The Impact of Stigma Consciousness, Self-Regulation, and Motivation on Achievement

Pre-Proposal Idea Paper

Portfolio III

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Stereotypes are part of our everyday world. They shape our expectations, behaviors, as well as our understanding of social situations. In fact, a large body of empirical research has shown that individuals who are the targets of negative stereotypes consistently underperform in conditions when those stereotypes are activated (e.g., stereotype threat: Schmader, Johns, & Forbes, 2008). However, as prevalent as they are, some individuals do not believe or are aware that stereotypes impact their social and academic environments (Pinel, 1999). This is understandable, though, given that we cannot expect all individuals within the same social group to endorse or experience stereotypes in the same way. To address this, Pinel (1999) coined the term stigma consciousness, which refers to the extent to which an individual expects to be stereotyped by others.

Stigma consciousness is similar to the more popularly researched construct called stereotype threat. In fact, the two constructs have been found to covary (Pinel, 1999). Stereotype threat refers to the anxiety of actually confirming the stereotype of his/her own group (Steele & Aronson, 1995) while stigma consciousness refers to the expectation of being stereotyped regardless of the actual behavioral outcome. Steele (1997) suggests that stereotype threat effects occur only when individuals have a concern for actually being stereotyped. If an individual does not care about being stereotyped then he/she will not experience stereotype threat. In terms of stigma consciousness, those who experience high levels of stigma consciousness tend to express more concern about being stereotyped than those who experience lower levels of stigma consciousness (Brown & Pinel, 2003). With this line of reasoning, we can infer that those who are high in stigma consciousness would be especially susceptible to stereotype threat effects.

One limitation of stereotype threat is that it is situationally induced as opposed to individually measured. Therefore, individual perceptions are ignored. As a result, stigma consciousness takes into account within-group variability of stereotypes and does not assume that all individuals within the same stigmatized group experience, react to, or are affected by the stigma in the same way. Because stigma consciousness was coined less a little over a year ago, research regarding stigma consciousness is particularly limited. A search on the Psycinfo database using the terms “stigma consciousness” resulted in 90 results while only three results emerged the ERIC database. Therefore, considering the strong relationship between stereotype threat and stigma consciousness, this review will discuss both stigma consciousness and stereotype threat literature to provide a stronger theoretical framework for this study.

Although stigma consciousness is a relatively new term, there is a growing body of research that shows that it is negatively related to student achievement/performance (Brown & Pinel, 2003; Pinel, 1999). For example, Brown and Pinel (2003) examined how stigma consciousness can moderate achievement in mathematics sample 49 female college students. Brown and Pinel (2003) hypothesized that women who reported high levels of stigma consciousness would be more likely to experience stereotype threat effects as evidenced by lower math performance than women who reported lower levels of stigma consciousness. The results revealed that stigma consciousness had indeed moderated the relationship between stereotype threat and math achievement. Specifically, in the high threat condition, women who were high in stigma consciousness had performed significantly lower than women who were low in stigma consciousness. This effect was large (*d =* .88) and stayed significant even when controlling for math perceptions such as math identification and math self-concept.

Another study by Pinel, Warner, and Chua (2005) provide further evidence that stigma consciousness is related to lower academic achievement. Specifically, Pinel et al. (2005) examined how stigma consciousness levels would predict college student overall GPA as well as psychological disengagement for stigmatized students at a predominately white university. Pinel et al. (2005) predicted that although psychological disengagement is a predictor of academic retention, it can also be a form of self-protection. Specifically, when students are psychologically disengaged (e.g., doing well in school is or is not part of one’s identity), stigma would have little impact on their performance. Additionally, the authors hypothesized that those who experienced a strong increase in stigma consciousness after arriving to the predominately White university would be more likely to achieve lower than students who experienced a lesser increase in stigma consciousness levels. Using the survey responses of 113 college students, Pinel et al (2005) found that minority males (African American and Hispanic) who reported stronger increases in stigma consciousness had predicted both lower GPAs and higher levels of psychological disengagement. However, regardless of the degree of increase in stigma consciousness perceptions, stigma consciousness had negatively predicted GPA for minority females. Additionally, there was evidence to suggest that for females, psychological disengagement had protected their self-esteem, where females with higher disengagement levels had higher self-esteem levels as well. Overall, these studies suggest that stigma consciousness plays a significant and negative role in academic achievement. However, the processes that underlie the effect between stereotypes and performance have yet to be thoroughly understood (Schumader, Johns, & Forbes, 2008). Specifically, what exactly causes stereotypes to have such an impact on performance and what can we do to mitigate these effects?

