederate B and Confederate C did not significantly differ on their level of frustration ($t = 1.670$, $p = .106$).

The level of distraction was determined based on the number of glances a participant made towards the confederate. There were no significant difference between confederates on this measure.

Table 1: Study 1 – Average Time (in seconds) on Solvable Tasks in Part One

<i>Task</i>	<i>No Feedback</i>	<i>Non-Contingent Success Feedback</i>	<i>t(87)</i>
Block 1	7.0 (2.1)	7.3 (2.9)	-.68
Block 2	12.9 (17.9)	9.6 (6.5)	1.15
Block 3	17.8 (11.1)	14.9 (8.4)	1.37
Block 4	38.8 (28.0)	35.5 (20.2)	.64
Block 5	53.7 (34.0)	49.9 (42.0)	.48
Tracing 1	16.3 (13.3)	14.4 (9.6)	.78
Tracing 2	27.2 (26.9)	24.0 (16.9)	.66
Tracing 4	96.7 (68.2)	70.5 (56.0)	1.98
Total	309.3 (148.6)	255.9 (109.3)	1.93

No Feedback N = 45; Non-Contingent Success Feedback (NCSF) N = 44

Table 2: Study 1 – Mean (standard deviation) responses, Brief Mood Introspection Scale by Group

<i>Subscale</i>	<i>No Feedback</i>	<i>Non-Contingent Success Feedback</i>	<i>t(87)</i>
Pleasant-Unpleasant	32.6 (6.8)	33.5 (6.3)	-0.65
Arousal-Calm	12.8 (3.7)	12.8 (4.3)	-0.02
Positive-Tired	10.9 (3.7)	11.2 (4.3)	-0.29
Negative-Relaxed	3.6 (3.1)	3.2 (2.6)	0.69

No Feedback N = 45; Non-Contingent Success Feedback (NCSF) N = 44

Table 3: Study 1 –Average time (in seconds) spent in behavior, with confederate present

	<i>No Feedback</i>		<i>NCSF</i>		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Helping	0	0	2.69	9.44	-1.92
Total Engagement	5.18	8.84	10.8977	15.08	-2.19*
Practice	279.54	27.09	263.86	49.19	1.87

*No Feedback N = 45; Non-Contingent Success Feedback (NCSF) N = 44; * p < .05*

Table 4: Study 1 - Average time (in seconds) spent in behavior, without the confederate

	<i>No Feedback</i>		<i>NCSF</i>		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Practice	239.06	84.24	255.50	64.98	-1.03
Texting	23.83	61.92	26.89	58.14	-.24
Other task	14.40.54	33.97	6.65	29.77	1.14

No Feedback N = 45; Non-Contingent Success Feedback (NCSF) N = 44

Table 5: Study 1 - Mean (standard deviation) responses, Claimed Handicaps

	<i>No Feedback</i>		<i>NCSF</i>		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Sleep	2.5	1.6	2.6	1.5	-.68
Test	2.4	1.9	1.8	1.7	1.45
Ill	.7	1.3	.6	1.2	.28
Didn't Understand	.4	.8	.2	.5	1.46
Sad	.6	1.0	.3	.6	1.77
Course load	2.0	1.6	1.6	1.4	1.31
Social Problem	.7	1.1	.7	1.1	-.16
Don't Care	.7	.8	.5	.8	1.37
Distracted	.7	1.0	.5	1.1	.88
Not enough practice	.9	1.3	1.2	1.6	-.91
Total	11.5	7.4	10.1	6.8	.95

No Feedback N = 45; Non-Contingent Success Feedback (NCSF) N = 44

Table 6: Study 1 – Regression analysis: Practice With a Confederate,

Model Summary

<i>Model</i>	<i>R</i>	<i>R</i> ²	<i>Std. Error</i>	<i>F</i>	<i>R</i> ² <i>Change</i>	<i>F</i> <i>Change</i>
Group, Total Time	.20	.04	39.58	3.49		
Group, Total Time, Group X Total Time	.39	.15	37.66	4.98**	.11	5.55**

