What is someone like me doing in a place like this?:

The Effects of Socioeconomic Status on Academic Identity in College

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Abstract

The present study was conducted in order to investigate a potential relationship between socioeconomic status (SES) and academic identity, which was conceptualized as being composed of academic self-concept, centrality of the academic identity, and the narrative academic identity. Researchers in the present study sought to affirm results of past research indicating that there is a relationship between SES and academic identity, and to illuminate processes that affect this relationship. To this end, SES, academic identity, and various possible mediators and moderators were measured and relationships between these variables were analyzed. Results indicate that SES and some facets of academic identity are related, and that this effect is mediated by sensitivity to SES-based identity discrepancy (SSID) and belonging. We also found that exploration moderated relationships between belonging and academic self-concept, and between SSID and certain negative narrative themes. Based on these findings, we tentatively conclude that feelings of being out of place in an academic environment are particularly damaging to the academic self-concept of students of lower socioeconomic classes. In addition, exploration of an academic identity can have negative consequences for the academic identity. Limitations and recommendations for future research are discussed.
Why Does Academic Identity Matter?

“If you give someone a fish, you feed them for a day; if you teach someone to fish, you feed them for a lifetime.” So the saying goes. This simple proverb illuminates the importance of education. Education has an enormous potential to enrich people’s lives on many levels. Education can inform, inspire, and empower people. Whether or not a person receives a high quality education can also have a substantial impact on that person’s quality of life in more objective ways. A college degree improves a person’s chances of acquiring a more appealing job and college graduates typically make over twice as much money as their non-graduate counterparts (U.S. Bureau of the Census, 2010). Unfortunately, not all people have the same opportunity to receive education. In the United States, though we dream of equal opportunity, many divides still exist among us, and discrepancies in educational opportunities grow from and perpetuate these divides.

For example, there has been much attention paid to the academic achievement gap in the United States between Caucasian students and students of minority ethnicities, most often African-American students. Studies show that African American students have lower standardized test scores than their Caucasian peers and that high school graduation rates and college attendance rates are somewhat lower for African Americans than for Caucasians (Steele, 1997; Racial Disparities). In addition, the college dropout rate for African Americans is higher than the national average (Racial Disparities). The fact that a college education improves one’s chances of finding a job, especially a competitive, higher-paying job, is just one example of ways that discrepancies in educational attainment almost certainly contribute to the economic divides that exist in the United States between Caucasians and African Americans.
It is important to acknowledge that the experience of race is inextricably tied to other experiences such as those of socioeconomic status and gender. These factors and others may interact to create a great variety of different experiences, and therefore various patterns that have been observed for any one or combination of groups of individuals may be hard to comprehend outside of the context in which the observations were made. That being said, patterns that have been observed consistently can provide information that may illuminate difficulties that certain groups of people face in general. For example, socioeconomic status (SES) also seems to have a large effect on one’s educational opportunities. Socioeconomic status is a combination of factors including income, educational experience, and work experience. All of these factors relate to one’s social position relative to others’.

A wealth of research has shown that students from lower SES backgrounds are also disadvantaged in terms of academic opportunities. These students often have lower GPAs than their higher SES peers and lower graduation rates from college, and that is once they have overcome the challenges required to get into college in the first place (Croizet & Claire, 1998; Leonhardt, 2005; Ostrove & Long, 2007). Furthermore, research shows that lower SES students are often worse off when it comes to their subjective college experience, often experiencing feelings of alienation and self-doubt regardless of their objective academic performance (Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). One possible process through which some of these feelings may arise is that of stereotype threat. Stereotype threat is the concept that activation of stereotypes about a group to which a person belongs may affect that person’s ability to perform in a domain in which they are concerned about the possibility of confirming the stereotype. Studies have shown that this process does affect lower SES students
in their academic performance in terms of their sense of their SES (Croizet & Claire, 1998). This indicates that psychological factors may have a significant impact on students’ experience of college, beyond other, more obvious, factors that may encumber students, such as financial difficulties. One such factor is the aspect of a student’s identity that makes up his or her conceptualization of his or her student self, which is his or her academic identity.

