The Relationship between Socioeconomic Status and Academic Identity: A Presentation of Mediators and Moderators

Benjamin S. Van Son
Advisor: Jennifer Lilgendahl

Collaborators: Hannah Brower and Fairleigh Barnes

Haverford College
Abstract

This study investigated the mediation relationship between socioeconomic status and academic identity (academic self-concept, academic centrality, and academic narrative identity). Based on previous qualitative research, we predicted that low SES would be associated with lower academic identity predicted by feelings of low belongingness, high SES stigma sensitivity, and external academic locus of control (Aries & Seider, 2005; Lehmann, 2009; Wentworth & Peterson, 2001). We found that low SES was related to lower levels of academic self-concept and academic centrality, but was not significantly associated with academic narrative identity. In addition, belongingness and SSID were significant predictors of the relationship between SES and academic identity. These results have implications for educators and policymakers about the unique challenges that low SES students face entering the college environment.
Introduction

“You cannot drop out of school and just drop into a good job. You've got to train for it and work for it and learn for it.”

President Barack Obama said this quote as he delivered a speech on the importance of education to high school students in Wakefield, VA. In his speech, President Obama touched on the importance of education as the gateway to the future. President Obama also touted a common American ideal: education can help anyone move up. Researchers in psychology also agree that an education is one pathway that can lead to social mobility (Ostrove & Cole, 2003). Anecdotally, many in the United States believe that getting an education is crucial to moving up in the world (Higgenbotham & Weber, 1992).

However, some argue that education is not as fair or universal as some make it out to be. For instance, studies have noted an achievement gap, a phenomenon in which certain groups perform worse in school than others (Berlak, 2009). This issue has been studied most prominently with regards to race in which it became clear that African Americans are performing worse at school. For instance, African Americans are more likely to drop out, have lower enrollments in AP scores, are less likely to go to college, and received lower standardized test scores (Berlak, 2009). The achievement gap has been generalized to socioeconomic status, also known as SES, in which having a lower socioeconomic status has been linked to lower academic achievement (Sirin, 2005). For instance, lower SES students have felt less prepared for higher education, feel less academically engaged, have lower GPAs, and are less likely to stay in school and complete their degrees (Rubin, 2012; Sirin, 2005). For the purposes of this study, SES can be defined as “an individual’s or family’s ranking on a hierarchy according to access to or control over some combination of valued commodities such as wealth, power, and social status” (Mueller and Parcel, 1981, p. 14). It
is important to note that socioeconomic status encompasses a whole host of factors including family income, education levels, and occupation (Sirin, 2005).

Due to the prevalence of the achievement gap, research has tried to understand the circumstances where the achievement gap may be most pronounced. Domhoff (2005) believes that elite universities create a climate of exclusion in which the cultural and economic elite thrive and the marginalized fail. While this viewpoint may be considered extreme, research described below has shown that certain groups struggle in this elite academic context more than others. Building off of this research, there have been many qualitative studies investigating how working class or lower SES students transition into a highly selective college environment. Many of these studies have found that low SES students struggle with adjusting to the college environment at the top academic schools.

Aries and Seider (2005) interviewed lower income students from an elite college (high discrepancies in SES) and a state school (low discrepancies in SES). They found that the low SES ivy leaguers felt like they were inadequate. In particular, low SES students felt they could not articulate their points in class eloquently and felt they lacked worldly experiences like traveling abroad. Several working class students also felt intimidated by their wealthy peers because they felt like upper class students were superior because they possessed more advantages. At the same time, many poor ivy leaguers also felt powerless because they lacked resources. Many felt like they could not control their future due to their lack of money.

Lehmann (2009) studied first-generation, working-class students at a research institute in Canada. During a three-year longitudinal study, he interviewed working-class students about their experiences as students. Many low-SES students questioned their ability
to do well at school. Due to their economic status and the large amount of money being spent on their education, low-SES students were more worried rather than excited about their time at the university. Others even questioned whether they deserved to be at school.

Wentworth and Peterson (2001) followed working-class women as they attended a prestigious college. They talked to participants three times during the course of their college careers and found that adjustment to college was difficult for their subjects. They struggled academically and felt they could not accomplish their goals. Additionally, some noticed that their peers were taking less time to study but were earning better grades. This led to a clash in which the lower SES students felt like they could not keep up with their peers.

Ostrove and Stewart (1998) conducted a longitudinal study that measured the relationship between social class and the effect it had on low SES students. They interviewed 102 women after they had graduated from a prestigious school about their SES and issues related to it. Some felt inferior in the way they dressed and talked. Others felt like there was a social separation between the low SES and high SES students.

As a set, this qualitative evidence suggests that low SES may negatively impact academic adjustment in the elite college context. More specifically, low SES students certainly question their role as a student and whether they fit in or deserve to be a student. Thus, due to this wealth of research, it is clear that academic identity is a core issue for low SES individuals in elite colleges.

One goal of the present research is to increase the quantitative research investigating the relationship between low SES and academic identity. In its simplest form, “identity” answers the question: “who am I?” (Buss, 2012 p. 158). In other words, identity measures one’s sense of self (Buss, 2012). However, one’s identity consists out of many components
that help shape the self (Major, 2012). These categories of identity, such as race, gender, sexuality, and class are based on group memberships called social identities (Reid & Deaux 1996). Humans can also have an academic identity. Anecdotally, academic identity has been described as staying engaged with one’s academics (Davidson, 1996). However, to the best of our knowledge, there is no one accepted definition of what academic identity is.

Therefore, one goal of this study was to utilize a broad definition of academic identity. This study will examine how low SES affects three components of academic identity: academic self-concept, academic centrality, and academic narrative identity. This research is interested in the relationship between academic identity and SES. Specifically, what is the potential relationship between low SES and academic self-concept, centrality, and narrative identity? In addition, this paper will explore potential mediators and moderators of these relationships. In other words, what are potential factors that may influence the relationship between low SES and academic identity?

*Academic Identity*

*Academic Self-Concept*

One of the most prominently studied components of academic identity is academic self-concept. Broadly, self-concept can be defined as the perception one has of oneself (Shavelson, Hubner, & Stanton, 1976). This identity is created through categorizing one’s life experiences, which provide meaning and structure to one’s life. Thus, a person can have multiple self-constructs, known as second tier sections, such as a social self-concept, an emotional self-concept, a physical self-concept, and an academic self-concept (Reynolds, 1988). These concepts are hierarchical starting with a global, overall self-concept that breaks down into more specific self-concept sections. Second tier self-concepts can be further
broken down into more specific subareas of self-concept. For instance, academic self-concept can be sub-categorized into sub-areas by subject matter such as English, history, math, and science. These sub-areas are affected by experiences, which can then fundamentally change one’s specific and global self-concept.

This relationship between experience and self-concept are cyclically related (Shavelson et al., 1976). Theoretically, it is hypothesized that experiences affect the forming of self-concept, which, in turn influences the way in which one acts. For instance, if a student does poorly on a math test they could then think that they are a poor student in math. This could then move up the hierarchy making them think they are a poor student overall. They then may engage in different behaviors (ex. study more, stop taking math classes) because of their newly defined self-concept. This example shows how one’s experiences in life may affect self-concept, which changes how one acts.

The first research on self-concept tested the basic validity of the self-concept as a construct to study. Shavelson et al. (1976) looked at 5 tests (Michigan State Self-Concept of Ability Scale, Self-Esteem Inventory, How I See Myself Scale, The Way I Feel About Myself, and Self Concept Inventory Scale) that were designed to measure self-concept. To investigate whether the theoretical framework of self-concept could be observed in real life, researchers analyzed correlational and correlational and experimental data from previous studies for each inventory. Results supported the notion that people have a general self-concept based on the features described by Shavelson et al. (1976). In other words, Shavelson et al. (1976) were confident that the tests were measuring the variable general self-concept. For instance, one test showed that total scores on the Way I Feel About Myself task adequately represented general self-concept. Furthermore, data supported the hierarchical
nature of self-concept with global self-concept being at the top with 2\textsuperscript{nd} tier self-concepts one step below. Factor analyses of the Self-Concept Inventory showed that different subscales combined to create a general self-concept variable, but apart would measure 2\textsuperscript{nd} tier self-concepts. Thus, research supported the notion that a general and hierarchical self-concept exists.

It is important to more clearly define academic self-concept. As mentioned, self-concept measures the definition of the self. Therefore, academic self-concept can tangentially be defined as the academic definition of the self (Shavelson et al., 1976). More specifically, academic self-concept is an individual’s judgment of his own academic abilities based on one’s experiences and beliefs in future performance in school (Gerardi 1990). Put differently, academic self-concept is a personal evaluation of one’s own academic abilities.

With regards to the 2\textsuperscript{nd} tier variables, research has also shown that academic self-concept can be differentiated from other types of self-concept (Shavelson et al., 1976; Shavelson & Bolus; 1982). Factor analyses showed that academic self-concept differed significantly from other 2\textsuperscript{nd} tier self-concepts like one’s social, emotional, and physical self-concept. Thus, academic self-concept is a unique construct.

Reynolds (1988) created the Academic Self-Concept Scale (ACSC) as a survey to measure academic self-concept and examined its relation to academic performance. Factor analyses found that the ASCS was significantly related to both general self-concept and GPA, showing a relationship between self-concept and academics. Thus, the ACSC is related to academic performance.

Muijs (1997) tested the relationship between self-concept and academic performance in a study of Belgian primary school children. 4\textsuperscript{th} and 5\textsuperscript{th} grade students from different
schools filled out a self-report measure for academic identity, while the school provided
GPAs as a measure of academic achievement. Using GPA scores, researchers created a
ranking of the pupils as a method of standardization across schools. To increase the strength
of his results, Muijs (1997) controlled for a host of possible confounding variables including
school commitment, SES, gender, and teacher interactions. Correlational data supported a
significant relationship between academic performance and academic self-concept (Muijs,
1997). Specifically, academic self-concept was positively correlated with academic
achievement. Thus, as an individual’s self-concept increased, his GPA did as well.
Correlations were significant at both time 1 and time 2. Additionally, academic achievement
was positively correlated with academic self-concept. Thus, as an individual’s GPA
increased so did his academic self-concept. These results supported the theoretical
assumption that experience and self-concept reciprocally impact each other.

