

UNIVERSITY OF CENTRAL OKLAHOMA

Edmond, Oklahoma

Jackson College of Graduate Studies

Validation of a Social Self-Efficacy Scale (SSE-1)

A THESIS

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment for the degree of

MASTER OF ARTS IN EXPERIMENTAL PSYCHOLOGY

By

VINCENT PINION

Bethany, Oklahoma

2021

VALIDATION OF A SOCIAL SELF-EFFICACY SCALE (SSE-1)

by

Vincent R. Pinion

December 10, 2021

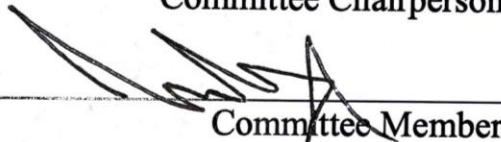
Jackson College of Graduate Studies at the University of Central Oklahoma

A THESIS APPROVED FOR
THE DEPARTMENT OF PSYCHOLOGY

By



Committee Chairperson



Committee Member



Committee Member

<i>Table of Contents</i>	Page
Abstract	3
Introduction	4
• Self-Efficacy	4
• Reciprocal Determinism	9
• Depression and Self-Efficacy	12
• Reinforcement Sensitivity Theory	12
• Social Anxiety and Self-Presentation	15
• Measurement of Self-Efficacy	18
Method	19
• Participants	19
• Materials	20
• Procedure	21
Results	21
• Data Screening	21
• Scale Validation and Development	21
• Data Reduction	21
• Principal Component Analyses of Other Scales	24
• Convergent and Discriminant Construct Validity Analysis	26
• Principal Component Analysis of Composite Scores for All Scales	27
Discussion	28
• Conclusion	35
References	35
Appendices	39

Abstract

A new self report scale was developed to measure individuals' social self-efficacy, which we named the SSE-1. Social self-efficacy could be thought of one's sense of personal mastery pertaining to the act of socializing. A proposed 20-item scale pool was created by semantically adjusting a general self-efficacy scale and was validated using statistical methods of principle components analysis and Cronbach's Alpha internal consistency reliability analysis. The scale was trimmed down to a 8-item scale fulfilling a desired criteria of sufficiently low noise, unidimensional measurement, high internal consistency, and conciseness. A convergent and discriminate validity regression analysis confirmed expected positive relationships between the SSE-1 and with the need to belong, behavioral activation, and general self-efficacy, as well as negative relationships with social anxiety and behavioral inhibition. Further dimensionality reduction was performed on the aforementioned scales to explore if there were underlying social constructs unifying these measures. Two dimensions we named "arousal" and "social appetitiveness" were found.

Introduction

Self-Efficacy is a person's concept of mastery. One appraises their ability to complete a task or carry out a performance, which is distinct from appraising the consequential outcome of the performance itself. Self-Efficacy has been studied within a context of it being domain specific. That is to say, it is useful to appraise an ability in a specific domain, such as a sport or technical endeavor, rather than to appraise a general sense of ability, which is not as useful to assess in a real-world application. A scale has been created to measure general self-efficacy, but due to its limited explanatory power in practical application, the present study explores the creation of a social self-efficacy scale, which is to measure a person's concept of mastery within the domain of social interaction. A factor analysis and convergent validity correlational assessment is used on proposed items based on the previously conceived general self-efficacy scale to create the present social self-efficacy scale (SSE-1).

Self-Efficacy

Albert Bandura (1977) proposed a construct which predicts the success of psychological procedures. This construct is self-efficacy. At the time of his original research, Bandura (1977) was a part of a divergence in the field of psychology where it split off into two schools of thought with different explanations to the success of treatment of psychological pathologies. At this time in the history of mainstream psychological research was the branching away of cognitive psychology from behaviorism. Cognitive psychology considered the mental processes which motivated a person to act. Whereas behaviorism, although a highly replicable and robust paradigm, began to fail to explain more complex phenomena.

Bandura (1977) was on the groundbreaking side of cognitive psychology, where he researched that a cognitive mechanism was mediating behavioral changes. (The behavioral change could be explained by attitudes and mental processes rather than object motivators, rewards, and punishments.) Reinforcement of self-efficacy, or one can think of this as *effectors of self-efficacy*, is used as more of a motivation enhancement device than a stimulus to elicit an autonomic response (Bandura, 1977). This emphasis in “motivation” aligns with a cognitive model because of the mental processes involved with developing self-efficacy.

Self-efficacy is conceived as an attitude rather than an unconscious mechanism. Cognition is involved in goal-setting and self-evaluative reactions – individuals make self-inducements to influence their behavior. A person’s level of self-efficacy influences the types of scenarios they anticipate. They will construct a visualization reflecting their behavior preceding the nature of outcome they are expecting (Bandura, 1989). People who judge themselves with low self-efficacy create failure scenarios in their consciousness (Bandura, 1989). At the conclusion of the behavior, the person reevaluates and accesses the success of the performance of the behavior, compares it to their own acceptable standards, and then the cycle continues. In this sense, self-efficacy is a bidirectional cognition; a high self-efficacy causes cognitive visualizations of effective task completion and remembering effective task completion strengthens self-efficacy (Bandura, 1989). If the performance is unacceptable, the person will likely cease performing, hence the central role of self-efficacy in fearful and avoidant behavior. This leads to the present exploration of the role of social anxiety in social self-efficacy expectations.

Self-efficacy is a theory of human agency i.e., it is an explanation of the mechanism by which people decide to do and carry out tasks. Pajares (1997) reported that the major facets of agency are:

- (1) the nature and structure of beliefs of the self,
- (2) the origins and effects of agency,
- (3) processes in which beliefs operate,
- (4) and the models which create and strengthen beliefs.

Agency is also related to clinical problems such as phobias (Bandura, 1983). The present research attempts to address the possibility of low social self-efficacy and high social anxiety undertaking the role of a phobia in the emergence of social avoidance behavior. After Bandura outlined the study of self-efficacy, it received increasing attention in academic research, primarily in studies of motivation and self-regulation, both of which are related to agency.

A supporting theory of self-efficacy is Social Cognitive Theory (Bandura, 1986). This posits that individuals exercise control of their thoughts, feelings, motivation, and actions. This control is regulated based on systems which perceive, regulate, and evaluate behavior. Some influence on these mental and behavioral processes is resourced from the environment. Essentially, people have control over their thoughts to some degree, which are influenced by both the environment and their own analysis of their behaviors, and then they proceed to act upon the environment according to their best judgement in anticipation of optimal outcomes.

High self-efficacy predicts low emotional arousal. This is important in consideration of social anxiety being a function of arousal, albeit negative arousal. There lies a distinction that self-efficacy is pertinent to all forms of arousal including excitement. Furthermore, one's

misjudgment of their self-efficacy can be consequential. However, whether the judgement is “accurate” or not, it still changes the environmental consequences and the behavior of the person. This is a necessary factor in the case of persistence. With high self-efficacy, there may be little preparation before the execution of the behavior. For example, in academics some anxiety can be performance-enhancing. However, dwelling on deficiencies makes difficulties seem more daunting than they are, decreasing performance in a sort of self-fulfilling prophecy.