Coefficients

	<i>B</i>	<i>SE B</i>	β	<i>t</i>
(constant)	279.10	5.70		48.98**
Group	-19.91	8.17	-.25	-2.44*
Total Time (centered)	.02	.04	.06	.44
Group X C. Total Time	-.19	.07	-.37	-2.93**

No Feedback *N* = 45; Non-Contingent Success Feedback (NCSF) *N* = 44

p* < .05 *p* < .01

Table 7: Simple Slope, Total Part One Time (centered at mean) Predicting Practice With a Confederate (No Feedback Group), Regression Coefficients

	R^2	B	SE B	β	β SE	t
(constant)		279.10	4.13			67.55
Total Time (centered)	.01	.02	.03	.09	.15	.61

No Feedback N = 45

Table 8: Simple Slope, Total Part One Time (centered at mean) Predicting Practice With a Confederate (Non-Contingent Success Feedback Group), Regression Coefficients

	R^2	B	SE B	β	β SE	t
(constant)		259.18	7.14			36.32
Total Time (centered)	.15	-.17	.06	-.39	.14	-2.71**

*Non-Contingent Success Feedback (NCSF) N = 44; ** $p < .01$*

Table 9: Study 2 – Average time (in seconds) on solvable tasks, Part 1

<i>Task</i>	<i>No Feedback</i>	<i>Non-Contingent Success Feedback</i>	<i>t(56)</i>
Block 1	6.5 (1.4)	7.3 (2.5)	-.154
Block 2	9.2 (2.3)	8.4 (2.9)	1.08
Block 3	22.2 (26.2)	16.2 (9.6)	1.16
Block 4	40.1 (51.5)	25.6 (19.7)	.44
Block 5	51.7 (55.5)	42.7 (25.1)	.79
Tracing 1	11.1 (8.0)	8.0 (8.5)	-.98
Tracing 2	20.2 (11.0)	20.0 (13.0)	.06
Tracing 4	67.1 (46.7)	61.8 (40.4)	.46
Tracing 5	27.5 (23.7)	32.8 (19.2)	-.94
Total	255.6 (178.4)	238.2 (98.3)	.46

No Feedback N = 29; Non-Contingent Success Feedback (NCSF) N = 29

Table 10: Study 2 – Mean (standard deviation) responses, Brief Mood Introspection Scale by Group

<i>Subscale</i>	<i>No Feedback</i>	<i>Non-Contingent Success Feedback</i>	<i>t(56)</i>
Pleasant-Unpleasant	34.8 (7.2)	33.8 (7.1)	.52
Arousal-Calm	14.0 (3.6)	12.8 (4.2)	1.24
Positive-Tired	12.2 (4.2)	11.7 (4.7)	.47
Negative-Relaxed	4.3 (2.4)	4.4 (2.0)	-.06

No Feedback N = 29; Non-Contingent Success Feedback (NCSF) N = 29

Table 11: Study 2 – Mean (standard deviation) responses, Manipulation Check Survey & Self-Handicapping Scale