Gerardi (1990) replicated these findings in a sample of minority and low SES
students. His sample consisted of freshmen college students who were of mixed race and
SES. As a measure of performance all participants provided their GPA. Subjects also filled
out the Brooksover Self-Concept Ability scale as a measure of academic self-concept. To
check other possible relationships, Gerardi (1990) also measured high school GPA and
objective measures of academic abilities (verbal and math comprehension tests). Regression
analyses determined that academic self-concept was significantly related to academic
performance (Gerardi 1990). Objective measures of academic ability and high school GPA
only correlated weakly with current academic achievement. Thus, these results indicate that
out of these variables academic self-concept was the best predictor of GPA.
These findings are important because they empirically show the importance of academic self-concept. If a student has a weak academic self-concept, then it can negatively impact his or her academic performance. Therefore, it is imperative to understand what variables affect academic self-concept in order to prevent students from developing low self-concepts.

Identity Centrality

Another important aspect of academic identity, although it has been less researched than academic self-concept, is academic identity centrality. Overall, centrality is based on the importance or significance one places on a specific identity (Ashmore, Deaux, & McLaughlin-Volpe, 2004). In other words, it is how one measures the significance of one’s different components of identity as it relates to his global identity. Specifically, centrality is broken down into two components: explicit centrality and implicit centrality. Explicit centrality, known simply as centrality in the literature, is how a person subjectively ranks his importance of his identities as it relates to his overall sense of self (Ashmore, Deaux, & McLaughlin-Volpe, 2004). In other words, someone is self-aware of the significance they are placing on an identity. On the other hand, implicit centrality, or salience, is the unconscious hierarchical ranking of one’s identities. In this case, the person does not even realize that they are subconsciously assigning levels of importance to his different identities.

To investigate the possible distinction between centrality and salience, Stryker and Serpe (1994) recruited male and female students to fill out questionnaires about their relationships to five key identities. These five categories were academic, athletic, extracurricular, friendship, and romantic. Participants were required to fill out self-report measures of both centrality and salience. The results found that, with regards to academic
identity, centrality and salience were distinct concepts that were significantly separate from each other. Due to the finding that academic centrality and academic salience are weakly correlated, we will focus on centrality, because almost all of the pertinent research regarding academic importance focuses on centrality (Bachman, 2005).

While there is a dearth of studies showing how centrality may be affected, research has investigated how centrality may affect behavioral outcomes. Stryker and Serpe (1994) investigated whether centrality was linked to behavior. For example, if one held his academic identity to be more important, would they commit more behavior that was representative of that identity? To test this theory, Stryker and Serpe (1994) had students record their behavior. Students wrote down all activities they participated in and the number of hours they committed to them. Researchers then coded each activity to each identity. For example, participating on the swim team would relate to athletic identity, while going to the movies with friends would be categorized in the friend identity. Thus, researchers were able to quantify behavior and relate it to different identities.

Correlational data showed that centrality was positively associated with behavior (Stryker & Serpe, 1994). Therefore, higher centrality was linked to increases in identity congruent behavior. For instance, if one had a high athletic centrality he was also more likely to play a recreational sport or workout. More specifically, with regards to academics, the relationship between centrality and time in roles was mixed. For women, there was a significant positive correlation in which time spent in the academic role was linked with higher levels of centrality. Put differently, those with a higher centrality were more likely to spend time doing academic related activities. While the correlation was not found in men, it is possible that this relationship still exists. Centrality was related to behavior in almost all of
the other roles for both genders and so this one test of academic identity in men may be an outlier (Stryker & Serpe, 1994).

These findings are important, because if centrality is related to behavior, then lower centrality could have a detrimental impact on performance. If someone has lower academic centrality, then they may be less likely to engage in behaviors related to being a student such as studying or finishing homework. Thus, due to this lack of studious behavior, the student’s performance will decrease, which is an extremely detrimental outcome for the future of the student.

Additionally, with regards to academic identity, previous research has shown that self-concept is influenced by centrality. Bachmann (2005) investigated the relationship between academic centrality and self-concept in an ethnically diverse sample of 2nd and 4th graders in New York City. Participants were interviewed at three different times about their academic centrality and academic self-concept. Students also filled out self-report measures on academic centrality. Academic self-concept was broken into 5 different components: performance (trying to earn good grades), learning/self improvement (trying to improve one’s own knowledge), family (doing well in school for the family), future (future goals as related to academics), and passing the grade (focused on moving to the next grade). For this experiment, we are only interested in the general interactions between centrality and self-concept. The results of this study showed that academic centrality was a part of academic self-concept. Specifically, regression analyses showed that centrality and self-concept interacted to impact different outcomes such as levels of motivation in students. In particular, higher levels of centrality interacted with the self-concept to change levels of intrinsic and extrinsic motivation. Specifically, when one had high levels of centrality and a
learning/ self-improvement academic self concept intrinsic motivation increased whereas high levels of centrality and high levels of future academic self concept led to lower levels of extrinsic motivation. Therefore, these results show that centrality and academic self-concept are linked together.

Overall, the research shows that centrality is related to both academic self-concept as well as academic behaviors. Thus, while there are individual variations, generally it can be assumed that academic centrality will have an impact on academic congruent behaviors and performance.

**Narrative Identity**

Broadly, research has shown that narrative identity is an important component of identity (McAdams & Pals, 2006; McAdams, 2001). For instance, Pennebaker and Seagal (1999) found that forming a narrative increased physical and mental health. Narrative identity is the process of creating stories that are descriptive and evaluative in nature (McLean, 2008). Narratives not only tell the listener what happened, but also provide an evaluation of how important the event is to the self (McLean, 2008; McAdams & Pals, 2006). In other words, narratives help form a story that categorizes experiences (McLean, 2008).

One of the most important parts of narrative is meaning-making, or how people relate past experiences to the self. Habermas and Bluck (2000) argue that everyone has a “life story”, which is an organization of one’s memories (Habermas & Bluck, 2000, p. 748). In narrative form, one’s complete life story is called a “life narrative” (Habermas & Bluck, 2000, p. 749). This narrative is formed through autobiographical reasoning, which is synonymous with meaning-making, in which one forms coherence between past experiences and relates these events to one’s life.
It is important to note that the amount of meaning-making has important implications for identity as illustrated by McLean and Pratt (2006). They hypothesized that higher identity achievement would be correlated with more meaning-making. To test this relationship, high school students first filled out multiple questionnaires measuring identity development. They then wrote narratives about an important transition in their life, which was coded for meaning-making. Students were tested at age 17, 19, and 23. It was found that lower levels of meaning-making were associated with lower levels of identity development (McLean & Pratt, 2006). Specifically, they found that low meaning-making was associated with low levels of exploration, or challenging one’s identity, which is a component of identity development. This is important, because the amount of meaning-making in a narrative can positively or negatively impact one’s identity.

Additionally, the content of meaning-making can also affect the self. The negativity or positivity of one’s interpretation can have serious implications for well-being. Bauer and McAdams (2004) investigated how themes of growth, a form of positive meaning-making that discusses the development of the self, in a narrative could have positive implications for the self (for a full review of the intricacies of growth please see Bauer and McAdams, 2004). They looked at four types of meaning-making including integrative and intrinsic themes, as well as, agentic growth and communal growth. Integrative themes focus on how well one assimilates new experiences into the life story whereas intrinsic themes measure the importance of extrinsic and intrinsic values on the self. Agentic growth is based on personal control one has during an experience while communal growth emphasizes relationships and intimacy.
Bauer and McAdams (2004) argued that higher levels of these types of growth would be related to a better formed identity and higher levels of well-being. To test this hypothesis, adults were recruited who were going through career or religious transitions, which are times of increased meaning-making (Cantor & Kihlstrom, 1987). They were asked to write about their experiences in 6 separate sessions (Bauer and McAdams, 2004). All participants also filled out surveys measuring identity development, impact of the transition, and well-being.

Bauer and McAdams (2004) found that higher levels of growth in the narrative would lead to more adequate levels of identity development and well-being. Those who used high levels of integrative themes had higher identity development while those that had high intrinsic themes in their narratives had high levels of both identity development and well-being. Narratives high in agentic-growth and communal-growth themes were also correlated with identity development and well-being. Hence, narrative growth overall, was linked to higher identity development and general well-being.

Redemption sequences are another type of positive narrative processing (McAdams et al., 2005). This is when a narrator changes a bad experience into a positive one. For example, a storyteller could tell about how he failed out of school. However, this failure was a blessing in disguise as he became a successful car mechanic and met his future wife at the car shop. An inherently bad experience (failing out) ended with a positive resolution (a stable job, finding love). On the other hand, contamination sequences are a negative type of narrative processing (McAdams et al, 2005). This is when a good experience changes into a bad one. An example would be a story starting out talking about the storyteller’s marriage. His marriage was happy and fulfilling. However, he then divorced his wife and has spiraled
into a depression costing his job. A positive experience (marriage) became contaminated (by
divorce, depression, loss of job).

McAdams et al. (2005) hypothesized that redemption sequences would be positively
related to well-being, while contamination sequences would be negatively related to well-
being. Adults were interviewed and asked to discuss important parts of their life (high point,
low point, etc.). These interviews were then coded for redemption and contamination
sequences. Additionally, all participants filled out surveys measuring well-being.
Correlational data showed a positive association with redemption sequences but a negative
relationship with contamination sequences. If someone had more contamination sequences
they scored lower on life satisfaction, self-esteem, and coherence, or manageability of life’s
challenges. These variables were much lower for those with more redemption sequences.

These findings showed that the content of narrative identity have important
implications to the self. Specifically, narrative growth and redemption sequences are related
to positive results while contamination sequences lead to negative outcomes. Therefore, both
content and amount of meaning-making can be correlated with one’s sense of self.

Research has shown that negative life events are an especially important component
of narrative identity (Pals, 2006). This is because difficult events may challenge one’s life
story by upsetting the continuity of their life story and narrative. For instance, if someone
believes that they have always receives good grades and he fails a test, this specific event
disputes the overall notion that he is a good student. Thus, those that have bad experiences
must question and change their narrative identity to fit these stories.

However, the difficulties surrounding incorporating negative life events into one’s
narrative identity has implications for the amount and content of meaning-making. With
regards to the amount of meaning-making, research has shown that more negative events were associated with a higher amount of meaning-making (McLean & Thorne, 2003; Pals, 2006). McLean and Thorne (2003) interviewed adolescents about issues of conflict surrounding their parents and peers. They found that conflict was positively correlated with higher levels of meaning-making. Put simply, if one had more negative events in their life, they also produced more complex meaning-making.