The self-efficacy scale created by Sherer and colleagues (1982) used a combination of the same methods used in the present study: construct validity correlational analysis and principal component analysis. Some of their scale’s correlates were locus of control, Personal control, social desirability, ego strength, interpersonal competence, and self-esteem. For the SSE-1, the correlates in question are need to belong, behavioral activation and inhibition, social anxiety, and Sherer’s (1982) general self-efficacy scale. Corelating our scale with general self-efficacy scale shall be sufficient for seeing it’s general component of self-efficacy as valid. The rest of our scales used are social-cognitive in nature. In the analysis of the Sherer (1982) scale, a general factor of self-efficacy and a social component of self-efficacy arose. However, the social items only contributed 6% variance to the overall model, on top of the general factor which explained 26.5% of the variance. The present study’s SSE-1 item pool contains the social items from Sherer (1982), as well as new questions which were based on core principles of self-efficacy. The new questions were assembled according to feelings of aptitude, confidence, and comfort within the domain of socializing. (See appendix A for SSE-1 item pool).

Flow theory provides an answer to why some people may sustain attention on a particular activity (Nakamura & Csikzentmihali, 2014). One can be absorbed in an activity completely and a person can make themselves happy or sad regardless of what is happening outside of

themselves by changing the thoughts which are active in their consciousness (Nakamura & Csikzentmihali, 2014). This could possibly be related to self-efficacy. To establish a self-efficacy judgement, one must evaluate their own ability to perform something, which is based on past performance (Bandura, 1983). A person may be “too hard on themselves,” for example, and that will lower their morale. Conversely, one may be able to consider their performance as improving, or they are just having an off day. When a struggle results in payoff and successful performance, it may be a wonderful experience, despite the temporary confrontation with obstacles (Nakamura & Csikzentmihali, 2014). This positive association with the task at hand should lower anxiety associated with task performance, which is crucial considering Bandura’s (1983) model of high self-efficacy being associated with lower task anxiety. In terms of enjoying one’s self during a state of performance, there are many major components (Nakamura & Csikzentmihali, 2014).

First, we confront tasks that we believe we may have a chance of completing. Consider the phenomenon of learned helplessness. When one is put up against a task of which they know they cannot complete, they go into a reactive depression (Seligman, 1972). This is characterized by reduced response initiation and “negative cognitive set.” A negative cognitive set is when someone feels they cannot do something even if they can (Seligman, 1972), which seems to be like a false appraisal of one’s own self-efficacy. An important component of flow is its requirement of immediate feedback (Nakamura & Csikzentmihali, 2014). This is more difficult to apply specifically to the *social* self-efficacy domain. Within the context of a social situation, people give feedback instantly in the form of body language and verbal feedback, so a social situation may enact a flow state for this reason. However, social self-efficacy beliefs are long-term beliefs. If a person is highly preoccupied with small amounts of negative feedback in an

otherwise generally positive social history, this may lower their general feeling of self-efficacy within this domain. Another characterization of flow is that one exercises a sense of control over their actions (Nakamura & Csikzentmihali, 2014). This highly relates to the self's sense of human agency; i.e., people exercise control of events, which is primarily spearheaded by one's self-efficacy beliefs (Bandura, 1989).

Reciprocal Determinism

Reciprocal determinism is a framework describing the interaction of behavior cognition and environmental influences (Bandura 1986). Theories of behaviorism use a unidirectional method of explaining “environmental” determinism. As for the theme in this review, behaviorism and environmental determinism do not consider the cognitive influences in the determinant of an outcome and is not sufficient in explaining more complex behavioral phenomena. Skinner (1971) had argued that there is a counter-control of the environment; however, this puts the environment as the instigating force, which the subject only reacts to. This discounts the role of the person as an agent contributing to the creation and changing of the environment itself. If the environment has changed, and the change was caused by the subject, and the subject reacts differently to this new environment, then the person has played a necessary component in this process.

Studies of humanism and existentialism point to the human ability of conscious judgement and self-determined actions. Humans have always used symbols, such that they can engage in methods of reflection (Bandura, 1986). Bandura (1986) rationalized that this gives the person the ability to reflect on past experiences. Using their imagination, people can mentally construct possible future circumstances and plan accordingly their intended behavior to act on them. In this way, people create conditional incentives for themselves to justify executions of

calculated actions. This supports the notion that behavior is a result of conscious effort.

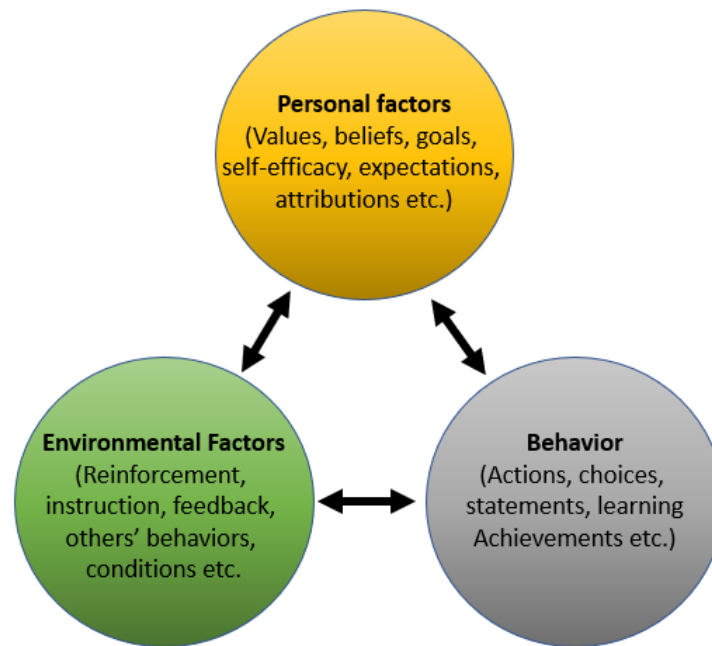
Reflection is a useful mechanism, especially supported by its use in the clinical therapy practice.

Actions must have a prior thought process, through use of symbolism and reflection, to any extent or else all that is carried out is a function of the environment only (Bandura, 1986).

There also serves a temporal component: how much time is afforded by the situation to allow a person to make an informed decision of their behavior? For example, the difference between deciding to go out with someone, or pumping the breaks in a car to avoid a car wreck. When given more time to decide, an action is based less on instinct.

Reciprocal determinism stresses the workings of three interacting factors (personality, environment, behavior) which predict a given outcome. This is even more complex than the bi-directional hypothesis of Person vs. Environment. The limitation of the bi-directional process is that behavior is treated as a “biproduct” of person vs. Environment, and it is not considered to influence the model.

The main weakness in previous models is that behavior is treated as a dependent variable rather than a factor in the total interaction. Thus, the current working model has all three factors simultaneously perform as independent factors and dependent factors as seen in Figure 1.

Figure 1*Bandura's Reciprocal Determinism Model*

Note. (Adapted from Zimmerman and Schunk, 2013)

Since the environment can be highly constrictive, it has been conceptualized previously as the paramount determinant in prior research. But conversely within a different context, behavioral consequences can be just as powerful of a predictor of outcomes. For example, Bandura (1989) uses the scenario of a piano player. The piano pieces played by the subject are familiar to him, and the subject creates a musical sensory environment by the means of playing the piano instrument. The behavior is regulated by the subject through the feedback of the very sound he is producing, thus behavior changes behavior. In this scenario, cognitive activity and environmental change are not much interacting. Other times the cognitive factor may carry the most influence during a performance. For example, when there is an activation and sustain of

defensive behaviors, or when false beliefs continue to bias behavior, all of which are difficult to change under the pretense of the environment.