**Social Cognitive Theory**

Social cognitive theory is a popular construct within the domain of educational psychology. This approach proposes that learning and performance involves the interaction between personal cognitive processes and the environmental context. Specifically, student achievement, according to this perspective, is dependent on the motivational and affective perceptions (personal cognitive variables) coupled with the social context (environmental factors). A student can achieve and perform to the extent to which he/she can successfully regulate these two factors. Therefore, if stereotypes are part of the social environment and if social cognitive theory posits that achievement is the result of the social environment and individual personal factors, then this theory has the potential to explain the causal effects of stereotypes on achievement. Thus, the purpose of this proposed dissertation study is to examine the relationship between stigma consciousness, social cognitive factors, and student achievement in mathematics.

**Self-Regulated Learning** **and Stereotypes**

The balance between personal and environmental processes can be further conceptualized as self-regulated learning (Zimmerman, 2008). Based on social cognitive theory, self-regulated learning is defined as the ability for a student to strategically, proactively, and independently engage in thoughts and behaviors to attain personal goals (Zimmerman, 2008). Critical to this perspective is the ability for the student to engage in a cyclic feedback loop between three sequential phases of learning: forethought, performance, and self-reflection/evaluation. Specifically, this feedback loop is what provides the student with information about how to best adapt ones behaviors and thoughts to more successfully attain personal goals.

The forethought phase of self-regulation involves the affective and motivational factors such as self-efficacy (e.g., does the learner believe that he/she has the necessary skills to successfully achieve the goal? (Bandura, 1986) and attainment value (e.g., how personally important is it for the learner to participate or do well on a given task? (Eccles & Wigfield, 1995). These are the processes that the learner engages in prior to actually engaging in the task at hand.

Although researchers have directly examined the relationship between self-efficacy and stereotypes, the results are inconsistent. In terms of self-efficacy, Hollins-Sawyer and Sawyer (2008) argue that stereotype threat researchers should take into consideration ones confidence in their test taking ability and examine it in terms of self-efficacy. However, prior research has found inconsistent results in terms of self-efficacy. For example, Spencer, Steele, and Quinn (1999) found that students’ level of self-efficacy did not mediate the differences in achievement across stereotype threat conditions. Conversely, Hollins-Sawyer and Sawyer (2008) found evidence that partially supported the hypothesis that low stereotype threat may have caused an increase in self-efficacy and Schumader, Johns, and Barissque (2004) found that females who viewed gender stereotypes as legitimate in mathematics had lowered competence beliefs in their mathematics skills than females who rejected those stereotypes. Furthermore, Aronson and Inzlicht (2004) found that Blacks who were more vulnerable to stereotypes reported stronger fluctuations of self-efficacy than Blacks who were less vulnerable to stereotypes. Some of these finding suggests that participants who are more likely to be affected by stereotype threat (e.g., through exposure to the threat or through stigma consciousness) experience a less stable sense of efficacy.