An important part of any student’s experience of school is how that student views academics in relation to him or herself. The extent to which a person conceptualizes his or her self as a student could have a significant impact on the way he or she approaches academics and on the way academic experiences affect him or her. This impact may go beyond quantifiable academic performance to the core of the way a person views academics, learning, and him or herself. The ways in which a person views herself as a student can be thought of as that person’s academic identity and would account for a certain part of that person’s self-definition. The construct of identity is generally accepted as a person’s perception of the self, created through one’s particular experiences and interpretations of these experiences within a sociocultural framework that informs interpretations with dominant social values (Torres, Susan, & Kristen, 2009). Identity is typically seen as developing over time, both in ways that follow normal, developmental patterns and in ways that may be brought about by particular experiences (Marcia, 1966). For instance, people are usually thought to begin to form a stable sense of who they are in adolescence and to continue to accumulate and explore various domains of their identities and commit to certain aspects of identity as they age (Marcia, 1966; McLean, 2008). However, studies have also shown that aspects of identity can be challenged and changed through particular experiences that may arise over the course of a person’s life (Jervik, 1999;
This illustrates that identity is an ever-developing construct, made up of many domains. In the present study, we will examine how SES affects academic identity and possible psychological mediators that may account for this relationship, particularly in an elite academic context. Academic identity is examined as a multifaceted construct consisting of how an individual perceives and evaluates him or herself as a student, how central the academic domain is to an individual’s identity, and how an individual makes sense of his or her academic experiences as a comprehensive and continuous story of the student self. These are captured in the constructs of academic self-concept, centrality of the academic identity, and narrative academic identity.

Three Facets of Academic Identity

The construct of academic identity in the present study includes academic self-concept, centrality of the academic identity, and narrative academic identity. Academic self-concept accounts for a student’s description and evaluation of her student self (Brunner et al, 2010; Gerardi, 1990; Reynolds, 1988). Centrality of the academic identity accounts for how important a student perceives her student identity to be to her concept of herself as a whole person with many identity domains (Bachman, 2005; Stryker & Serpe, 1994). Narrative academic identity consists of the narratives a person chooses from her past experiences to describe herself as a student, the way that person tells these narratives, and the meaning she creates from these past experiences and uses to form a coherent story of her student self (McLean, 2008). Together these three facets of identity encompass a student’s descriptive understanding of her student self, her evaluation of herself as a student, the importance she places on this student identity, and the meaning of this identity to her. Each of these facets addresses a different aspect of identity,
therefore, the combination of these facets creates a more comprehensive picture of a person’s academic identity than any one facet alone.

These aspects of identity are also important to examine because they have all been connected to important outcomes. For instance, academic self-concept has been connected to academic performance, and academic self-concept and centrality of the academic identity have both been connected to persistence and effort expended on academics (Craven, Marsh, Debus, 1991; Stryker & Serpe, 1994; Trautwein, Ludtke, Schnyder, & Niggli, 2006). Research has shown that centrality of an identity domain is also associated with affective commitment to the domain, that is, the degree to which a person has emotionally invested in and is emotionally affected by her performance in the domain (Stryker & Serpe, 1994). In narrative identity, lower levels of meaning-making have been related to lower levels of identity development, maturity, and well-being, while negative meaning-making has been connected to the formation of lasting negative views of the self (Lilgendahl, McLean, & Mansfield, in press; McLean & Pratt, 2006; Pals, 2006). Therefore, these three aspects of academic identity have important outcomes for a student.

Academic Self-Concept. Academic self-concept can be described as a person’s self-description and perception of his or her ability to perform well in the academic domain (Brunner et al, 2010; Gerardi, 1990; Reynolds, 1988). Self-concept in general is the way in which one views oneself. Self-concept is often presented as both descriptive and evaluative (Brunner et al, 2010). The descriptive aspect includes basic descriptions of the self (e.g. I am a student) while the evaluative aspect encompasses one’s evaluation of one’s ability and performance (e.g. I am a good student) (Shavelson & Bolus, 1982). The evaluative aspect of the self-concept makes this
construct very similar to self-esteem at the general self-concept level; so much so that self-concept and self-esteem are sometimes used interchangeably (Shavelson, Hubner, & Stanton, 1976). Self-concept is typically thought to be structured so that general self-concept breaks down into domain-specific subsections of self-concept, and self-concept is also thought to become more multifaceted as one grows up and encompasses more domains into the self (Shavelson & Bolus, 1982; Shavelson, Hubner, & Stanton, 1976).