Depression and Self-Efficacy

With social psychology relating to appetitive and inhibitive cognitive mechanisms, could depression interact with this model? Wei, Russell, & Zakalik (2005) explored this link but used a sample of college freshmen – people who have just left home and are integrating into a new society, making new relationships. However, the current research explores a heterogeneous sample of all college student classification types including graduate students. Wei et al. (2005) found that loneliness was associated with depression; indeed, much of the Wei et al. (2005) sample experienced serious loneliness in their first year away from home. Loneliness may not be avoided regardless of social self-efficacy due to external culture and environmental factors (e.g. no roommate, no extra-curricular involvement).

Reinforcement Selectivity Theory

Origins of reinforcement sensitivity theory can be traced back to Pavlov's (1927) ideas of personality. It has roots of the ideas of extinction and inhibition from research from the Soviet Union as well as western concepts of arousal and activation. Reinforcement sensitivity theory stems from Pavlov's (1927) consideration of individual differences to make his overall conditioning theory more robust. The proposed scale in this research is intended to measure this individual-differences component of personality along a continuum, and it may be useful in a clinical setting.

Hans Eysneck (1963) later developed a model of personality in his book *Dimensions of Personality*, where a two-factor spectrum of extraversion and neuroticism described individual

differences in behavior. He related the four quadrants his personality scale to ancient Greek philosophy temperaments:

- High Neuroticism and high Extraversion = Choleric type (driven and task-oriented)
- High Neuroticism and low Extraversion = Melancholic type (cautious perfectionism)
- Low Neuroticism and high Extraversion = Sanguine type (lively people-person)
- Low Neuroticism and low Extraversion = Phlegmatic type (people-serving and calm)

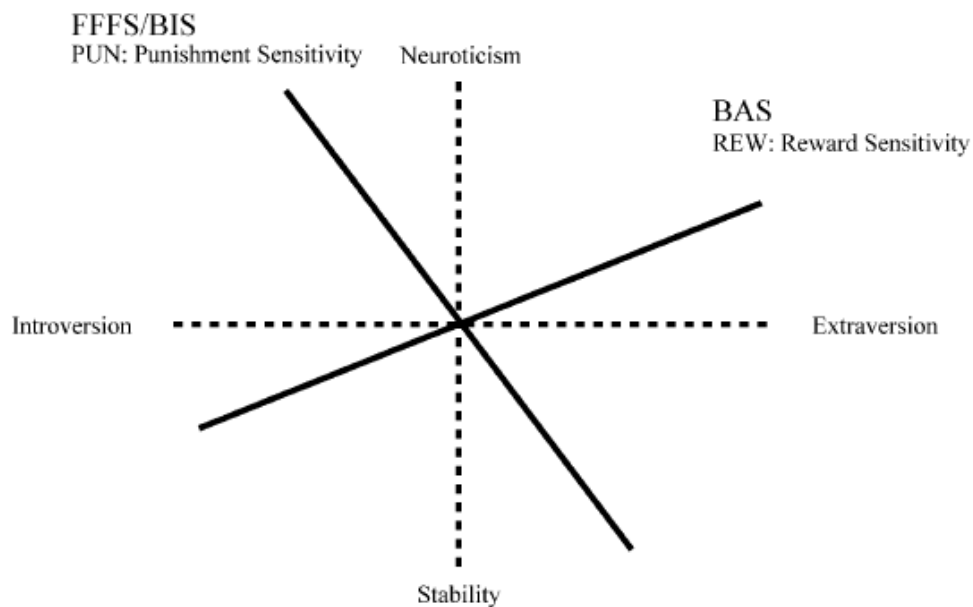
Eysneck's (1963) theory was built off of a biological model. Low cortical arousal (less sensitivity to stimuli) was an extroverted trait, and high limbic system activation (responsible for feelings of fear and anxiety) was a mark of neuroticism. Because this paradigm is built on a genetic reaction to stimuli, it supported Pavlov's (1927) ideas of classical conditioning.

However, other researchers felt it needed further development.

Jeffrey Alan Gray (1970), a student of Eysneck, argued that his personality model was inaccurate because it attributed all personality differences to only classical conditioning. Gray (1970) proposed a slightly rotated axis upon the Eysneck's (1963) dimensions of extroversion and neuroticism to support his own theory of a Behavioral Activation System (BAS) and Behavioral Inhibition System (BIS). The axis rotation is demonstrated in figure 2.

Figure 2

BIS and BAS rotation overlaid on the axis of Neuroticism and Extraversion



Note. Figure is sourced from Corr (2004). This lining-up of constructs was a proposition that sensitivity to reward is unstable and therefore neurotic. However, introverts tend to be more highly aroused than neurotic individuals, and this is because punishment is highly physiologically arousing.

Gray (1970) was attempting to explain introversion in a way which fits previous experimental models more (Corr, 2004). The rotation of the axis formed “anxiety” (BIS) and “impulsivity” (BAS). For example, anxiolytic drugs lower neuroticism and raise extroversion, which activates a single factor of BIS. Gray (1970) had a compelling argument for rejecting that neuroticism was caused by classical conditioning. In several cases, the conditioned response does

not resemble the unconditioned response. For example, when there is an unconditioned stimulus such as pain, a person will yell. But in introducing the unconditioned stimulus (the pain causing object) again, the conditioned response is anxiety and avoidance, which is due to the activation of the BIS. Classical conditioning, therefore, cannot explain the development of BIS pathology.

Social anxiety and self-presentation

Social Anxiety may involve shyness, dating anxiety, stage fright, and embarrassment. This is a popular problem often seen by therapists, but it lacks a significant framework, which has been attempted to be addressed by Schlenker and Leary (1982). Factor analysis of anxiety domains tends to single out a “social” facet. Some other studies found two types of social anxiety: (1) Ordinary social events and (2) social failures and criticism. Social anxiety can apply to specific situations such as: giving a speech or a job interview, which are common things that most people have to execute in their lives. Therapy, after all, is meant to address problems associated with everyday living (R. Doan, personal communication, August 2019). The SSE-1 is meant to address interpersonal interaction or smaller group relations. This limitation may be considered because it does not address endeavors such as leadership and social status on a grander scale.

Causes of social anxiety are theorized to stem from poor social skills, classical conditioning, trait personality, and negative self-evaluation. These components may line up with the self-efficacy model. Self-presentation is a consideration of social anxiety. This can be described as controlling the images of the self as seen by other people. The subject acts in a certain way to modify how the audience perceives and treats the subject. It may be considered that this “treating” is a form of reinforcement to the subject. People generally want to be perceived as having positive traits such as competence, attractiveness, and honesty. However,

contextually how a person wants to be perceived is greater nuanced by their personality and contextual situation factors. These two fundamental factors of social experience composite the fundamental attribution error as well.

Therein serves a self-presentation goal: is the person coming off the way they want to come off? The actor has a goal of manipulating how audiences perceive them. This does not necessarily require conscious deception; one may only align their behavior with their conceived true self though automaticity.

The current proposed scale may work towards a treatment for inhibitions and defensive behavior. Over-correcting one's self and hypercriticalness can be debilitating and exhausting. A person in order to live comfortably must have some amount of social ability. If one recognizes a lack of ability, they may be apprehensive to participate in social situations and withdraw. A person's successful performance in socializing replaces the symbolically-based performance as a vehicle of change. A recognition of social mastery happens when performance is evaluated as effective.