However negative events may lead to either positive or negative types of meaning-making (Lilgendahl, McLean, & Mansfield, 2012). Lilgendahl et al. (2012) investigated the relationship between negative events and positive/negative meaning-making by asking adults to complete an online survey discussing negative life experiences. All participants wrote a narrative about their negative events as well as filled out self-report scales about the incident. Narratives were then coded for positive meaning making (growth) and negative meaning making. Negative processing was characterized as narratives that emphasized that the event negatively changed the self or was illustrative of one's bad character. Descriptive statistics showed that negative events could invoke either positive or negative meaning-making.

These results show the importance of negative events on narrative identity. Overall, humans are likely to have a higher amount of meaning-making when incorporating negative events to their life story. However, this meaning can be a great source of positive growth or harm to one’s identity. Additionally a failure narrative will also recognize performance as a subjective category. To acknowledge the importance of negative events on narrative identity, participants of this study will provide narratives of academic struggles and failures.

It is important to note, that there has been some research linking narrative identity to an academic narrative identity. Sutin and Robins (2005) asked participants to write about
positive and negative academic experiences. They found that the affect and motivation from narratives of academic experiences were related to academic achievement. Specifically, positive affect and higher achievement motivation, or working to do well, were correlated with better academic outcomes such as getting better grades and having a better chance of graduating. These findings are important for two reasons. First, this study shows that academic identity can be operationalized in a narrative identity. Additionally, this research shows that academic narrative identity has a tangible impact on academic outcomes.

A narrative-based approach, specifically a failure narrative, is important for this research, because it is a subjective measure of performance. GPA or test scores are absolute measures of performance, which may not adequately measure poor academic performance. For a student who typically gets straight A's they may see a C grade as a terrible but a failure narrative allows the participant to identify poor accomplishment. However, a failing student may see a C as a good grade. Thus, giving participants the opportunity to define performance in their own context will control for individual differences in the participant’s viewpoint of poor performance.

Relation to SES

Overall, there is a wealth of qualitative research that shows a negative relationship between SES and academic identity. Thus, one goal of this study is to increase quantitative research investigating the relationship between SES and academic identity across the three domains of academic identity. However, the pre-existing research between SES and these academic identities varies.

Of the three components of identity, the most has been done between SES and academic self-concept. Research has tentatively shown a relationship between the two.
Muijs (1997) studied the relationship between SES and academic self-concept in his study of Belgium students. To measure SES, parental occupation and educational level data were collected. Using regressions, Muijs (1997) found that SES was significantly correlated to academic self-concept. This correlation was positive, meaning that higher SES was associated with healthier self-concept. However, this correlation was very small with SES only exerting a small affect on academic self-concept. Nevertheless, there does seem to be a relationship between SES and academic self-concept, a correlation that will be further explored in the current study. These variables are important because they can affect performance and behaviors related to academics.

To the best of this paper’s knowledge, there is no research on the effects of SES and academic centrality. However, if centrality can affect performance and behaviors that fit an identity, then it is imperative to study factors that may affect centrality. In this study, we will examine whether SES may relate to a student’s academic identity centrality.

There is limited research investigating the relationship between SES and narrative identity. One study found that the autonomy themes in narratives, or how connected one feel to others, were different in children that differed in SES (Wiley, Blager, & Rose; 1998). While this study is not fully related to this paper’s interests, it does show that SES can have an impact on narrative identity broadly. In addition, Lilgendahl and McAdams (2011) found that the life stories of lower SES adults possessed more negative events and negative growth. In their experiment, Lilgendahl and McAdams (2011) tested how the individual differences in positive processing were related to well-being. For their study, 88 adults completed surveys measuring psychosocial information (mental health, personality, well-being) and demographic information. Subjects also completed life story interviews to provide a
narrative sample. Although this main finding was not a main hypothesis, Lilgendahl and McAdams (2011) found that the narratives of low SES adults included more negative events and more negative processing. Therefore, based on this result, it is believed that SES could influence the content (negative versus positive meaning-making) in the narrative academic identity of students.

Mediators of the relationship between SES and academic identity

Based on the observations in the qualitative studies in the introduction, it is generally hypothesized that low SES will have a negative impact on academic identity. Specifically, low SES students will have more negative self-concept, lowered centrality, and poorer meaning-making. While research has not explicitly looked at the relationship between SES and academic centrality and narrative identity, we hypothesize that there are various mediators that can explain why this relationship will exist. Conceptually, this argument is grounded in stereotype threat and operationalized in items measuring belongingness, locus of control and stigma sensitivity. These mediators combine to support the argument that low SES will have a negative impact academic identity.

Stereotype Threat

Stereotype threat is based on the notion that negative stereotypes of a group can have negative impacts on academic performance (Steele, 1997). For stereotype threat to become salient the person must first identify with a group that has a negative stereotype attached to academics. For instance, Black individuals are stereotyped as having a lower intellectual ability, while women are stereotyped as lacking proficiency in math (Steele, 1997, Steele and Aronson, 1995). When this stereotype becomes activated, such as a Black person taking a test, they feel an increased anxiety and discomfort (Steele, 1997). This anxiety is based not
necessarily on a feeling of internalized inferiority, but the recognition that a stereotype could be applied. This pressure leads to worse performance, because this anxiety becomes disruptive (Steele & Aronson, 1995).

Stereotype threat can then lead to disidentification, which Steele describes as changing the self to remove the academic domain as a self-identity to protect the self (Steele, 1997). In other words, stereotype threat may lead to the stereotyped person separating academic identity as part of the self to protect his self-esteem. Steele (1997) argues that disidentification may be maladaptive because becoming less identified may affect motivation. If one saw his academic identity as less important to his self-esteem, then the incentive to do well was lost. Thus, there is a juxtaposition in which self-esteem is protected, but performance is dropped.

This theory has been supported by research (Steele & Aronson, 1995). Steele and Aronson (1995) empirically investigated stereotype threat in African Americans with regards to test performance. Black and White college students were split into a stereotype group and a control group and then given a test. The stereotype group was told that the test they were about to take was measuring intellectual ability, which should trigger the stereotype that Blacks are intellectually inferior. The control group was given instruction that did not relate to ability. Results found that Blacks significantly performed worse than Whites in the stereotype threat condition, but performed the same in the control group. Importantly, SAT scores, which measures test taking ability and verbal abilities, were controlled, increasing the validity of this relationship. These results were replicated by multiple follow-up studies by Steele and Aronson (1995). Whites, who do not have a negative academic stereotype, were not affected by the stereotype threat condition.
Stereotype threat has been generalized to other groups. For instance, Spencer, Steele, and Quinn (1998) measured stereotype threat in women with regards to mathematics. Women are often stereotyped as having worse mathematical abilities than men. To test this hypothesis women and men were split into a stereotype group and a control group and then given a math test. Results found that women in the stereotype group performed worse on a math test, while those in the control group performed at the same level. Men were not affected by the stereotype threat condition.

Importantly, stereotype threat has also been generalized to include SES. Low SES people have been commonly stereotyped as intellectually inferior (Spencer & Castano, 2007; Croziet & Claire, 1998). This stereotype has led to low SES students experiencing stereotype threat. Croziet and Claire (1998) took high and low SES participants and randomly assigned them to either the stereotype condition or the control. In the stereotype condition, test instructions indicated that this exam measured intellectual ability, while the control condition was given instructions not related to intelligence. All participants filled out a verbal task based on the GRE. Results revealed that the low SES students performed worse than the high SES students in the stereotype condition. In the control condition, however, low SES and high SES scores were the same. Spencer and Castano (2007) replicated these results finding that low SES participants in the stereotype group performed worse.

Research has also empirically verified the phenomenon of disidentification. Osborne (1997) investigated whether Blacks disidentify from their academic identity. To test this question, Osborne (1997) had White and Black students fill out questionnaires measuring academic outcomes, like GPA, and self-esteem. Overall, he found that Blacks were more likely to disidentify. In other words, the correlations between academic outcomes and self-
esteem decreased over time. Thus, Blacks began to separate the importance of their academics from their self-esteem, where academic outcomes would lose their value to the self.

It is important to qualify that stereotype threat is the precursor before disidentification (Steele, 1997; Morgan & Mehta, 2004). Further research on disidentification shows that it is a process that occurs over time from repeated exposure to stereotype threat. Therefore, while a stereotyped group, like low SES students, may have higher levels of disidentification, there will still be individual variation within the group where some low SES students may not experience disidentification. Overall, however, stereotyped groups will have lower levels of centrality when compared with non-stereotyped groups.

Thus, it is believed that stereotype threat could guide the relationship between low SES and the three academic identity concepts. With regards to academic self-concept, it is clear that stereotype threat negatively affects performance. Specifically, low SES students are more likely to perform academically due to stereotype threat. Due to the relationship between academic performance and academic self-concept it is hypothesized that low SES participants would have a lower self-concept.

Stereotype threat should also predict low SES and academic centrality through disidentification. To protect their self-esteem from their poor academic performances, low SES students would subjectively rank their academic identity as less important. In other words, the process of disidentification by low SES students would lead them to lower the centrality of their academic identity.

Finally, stereotype threat would also explain the relationship between low SES and academic narrative identity. It is hypothesized that low SES participants will have more
negative content when compared with their high SES peers. Specifically, they may have lower levels of positive meaning-making and higher levels of negative meaning-making. This hypothesis is based on the negative effects of identity that low SES students may experience. With a lower self-concept they may process their memories more negatively because they believe that they will perform worse in the future.

The relationship between stereotype threat and the amount of meaning-making for low SES students may be more nuanced. Overall, groups that are more likely to experience stereotype threat will have higher levels of disidentification than groups who do not experience stereotype threat. It is possible that, as a result of stereotype threat, those that disidentify may have lower levels of complexity in their narrative meaning-making. This is because if one is disidentified they find the identity as less important. Thus, they may spend less time questioning and thinking about events that are not as central to their sense of self. As an exploratory hypothesis, this paper will also investigate if lower SES students have lower levels of complexity in their general meaning-making of their narratives when compared with the general meaning-making of other students.