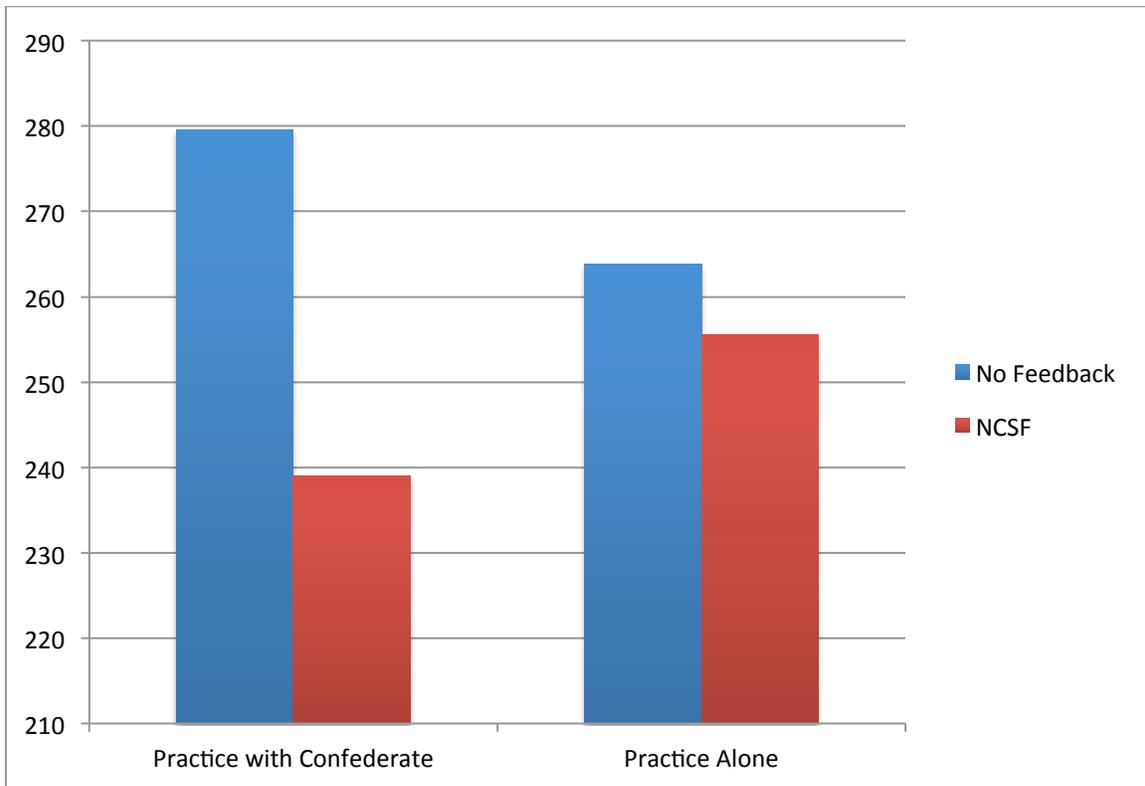
<i>Question</i>	<i>No Feedback</i>	<i>Non-Contingent Success Feedback</i>	<i>t(56)</i>
How well did you do on the block design?	5.5 (2.3)	8.0 (1.2)	-5.26**
How confident are you in doing that well again?	7.3 (2.2)	8.4 (1.6)	-2.30*
How well did you do on the tracing task?	4.3 (1.6)	6.5 (1.4)	-5.48**
How confident are you in doing that well again?	5.9 (2.0)	5.0 (1.8)	1.72
How many puzzles will you solve in part two?	18.7 (5.3)	17.9 (4.7)	.60
Compared to others, how quickly will you complete the puzzles in part two?	4.6 (1.7)	5.0 (1.4)	-1.18
Self-Handicapping Scale (total)	55.3 (11.6)	51.2 (10.0)	1.46