Social anxiety may be treated in many ways, but my scale may introduce the addressing of social skills from a skills-building (efficacy-building) perspective rather than lowering negative arousal (i.e. social anxiety). Current methods to reduce social anxiety are through exposure therapy (Rodebaugh, Holaway, & Heimberg, 2004). Rodebaugh et al. (2004) found that this approach serves a learning function which replaces and overpowers the fear response. This is opposed to simply "unlearning" the fear response.

This gives way to a cognitive model because it uses symbolic sources of information. It is a central process, whether the learning is direct or vicarious. The vicarious learning aspect pulls from Bandura's central learning theory. Learning in itself is a cognitive process. Rodebaugh et al.

(2004) show that this is not as simple as behavioral conditioning. Behavioral conditioning is utilized associations between paired stimulation. The social learning necessary in development of self-efficacy rather requires an appraised correlative ground of behavior and experience, or else learning will not take place. One may think, “This consequence is irrelevant,” and such a cognition will block behavioral change. Self-efficacy is shaped over a long period of time. It is contingent upon an aggregate of consequences of events. The immediacy of these consequences is paramount in the self-efficacy shaping strength (Rodebaugh et al., 2004). In regard to the time factor of this shaping, reinforcement schedule variance in effectiveness further supports the cognitive model used here.

An answer my research aims to provide is an improvement in the measurement of self-efficacy domains in general. Bandura proposed a method of developing a self-efficacy scale. He insisted that scales must be domain specific. A general measure of an “overall” self-efficacy has limited explanatory power for any particular behavior. As such, a general self-efficacy measure’s use is limited in its ability to fulfill the goals of science e.g., description, prediction, and causation. Our interest as an object of mastery is based on the assessment of social feedback, whether it is positive or negative. However, our scale is limited in its inability to assess feedback, that is the subject's job of doing, based upon which information they use to conceptualize their social self-efficacy, which we will measure. Essentially, this is similar to measuring an attitude.

Bandura’s scale guide requires to appraise different scenarios to a subject, and their perceived confidence in succeeding in the scenario is measured. An interesting point of this metric is that a person may have “objectively bad social skills,” though it may be irrelevant to the measure’s outcomes, since we are only concerned with their perceived efficacy.

Measurement of Self-Efficacy

In Bandura's scale guide, there are directions to give scenarios to the test-taker. In the SSE-1, vaguer scenarios are preferred, as long as they still assess *social* scenarios. It is anticipated that the more specific the scenarios, the more difficult factor loading under this construct could prove to be due to the varying social experiences of individuals. (I.e., statistics showing inconsistency of measure between scale items.) As such, thinking of very specific scenarios is difficult to standardize across all audiences. I test this by assessing all students at the sample university rather than only freshman, or any specific group, to assess the scales external validity. I lean more in the direction of external validity for hope of better use in the therapeutic field not limiting to certain clients. In other concerns for statistics, Bandura's scale uses 0 to 100 for each item in ten equal intervals. The present scale uses a 5-point labeled Likert scale.

In Schunk's (1995) study of self-efficacy motivation and performance, people gain knowledge of themselves through social comparisons. This makes the social domain of self-efficacy a step more complex than other forms of self-efficacy. Measures of self-efficacy may be conducive to either (a) outcome self-efficacy: to achieve a particular task or outcome or (b) process self-efficacy: engaging in processes which lead to a particular outcome (Heslin & Klehe, 2006). In the present scale, I attempt to encompass both of these metrics simultaneously. Heslin & Klehe (2006) each explain the conventional use of scenario specific testing, unlike the present scale. Two scale item examples they give in their article: (a) "I believe I can get a new job with a starting salary of \$65,000," for *outcome* self-efficacy and (b) "I believe I can network effectively during the next 4 weeks," for *process* self-efficacy. I argue that "networking effectively" can be considered just as much as an "outcome." The only difference is parsing out opinion from fact in

this case, and such appears irrelevant to the measure of social self-efficacy, unless absurd (though operational) metrics may be introduced such as, “I will make 3 friends this week,” or “I will acquire a romantic partner in the coming month.” It may be considered that the current scale is within the process domain. Haslin & Klehe (2006) argue that a scale must be highly focused on specific behaviors, but the present scale attempts to encompass all facets of socializing e.g., attraction, sustaining attention, approaching, and conversation.

Method

Participants

There were 295 students from a large regional university in the Southwestern United States who completed the research. All students from the university were invited to participate including graduate students, remote students, and non-traditional students. Three students were excluded from the analysis because they reported that they were under the age of 18 and two additional students did not agree to consent, which left usable data from 291 students. Racial and ethnic demographics were reported 66% white ($N = 191$), 9% two or more races ($N = 25$), 8% black ($N = 23$), 7% native American ($N = 19$), 6% Hispanic or Latino ($N = 17$), 4% Asian ($N = 12$); one participant reported “other”, and two participants chose “Do not wish to disclose.” Gender demographics were reported as well: 27% men ($N = 78$) and 68% women ($N = 198$); 11 participants reported other genders (see appendix B) and 4 participants did not wish to disclose. Ages ranged from 18 to 66 years old with a strong positive skew ($M = 26.64 \pm 10.34$ years). The nature of the skewness is shown in figure 3.

Figure 3

Boxplot of positively skewed age distribution



Materials

Participants were solicited by email via a posting in each student's school email with a link to survey under the name "Brief Survey on Perceived Personal Social Skills." Qualtrics was used as the online data-gathering tool. Six scales were included in the test battery.

1. General Self-Efficacy Scale 5-point Likert scale (Sherer et al., 1982), $\alpha = .86$
2. Proposed 20-item pool of the SSE-1, 5-point Likert scale
3. Behavioral Activation Scale, 3-factor 4-point Likert scale (Carver & White, 1994), $\alpha = .66, .73, .76$
4. Behavioral Inhibition Scale, 4-point Likert scale (Carver & White, 1994), $\alpha = .74$
5. Need to Belong Scale, 5-point Likert scale (Leary et al., 2013), $.78 \leq \alpha \leq .81$
6. Social Interaction Anxiety Scale, 5-point Likert scale (Mattick & Clarke, 1998)
 $.88 \leq \alpha \leq .94$

Students were able to complete the test battery using any capable phone or computer with a reliable internet connection. The SSE-1 was created by tailoring the items in the general self-efficacy scale to social contexts.

Procedure

The students were instructed that the survey should not take longer than 15 minutes, and they could do it in their own time and with their own test-taking device. Data was automatically recorded and saved in a Qualtrics database.

Results

Data Screening

The required amount of data for factor analysis was satisfied, with a final sample size of 291, providing a ratio of over 14 cases per variable. Scale composites were checked for resemblance of normality and checked for outliers (Criteria: $z \pm 3$), and all distributions were satisfactory. However, age was positively skewed with 4 upper outliers.

Scale Validation and Development

Initially, the component identification of the 20-item pool for the SSE-1 was examined. The Kaiser-Meyer-Olkin measure of sampling adequacy was .94, which according to Kaiser (1960), is a “marvelous” sample when using their rule of thumb. Bartlett’s test of sphericity was significant ($\chi^2(190) = 2843.73, p < .001$); it is not an identity matrix and the items are sufficiently correlated. The initial one-component solution explained 42% of the variance in the single component solution. Cronbach's alpha reliability analysis yielded $\alpha = .93$.