It is important to note, that almost all of the studies investigating stereotype threat have been through experimental designs. This is because stereotype threat is a process that is triggered by activation of a stereotype (Steele, 1997). Thus, based on the strong empirical evidence linking SES stereotype threat with academic performance (Spencer & Castano, 2007; Croziet & Claire, 1998) it is assumed that stereotype threat does have some impact between SES and academic identity. Instead of investigating stereotype threat directly, we look at SES stigma sensitivity, feelings of belongingness, and locus of control. These mediators are important, because they can result from chronic stereotype threat. If a student
performs worse, because of stereotype threat, he may feel like he does not belong in a rigorous academic environment. In addition, if one feels stereotyped by his socio-economic status he may feel a heightened awareness of his SES status in relation to others. Finally, if one performs worse he may feel like he does not have control over his academic abilities.

**SES Stigma Sensitivity**

It is possible that SES stigma sensitivity plays a role in explaining the relationship between SES and academic identity. Qualitative data has shown that low SES students also become very aware of their own class standing in elite, private schools (Lehmann, 2009; Ostrove & Stewart 1998). This is because some of their experiences highlight their own lack of wealth. For instance, one student noticed how he had to work during the summer to make money while his peers were able to do career developing internships (Lehmann, 2009). Another student mentioned how he could not attend parties because he did not have the necessary funds to pay (Aries & Seider, 2005).

Quantitative research has shown that low SES students are more likely to have an awareness surrounding their discrepancy in wealth. Johnson, Richeson, and Finkel (2011) investigated the relationship between SES and stigma sensitivity. They had 474 undergraduate students fill out measures of SES and SSID. Correlations found that SES was negatively associated with SSID. The higher SES one had the less sensitive they were to their privilege of those around them. As one’s socioeconomic status decreased one was more likely to feel sensitive to discrepancies in wealth.

These results are important, because Johnson et al. (2011) found that SSID was also negatively correlated with self-regulatory processes, or the ability to regulate one’s behavior. The authors argue that the conscious stress from SSID becomes a burden that hurts one’s
psychological resources becoming a chronic stressor. Specifically, using self-report data they found that those who were stressed by SSID were less able to control their own behavior. Therefore, if low SES students have higher levels of SSID they may also become burdened and also have worse self-regulatory processing.

Broadly, these findings are important because high SSID may increase the pressure in testing situations and help trigger stereotype threat. Additionally, having less self-regulation may lead to worse academic behaviors such as studying less and avoiding maladaptive behaviors such as binge drinking that may further hurt academic self-concept.

Belongingness

Belonging is a feeling that one is included, or fits in (Ostrove & Long, 2007). Therefore, a lack of belongingness is characterized as feeling alienated or excluded (Ostrove, 2003). Importantly research has found that low SES students feel a lower sense of belongingness when they attend elite universities. Ostrove and Long (2007) hypothesized that low SES would negatively correlate with belongingness. This is because low SES students may feel alienated due to their class. Surrounded by wealth, lower SES students may feel like they are not meant to be in an environment like a prestigious ivy or liberal arts school.

Research has supported this hypothesis. Ostrove and Long (2007) and Ostrove (2003) asked low SES and high SES students from elite colleges to fill out measures of social class belongingness. They both found that low SES was negatively correlated with belongingness. Furthermore, qualitative data from Ostrove (2003) showed that it was typically secondary school education, parental occupation, and wealth of home neighborhood that influenced belongingness. Rubin (2012) also supported this relationship by finding a
negative correlation between sense of belongingness and SES through a meta-analysis of 35 studies. Thus, both quantitative and qualitative data show a negative correlation between SES and sense of belongingness.

This relationship is important, because research has also found that levels of belongingness can have important effects on academics including academic adjustment and academic preparedness (Ostrove and Long, 2007). There has not been much research, however, connecting belongingness to academic identity. One study found that a lack of belongingness might also negatively impact academic self-concept (Ostrove, Stewart, & Curtin, 2011). Graduate students filled out surveys measuring academic self-concept, SES, and belonging. Results indicated that those with lower SES were more likely to have a lower sense of belonging. This lack of belongingness was positively associated with lower levels of academic self-concept. Thus belongingness mediates the relationship between low SES and academic self-concept.

This literature suggests that belongingness may mediate the relationship between SES and academic self-concept. Thus, if academic self-concept decreases so will academic performance, which may trigger academic stereotype threat and disidentification. In addition, belongingness may also mediate negative meaning-making in academic narrative identity. If a low SES student struggles academically, this hardship may confirm the belief that low SES students do not belong in an elite academic context. Hence, belongingness may be one factor that would explain the relationship between lower SES and lower academic identity.

Locus of Control
Locus of control quantifies how much agency a person has in a situation (Coleman & DeLeire, 2003). In other words, locus of control is how much a person believes his behavior affects his consequences. If someone thinks that his efforts will significantly affect his outcomes they have an internal locus of control. However, if someone feels like his results are based on outside factors they have an external locus of control.

Previous research has linked low SES to having a lower internal locus of control. Gurin, Gurin, and Morrison (1978) argued that those in low SES situations would have lower levels of internal locus of control because external factors (low income, poor healthcare) would limit the agency they had in their life. They found that higher income was associated with a higher level of general internal locus of control.

This distinction is important because having an internal locus of control has been associated with more positive academic behaviors and outcomes. For instance, research has shown that those with a higher locus of control have higher levels of academic achievement and academic motivation (Tella et al., 2009; Martinez, 2003).

Tella et al. (2009) had students fill out scales measuring locus of control and academic achievement (Tella et al., 2009; Coleman & DeLeire, 2003). Their results indicated that those with an internal locus of control had higher levels of academic achievement.

Additionally, Gurin, Gurin, and Morrison (1978) found that internal locus of control was strongly correlated with self-efficacy, which is synonymous with self-concept (Tella et al., 2009; Coleman & DeLeire, 2003). Gurin et al. (1978) had samples of low and high SES participants fill out scales measuring self-efficacy, SES, and locus of control. They found
that locus of control strongly correlated with self-efficacy, where having an internal locus of control led to higher levels of self-concept.

Thus, while there has been no research explicitly linking locus of control to academic identity, it is understandable why this relationship exists. If low SES students have lower levels of internal locus of control, they feel like they cannot perform as well (Tella, Tella, & Adeniyi, 2009). Thus, a student with a low internal locus of control would lose motivation leading to fewer academic behaviors (i.e., studying) and lower academic performance. These worsened academic outcomes would heighten the probability of confirming stereotype threat and disidentifcation leading to lower academic identity.

Overall, the positive relationship between low SES and low academic identity can be explained conceptually by stereotype threat. Stereotype threat leads to worse performance that would then affect how one reacts to the experience of poor performance. Specifically, it is believed that low SES students will have a lower academic self-concept. The subsequent disidentification from stereotype threat with an academic identity would lower centrality. The content of the narratives of low SES students would become more negative. However, stereotype threat is not the only explanation for this relationship. Sense of belongingness, SES stigma sensitivity, and locus of control may also account for low academic identity in low SES students.

*Identity Exploration as a Moderator*

This hypothesis has to be further nuanced. It would be overly simplistic to say that all low SES students have lower academic identity; low SES is not a trait that automatically guarantees low academic identity. In fact, Ingram (2011) argues that low SES students can
overcome their identity as working class and succeed in the academic field. Thus, it is important to understand why there may be individual differences within low SES students.

One way this relationship may be moderated is through exploration, which is the process of examining identity (Berman et al. 2001). In other words, if someone is exploring one’s identity he is questioning his sense of self, or who he thinks he is. Exploration is the one of the two key processes of identity formation in which one considers committing to potential identity domains (Marcia 1966). The second process is commitment, which is when someone chooses a certain identity domain, such as one’s occupation or one’s academic career, as central to the self. Marcia (1966) has four identity statuses that highlight the interactions between commitment and exploration: identity diffusion, identity foreclosure, identity moratorium, and identity achievement. Identity diffusion is when someone has not committed to an identity and has not explored potential identity domains. This leads to the person lacking an internal sense of self, forcing them to look externally to define themselves (Kroger & Marcia, 2011). Foreclosure is when someone has made an identity commitment, but has not explored alternative identity domains. People in foreclosure struggle to consider alternatives to their values and, thus, may struggle internally as they try to cope with their inflexibility. The opposite is moratorium in which one is exploring identity domains, but has not made a commitment. Moratorium is known as the crisis stage in which one is actively trying to define oneself, but have not found a stable sense of self. Finally, identity achievement is when someone has explore potential identity domains and committed to one. Achievers have taken the time to consider their identity and have settled on one that makes them comfortable. Overall, identity achievement is the most
favorable identity status as it has been associated with positive outcomes such as higher levels of self-esteem (Taylor & Oskay, 1995).

It has been found that these with minority statuses, such as being an ethnic minority or a sexual identity minority, actually question or explore their identity more because their minority identity goes against the typical life trajectory (Konik & Stewart, 2004; Ellis, 2000). This is important, because exploration can lead to positive outcomes such as having a higher sense of identity achievement.

For instance, Ellis (2004) found that lesbians were more likely to have explored their identity and also have higher levels of sexual identity achievement than people who identify as heterosexual. This exploration can be explained because lesbians go against what society considers normative. Thus, they have to genuinely explore their sexuality to come to an acceptance. These results were replicated as well as generalized to ethnic minorities (Konik & Stewart, 2004; Saint Louis, 1998).

This process of exploration has also been described in individuals with low SES. Aries and Seider (2005) asked low and high SES participants to fill out surveys measuring identity achievement. Uniquely, they split participants into four groups: high SES and low SES from a state college, and high SES and low SES from a private, elite school. The difference in schools was important, because the socio-economic discrepancy in the private school was much more pronounced than in the state school. Results indicated that the low SES students from the little Ivy had the most exploration out of all the groups.

Thus, these results support the notion that having a minority status may lead to more exploration, because of the unique challenges that individuals from an out-group (low SES, racial minorities, homosexuals) face. This is important, because higher levels of exploration
might buffer the negative effects of the minority status leading to more positive outcomes such as higher levels of identity. Therefore, this theory can be generalized to this study. As shown, low SES students may have unique challenges (stereotype threat, SES stigma, etc.) that they have to cope with. These struggles may trigger exploration in which low SES students question their identity. These higher levels of exploration may lead to higher levels of academic identity development in some low SES students leading to more positive academic identity outcomes.