No Feedback N = 29; Non-Contingent Success Feedback (NCSF) N = 29

***p < .01*

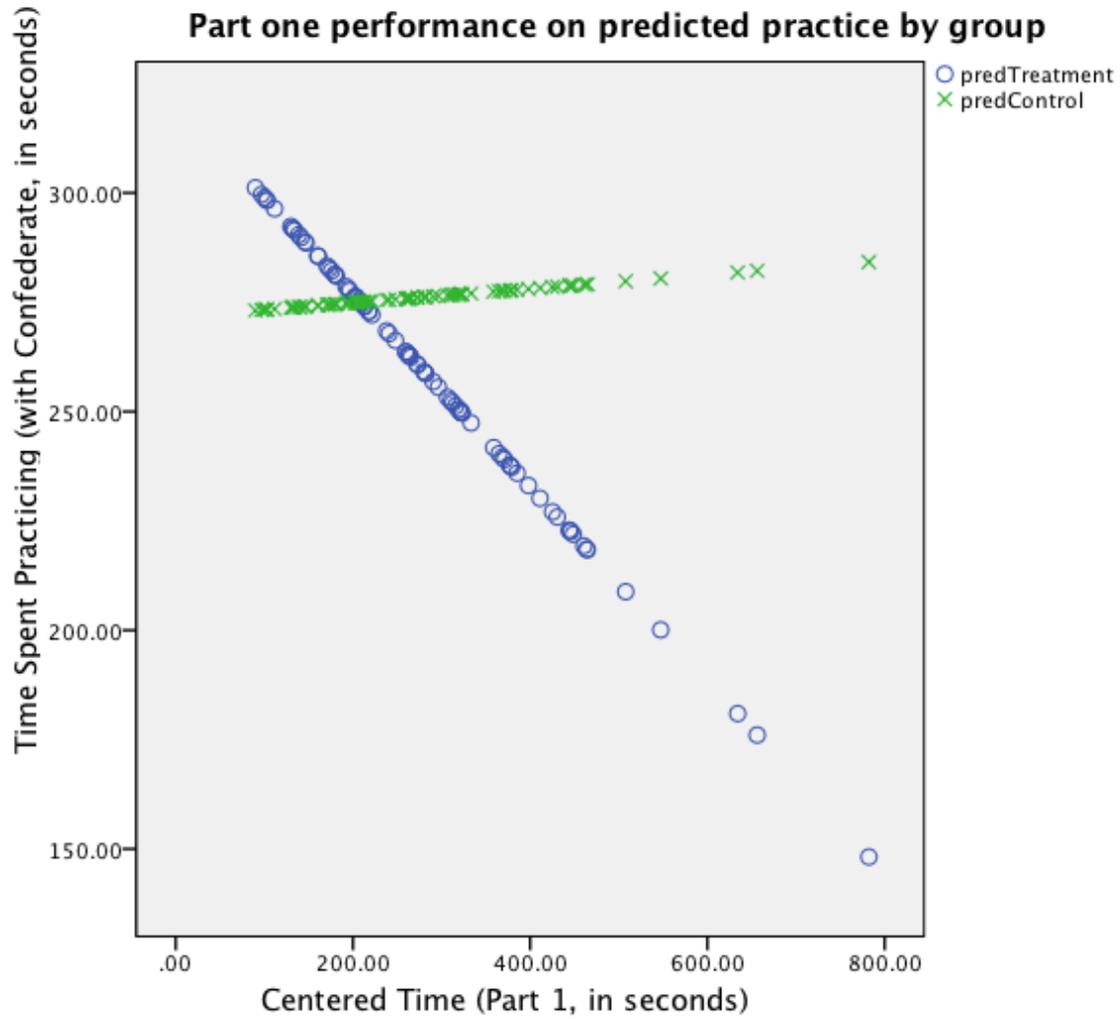
** p < .05*

Figure 1: Comparison of time spent practicing (in seconds) with and without the confederate



No Feedback $N = 45$; Non-contingent Success Feedback (NCSF) $N = 44$

Figure 2: The Interaction Between Group and Performance on Predicted Practice, Graph



Appendix A

Quality Assurance

Participant:

Coder:

Date:

1. How frustrated did the confederate appear?

0 1 2 3
 Not Frustrated Extremely

**See guide for anchors*

2. How distracting was the confederate to the participant?

0 1 2 3
 Not Distracting Extremely

Tally each time one of the following behaviors occur:

Touching her face		Running fingers through hair	
Playing with or clicking her pen		Folding arms/leaning away from the table	
Sighing both with breath and with arms/shoulders		Pushing the blocks away	
Shaking head “no” in reaction to incorrectly solving the puzzle		Pursing her lips/squinting while looking at the answer card	
Talking to herself (silent)		Shaking blocks (in frustration)	
Tilting head upward/closing eyes		Drumming fingers	