Data Reduction

A result of 42% variance explained was sufficient but not preferred. Based on the rigorous statistical standards of the other reputable tests in the battery, 50% variance explained or above would be ideal. Items were trimmed in an attempt to produce a shorter and more accurate test with less noise. A shorter test would also encourage use of the SSE-1 in further research due

to inducing least test fatigue. According to the K-1 rule (Kaiser, 1960), 3 components were to be kept from the 20-item pool, although the following two components were marginally close to one eigenvalue (1.33 and 1.17 respectively). The 20-item solution would have been sufficient according to the Cattell's (1966) Scree test, however. The most encompassing component yielding an eigenvalue of 8.77 and the first invalid component leveling off, beginning at an Eigenvalue of .933.

The method for ejecting 13 items from the item pool started with removing all items the rotation reported to load under the second and third components rather than the first. The initial factor loadings and rotated component matrix are shown below. Following this, a single factor solution was constructed in accordance with the K-1 rule. Items were then further removed to the point of reaching a 61% variance-explained solution, while still retaining a Chronbach's alpha of above .90. The items selected for removal were considered using a combination of the reliability analysis and lowest factor loading score.

The final 8-item, single-factor solution was conducted. The Kaiser-Meyer-Olkin measure of sampling adequacy was .92, providing a "marvelous" sample. Bartlett's test of sphericity was significant ($\chi^2 (28) = 1263.85, p < .001$); it is not an identity matrix and the items are sufficiently correlated. The one-component solution explained 61% of the variance of the items. All items in the solution had factor loadings above .70. Cronbach's alpha reliability analysis yielded $\alpha = .91$. The factor loadings are presented in table 1 below.

Table 1

Factor loadings based on a principle components analysis for 8 items from the Social Self-Efficacy Scale (SSE-1) (N = 291).

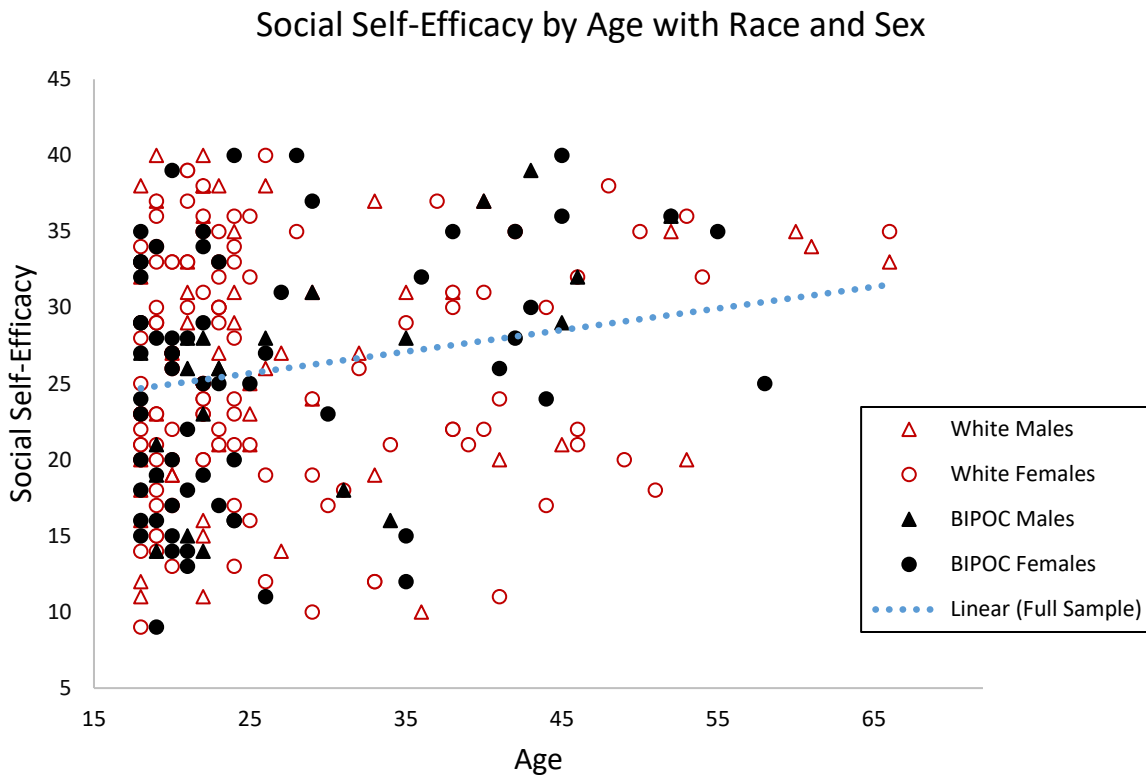
	Social Self- efficacy
I am confident in my ability to meet new people	0.84
I am a socially competent person	0.83
It is easy for me to initiate conversation	0.79
It is difficult for me to make new friends - R	0.78
I do not handle myself well in social gatherings - R	0.77
I am a charismatic individual	0.77
I avoid facing social situations where I have to meet strangers - R	0.76
I usually feel confident in a group of strangers	0.73

A demographic analysis was performed on the SSE-1 using a standard multiple regression. The predictors in the model were age, race, and sex. The results of the regression indicated the three predictors explained 3% of the variance (adjusted $R^2 = .03$, $F(3,255) = 3.33$, $p = .02$). It was found that age significantly predicted social self-efficacy ($\beta = .18$, $p = .003$), but race ($\beta = -.04$, $p = .59$) and sex ($\beta = -.03$, $p = .54$) did not significantly contribute to the model. When simplifying the model to only use age as a predictor of social self-efficacy, age explained 4% of the variance in social self-efficacy $r(273) = .20$, $p = .001$, which improved the reliability of the model. However, N increased from 259 to 291 because 32 participants chose not to report

their race and sex, excluding them from the model, which has greater implications for future data collection.

Figure 4

Multiple regression using race, sex, and age to predict Social Self-Efficacy.



Note: Sex and race were not significant contributors to the model, but they are included in the figure to show the dispersion of the demographic data collected.

Principal Component Analyses of Other Scales

Social Anxiety Inventory

The social anxiety inventory was analyzed with principal components analysis. Five participants had missing inputs, leaving a final N of 286. The Kaiser-Meyer-Olkin measure of sampling adequacy was .95, providing a “marvelous” sample. Bartlett’s test of sphericity was significant ($\chi^2 (190) = 3230.57, p < .001$), confirming it is not an identity matrix, and the items

are sufficiently correlated. The one-component solution explained 47% of the variance of the items using the scree test. Cronbach's alpha reliability analysis yielded $\alpha = .92$.

Need to Belong Scale

The Need to Belong Scale was analyzed with principal components analysis. One participant had missing inputs, leaving a final N of 290. The Kaiser-Meyer-Olkin measure of sampling adequacy was .84, providing a “meritorious” sample. Bartlett’s test of sphericity was significant ($\chi^2 (45) = 867.40, p < .001$); it is not an identity matrix, and the items are sufficiently correlated. The one-component solution explained 39% of the variance using the scree test. Cronbach’s alpha reliability analysis yielded $\alpha = .82$.