**Current Research**

This research concerns the relationship between SES and academic identity. At the broadest level, it is believed that low SES will be correlated with lower academic identity in the setting of elite, private colleges. Specifically, low SES students will have more negative academic self-concept, lower levels of centrality, and more negative meaning-making. If they become disidentified, they will also have lower academic centrality, and lower amounts of meaning-making. Stereotype threat will be the main mediator of these relationships, but sense of belongingness (low), SES stigma sensitivity (high), and locus of control (external) will also account for the relationship between low SES and low academic identity. Finally, it is believed that individual differences within the low SES group will be moderated by exploration. In sum this study presents the following hypotheses:

1) Low SES will be correlated with low academic identity

1a) Low SES will be correlated with lower academic self-concept.

1b) Low SES will be correlated with lower levels of academic centrality

1c) Negative meaning-making for academic narrative identity will be higher for low SES participants, but positive meaning-making of academic narrative identity will be lower for low SEs participants
1d) As an exploratory hypothesis, it is believed that the amount of general meaning-making will be less for low SES students.

2) The relationship between SES and academic identity will be mediated by belongingness, SES stigma sensitivity, and locus of control.

3) Individual differences on academic identity within low SES participants will partly be explained by exploration, which will moderate these relationships such that higher exploration will lessen the association between mediators and academic identity.

**Methods**

**Participants**

This study used 105 college students from Haverford College, an elite liberal arts school. Students were recruited via online message boards, emails, Facebook, and Introductory Psychology classes. In exchange for their participation, students were paid $10 or received introduction to psychology credit. Students’ names were not associated with their responses to protect their anonymity.

**Demographic Statistics**

Overall 105 subjects participated with 96 finishing the full survey. Out of the 105, 29.5% were male and 70.2% were female. 24.8% were freshmen, 21.9% sophomores, 25.7% juniors, and 27.6 seniors. The majority of respondents (78.1%) were white, while 4.8% were Asian, 4.8% were black, and 5.7 were Hispanic. GPAs were mixed with 30.5% in the 3.7 to 4.0 range, 34.3% with a 3.5 to 3.69, 20% with a 3.3 to 3.49, 9.5% with a 3.0 to 3.29, 4.8% with a 2.7 to 2.99, and 1% with a 2.0 to 2.69. With regards to parental income, 14.4% reported an income less than $50,000, 38.5% reported an income between $50,001 and $120,000, and 47.2% reported an income above $120,001. The highest level of education obtained by participants’ mothers was typically Masters degrees (35.6%) with 15.4% obtaining a PhD, JD, or MD. 28.8% stopped going to school after receiving their Bachelors
degree, while 8.7% attended college, but did not graduate. Finally, 7.7% received a high school degree and 3.8% attended high school but not graduate. 33.7% fathers received a PhD, JD, or MD as their highest level of education, while 32.7% earned a Masters degree. In addition, 13.5% gained a Bachelor’s degree, while 10.6% went to college, but did not graduate. 7.7% stopped their education after graduating from high school and 1.9% did not graduate from high school.

Procedure

All participants completed surveys and narrative responses online through Qualtrics. First, participants signed an informed consent. After they filled out measures of SES, academic self-concept, academic centrality, stereotype threat, SES stigma, locus of control, and exploration. They then wrote about their academic narrative. After they filled out basic demographic information as well as provided their name and email for the lotteries/credit.

Measures

Socioeconomic Status was measured with both objective (facts) and subjective measures (how one perceives their SES). Our objective measure included parental income, educational attainment of parents, and financial aid status. Subjective SES was measured by the MacArthur Scale of Subjective Social Status (Yip, 2003). Participants were given a ladder and asked which rung ranked their relative socio-economic status (higher rungs equaled higher SES at school; lower rungs equaled lower SES at school).

Academic Self Concept was measured by the Academic Self-Concept Scale. The Academic Self-Concept Scale measures general academic self-concept on a four point Likert scale (1 disagree; 4 agree) (Reynolds, 1981). It consists of 40 questions with higher scores
indicating higher academic self-concepts. A sample question measuring self-concept is “no matter how hard I try I do not do well in school”. Reliability was high at .95.

Centrality was measured by the Relative Psychological Centrality Measure created by Stryker and Serpe (1994; p. 21), Absolute Academic Centrality question, and the Disengagement scale. Stryker and Serpe (1994) created a measure of centrality, which they left unnamed (we coined it the relative centrality scale). This survey asked participants to rate different identities (academic, extracurricular) against each other. Scores can range from 1 (least important) to 6 (most important). The Absolute Academic Centrality question is one item that asks what the importance of academics is in the respondent’s life. Scores range from 1 (least important) to 7 (most important) (Sharabi & Harpaz, 2010). The Disengagement scale is a 12 question survey that measures disidentification with one’s academic identity (Major et al. 1998). All questions, such as “doing well on intellectual tasks is very important to me” were answered using a 7 point Likert scale (1 strongly disagree; 7 strongly agree) with a Cronbach’s Alpha of .64.

Academic Narrative Identity and Coding. Participants responded to the following prompt asking them to remember and write about an academic failure experience. The prompt read:

Please describe a memory from your time at Haverford in which you experienced an academic hardship or failure (when you performed under expectations or received an undesirable academic outcome). The memory should be relevant to your identity as a student and reveal something about how you feel about yourself in the academic domain. It should be a personally meaningful memory that you have thought about many times. In describing your memory, please share what happened, how you thought and felt about it at the time, and the significance of the memory to you now as you look back on it.

These responses were broadly coded for meaning-making or how one integrates experiences into their life-story. Specifically this paper adapted McLean & Pratt’s (2006) coding system
for meaning-making. General meaning-making refers to general statements of representing broader meaning or interpretation about self or life. For general meaning-making, we were focused on the sophistication of meaning-making, not whether it was explicitly positive or negative (Lilgendahl, n.d.).

Complexity of the general meaning-making was ranked on a one to three scale. One indicates no meaning reported, while a two means meaning-making is present, but is more like a specific lesson (I learned I should study harder when I take this test) than a broad insight (Lilgendahl, n.d.). A three indicates that meaning-making is present and it contains broad insights and is well-elaborated (e.g. I learned a lot about my self from this experience, including what my strengths and weaknesses are as a student and the value of following through no matter how hard it gets) (Lilgendahl, n.d.).

Positive versus negative meaning-making was measured using the coding system adapted by Lilgendahl, McLean, and Mansfield (2012), Lilgendahl et al. (2012), and McAdams et al. (2001). Positive meaning-making was defined as interpretations that are positive from the perspective of the narrator (e.g. I always now feel a sense of pride for making the most of a difficult situation) or from an outside perspective (e.g. I learned that it is important to stay on top of things during the semester) (Lilgendahl, n.d.).

Positive meaning-making was rated on a one to three scale. A one indicates that no positive meaning-making is present. A two indicates that positive meaning-making is present, but not well developed (Lilgendahl, n.d.). A three means that positive meaning-making is a dominant theme of the narrative and clearly elaborated (Lilgendahl, n.d.). Negative meaning-making was defined as interpretations that are negative from the perspective of the narrator (e.g. since then, I have always doubted myself when writing
papers) or from an outside perspective (e.g. since then, I don’t even bother trying anymore, because it doesn’t matter (Lilgendahl, n.d.).

Negative meaning-making was coded on a one to three scale. One indicates no negative meaning-making is present. A two indicates some negative meaning is present, but it is not well developed (Lilgendahl, n.d.). A three means that negative meaning-making is well elaborated and dominant (Lilgendahl, n.d.).

Before full narrative coding was performed, researchers picked ten narratives to practice coding. These ten were selected, because they ranged in levels of general, positive, and negative meaning-making. Researchers coded the ten narratives separately and then compared their ratings for each narrative. For any discrepancies, researchers discussed the narrative and reached a consensus for the rating.

For the narratives, reliabilities were performed to test inter-rater reliability. Because there were three coders, we will only report the range of reliabilities (worst to best). For negative meaning-making the alpha ranged from .38 to .59, whereas for positive meaning-making the alpha range was from .76 to .78. While the inter-rater reliability was low, we decided to keep negative meaning-making as an analysis, because one of our main hypotheses was linked with negative meaning-making. To create usable scores for positive and negative meaning-making the three coders fixed all discrepancies for each narrative to render one score. Finally, because the inter-rater reliability of evaluative sequencing of contamination and redemption sequences ($\alpha$ from .34 to .49) and general meaning-making ($\alpha$ from .38 to .60) was so low they were dropped from the analyses. Therefore, Hypothesis 1d was dropped from the analyses.
During narrative coding, we noticed that many of the narratives displayed distinct themes in their positive and negative meaning-making. Thus, researchers decided to code for positive and negative themes in the narrative to explore whether the theme of the narratives were significantly related to any of the variables. The full descriptions and inter-rater reliabilities for the themes are presented in Appendix 1.

*Belongingness* was measured using the Student Adaptation to College Questionnaire and the Sense of Belonging Scale. The Student Adaptation to College Questionnaire (SACQ) has a subscale labeled Social Adjustment that consists of 8 questions pertaining to belongingness (Baker & Siryk, 1999). All questions such as “I feel that I fit in well as part of the college environment” were answered on a 9 point Likert scale (1 applies very close to me; 9 doesn’t apply to me at all). Cronbach’s Alpha was calculated at .88. Additionally, a question that Ostrove and Long (2007) added to the SACQ was used. This question asked, “Overall to what extend do you feel you belong at [College name]”, Participants answered on a 5 point Likert scale (1 not at all; 5 a great deal). The Sense of Belonging Scale is a 3 item scale measuring belongingness (Ostrove et al., 2011). Specifically this survey is a semantic differential assessment asking about the climate of the college. One question was answered on a scale ranging from welcoming/alienating, another respectful/disrespectful, and the third down to earth/snobbish. All questions were answered on a 5 point Likert Scale (ex. 1 welcoming; 5 alienating).

*SES Stigma* was measured through the Sensitivity to SES-Based Identity Discrepancy (SSID) (Johnson et al., 2011). This 6 item scale measures the discrepancy one sees with their SES compared with their peers. All questions, such as “my family background is similar to
that of the typical [college] student” will be answered on a 7 point Likert scale (1 strongly disagree; 7 strongly agree) with a Cronbach’s Alpha of .86.