A person’s self-concept can also be thought of as having subsections. Each subsection includes the qualities and abilities of the person that she categorizes into that subsection and the way she evaluates that subsection of herself (Brunner et al, 2010; Shavelson, Hubner, & Stanton, 1976). Academic self-concept is one of these subsections, along with constructs such as social self-concept, emotional self-concept, and physical self-concept (Brunner et al, 2010; Shavelson, Hubner, & Stanton, 1976). As this multifaceted model would indicate, studies have shown that academic self-concept is significantly correlated with general self-concept but that academic self-concept is also somewhat independent from general self-concept (Reynolds, 1988; Shavelson & Bolus, 1982). Academic self-concept therefore can be thought of as the qualities of oneself that one perceives as relating to the academic domain as well as a person’s self-evaluation in the domain of academics (Reynolds, 1988; Shavelson, Hubner, & Stanton, 1976).

Academic self-concept has also been related to important outcomes for students. One important finding in the research is that academic self-concept is a significant predictor of academic success (Cokley, McClain, Jones, & Johnson, 2012; Gerardi, 1990; Shavelson & Bolus, 1982). Studies have also indicated that greater academic self-concept is related to greater effort expended in academics (Trautwein, Ludtke, Schnyder, & Niggli, 2006). Additionally,
research shows that that academic self-concept can be enhanced by encouraging students to attribute academic success to their own effort and ability, which may encourage students to put effort into their academic performance (Craven, Marsh, Debus, 1991; Trautwein, Ludtke, Schnyder, & Niggli, 2006). As this would be likely to encourage students to put more effort into their academic performance, this may suggest that part of the reason for the relationship between academic self-concept and academic achievement is that people with higher academic self-concepts generally feel they have control over their academic performance through their own effort, which may encourage them to work harder and more persistently in school (Craven, Marsh, Debus, 1991).

Studies have shown that students form their academic self-concepts based on various influences, including the student’s past academic performance, others’ perceptions of the student and feedback expressed to the student, and comparisons the student makes between himself or herself and his or her peers (Brunner et al, 2010; Gerardi, 1990; Reynolds, 1988). It seems quite reasonable to believe that a student’s academic performance would have an impact on that student’s view of her academic abilities, and indeed, this has been shown in research (Muijs, 1997). In addition, academic self-concept has been shown to have an effect on academic performance, even when controlling for prior performance (Gerardi, 1990). Therefore, research indicates that there is a reciprocal relationship between academic performance and academic self-concept (Marsh & Craven, 2006). However, academic self-concept is not simply a student’s summary of her grades, other factors contribute to academic self-concept as well. For instance, feedback that a student receives from teachers, parents, or other significant figures regarding a student’s academic performance can enhance or damage a student’s academic self-concept.
Indeed, research has indicated that students’ perceptions of their teachers’ attitudes towards them can heavily impact the students’ feelings about their ability as students (Craven, Marsh, & Debus, 1991; Ostrove & Cole, 2003).

Another important element in the formation of academic self-concept is one’s comparison of oneself to other students. Other students provide a reference group to which each student can compare himself. A student who feels that he is lower-performing in comparison to his reference group may form a lower academic self-concept as a result, and the reverse may be true as well. Qualitative and quantitative research findings have, in fact, indicated that students compare their academic achievement with that of their peers, and that this predicts academic self-concept (Brunner et al, 2010; Jervik, 1999). These findings indicate that if someone feels relatively high-achieving compared to a certain group of people, he may still feel deficient compared to another, so that different contexts may affect his academic self-concept differently (Gerardi, 1990). In addition, academic self-concept may be self-perpetuating in that students attend more to information that confirms and reinforces their self-concept, with the result that students with higher academic self-concepts overestimate their own success, while students with lower academic self-concepts have lower expectations of themselves (Gerardi, 1990; Jussim, Coleman, & Nassau, 1987; Wells & Sweeney, 1986). Therefore, the academic self-concept is developed based on a variety of factors involving a student’s academic experiences and how the student interprets these experiences.