In terms of attainment task value, research has found that the more importance stigmatized students place on doing well in a certain task, the more vulnerable they are to the effects of stereotype threat (Aronson & Good, 2001; Aronson et al., 1999). Specifically, Aronson and Good (2001) found that stigmatized students who did not value doing well in a task under stereotype threat conditions had significantly performed higher than students who reported higher levels of value in a nonstereotype threat condition. The authors rationalized that the anxiety induced by stereotype threat was more pronounced in those who actually wanted to do well, where as students who did not care about doing well had less of a reason to be impacted by the anxiety. However, this relationship is at odds when interpreted through the lens of social cognitive theory. Specifically, students who value a task would be more motivated to engage in self-regulatory strategies to increase the likelihood of academic success (Wigfield & Eccles, 2000). However, when stereotype effects are also included in the model, this relationship is reversed, where stigmatized students who value the subject matter more are less likely to do well. Therefore, a critical question remains as to how this relationship between stereotypes and attainment value impact the other self-regulatory processes such as task strategies and attributions.

After students have formed their motivational and affective beliefs in the forethought phase, learners then proceed to the performance phase where they actually engage in accomplishing the task/goal at hand. A critical component in this phase is self-regulated learning strategies (Zimmerman, 2000). Self-regulated learning strategies are the actual behaviors that students engage in to achieve a goal and these behaviors can be both adaptive and maladaptive (Cleary, 2006). Specifically, strategies such as structuring and managing the learning environment and behaviors (e.g., time management, effort regulation, planning) help the student in attaining academic goals while maladaptive strategies may include avoidance of the task or poor management abilities. In terms of the relationship between strategy use and stereotype effects, prior research has shown that a strategy such as effort regulation may play an insignificant role in stereotype threat effects (Aronson & Salinas, 2001; Aronson & Steele, 2005). That is, the negative effects of stereotype threat are still present even when participants devoted a high amount of effort into completing the task. However, this proposed study does not only look at how stereotypes impact effort, but how stereotypes impact learning strategies within the framework of self-regulated learning.

Finally, in the self-evaluation/reflection phase of self-regulated learning the student self-judges his/her performance and based on that information, make changes to their behaviors/cognitions in the forethought and performance phase for future tasks. A critical component in this phase is called attributions, which refers to the explanations that a student makes to explain a particular outcome. Specifically, attributions can be conceptualized as controllable (effort) or uncontrollable (luck), stable (ability) or unstable (effort), and external (luck) or internal (ability). The most adaptive attributions are those that are unstable, internal, and controllable, such as effort while the most maladaptive attributions are those that are stable, external, and uncontrollable, such as luck (Schunk, Pintrich, & Meece 2008). Specifically, students tend to achieve higher and take more control over their learning when they perceive that they are responsible for their own learning and that their academic outcomes. However, these positive attributions that one makes may differ according to stereotypes. Specifically, in terms of gender, Sabine, Muller, and Sieverding (2008) found that women in a stereotype threat condition had attributed their personal failure to more maladaptive outcomes and attributed men’s failure to more external outcomes than other women in a non stereotype threat condition. These stereotype effects may relate to stigma consciousness because students who have high expectations to be stereotyped may form more maladaptive attributions to success and failure. However, little research exists in terms of attributions for outcomes in the context of stereotypes in natural settings.

Overall, the literature on stereotype threat indicates that negative stereotypes that are socially inflicted upon ones ability to achieve actually impede achievement (Aronson & Steele, 2005; Steele & Aronson, 1995; Steele, 1997). Since the inception in 1995 by Steele and Aronson, the theory of stereotype threat has been one of the most popularly studied phenomenons in the field of social psychology (Schmader et al., 2008). Although stigma consciousness is a less popular construct, like stereotype threat, it still has important implications to the field of educational psychology and the contextual influences on learning. However, the mechanisms that mediate this relationship have yet to be clearly understood (Pinel et al., 2005; Pinel & Brown, 2003) and no research to date have examined this effect holistically through the lens of social cognitive theory.

**Purpose of the Proposed Dissertation**

This proposed dissertation will attempt to merge together two fields of psychology: social psychology and educational psychology. Specifically, I will take a traditionally social psychology construct (stigma consciousness) and attempt to merge it into a model of self-regulated learning to see if a traditionally educational psychology construct can be used to explain stigma consciousness effects on achievement. One of the main purposes of this study is to determine how stigma consciousness impacts the model, particularly with attainment task value. That is, research in educational psychology have confirmed that students who exhibit a high level of task value will typically achieve higher than those who do not (Eccles & Wigfield, 1995), however, research in social psychology have also confirmed that students who do *not* exhibit a high level of task value will be more able to overcome the impact of stigma on achievement than those who do (Aronson et al., 1999). Therefore, this proposed dissertation will attempt to determine if the model of self-regulation, motivation, and achievement will change with the addition of stigma consciousness.