*Locus of Control* was measured using Trice’s academic Locus of Control (Tella et al., 2009). This measure asks participants to answer true or false to questions such as “college grades most often reflected the effort you put into class”. Scoring was out of 28 with higher scores equaling higher levels of external locus of control and lower levels relating to internal locus of control. Cronbach’s Alpha stood at .68

*Exploration* was measured using the Ego Identity Process Questionnaire. The Ego Identity Process Questionnaire measures exploration on a 6 point Likert scale (6 strongly agree; 1 strongly disagree) (Balistreri, Busch-Rossnagel, & Geisinger; 1995). For every item, researchers reworded the item to reflect academic identity exploration instead of general identity exploration. Specifically, researchers changed the wording to include topics such as choice of major, study habits, academic trajectory, and professor/student relationships. One statement from the original survey said, “I have definitely decided on the occupation I want to pursue”. Researchers adapted the question to read, “I have definitely decided on the major I want to pursue”. Cronbach’s Alpha was calculated at .87.

**Intercorrelations**

Bivariate intercorrelations were calculated to see commonalities between the different SES variables. As shown in Table 1, it was found that many of the SES variables were significantly related to each other. Due to the high associations between the SES variables, z-scores were calculated to create two composite variables. Objective SES composite includes parent’s income, mother’s education, and father’s education. SES composite
includes parent’s income, mother’s education, father’s education, and the subjective SES variable.

*Insert Table 1 Here*

In addition, intercorrelations were calculated to see the commonalities among the mediator items. Results found that three belongingness variables, the Social Adjustment Scale (SACQ), Sense of Belonging Scale, and Single Item Scale were all highly intercorrelated with each other. The SACQ was positively associated with both the Sense of Belonging Scale ($r = .40, p > .01$) and the Single Item Scale ($r = .59, p > .01$). The correlation between the Sense of Belonging Scale and the Single Item Scale was also significantly positive ($r = .66, p > .05$). Therefore, Z-scores were calculated to create a composite belongingness scale using these three variables.

Finally, as shown in Table 2, many of the academic identity variables were not related or only weakly correlated at best. Due to the lack of strong intercorrelations between the academic identity variables, we decided to look at all of the academic identity variables individually instead of using composite variables.

**Results**

*Correlations among key study variables*

To test the relationship between the SES variables, mediator variables, and academic identity variables, bivariate correlations were calculated. First, to test Hypothesis 1, correlations between the SES variables and academic identity variables were performed.

*Insert Table 3 Here*

Correlational analyses supported Hypothesis 1a showing that academic self-concept was significantly related to SES composite ($r = .23, p > .05$), mother’s education ($r = .25,$
p>.05), and subjective SES (r = .26, p>.01). For Hypothesis 1b, only the Disengagement Scale was significantly correlated with SES. The Disengagement Scale was negatively correlated with parent’s income (r = -.20, p>.05) and subjective SES (r = -.21, p>.05). It is important to note that, unlike the other centrality variables, a higher Disengagement Scale score signifies lower levels of centrality. Therefore this negative correlation between the Disengagement Scale and SES fits the hypothesis. Results also showed that Hypothesis 1c was not supported. As shown in Table 3, positive and negative meaning-making were not significantly associated with any SES variable.

To test Hypothesis 2, correlations were performed to investigate the relationship between the SES variables and the mediators: SSID, belongingness, and locus of control variables. As shown in Table 4, while locus of control was not significantly related to any SES variable, SSID had a significant negative association with all of the SES variables (r = -.42 to -.58, p>.01). Furthermore, the belonging composite scale was significantly associated with objective SES composite (r = .26, p>.01), SES composite (r = .30, p>.01) father’s education (.30, p>.01), and the subjective SES variable (r = .32, p>.01).

Insert Table 4 Here

Next, correlations were performed to investigate the relationship between the mediators and the academic identity variables. As reported in Table 5, it was found that academic self-concept was significantly related to SSID (r = -.32, p>.01), belonging composite (r = .31, p>.01), and locus of control (.68, p>.01). For centrality, absolute academic centrality was only correlated with locus of control (.30, p>.01) while relative academic centrality was correlated with SSID (r = .35, p>.01) and locus of control (r = .22,
Positive meaning-making was correlated with belongingness ($r = 27, p > .01$), but negative meaning-making was not significantly correlated with any mediators.

**Insert Table 5 Here**

It is important to acknowledge that GPA and race were significantly correlated with SES, academic identity, and mediator variables. For race, participants indicated the ethnic group that they felt represented them (African-American, Caucasian, Asian, Native American, Latino, or multiracial). To increase the sample size for our analyses, we split respondents into two categories: white or minority. By redefining our race category, we consolidated our sample size, which would lead to a more rigorous analysis then looking at each racial category independently. As shown in Table 6, minority status was significantly correlated with SES composite ($r = .46, p > .01$) as well as academic self-concept ($r = .21, P > .05$). GPA was also negatively correlated with SSID ($r = -.38, p > .01$). GPA was correlated with SES composite ($r = .40, p > .01$) and academic self-concept (.42, p > .01). It was also correlated with locus of control ($r = .30, p > .01$), but negatively correlated with SSID ($r = -.33, p > .01$). Thus, it is clear that GPA and race are intricately tied with one’s SES and academic identity as well as the potential mediators of this relationship. As we moved forward with meditational analyses, we controlled for GPA and race to understand the impact that GPA and race have on the relationship between SES and academic identity.

**Insert Table 6 Here**

**Mediation Analyses**

From the correlational analyses, it was clear that there were significant sets of correlations across SES, academic identity and the mediators. Academic self-concept correlated with SES and two of the mediators: SSID and belonging. SSID and belonging
also correlated with SES. Regressions were performed to test the potential mediation effects of belongingness and SSID on the relationship between SES and academic self-concept.

With regards to the belongingness regression, SES was entered in step one and belongingness entered in step two. At step one the predictor variable, SES composite, was significantly related to academic self-concept ($\beta = .23, p > .05$), but was reduced to non-significance in step two ($\beta = .05, p = .18$). Step two indicated that belongingness significantly mediated the relationship between SES and academic self-concept ($\beta = .27, p > .01$). A sobel test demonstrated that there was a significant mediation effect for belongingness ($Z = 2.02, p > .05$).

For the SSID regression, SES was entered in step one and SSID entered in step two. With regards to SSID, during step one SES was a significant predictor of academic self-concept ($R^2 = .05, \beta = .23, p > .05$), but was reduced to non-significance in step 2 ($\beta = -.01, p = 1.00$). Step two indicated that the relationship between SES and academic self-concept was also mediated by SSID ($R^2 = .11, \beta = -.33, p > .05$). The sobel test demonstrated that there was a significant mediation effect for SSID ($Z = 2.27, p > .05$).

Even though the regressions were significant, it was noted that GPA and race were significantly correlated with SES, academic self-concept, and SSID. Thus, because GPA and race were significantly related to almost all of the components of the regressions, the two separate regressions were run again with GPA and race included. The first featured SES composite, GPA and race in step one and belongingness in step two. It was found that at step two SES composite was not significant ($\beta = -.07, p = .53$), but that GPA ($\beta = -.41, p > .01$) and belongingness were significant ($\beta = -.28, p > .05$). Thus, even when controlling for race and
GPA, belongingness still significantly predicted the relationship between SES and academic self-concept.

The second regression featured GPA, race, and SES composite in step one and SSID in step two. At step two SES composite was not significant ($\beta = -.15$, $p = .28$), but GPA ($\beta = -.37$, $p > .01$) and SSID ($\beta = -.26$, $p > .05$) were statistically significant. Therefore, when controlling for race and GPA, SSID also remained a significant predictor of the relationship between SES and academic self-concept. Thus, both belongingness and SSID significantly mediated the relationship between SES and academic self-concept when controlling for GPA and race.

*Moderation*

For Hypothesis 3, we investigated whether the mediation relationship between SES and academic self-concept was moderated by exploration using moderated multiple regressions (Aiken & West, 1991). To begin we first tested whether exploration moderated the relationship between SES and academic self-concept. To accomplish this task, Z-scores were created for SES composite and exploration. Furthermore, SES composite and exploration was multiplied to create a Z-score representing the interaction between SES composite and exploration. Z-scores for SES composite and exploration were entered into step one, while the interaction between exploration and SES was entered in step two. Results indicated that SES composite was a significant predictor of academic self-concept ($\beta = .21$, $p > .05$), but that exploration ($\beta = .02$, $p = .27$) and the interaction between SES and exploration ($\beta = .02$, $p = .87$) were not significant. Since there was no significant moderation effect between SES and academic identity, it was not possible to test for a moderated...
mediation effect. Thus, our hypothesis that exploration would moderate the mediation relationship between SES and academic identity was not supported.

As more exploratory analyses, we then tested whether any of the relationships between the mediators and academic identity were moderated. To accomplish this task, moderated multiple regressions were performed (Aiken & West, 1991). Z-scores were created for the mediator variables and academic identity variables. From the analyses, a significant moderation was found between belongingness and academic self-concept. Z-scores for belonging composite and exploration were entered into step one with the interaction between the two added in step two. In the second step, it was found that belonging composite ($\beta = .37$, $p > .01$) was a significant predictor of academic self-concept and exploration was a marginally significant predictor ($\beta = -.18$, $p = .06$). In addition, the interaction effect of belonging and exploration was also significant ($\beta = .20$, $p > .05$).

*Insert Figure 1 Here*

In order to further examine the nature of this interaction effect, we used Aiken and West’s (1991) procedure for graphing moderator effects by solving the regression equation for academic self-concept for scores positive and negative one standard deviation on both belongingness and exploration. The graphing procedure showed that high exploration and high belonging led to the highest levels of academic self-concept, but those with low belonging and high exploration held the lowest levels of academic self-concept. Those with low belonging and low exploration had average levels of self-concept as those with high belonging and low exploration having the second highest levels of self-concept. Thus, this finding is significant, because it is the opposite of the general trend that we expected. Higher
levels of exploration actually led to more negative academic identity instead of a stronger academic identity.

*Insert Figure 2 Here*

**Exploratory Analyses: Narrative Themes**

During the coding process for the narratives, researchers noticed that many of the narratives displayed distinct narrative themes. Thus, we coded each narrative for a range of positive and negative themes outlined in Appendix 1. We then looked to see whether the themes correlated with any of our SES variables or mediator variables. Results indicated that some of the narrative themes were marginally related to some of the SES variables. Negative theme B, labeled “disengagement theme”, was marginally negatively correlated with SES composite ($r = -.19, p = .057$), subjective SES ($r = -.19, p = .056$), objective SES composite ($r = -.17, =.09$), and father’s education ($r = -.18, p = .09$). Positive theme B, named “self-realization theme” was marginally significant with parental income ($r = .17, p = .09$). In addition, negative theme A, named “negative self-evaluation theme”, was also marginally negatively associated with the subjective SES variable ($r = -.20, p = .051$).