Appendix B

Quality Assurance Key

1.) How frustrated did the confederate appear?	2.) How distracting was the confederate the participant?
<p>0: Not Frustrated</p> <p>Less than 5 behaviors exhibited (frequency) Less than 2 types of behavior (variety)</p>	<p>0: Not Distracting</p> <p>Participant did not look at confederate Confederate offered no frustrated behaviors</p>
<p>1: Mildly Frustrated</p> <p>Between 6 and 10 frustrated behaviors (frequency) Between 2 and 5 types of behavior (variety)</p>	<p>1: Mildly Distracting</p> <p>Participant looks at confederate briefly but does not change behavior Participant exchanges pleasantries</p>
<p>2: Moderately Frustrated</p> <p>Between 11 and 15 frustrated behaviors (frequency) Between 6 and 12 types of behavior (variety)</p>	<p>2: Moderately Distracting</p> <p>Participant voluntarily engages with participant Confederate does not specifically ask for help and any interaction stems from frustrated behaviors.</p>
<p>3: Extremely Frustrated</p> <p>Over 16 frustrated behaviors (frequency) 12 types of behavior (variety)</p>	<p>3: Extremely Distracting</p> <p>Confederate's noise level prevents any practice by participant Confederate initiates conversation or asks for help</p>

Appendix C

Record Form

Participant Number:

Date:

Coder:

With Confederate

Total Time	
Time Spent Helping	
Time Spent Engaged with Confederate; NOT helping	
Time Spent Practicing	

Without Confederate

Total Time	
Time Spent Practicing	

**Time spent helping: Total time participant engages with the block design, either physically manipulating or assisting confederate.*

**Time NOT helping: Total time participant engages with confederate without manipulating block design. Neither confederate nor participant are manipulating or discussing BD*

**Time practicing: Total time participant is practicing tracing, tracing on paper, or looking at design.*

Appendix D

QUESTIONNAIRE

Below we have provided a list of potential threats to your performance on part two of this study as well as the opportunity to offer any other possible situations not already provided. Please read over this list carefully and answer as honestly as you can.

Rate each:

0 (Strongly Disagree) 1 (Disagree) 2 (Neither agree nor Disagree) 3 (Agree) 4 (Strongly Agree)

1.) I did not get a lot of sleep last night and right now I am feeling tired.

0 1 2 3 4

2.) I have a test coming up soon (within a week) that I am more focused/worried about.

0 1 2 3 4

3.) Today I am feeling ill/have a headache.

0 1 2 3 4

4.) I did not understand the instructions given with regards to the task.

0 1 2 3 4

5.) Today I am feeling sad or angry.

0 1 2 3 4

6.) I have a heavy course load this semester and I am distracted

0 1 2 3 4

7.) I have had a recent social problem and I am distracted

0 1 2 3 4

8.) I do not care about this task/study.

0 1 2 3 4

9.) I was distracted during the practice period and do not feel prepared.

0 1 2 3 4

10.) I did not have enough time to practice this task.

0 1 2 3 4

Appendix E

Brief Mood Introspection Scale (BMIS)

by John D. Mayer

INSTRUCTIONS: Circle the response on the scale below that indicates how well each adjective or phrase describes your present mood.

(definitely do not feel) (do not feel) (slightly feel) (definitely feel)

	0		1		2		3
Lively	0	1	2	3	Drowsy	0	1 2 3
Happy	0	1	2	3	Grouchy	0	1 2 3
Sad	0	1	2	3	Peppy	0	1 2 3
Tired	0	1	2	3	Nervous	0	1 2 3
Caring	0	1	2	3	Calm	0	1 2 3
Content	0	1	2	3	Loving	0	1 2 3
Gloomy	0	1	2	3	Fed up	0	1 2 3
Jittery	0	1	2	3	Active	0	1 2 3

Overall, my mood is:

Very Unpleasant Very Pleasant

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

*Appendix F***Information**

Thank you for your participation! Allow us a moment to tell you more about the purpose of this study. The focus was to look into positive displays of self-handicapping behaviors. When faced with a difficult task in which future replication of previous success is uncertain, people sometimes engage in behaviors, or report behaviors, that hinder performance. Traditionally, these behaviors are viewed as negative by society (e.g., – alcohol use, procrastination) and are therefore easily detected. This study targeted helping, a positive behavior less likely to be discouraged, as a form of self-handicapping. Because we needed to observe your behaviors in as natural an environment as possible, you were initially told that the purpose of the study was to look at spatial reasoning and performance. This was used as a cover story so that your behaviors throughout the study and your effort displayed towards the task were as natural as possible. **Please note that we did not test your intelligence during this study.**

A cover story is sometimes used in psychological research in order to obtain natural responses that are unaffected by researchers' observations or by what the participants know about the study. Typically, when one is given information or a prediction is made about their behavior (e.g., you are likely to help someone) that individual will change their behavior to match and confirm that information. We did not want you to change your behavior because you knew how we predicted you would behave. This is why the information given to you was limited.