Behavioral Activation System

The Behavioral Activation System Scale was analyzed with principal components analysis. Eight participants had missing inputs, leaving a final N of 283. The Kaiser-Meyer-Olkin measure of sampling adequacy was .85, providing a “meritorious” sample. Bartlett’s test of sphericity was significant ($\chi^2 (78) = 1059.24, p < .001$); it is not an identity matrix, and the items are sufficiently correlated. The three-component solution explained 55% of the cumulative variance using the K-1 rule. Three components were expected and in line with prior research which deemed the BAS scale had an underlying structure of “drive, fun-seeking, and reward responsiveness” (Carver & White, 1994). Cronbach’s alpha reliability analysis yielded $\alpha = .84$.

Behavioral Inhibition System

The behavioral inhibition system scale was analyzed with principal components analysis ($N = 291$). The Kaiser-Meyer-Olkin measure of sampling adequacy was .83, providing a “meritorious” sample. Bartlett’s test of sphericity was significant ($\chi^2 (21) = 463.89, p < .001$); it is not an identity matrix, and the items are sufficiently correlated. The one-component solution

explained 44% of the variance using the scree test. Cronbach’s alpha reliability analysis yielded $\alpha = .78$.

General Self-Efficacy Scale

The general self-efficacy scale was analyzed with principal components analysis. Three participants were excluded due to incomplete data ($N = 288$). The Kaiser-Meyer-Olkin measure of sampling adequacy was .93, providing a “marvelous” sample. Bartlett’s test of sphericity was significant ($\chi^2 (120) = 2029.758, p < .001$); it is not an identity matrix, and the items are sufficiently correlated. The one-component solution explained 44% of the variance using the scree test. Cronbach’s alpha reliability analysis yielded $\alpha = .91$.

Convergent and Discriminant Construct Validity Analysis

Social self efficacy showed a moderate positive correlation with general self efficacy, $r(285) = .54, p < .001$; a weak positive correlation with the behavioral activation system $r(281) = .34, p < .001$; a weak negative correlation with the behavioral inhibition system $r(289) = -.46, p < .001$; a strong negative correlation with social anxiety (see figure 5), $r(284) = -.74, p < .001$; and a very weak correlation with the need to belong $r(288) = -.14, p = .02$. More correlations between the other constructs are shown in the table below.

Table 2

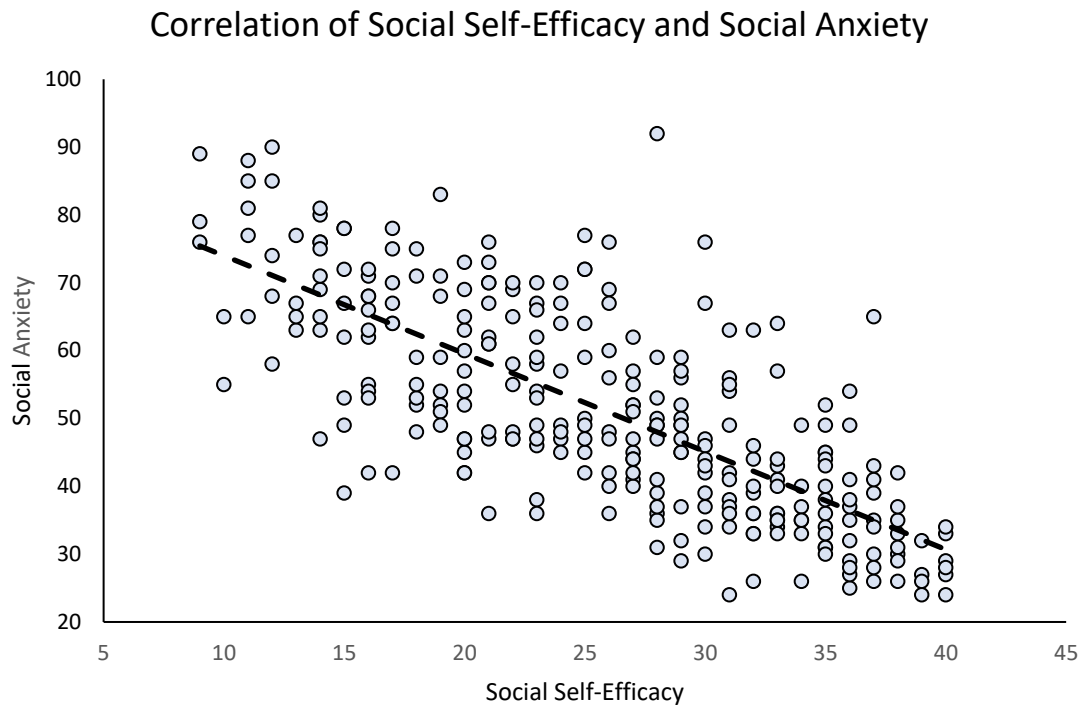
Correlation matrix of social psychological scales.

	(1)	(2)	(3)	(4)	(5)	(6)
1. Social Self-Efficacy	—					
2. General Self-Efficacy	.53**	—				
3. BAS Scale	.39**	.40**	—			
4. BIS Scale	-.46**	-.47**	-.14*	—		
5. Social Anxiety	-.74**	-.58**	-.26**	.62**	—	
6. Need to Belong	-.14*	-.27**	.02	.48**	.34**	—

$N > 278, *p < .05, **p < .001$

Figure 5

Scatterplot of Negative Relationship between Social Anxiety and Social Self-Efficacy.



Principle Component Analysis of Composite Scores for All Scales

The composite scores of all tests were analyzed with principal components analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was .75, providing a “middling” sample. Bartlett’s test of sphericity was significant ($\chi^2 (15) = 639.455, p < .001$); it is not an identity matrix, and the items are sufficiently correlated. Two components accounted for 71% of the cumulative variance of the items using the K-1 rule and Cattell’s scree test. Component one accounted for 51% the variance and component two accounted for 20% of the variance. Factor loadings in the rotated component matrix are displayed below:

Figure 6

Rotated Component Matrix of Social Psychological Scales.

	Component	
	Arousal	Social Appetitiveness
Social Anxiety	.884	.040
Social Self-Efficacy	-.803	.289
General Self-Efficacy	-.794	.144
Behavioral Inhibition	.763	.374
Need to Belong	-.447	.730
Behavioral Activation	-.461	.652

Extraction Method: Principal Components Analysis

Component one was determined to be measures of self-efficacy. Indeed, the two self-efficacy scales are there; however, high self-efficacy has a necessary trait of low arousal. Since Inhibition and Anxiety are measures of arousal, it would make sense that they share variance. Need to belong and behavioral activation both appear to measure social appetitiveness; both are conducive to stimuli and reinforcement seeking. A strong need to belong draws a person to socialize and such is true with high behavioral activation.

Discussion

The validation of the SSE-1 scale has been solidified as a success within our statistical assessments of reliability and validity. The principal components analysis showed that all items were sufficiently related to each other and comprehensively measuring one construct of social self-efficacy. A reliability analysis has shown measurement to be consistent between items within the composite scale. Upon analyzing the scales used all together, the Need to Belong Scale and Behavioral Activation System Scale loaded more under a second component, i.e., they may be measuring something slightly different than the Social Anxiety Scale, General Self-

Efficacy Scale, social self-efficacy scale, and Behavioral Inhibition System Scale. A demographic analysis showed a significant positive relationship between age and social self-efficacy. After the SSE-1 was internally deemed valid and consistent, the first step of exploring the test battery scales' results in their interaction was to create an inter-relationship matrix to access how each was related to the other in a broader sense.