This proposed dissertation will attempt to explore the following model of stigma consciousness, self-regulated learning, and achievement:

Stigma Consciousness

Attainment Value

Adaptive Task Strategies

Attributions

Semester

GPA

Self-Efficacy

Self-Efficacy for Learning

Goal- Setting

Maladaptive Task Strategies

Figure 1

In figure 1, the hypothesized model shows that self-regulation and motivation processes will mediate the relationship between stigma consciousness and student achievement. Additionally, although this is not indicated in the figure for readability purposes, all of the self-regulation and motivation variables are hypothesized to be related to one another in addition to student achievement.

This proposed dissertation will use the Pinel et al. (2005) study to guide the methodological and theoretical framework for this study. Specifically, although research within educational psychology (Pajares & Miller, 1995) have suggested that domain specific measures are the most powerful predictors of achievement, Pinel et al. (2005) measured the predictive power of stigma consciousness on self-reported and estimated GPA. In this proposed dissertation, I will attempt to measure actual GPA collected from university records. Also, it is important to note that the stigma consciousness measure itself is not a domain specific measure, rather, it is a race- or gender-stigma specific measure. That is, the measure assesses stigma consciousness in terms of expectations to be stereotyped because of their race or gender, regardless of the academic domain. Therefore, other measures assessing self-regulation and motivation will also be domain-general. Additionally, it would be interesting to see how stigma consciousness impacts the relationship between self-regulation, motivation, and achievement in a general rather than in a specific domain.

In addition to testing this model, this proposal also seeks to explore the following research questions:

1. Can self-regulatory processes (attributions, goal setting, self-efficacy for learning, adaptive and maladaptive task strategies) and motivational processes (self-efficacy and attainment task value) mediate the relationship between stigma consciousness and overall achievement?
2. Does the model apply equally to both male and females?

Methods

*Participants*

I expect to collect data from at least 300-400 students enrolled in a large introductory undergraduate classes (i.e., BIO 100, PSYC 100, etc.). Doing so would allow me to sample a more heterogeneous group of students in terms of motivation. Specifically, in a previous pilot study of stigma consciousness and self-regulation in mathematics, the average age of students in introductory math courses was 23.68 (SD = 6.47) with only 4% of freshmen students and over 43% senior students. This is also another rationale for studying achievement in general as opposed to within a specific domain. The university in which I will be collecting data in is nationally recognized as one of the most diverse schools in the nation. Additionally, I may collect data from participants from a nearby community college. To ensure that students from these two populations do not differ significantly, I will run preliminary analyses to test if these students differ on any of the variables and determine whether to control university type.

**Materials**

**Demographics Questionnaire.** Gathers information on student name, email, ethnic background, gender, age, and target GPA.

**Stigma Consciousness Questionnaire (SCQ. Pinel, 1999).** To examine stigma consciousness, students will complete the SCQ which measures stigma consciousness in terms of gender with ten items (i.e., *“Most men have a problem viewing females as* *equals”*) measured on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability coefficients will be reported.

**Self-and Task Perception Questionnaire (STPQ: Eccles & Wigfield, 1995).** The perceived task value subscale of the STPQ will be used to assess students perceived task attainment (3 items, *“How important is it to you to get good grades in math?”*). The original scale was used to measure high school students perceived task value in mathematics. Therefore, the questions will be transformed to fit the purposes of this study. Specifically, “high school math” will be changed to “this mathematics class” to provide a more context specific responses. The responses measured on a Likert scale from 1 to 7. Depending on the question, the labeling of the anchor items are from 1 = “Very Boring” or “Not Very Much” to 7 = “Very Interesting” or “Very Much”. Reliability analyses will be conducted and reported.