*Academic Identity Centrality.* The centrality of a person’s academic identity is defined as how important the person feels this identity domain is to his or her overall identity, relative to other domains with which the person identifies (Bachman, 2005; Stryker & Serpe, 1994).
Examples of possible domains that a person might include in his or her overall identity include academics, athletics, extracurricular activities, and personal relationships (such as relationships with family or friends). Any of these domains could be more or less central to a person’s concept of him or herself. A related concept is salience, which is defined as the likelihood that a person will act out behaviors of an identity domain (Stryker & Serpe, 1994). For example, a student with a salient academic identity may be more likely to talk about his or her studies, even outside of school, or to think about how knowledge he or she acquires outside of school could relate to his or her schoolwork.

Studies have shown that salience and centrality overlap in terms of predicting a person’s commitment to an identity domain and likelihood of performing an identity domain (Stryker & Serpe, 1994). However, salience is thought to be different from centrality in that identity domains can be salient without a person consciously acknowledging that the identity domain is affecting his or her behavior, while central identities are those that are consciously included as primary aspects of one’s self-concept (Stryker & Serpe, 1994). Therefore, in the present study we will examine centrality of the academic domain of identity. Centrality is associated with certain outcomes, such as the likelihood that a person will engage in activities or behave in ways that are in keeping with the domain identity. This was demonstrated a study done by Stryker and Serpe (1994), in which they found that centrality of an academic role was significantly and positively correlated with time subjects spent engaging in activities that were related to that role. Research has also shown that centrality of an academic identity is positively correlated with intrinsic motivation in academics, suggesting that students with a more central academic identity may be more deeply and stably motivated to engage in academics (Bachman, 2005).
The centrality of a domain may be influenced by various factors, including how beneficial a domain is perceived to be to the self. For instance, Stryker and Serpe (1994) found that, for several domains, including athletic and academic, the degree to which a person felt affective commitment in the domain was significantly correlated with the centrality of that domain for that person. Affective commitment is defined as the degree to which a person feels they would not receive emotionally important things like friendships and parental appraisals without engagement with a certain identity domain. These findings therefore indicate that the centrality of a domain may be affected by the relative potential of that domain to allow one to receive positive reinforcement. Specifically, these findings indicate that how central a domain is to the identity may be affected by the potential of a domain to provide positive views of the self. Therefore, if identifying oneself with a domain and engaging in the behaviors or activities of that domain provides more potential for damaging information about the self than positive information about the self, a person may be less likely to identify with that domain, i.e. include that domain as a central part of his identity.

Interestingly, research also shows that people who are disidentified with a domain are less likely to experience a negative impact on their self-esteem when they perform poorly in that domain, indicating that the centrality of a domain also affects the power of that domain to affect a person’s positive selfFeelings (Bachman, 2005; Major, et al, 1998). Disidentification with a domain is defined as, “a reconceptualization of the self and of one’s values so as to remove the domain as a self-identity” (Steele, 1997). This definition describes a process that could also be thought of as decentralizing an identity domain; making it less important to the self-concept. Research has shown that some domains have a greater influence on self-esteem than others for
certain individuals, and perhaps these are the domains that are more central (Hare & Costenell, 1985). For instance, research has shown that students with low academic performance may have low self-regard in relation to school, but may still have high self-esteem overall if they experience positive self-regard in terms of other domains, such as in friendships (Hare & Costenell, 1985). In addition, studies have found students who receive negative feedback on intellectual tasks suffer less in terms of their self-esteem if they are disidentified with academics (Major, et al, 1998). These findings imply that less central identity domains do not have a strong impact on a person’s self-esteem.

It is reasonable, then, to suppose that the more central a domain is to a person, the more performance in that domain will affect the person emotionally. Indeed, in a study done by Bachman (2005), the researcher found that, for students who defined their academic roles based on their academic performance, centrality of academic identity was positively correlated with anxiety. This indicates that the more central academic identity had a stronger affective impact on students. Steele (1997) proposed that this relationship between identification with a domain and the power of that domain to affect a person’s self-esteem occurs because a person may disengage from an identity domain that is damaging to the self in order to avoid the negative emotional impact of concerns about poor performance in that domain. Therefore, the domain becomes less central to the identity and thereby has less power to affect a person’s feelings about the self.