With regards to the mediators, the disengagement theme was significantly associated with the belongingness composite score ($r = -.21, p > .05$) and negatively correlated with SSID ($r = .23, p > .05$). It was also marginally significant with locus of control ($r = -.18, p = .09$). The social adjustment subscale was marginally positively correlated with positive theme E, labeled “affirmation theme” ($r = .19, p = .065$) and marginally negatively correlated with the negative self-evaluation theme ($r = .19, p = .065$).

Regression analyses were performed to see whether exploration moderated any of the relationships between the mediator variables and the themes. It was found that the
relationship between SSID and the disengagement theme was moderated by exploration. For this regression, SSID and exploration were entered into the step one with the interaction between the two added in step two. In the second step it was found that the SSID variable ($\beta = .16, p=.09$) was a marginally significant predictor of the disengagement theme, but exploration was not ($\beta = .13, p=.19$). In addition, the interaction between SSID and exploration was significant ($\beta = .42, p>.01$).

*Insert Figure 3 Here*

Therefore, we used Aiken and West’s (1991) procedure for graphing moderator effects by solving the regression equation for the disengagement theme for scores positive and negative one standard deviation on both SSID and exploration. The graphing procedure showed that those with high exploration and high SSID had the highest levels of the disengagement theme, but those with high SSID and low exploration had the lowest levels of the disengagement theme. Those with low SSID and low exploration had the second highest levels of the disengagement theme with those with high SSID and low exploration having the second lowest levels of the disengagement theme. Thus, this regression shows that high exploration also led to negative narrative outcomes

*Insert Figure 4 Here*

**Discussion**

This study had multiple hypotheses. First it hypothesized that low SES would be associated with negative academic identity, specifically, lower academic self-concept, higher levels of negative academic narrative identity, lower levels of positive academic narrative identity, and lower levels of centrality. In addition, it was believed that these relationships would be mediated by belongingness, SSID, and locus of control. Finally, we hypothesized
that exploration would help moderate these relationships with higher levels of exploration leading to higher levels of academic well-being.

The results partly supported our hypothesis that low SES was related to low academic identity. Lower SES was associated with lower levels of academic self-concept. Importantly, the correlations between low SES and low academic self-concept were the strongest out of all of the associations between the academic identity and SES variables. These results extend the results of Gerardi (1990) and Muijs (1997) who found lower SES was linked to lower performance, and performance was linked to lower academic self-concept. Our results are important because they demonstrate a direct association between SES and academic self-concept that was lacking in the previous literature.

With regards to centrality (Hypothesis 1b), our results were mixed. The Disengagement scale was significantly negatively related to SES in which lower levels of centrality were linked to lower levels of SES. However, the absolute and relative centrality measures were not significantly related to SES. Thus, while we did find an association between centrality and SES, it must be interpreted cautiously. The results from Stryker and Serpe (1994) can help explain the mixed relationship between SES and centrality. They found that academic centrality was linked with time in their role. Since students at rigorous colleges spend a large amount of time in their student role, they may consciously rank their academic centrality higher regardless of performance. Thus, it may be that SES has a more significant impact on one’s academic salience, or unconscious hierarchical ranking of the importance of identity. Future research should examine whether low SES students have a lower academic salience.
Nevertheless, the Disengagement scale was significantly related to SES. In addition, the Disengagement theme was marginally significant with low SES, which again supports the notion that low SES students have lower levels of academic centrality than high SES students. These significant relationships could partly be explained due to the nature of the measures. The Disengagement scale and failure narrative prompt both prime subjects to think about academic failure whereas the Absolute Centrality and Relative Centrality scales only ask about the importance of academics in one’s life. In particular, the Disengagement scale asks questions specifically about standardized tests and academic performance. The narrative prompt asks participants to think about an academic failure before they begin writing. Thus, it may be possible that priming participants with specific examples of their academic failures may trigger different reactions in different groups. Specifically, when low SES students think about academic failure, their sense of stereotype threat may become triggered. Feelings of stereotype threat may lead them to disidentify from their academic identity, leading to lower levels of academic centrality. Low academic centrality may become affected by these questionnaires in ways specific to low SES students.

Turning to the narratives, low SES was not significantly correlated with higher levels of negative meaning-making or lower levels of positive meaning-making, but was marginally significant with the self-realization theme and marginally negatively correlated with the disengagement theme. Thus, those with high SES were more likely to display narrative themes realizing their academic future (i.e. realizing that academic performance is more important than they thought) and less likely to mention themes that disengage from their academics (i.e. losing interest in academics). While these results were only marginally significant, the narrative themes may signify weaknesses with this hypothesis. It may be that
the general categories of positive and negative themes are too broad to capture the relationship between SES and narrative identity. In other words, it may be that low SES students have more negativity in their narratives and less positivity, but this meaning-making may manifest itself in particular ways. Thus, the general categories of positive and negative meaning-making may have been too simplistic to capture the nuances of the academic narratives.

In addition, this study only asked for one academic narrative. Overall, one’s narrative identity is formed through integrating multiple life experiences into one’s sense of self (Pasupathi, Mansour, & Brubaker, 2007; Habermas & Bluck, 2000). Therefore, only asking for one story may only provide a partial sense of the depth and emotionality of someone’s meaning-making. In other words, one memory may be an unreliable measure of meaning-making.

For Hypothesis 2, two out of the three mediators were found to significantly mediate the relationship between SES and academic identity. Correlational analyses showed a significant three-way correlation between SES, belongingness, and academic self-concept. A multiple regression showed that belongingness was a significant predictor of this relationship even when controlling for GPA and race. This research is important, because it ties much of the previous research together. Previous research has shown that SES and belongingness are significantly related; those with a higher SES are more likely to feel higher levels of belongingness at elite academic universities (Ostrove & Long, 2007). In addition, other research has shown an association between belongingness and academic self-concept (Ostrove et al., 2011). Thus, our research extends these findings by showing that
belongingness is a significant predictor of the relationship between SES and academic self-concept.

This finding can be contextualized in a number of different ways. First, research has shown that feeling alienated is a stressful experience that can impact one’s psychological and physical well-being (Hale, Hannum & Espelage, 2005; Ostrove & Long, 2007). Research has also shown that stress is correlated with negative academic performance (Macan, Shahani, Dipboye, Phillips, 1990; Stewart, Lam, Betson, Wong, & Wong, 1999). Therefore, since low SES students are more likely to feel alienated, it is possible that they also have higher stress levels. This extra stress may lead to decreases in academic performance, which would lead to decreases in academic self-concept.

In addition, Ostrove and Long (2007) argued that sense of belongingness affected academic behaviors that would influence performance. Those that do not belong may be more reticent to speak in class or to seek tutoring help. Thus if low SES students feel like they do not belong, they may be less likely to use academic resources or engage with professors and other students outside of class. The underutilization of these resources may also negatively affect performance leading to a lower academic self-concept.

It is also possible that low belongingness triggers stereotype threat. A sense of alienation can become so powerful that students begin to demarcate groups along lines of social acceptance like “insiders versus outsiders” (Ostrove, 2003, p. 782). Thus, because there is a relationship between performance and belongingness, a stereotype could develop that those who do not belong are less academically successful. For instance, one may begin to believe that teachers and administrators favor popular students, putting alienated students at a disadvantage. This belongingness stereotype threat may lead to performance anxiety,
which would decrease levels of performance in alienated students. Thus, feeling alienated could become a crippling academic stereotype leading to poorer performance and worse academic self-concept.

There was also a significant three-way correlation between SES, SSID, and academic self-concept in which those with higher levels of SSID had lower levels of SES and lower levels of academic self-concept. A multiple regression showed that SSID was a significant predictor of academic self-concept, even when we controlled for GPA. These findings are important, because they support qualitative research that lower SES students are extremely aware of their class (Lehmann, 2009). In addition, these findings also extend the previous literature by showing that SSID has an impact on academic identity.

These results could be explained based on the association between SSID and self regulatory processing, as evidenced by eating more candy. One’s social class identity becomes extremely burdensome when one is sensitive to the discrepancies in wealth between one’s wealth and his peers. This chronic stress lowers their self-regulatory processing. Thus, if low SES students have higher levels of SSID they may have worse self-regulatory processing. This may lead to low SES students engaging in more unhealthy behavior, such as binge drinking, that could negatively affect academic performance. Lower academic performance may negatively influence their academic self-concept.

Academic locus of control was not significantly related to any SES variable but it was correlated with many of the academic identity variables. Specifically, an internal academic locus of control was significantly related to academic self-concept, absolute centrality, and relative centrality. In addition, an external academic locus of control was negatively related to negative meaning-making in the narrative. The significant relationship between academic
locus of control and academic self-concept extended the results found by Gurin et al. (1978), who found a significant relationship between internal locus of control and self-efficacy. In addition, our significant result between centrality and internal locus of control can be explained by research from Tella et al. (2009), who found that locus of control was linked with higher levels of academic achievement. By performing better, those with an internal locus of control are less likely to disidentify from their academic centrality. Thus, performance may be the key for the association between centrality and locus of control.

The specific lifestyle of our sample could explain the lack of a relationship between SES and academic locus of control. Previous research on locus of control only found a relationship between SES and general locus of control (belief of control over general behaviors). The logic behind this relationship argues that those with lower SES have to cope with external factors (low income, poor healthcare) that would limit their agency in life. However, it may be that academic locus of control was too specific to fit this logic. When students move to campus, they are provided with a variety of academic and personal resources (tutoring, academic workshops, comfortable housing, nutritious food) that may raise their quality of life. Thus, because all students are given these privileges, there may be a weakening of the relationship between academic locus of control and SES.

For Hypothesis 3, exploration did not significantly moderate the relationship between SES and academic self-concept. Because the relationship between SES and academic identity was not moderated, it was not possible to investigate whether the mediation relationship between the two was moderated. Therefore Hypothesis 3 was unsupported.

This non-significant relationship could be explained by the specificity of our definition of academic identity. In previous studies of the relationship between exploration
and racial identity and sexual orientation identity, identity was investigated using Marcia’s four statuses of identity achievement (Ellis 2004; Saint Louis 1998). Our study did not look at the four stages of academic identity development, instead conceptualizing identity achievement as higher levels of academic self-concept, centrality, and narrative identity. Therefore, it may be that our conceptualization of academic identity does not represent the type of identity achievement associated with exploration.