Indeed, the measurement process in this study was solely based on self-report. Our analysis had a limitation that it did not utilize a multi-method model, where peers or loved ones of each participant could be assessed and compared to self-reporting. Furthermore, a correlative behavioral measure could contribute to a validity analysis of the SSE-1. However, because we only required survey data, a high number of participants could be gathered for the present research. I strongly recommend with future research to at least incorporate a behavioral measure with materials such as the Psychology Experiment Building Language (PEBL). This way, a behavioral aspect of these social trait phenomena can be explored while still using remote computer applications, which may be used upon the participants' own time.

A good reason for the creation of this scale was to assess the limited explanatory power of measuring only a "general" self-efficacy. If the social self-efficacy scale is truly more useful within the context of social psychological research, then it should explain differences in other social psychological measures. Upon analyzing the matrix of related measures, the general self-efficacy scale marginally predicted behavioral activation less than the social self-efficacy scale, though it could be conceived that they predict it equally well. Both scales had a moderate strength of positive prediction of behavioral activation. When trying to find the structural underpinnings of the scales by assessing them all together in the component analysis, general self-efficacy and social self-efficacy also equally were related to our named component

“arousal,” rather than the second component, “social appetitiveness.” Theoretically, this is because as efficacy increases, arousal related to the performance of the anticipated performance is lower. Think of it as: as one gets more confident, they become less nervous. Behavioral activation is intended to be a measure of reinforcement sensitivity, which is a combination of the factors of neuroticism and extraversion. Given that behavioral activation has such a strong component of extroversion, which is an explanation of *specifically* social behavior and cognition, it is a problematic limitation that general self-efficacy is just as sufficient of a predictor of such as social self-efficacy is.

The case with behavioral inhibition is also the same. The validity of self-efficacy as a predictor, whether general or social, is nearly identical. Behavioral inhibition is a marker of sensitivity to punishment, so rather than neuroticism, this is a measure of stability. Stable people are more cautious, and they have a keen sense of risk and consequences; so consequently, behavioral inhibition is a determinant of introversion.

For this reason, we needed to tease out the unique variance that social self-efficacy may be contributing to these traits of behavioral inhibition and behavioral activation. When isolating the variance of behavioral inhibition explained purely by the social self-efficacy, it did increase the strength model significantly than if we used general self-efficacy on its own. Due to this, we have evidence that measuring social self-efficacy using the SSE-1 is uniquely useful in determining introversion.

A difficult-to-grapple-with result of this scale’s validation process was how similar the items appear to be to the Social Anxiety Scale. However, when referencing the theory of self-efficacy, some of the Social Anxiety Scale items appear to be measuring efficacy rather than anxiety. I argue that many of these social anxiety questions are asking about a perceived

aptitude, (e.g., “I have *difficulty* talking to persons of the opposite sex”, “I find it *easy* to make friends my own age.”) which is highly conceptually similar to self-efficacy. This particular social anxiety measure seemed most relevant at the start of the literature review because it didn’t appear like a list of symptoms. Take for instance Beck’s (1988) Anxiety Inventory: it is well recognized that this is a valid inventory for measuring anxiety, but it is problematic at measuring anxiety when using group inferential statistics because it is essentially a list of symptoms such as sweating, stomach pain, and tension. For example, someone may have high anxiety, but only feel a quarter of the symptoms the test lists. With their results given from the test, we would assume that the person is within the lowest quartile of anxiety—even if they may not be—due to the measuring tool used. For further research, an item analysis may be run on both the Social Anxiety Scale and the SSE-1 to see if the aptitude questions rather than the feeling questions tend to load higher under the component the SSE-1 occupies.

Need to belong resulted with the lowest amount of measurement commonality shared with social self-efficacy. It appears that individuals can have lower “need to belong” yet high social self-efficacy. There may be individuals who are well-loved and attended to, so they may not feel a strong sense of belonging since they may be privileged of belonging already. Think about the old sentiment of, “You don’t know what you have until it is gone.” Others may describe themselves as “loners,” not because of social exclusion, but rather by choice. Moreover, in the case of low self-efficacy and high need to belong, that is less complex. For example, a person feels they have poor social skills, becomes excluded and in turn, craves to be included.

A large part of the mechanism of self-efficacy relates to goal setting. When a person meets a goal which they have constructed prior, then this performance is considered satisfactory. It is important to consider the role of personal satisfaction when assessing self-efficacy. The

personal feeling of need-satisfaction is functionally similar to goal-setting behavior. Abraham Maslow (1943) attempted to explain a theory of human motivation being driven by needs, and there are succeeding tiers of importance separating general categories of needs. Near the top are the needs of love and esteem. As the needs become higher order, they are no longer operationally measurable objects such as food and shelter. In this sense, a person has to judge if they are respected and loved to a satisfactory extent. Maslow's ideas are quite old and manifested before our current style of rigorous empirically driven research today (Maslow, 1943). However, the general paradigm still stands. The drive behind the development of social self-efficacy is based on attracting mates, socializing, being charming and charismatic, or even "winning people over;" therefore, an overlap between social self-efficacy and higher order needs is conceivable.

A good portion of the current literature review explains Albert Bandura's case for exploring self-efficacy as a cognitive behavioral phenomenon, and further adding to the scientific value of looking beyond simple object-reinforcement as an explanation for a person's behavior. Two theorists who were pioneers of the modern approach to personality and agency are Carl Rogers and Carl Jung.

Carl Rogers lent to breakthroughs in successful therapeutic change (Rogers, 1995). A person, in order to be mentally healthy and productive in society, must recognize their own feelings and accept themselves for who they are (Rogers, 1995). Furthermore, a person's *ideal self* must be realistic, obtainable, and otherwise reasonable (Rogers, 1995). The person must also have a clear and accurate assessment of their *true self*. Finally, after the ideal self and actual self are correctly constructed, maximizing the congruence between the two leads to better success in therapy. This is done through productive cognition and reflection, and often facilitated in psychotherapy. Note how this relates to theories of self-presentation: is the way the person is

being judged in line with how they wish to be judged? Are they playing the role of a person they want to be? This is a humanistic approach to understanding the self, which gives an emphasis on agency, willingness to change, having realistic goals, and reframing.

As a pioneer in the consideration of personality affecting one's behavior, Carl Jung and colleagues (1993) introduced the ideas of extroversion and introversion, which later was scientifically explained by the BIS and BAS scales. Philosophically, the modern therapeutic approach has deep roots in existential thinking, which can be thought of as having a sort of "spiritual agency." In existential thinking, one must appraise their own meaning of life and purpose. Carl Jung's research was centered on individualism, or alternatively, a person's cognitive biases and personality having an effect on their behavior. Indeed, different styles and methods of psychological intervention affect different people with variance in success.

The incorporation of flow theory into the literature review lent a unique perspective that there may be a "sweet spot" for arousal when performing any behavior; indeed, a boring job is a job loathed. Flow theory posits that there is an optimal balance between anxiety and boredom, which results in a sense of euphoria in the person and pushes them to continue their performance. In the self-efficacy literature, there was evidence that "too low" of arousal could cause a lack of interest in the task, and some arousal or anxiety is necessary for giving a person the motivation to prepare for a task. For example, one will not study for a test if they expect the test to be easy or unimportant. Within the context of the current research, this lack of interest related to low anxiety appears to be related to the need to belong. If there is a low need to belong, then poor outcomes of social scenarios may be less worrisome than for someone who cares a lot about how they are socially received. However, flow states are generally attributed to performances with clear-cut objectional outcomes and consistent feedback (e.g., hobbies and professional

endeavors) as opposed to something that is complex to appraise such as a social situation, which is highly spontaneous, inconsistent, and difficult to predict. For this reason, a great way to treat social anxiety is through virtual reality exposure therapy as it gives the clinician complete control of the environment, which is otherwise not functionally possible. In the present research, need to belong and social self-efficacy appeared to only be slightly related; this potentially indicates the nuanced role arousal plays in social interaction.