**Academic Self-Efficacy***.* The Patterns of Adaptive Learning Scale (PALS: Midgley et al., 1998) will be used to assess student self-efficacy. This scale has been widely used by researchers assessing college student academic self-efficacy and has been shown to have strong reliability and validity across developmental levels and college students in recent validation studies (Ross, Shannon, Salisbury-Glennon, & Guarino, 2002). Students respond to five questions on a five point Likert scale (1 = “Not at all true,” and 5 = “Very true”). An example question is, “Even if the work is hard, I can learn it.”.

**Self-Efficacy for Learning Form (SELF: Zimmerman & Kitsantas, 2007).** The self-form is a 19 item, one subscale measure that assess student self-efficacy for using various task strategies for learning. This scale has been validated in previous studies (Zimmerman & Kitsantas, 2009) and has shown strong levels of reliability (.91) as well as predictive validity. Students respond on a 0 (“Definitely cannot do it”) to 100 (“Definitely can do it”) Likert scale in 10-unit increments. An example question is, *“When you are feeling depressed about a forthcoming test, can you find a way to motivate yourself to do well?”*

**Goal Setting.** TBD

**Self-Regulation Strategy Inventory—Self Report (SRSI-S; Cleary, 2006).**The SRSI-S is an instrument used to assess student learning strategy use. Two subscales will be used in this study: Managing Environment/Behavior and Maladaptive Regulatory Behaviors. The first subscale measures strategies such as effective use of study materials, time management, and self-instructional strategies with 12 items (e.g., *I make sure no one disturbs me when I study)*. The second subscale measures maladaptive strategies with eight items such as avoidance and inappropriate self-management (e.g., *I wait till the last minute to study for exams*). All of the questions are measured on a 7 point Likert scale ranging from 1 (never) to 7 (always). Reliability coefficients will be reported for each of the two subscales.

**Attributions.** The Attribution Strategy Success and Attribution Strategy Failure Scales (Nelson & Williams, 2006) will be used as a guideline to assess attributions. Specifically, students will be given the following scenarios: “*Suppose you average a 4.0 GPA for this semester: Please list the main reasons why you would achieve such a GPA:*” and, “*Suppose you average a 1.5 GPA for this semester: Please list the main reasons why you would achieve such a GPA:*” Following, their responses would be hand coded according to internal/external and controllable/uncontrollable attributions. Inter-rater reliability for this measure will be established.

**Achievement***.* Student final semester GPAs will be collected from university records to assess overall achievement.

**Procedure**

Instructors will be contacted and permission will be obtained. A trained graduate student will obtain the informed consent as well as administer the test to the student. To lessen the impact of group administration, students will be given a blank sheet of paper to cover responses.

**Analytical Approach**

Due to the number of variables and relationships being examined, structural equation modeling (SEM) will be used to assess the model. Specifically, SEM will be the most accurate and powerful approach to testing this model due to its ability to take into account measurement error. This approach will also allow me to see how the relationship between self-regulation (task strategies and attributions) and motivation (attainment task value and self-efficacy) are influenced when stigma consciousness is added into the model. Additionally, to test for the mediation hypotheses, individual mediated regressions for each of the independent variables will be analyzed.

**Educational Implications**

The results of this research have several important implications. First, by understanding how self-regulation may be differentially influenced by stereotypes, educators and researchers may be better able to design more culturally and racially sensitive interventions and assessments to reduce the achievement gap. Additionally, since motivation and self-regulation are both amendable through intervention (Zimmerman, 2008), this research may provide researchers with useful information on how to design interventions more effectively to help students overcome the maladaptive effects of stereotypes. In addition to interventions, this research also has practical applications for preservice teacher training programs. Specifically, more discussion about race and gender is necessary in preservice teacher education programs in order to promote more understanding of how race and gender explicitly and implicitly influences learning. Understanding the potential interaction between stigma consciousness and social-cognition may not only advance the literature on stereotypes, but may also provide useful insight on how gender operates within the educational system on an implicit level.