Results indicated that exploration moderated two relationships: belongingness and self-concept, and SSID and the disengagement theme. Those with high exploration and high belonging had the highest levels of academic self-concept, but those with low belonging and high exploration held the lowest levels of academic self-concept. With regards to SSID and negative theme B, participants with high SSID and high exploration had the highest levels of negative theme B, but subjects with high SSID and low exploration had the lowest levels of negative theme B. Interestingly in both cases, high exploration led to more negative outcomes such as lower self-concept and a negative narrative theme.

While contrary to our hypothesis that exploration would lead to more positive outcomes, these results are explainable. First, since exploration is high, it is possible that students high in exploration are exploring their academic identity, but have not settled on a commitment. This stage of identity formation is called moratorium and is associated with internal conflict. Marcia calls this stage the “crisis” stage in which people are struggling to find an identity that fits their sense of self (Marcia, 1966; Kroger & Marcia, 2011). People in moratorium can turn their exploration into rumination in which their search for a commitment becomes uncomfortable indecision (Kroger & Marcia, 2011). One study by Luyckx et al. (2008) found that those who were in moratorium and utilizing ruminative
exploration had the lowest levels of well-being. Thus, because high exploration students are struggling to define their academic sense of self, but have not necessarily committed to an academic identity domain, they might engage in ruminative exploration that may negatively impact their academic identity. In other words, because they are stuck in moratorium, their exploration can lead to negative outcomes such as disengaging from one’s academic identity.

In review, qualitative data has shown that lower SES students have a host of struggles when entering an elite academic environment. Low SES students struggled more academically, felt excluded, and questioned their abilities as students (Wentworth & Peterson, 2001; Ostrove & Stewart, 1998; Lehmann, 2009). In addition, quantitative data has found an association between lower SES and negative academic outcomes such as lower GPA, lower academic self-concept, and lower levels of belongingness. This study extended the literature regarding low SES and academic identity, showing significant associations between low SES and academic self-concept and centrality. Furthermore, we found that this relationship was mediated by feelings of belonging and SSID. Finally, relationships between belonging and SSID were moderated by exploration, with high exploration mostly leading to more negative academic outcomes.

Implications

Our results are incredibly important when we consider the college academic experience for lower SES students. When incoming students enter into college, many freshmen support services are provided for minority students. For instance, Haverford College has a multicultural scholars program that provides extra academic assistance and professional skills trainings for ethnic and racial minority students. However, not many schools have specific programs in place to assist low SES students with the transition
academically into an elite academic institution. Based on our research findings, schools should consider creating programs that could serve as an academic resource for students of lower SES as they begin and continue their college career.

In addition, our results show that lower SES students may also struggle socially as they enter in college. Elite academic institutions must stay vigilant to the needs of their diverse student body and provide creative outlets for the student body to form an inclusive community. One example could be structuring part of the school’s freshmen orientation around issues of diversity that would allow students to engage with multiculturalism as they enter the student community.

It is important to note that while we are generalizing these recommendations and findings to low income students, we are cognizant that there is individual variation within the group. Many low SES students enter college and lead fulfilling academic and social careers. These recommendations are not meant to paint a picture of the academic experience of all low SES students, but are intended to provide recommendations for a group that has unique challenges when entering elite, academic institutions.

Limitations

Our study has a number of limitations that we should acknowledge. First, our sample included only Haverford College students. Thus, there may be a specific academic culture at Haverford that may have affected students’ conception of their academic identity. For instance, Haverford students do not know the grades of others, creating a less competitive and more collaborative environment. These factors may influence the way in which these students develop their academic identity.
Another limitation is that we were unable to test for stereotype threat directly. While stereotype threat is an integral piece of the academic identity literature, it has only been investigated extensively with an experimental design. There is no popularized survey test to measure stereotype threat in students. Thus, we were unable to test for stereotype threat in our experiment.

In addition, our reliabilities were relatively low for some of our narrative identity variables. Since, we had low inter-rater reliability, our scores may not adequately reflect the meaning-making in the narratives. While this study extended the literature surrounding academic narrative identity, a more rigorous coding system must be developed to increase inter-rater agreement.

Furthermore, our SES sample was skewed with more people reporting higher class status. While we increased our sample size to add more low SES students, it is hard to target low SES students, because the population at Haverford College is, generally, wealthy. Thus, our data may not have a fully representative sample size of low SES students. Likewise, there were only three narratives that were coded for the disengagement theme. While we found some significant results, they must be interpreted carefully. Future research should try and replicate our results with a larger sample of disengagement narratives.

Finally, this experiment only used exploration as a moderator and did not investigate identity commitment. Without testing students’ identity commitment it was not possible to differentiate which of the four identity statuses were most prevalent with our sample. Thus, our rationale of low SES students struggling with exploration in the moratorium phase can only stay speculative.

*Future Directions*
This study demonstrated very promising results that may lead to further investigations. Since research has shown that low SES may negatively impact academic identity, it would be interesting to study the differences between low SES students that academically succeed and have high academic identity. Specifically, what are the variables that may influence whether a low SES student succeeds or struggles in school? A longitudinal design that followed student’s progress over time would be ideal.

It would also be interesting to study low SES students in academic institutions that are not considered “elite”. Aries and Seider (2005) found, through qualitative data, that lower income students in state schools were less likely to feel a heightened awareness of class and feelings of intimidation, inadequacy, and exclusion. What impact does the academic and social culture have on the academic identity of its students?

Finally, our findings regarding exploration merit further testing. Specifically, what levels of commitment and exploration are lower SES students experiencing during college, and do these levels differ from high SES students? Are more low SES students in the moratorium phase as they struggle to incorporate their academic identity as a part of their self?

Conclusion

Overall, the present study has partly supported the association between low SES and academic identity. Specifically, low SES was associated with lower levels of academic self-concept, which was mediated by belongingness and SSID. These results indicate that low SES students have unique challenges that they face when entering into a prestigious college environment. While not all SES students share these struggles, we hope that this research
can help policy-makers and educators provide the specific tools that low SES students may need to succeed academically.
Works Cited


Academic Identity 67


Table 1. SES variables intercorrelations

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*. Correlation is significant at the .05 level
Table 3. Correlations between SES and academic identity variables

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** Correlation is significant at the .01 level
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+  Correlation is significant at the >.1 level
**Table 4.** Correlations between SES and mediator variables

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** Correlation is significant at the .01 level
* Correlation is significant at the .05 level
+ Correlation is significant at the >.1 level
Table 5. Correlations between mediator variables and academic identity variables

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<td>.12</td>
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<td>Positive Theme D</td>
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<td>.10</td>
<td>-.03</td>
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<td>-.13</td>
<td>-.02</td>
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<tr>
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<td>.23*</td>
<td>.21*</td>
<td>-.18+</td>
</tr>
<tr>
<td>Negative Theme C</td>
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<td>-.06</td>
<td>-.09</td>
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</table>

** Correlation is significant at the .01 level  
* Correlation is significant at the .05 level  
+ Correlation is significant at the >.1 level
Table 6. Correlations between GPA, race, and key variables

<table>
<thead>
<tr>
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<th>GPA</th>
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</thead>
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<tr>
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<td>.40**</td>
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<tr>
<td>SSID</td>
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<td>-.33**</td>
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<td>Belong. Composite</td>
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<td>.09</td>
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<td>Locus of Control</td>
<td>.02</td>
<td>.30**</td>
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<tr>
<td>Academic SC</td>
<td>.21*</td>
<td>.42**</td>
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<td>Disengagement</td>
<td>-.01</td>
<td>-.10</td>
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<tr>
<td>Absolute Centrality</td>
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<td>Relative Centrality</td>
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<td>Negative Meaning</td>
<td>-.04</td>
<td>.01</td>
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</table>
**Figure 1.** Belonging mediation between SES and academic SC

\[ .14 (.23*) \]

\[ .30* \]

\[ .27** \]

** Significant at the .01 level.
* Significant at the .05 level.

**Figure 2.** Exploration moderation between belonging and academic self-concept
**Figure 3.** SSID mediation between SES and academic SC

![Diagram showing mediation between SES, SSID, and Academic SC with coefficients -.01, -0.58*, and -0.33*.

** Significant at the .01 level.
* Significant at the .05 level.

**Figure 4.** Exploration moderation between SSID and disengagement theme.

![Graph showing the interaction between low and high SSID with low and high explore.](image-url)
Appendix 1. Positive and negative meaning-making themes and inter-rater reliability (note: 3 reliabilities, therefore range of inter-rater reliability reported)

Positive Theme A [self-evaluation theme]- Positive change in self emphasizing academic behavior- change toward greater effort, better study habits, better coping skills, etc. (i.e. change towards greater maturity as a student). $\alpha = .40$ to .61

Positive Theme B [self-realization theme]- Positive change in self or self-realization involving academic values or interests- e.g., focusing more on learning than grades, realizing that academic performance is more important than he or she thought, realization that a particular field is a good match. $\alpha = .82$ to .74

Positive Theme C [positive character theme]- Confirmation of stable positive characteristics of self- ability to cope with difficult situations (e.g. “this shows how I can get through tough times”). $\alpha = .79$ to .37

Positive Theme D [positive abilities theme]- Positive self-evaluation of ability level (e.g. if a student turns a grade around and sees that as demonstrating his/her intelligence, ability to cut it at Haverford, etc.). $\alpha = .65$ to .47

Positive Theme E [affirmation theme]- Distancing from academics through affirming other positive parts of the self and/or seeing academics as trivial in the grand scheme of what is important in life. $\alpha = .85$ to .31

Positive Theme F- Other- positive meaning-making is present, but none of the above themes apply.

Negative Theme A [negative evaluation theme]- Negative self-evaluation of ability- either doubting one’s ability to succeed or feeling confirmed in not being as capable as one would have hoped. $\alpha = .45$ to .35

Negative Theme B [disengagement theme]- Disengaging from academics because effort does not make a difference- not trying anymore (sense of defensiveness- not caring anymore). $\alpha = .65$ to .65

Negative Theme C [confusion theme]- Negative change in self toward confusion or uncertainty about academic future, best fit in terms of major, etc. (i.e. a failure has caused uncertainty about one’s academic identity/career trajectory. $\alpha = .57$ to .45

Negative Theme D- Other form of negative meaning-making not captured by those listed above