More future research possible for this area is the incorporation of assessing “perceived social support.” Perceived social support seems to act like a buffer between the causal relationship of stress and pathology (Procidano & Smith, 1997). Perceived social support is one’s perception of how much they are cared for and loved (Cobb, 1976). Measuring this may be helpful in teasing out variance in the measurement of anxiety, self-efficacy, and behavioral inhibition. Since these are determinants of arousal (recognized by our between-scales factor analysis), arousal is not so much a different reactive feeling than stress in general. Furthermore, perceived social support shares a social-cognitive component with social self-efficacy. The case for assessing perceived social support rather than an enacted or “object” amount of social support is that: similar to the rest of the present research, the answer is cognitive in nature (Procidano & Smith, 1997) i.e., the feeling of being cared for is historic in nature. It is a composite of the person’s view of how loyal the loved one is, their generosity, and their helpfulness over the lifespan of their relationship. In defense of a behavioristic approach, this is still technically reinforcement; however, a person makes an overall cognitive judgment of “how to feel” toward a person based on these interactions.

Social support also interacts with one’s “attachment style” i.e., the nature of how one views their loved ones and their perception of how their loved one’s view them. With attachment

style having such an influence on relationships, if the direction of the present research moves to a multimethod model where the inter-rating of the self-report and loved one's report are considered, it would be necessary for the attachment style of the participant and loved one to be considered. Note: Attachment style is built on a two-factor model which reduces the explanatory variables of "self-worth" and "worth of loved one" into four categories (Bartholomew & Horowitz, 1991). Statistical consideration of measuring attachment style with the full a two-dimensional continuous scale is strongly suggested.

Conclusion

This validation of the SSE-1 scale has been a success by far as we can assess through our self-report data collection efforts. The principal components analysis resulted in all 7 items being unified under a single construct measure. Internal consistency was also high, as reported by the reliability analysis. Further exploration of the relationship of these six scales were carried out. An integral goal of this research was to create a scale oriented by positive psychology, rather than focused on pathology, which can be useful in psychotherapy as an assessment tool for clients experiencing social anxiety or poor social outcomes. Self-efficacy has a long history, relating back to philosophy, therapeutic practice, and physiological science. The present research was a great effort to further the general understanding of self-efficacy.

References

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.

- Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of personality and social psychology*, 45(5), 1017.
- Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of social and clinical psychology*, 4(3), 359-373.
- Bandura, A. (1989). Human agency in social cognitive theory. *American psychologist*, 44(9), 1175.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of personality and social psychology*, 61(2), 226.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*, 56(6), 893.
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: the BIS/BAS scales. *Journal of personality and social psychology*, 67(2), 319.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate behavioral research*, 1(2), 245-276.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic medicine*.
- Corr, P. J. (2004). Reinforcement sensitivity theory and personality. *Neuroscience & Biobehavioral Reviews*, 28(3), 317-332.
- Eysenck, H. J. (1963). Biological basis of personality. *Nature*, 199(4898), 1031-1034.
- Gray, J. A. (1970). The psychophysiological basis of introversion-extraversion. *Behaviour research and therapy*, 8(3), 249-266.

- Heslin, P. A., & Klehe, U. C. (2006). Self-efficacy. *Encyclopedia Of Industrial/Organizational Psychology*, SG Rogelberg, ed, 2, 705-708.
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and psychological measurement*, 20(1), 141-151.
- Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Construct validity of the need to belong scale: Mapping the nomological network. *Journal of personality assessment*, 95(6), 610-624.
- Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour research and therapy*, 36(4), 455-470.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, 50(4), 370.
- Nakamura, J., & Csikszentmihalyi, M. (2014). The concept of flow. In *Flow and the foundations of positive psychology* (pp. 239-263). Springer, Dordrecht.
- Pajares, F. (1997). Current directions in self-efficacy research. *Advances in motivation and achievement*, 10(149), 1-49.
- Pavlov, I. P. (1927). *Conditioned reflexes: an investigation of the physiological activity of the cerebral cortex*. Oxford Univ. Press.
- Procidano, M. E., & Smith, W. W. (1997). Assessing perceived social support. In *Sourcebook of social support and personality* (pp. 93-106). Springer, Boston, MA.
- Rodebaugh, T. L., Holaway, R. M., & Heimberg, R. G. (2004). The treatment of social anxiety disorder. *Clinical Psychology Review*, 24(7), 883-908.
- Rogers, C. R. (1995). *On becoming a person: A therapist's view of psychotherapy*. Houghton Mifflin Harcourt.

- Seligman, M. E. (1972). Learned helplessness. *Annual review of medicine*, 23(1), 407-412.
- Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological reports*, 51(2), 663-671.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization model. *Psychological bulletin*, 92(3), 641.
- Schunk, D. H. (1995). Self-efficacy and education and instruction. In *Self-efficacy, adaptation, and adjustment* (pp. 281-303). Springer, Boston, MA.
- Skinner, B. F. (1971). Operant conditioning. *The encyclopedia of education*, 7, 29-33.
- Wei, M., Russell, D. W., & Zakalik, R. A. (2005). Adult attachment, social self-efficacy, self-disclosure, loneliness, and subsequent depression for freshman college students: A longitudinal study. *Journal of counseling psychology*, 52(4), 602.
- Yung, C. G., Henderson, J. L., Yakobi, I., & Yaffe, A. (1993). *Man and his Symbols*. Translated by Abu Talib Saremi. Tehran: Amir Kabir Publications.
- Zimmerman, B. J., & Schunk, D. H. (2013). Reflections on theories of self-regulated learning and academic achievement. In *Self-regulated learning and academic achievement* (pp. 282-301). Routledge.

Appendix A

SSE-1 Item Pool

- I give up on making friends often - sometimes before even trying.
- I am confident in my ability to meet new people.
- If someone comes off as unapproachable, I will not try to approach them
- When meeting someone new, I often don't know what to say.
- If a conversation starts to falter, I cannot handle it well.
- When I see someone attractive, I do not hesitate to approach them.
- I usually feel confident in a group of strangers.
- I avoid facing social situations where I have to meet strangers.
- Social rejection is difficult for me to handle.
- I give up in confrontations easily.
- It is easy for me to initiate conversation.
- I am a socially competent person.
- I am a charismatic individual.
- I often feel "left out" of social situations and environments.
- It is difficult for me to make new friends.
- If I see someone I would like to meet, I go to that person instead of waiting for them to come to me.
- I do not handle myself well in social gatherings.
- I have acquired my friends through my own personal abilities of making friends.
- If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.
- When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.

Appendix B

Additional Demographics Provided

<i>Gender</i>	<i>f</i>	<i>comments</i>
Non-binary	6	Transmasculine (2) Female Sex (1) Male Sex (1) Fluid (1) Female Pronouns (1)
Transgender	1	
Agender	2	

(Two participants did not provide further information after selecting “other.”)