In this study, you were placed in one of two groups. You were either told you performed very well on the tracing task in part one or you were not given any feedback on your performance. A research assistant was then placed in the practice room to offer you an opportunity to helping/self-handicapping. You were then observed on how you utilized your practice time between part one and part two.

Your role in this study is greatly appreciated. We apologize again for not being able to tell you everything initially and hope you now understand more about the study as well as the importance of secrecy. We therefore request that you aid in our research effort by **NOT TELLING OTHERS** about the true nature of the study. Future participants knowing what we are looking for may act unnaturally during the practice period. We hope that you enjoyed being a part of this study. We appreciate your effort and time. Thank you!

Please be assured that your participation in this study will be kept confidential and anonymous. Should you wish to withdraw from this study and have your data destroyed, please notify the research assistant at this time. If you have any questions regarding this research, please contact Danny Axsom (axsom@vt.edu).

I understand the information provided and would still like to be a participant in the study. By signing above, I have agreed to refrain from telling other potential participants that this study is not about gender and intelligence.

Appendix G **NOVEL APPROACHES TO UNDERSTANDING
PERFORMANCE**

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Information Sheet for Participants
in Research Projects Involving Human Subjects

Title of Project: Novel Approaches to Understanding Performance

Investigator(s): Michael Wusik & Danny Axsom
(mwusik@vt.edu) (axsom@vt.edu)

Institutional Review Board Contact: David Moore, moored@vt.edu, 540-231-4991;
Dr. David Harrison, dwh@vt.edu, 540-231-4422

I. Purpose of this Research/Project

This study looks at performance on spatial reasoning tasks among women.

A total of 70 female students are needed for the study. All female students who are signed-up through the SONA research site at Virginia Tech can participate. Students must be 18 years of age or older.

II. Procedures

For this study, you will be shown a spatial reasoning task utilized to test intelligence and later tested on your performance on that task based on speed and accuracy. Your behaviors throughout the lab visit may be observed and recorded. You will also be given a questionnaire to better assess various factors influencing your performance. This study will take you approximately 30 minutes to complete.

III. Risks

There is no more than minimal risk associated with this study. This means that the tasks require as much stress or less stress than everyday tasks you are used to performing. However, if you decide at any time that you do not want to participate, you are allowed to leave without any consequences.

IV. Benefits

There are not any tangible rewards for your participation in the study; however, your participation will increase your awareness of how research in psychology works. Your participation also has the potential to increase scientific knowledge in this area.

V. Extent of Anonymity and Confidentiality

Your participation in the study is completely anonymous. Your answers to questions will in no way be linked to your name or identifying information. When

you end the study you will be asked to enter your Virginia Tech PID; however, your PID will not be linked to your responses and is only to make sure that you receive research credit.

VI. Compensation

Participation in this study will earn you one research credit.

VII. Freedom to Withdraw

You are free to withdraw from the study at any time without penalty. Should you discontinue participation, research credit will still be rewarded.

VIII. Subject's Permission

I have read and understand the Consent Form and conditions of this project. I acknowledge that I am 18 years of age or older.

Participant Signature

Date

If you have any questions or concerns regarding this project, you may contact any or all of the following individuals:

Dr. David Moore, Chair of the Institutional Review Board, moored@vt.edu, 540-231-4991

Dr. David Harrison, Departmental Chair of the Human Subjects Committee, dwh@vt.edu, 540-231-4422

Dr. Danny Axsom, Principal Investigator, axsom@vt.edu, 540-231-6495

*Appendix H***Recruitment Information to Appear on SONA**

Title of Project: Novel Approaches to Understanding Performance

Investigator(s): Michael Wusik & Danny Axsom
(mwusik@vt.edu) (axsom@vt.edu)

Brief Description on SONA: An in lab study (1 credit).