References

Aronson, J., & Good, C. (2002). The development and consequences of stereotype vulnerability in adolescents. In F. Pajares & T. Urdan (Eds.), *Adolescence and education.* New York: Information Age.

Aronson, J., & Inzlicht, M. (2004). The ups and downs of attributional ambiguity. *Psychological Science*, *15*(12), 829-836.

Aronson, J., & Salinas, M. F. (2001). *Stereotype threat, attributional ambiguity, and Latino underperformance*. Unpublished manuscript, New York University, New York.

Aronson, J., & Steele, C. M. (2005). Stereotypes and the fragility of academic competence, motivation, and self-concept. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation.* (pp. 436-456). New York: Guilford Press.

Aronson, J., Lustina, M. J., Good, C., Keough, K., Steele, C. M., & Brown, J. (1999). When White men can’t do math: Necessary and sufficient factors in stereotype threat. *Journal of Experimental Social Psychology, 35,* 29–46.

Bandura, A. (1986). *Social foundation of thought and action: A social-cognitive view*. Englewood Cliffs, NJ: Prentice Hall.

Brown, R. P., & Pinel, E. C. (2003). Stigma on my mind: Individual differences in the experience of stereotype threat. *Journal of Experimental Social Psychology, 39,* 626-633.

Cleary, T. J. (2006). The development and validation of the Self-Regulation Strategy Inventory--Self-Report. *Journal of School Psychology*, 44(4), 307-322.

Eccles, J., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents’ achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin, 21,* 215-225.

Eccles, J., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents’ achievement task values and expectancy-related beliefs. *Personality and Social Psychology Bulletin, 21,* 215-225.

Hollis-Sawyer, L. A., & Sawyer, T. P. (2008). Potential stereotype threat and face validity effects on cognitive-based test performance in the classroom. *Educational Psychology*, *28*(3), 291-304.

Midgley, C., Kaplan, A., Middleton, M., Maehr, L. M., Urdan, T., Anderman, E., & Roeser, R. (1998). The development and validation of scales assessing students’ achievement goal orientations. *Contemporary Educational Psychology 23,* 113-131.

Nelson, J. M., & Manset-Williamson, G. (2006). The impact of explicit, self-regulatory reading comprehension strategy instruction on the reading-specific self-efficacy, attributions, and affect of students with reading disabilities. *Learning Disability Quarterly*, *29*(3), 213-230.

Pajares, F., & Miller, M. (1997). Mathematics self-efficacy and mathematical problem solving: Implications of using different forms of assessment. *Journal of Experimental Education*, *65*(3), 213-28.

Pinel, E. C. (1999). Stigma consciousness: The psychological legacy of social stereotypes. *Journal of Personality and Social Psychology, 76,* 114-128.

Pinel, E. C., Warner, L. R., & Chua, P. (2005). Getting there is only half the battle: Stigma consciousness and maintaining diversity in higher education. *Journal of Social Issues, 61*(3), 481-506.

Koch, S. C., Muller, S. M., & Sieverding, M. (2008). Women and computers: Effects of stereotype threat on attribution of failure. *Computers & Education*, 51(4), 1795-1803.

Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychological Review*, *115*(2), 336-356.

Schumader, T., Johns, M., & Barquissau, M. (2004). The costs of accepting gender differences: The role of stereotype endorsement in women’s experience in the math domain. *Sex Roles, 50*(11/12), 835-850.

Schunk, D. H., Pintrich, P. R., Meece, J. L. (2008). *Motivation in Education: Theory research, and applications*. Upper Saddle River, NJ: Pearson-Merrill Prentice Hall.

Spencer, S. J., Steele, C. M., & Quinn, D. M. (1999). Stereotype threat and women's math performance. *Journal of Experimental Social Psychology*, *35*(1), 4-28.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, *52*(6), 613-629.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*(5),

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, *45*(1), 166-183.