Long Description on SONA: This study is in-lab (Williams Hall, approximately 30 minutes).

The study looks at performance on a spatial reasoning task.

Eligibility Requirements: Must be female and at least 18 years of age.

No Prerequisites for Participation

Duration: 30 minutes (Part1)

Credits: 1 credit

*Appendix I***Self-Handicapping Scale**

Please indicate (by writing a number in the blank each item) the degree to which you agree with each of the following statements as a description of the kind of person you think you are most of the time. Use the following scale.

0 = disagree very much 1 = disagree pretty much 2 = disagree a little 3 = agree a little 4 = agree pretty much 5 = agree very much

- _____ 1. When I do something wrong, my first impulse is to blame circumstances.
- _____ 2. I tend to put things off until the last moment.
- _____ 3. I tend to overprepare when I have an exam or any kind of “performance.”
- _____ 4. I suppose I feel “under the weather” more often than most people.
- _____ 5. I always try to do my best, no matter what.
- _____ 6. Before I sign up for a course or engage in any important activity, I make sure I have the proper preparation or background.
- _____ 7. I tend to get very anxious before an exam or “performance.”
- _____ 8. I am easily distracted by noises or my own creative thoughts when I try to read.
- _____ 9. I try not to get too intensely involved in competitive activities so it won't hurt too much if I lose or do poorly.
- _____ 10. I would rather be respected for doing my best than admired for my potential.
- _____ 11. I would do a lot better if I tried harder.
- _____ 12. I prefer small pleasures in the present to larger pleasures in the dim future.
- _____ 13. I generally hate to be in any condition but “at my best.”
- _____ 14. Someday I might “get it all together.”
- _____ 15. I sometimes enjoy being mildly ill for a day or two because it takes off the pressure.
- _____ 16. I would do much better if I did not let my emotions get in the way.

___ 17. When I do poorly at one kind of thing, I often console myself by remembering I am good at other things.

___ 18. I admit that I am tempted to rationalize when I don't live up to other's expectations.

___ 19. I often think I have more than my share of bad luck in sports, card games, and other measures of talent.

___ 20. I would rather not take any drug that interfered with my ability to think clearly and do the right thing.

___ 21. I overindulge in food and drink more often than I should.

___ 22. When something important is coming up, like an exam or a job interview, I try to get as much sleep as possible the night before.

___ 23. I never let emotional problems in one part of my life interfere with other things in my life.

___ 24. Usually, when I get anxious about doing well, I end up doing better.

___ 25. Sometimes I get so depressed that even easy tasks become difficult.

Please fill out the following information about yourself.

1. Sex: Male () Female ()

2. Where would you put yourself on the following scale?

Underachiever Achiever /Distinct Normal /Distinct Overachiever

Appendix J

For each of the following questions, please circle the ***one*** number that best reflects your thoughts or feelings.

1. On the block task that you completed during the first part of the study, compared to others your age, how did you perform?

Worse									Same			Better
0	1	2	3	4	5	6	7	8	9	10		

2. If you are retested on the block task in the second part of the study, how confident are you that your performance would be as good or better than before?

Not confident									Very confident	
0	1	2	3	4	5	6	7	8	9	10

3. On the tracing task that you completed during the first part of the study, compared to others your age, how did you perform?

Worse									Same			Better
0	1	2	3	4	5	6	7	8	9	10		

4. If you are retested on the tracing task in the second part of the study, how confident are you that your performance would be as good or better than before?

Not confident									Very confident	
0	1	2	3	4	5	6	7	8	9	10

5. For the task you will be retested on, how many items do you think will successfully complete (out of 30 items)?

6. For the task you will be retested on, how do you think the speed in which you complete the tasks will compare to others?

Much slower									Same as			Much Faster
0	1	2	3	4	5	6	7	8	9	10		