Academic self concept and centrality provide a picture of a student’s concept of his ability as a student and how important that aspect of himself is to him. However, these two factors do not convey the meaning that a student draws from their experience of being a student, how it affects the way he sees himself and his life and where being a student fits into that
narrative. To delve into these aspects of academic identity, we will also examine narrative academic identity.

Narrative Academic Identity: Narrative identity in general is defined as the way a person understands his or her accumulated experiences as a continuous life story from which he or she can draw meaning about the self (McLean, 2008). Academic narrative identity is therefore proposed as the continuous story of the academic self that a person creates from his academic experiences. The construct of general narrative identity includes many qualities of a person’s narratives, including the content of the narratives people tell about themselves, as well as the emotional tone, specificity, and integrative meaning of the narratives, all of which are applicable to an academics-specific domain of narrative identity. Research has shown that these qualities are related to various aspects of personality, as well as being connected to important psychological outcomes (McAdams, et al, 2004). These connections illustrate that the narrative identity approach reveals a great deal about a person’s personality and functioning and thus allows for a relatively comprehensive understanding of a person’s identity.

Integrative meaning in narratives is defined as an extrapolation of a larger meaning about the world or the self from a particular experience (McLean, 2008). People may draw deep meaning from their individual experiences and connect various experiences in order to create a meaningful, coherent life story. Alternatively, they may see various moments in their lives as only loosely connected, without delving into possible causation or significance. Integrative meaning is a particularly significant aspect of narratives because the process of selecting and developing important past experiences into narratives with integrative meaning—or meaning-making—represents the development of a meaningful, coherent life story and is related to core
developmental processes (Blagov & Singer, 2004). For instance, in early adolescence people may begin to see connections between their collection of past experiences and themselves, and begin to make meaning from these connections and establish some coherence in their stories (McLean, 2008). In later adolescence and early adulthood, narrative identity usually begins to stabilize as people begin to commit to a coherent life story and certain roles that correspond with this life story (McLean, 2008). Therefore, the examination of the academic narratives of college-aged students may be particularly revealing in that these students may be beginning to form more stable narratives that frame their views of themselves as students. However, it is important to note that the development of a life story is not a finite process; it is on-going and must continue to incorporate new experiences as they arise (Lilgendahl & McAdams, 2011). In addition, not all people develop coherent narratives with the same level of meaning-making over the course of their lives and this has effects on well-being and other psychological outcomes (McLean & Pratt, 2006; Pals, 2006). The examination of a person’s academic narrative identity would therefore have great potential to reveal differences in people’s experiences of academics, the meaning they draw from these experiences, and the potential psychological outcomes of these processes.

There are many significant psychological outcomes associated with meaning-making that reveal the significance of this construct to positive functioning and identity development. Narratives in which the teller draws meaning from her experience; about herself or the world; that is explicit, broad, and well-elaborated; are seen as having high levels of meaning-making -or more sophisticated meaning-making (McLean & Pratt, 2006). For example, in the present study a participant whose narrative was rated as very high on meaning-making said, “This was important to me as a student because it helped me to redefine my sense of academic value and
realize that what I got out of my academic life did not need to depend solely on my grades.” Past research has shown that higher levels of meaning-making are related to greater well-being, maturity, and identity development (Blagov & Singer, 2004; McLean & Pratt, 2006; Pals, 2006). For example, of the four statuses of identity development-diffusion, foreclosure, moratorium, and identity achievement- less sophisticated meaning-making has been shown to be correlated with two-diffusion and foreclosure (McLean & Pratt, 2006). All four of these identity statuses represent different combinations of exploration of identity and commitment to identity (Marcia, 1966). Exploration refers to a process of evaluating various possible roles, norms, and values; while commitment refers to the decision to invest in certain ones of these and behave accordingly (Marcia, 1966). The moratorium status indicates exploration without commitment and achievement status indicates commitment following exploration. Diffusion and foreclosure both indicate low levels of exploration of one’s identity or domains of one’s identity, but foreclosure also includes commitment to an identity, while diffusion does not. Foreclosure is associated with acceptance of authoritarian values while diffusion is associated with distanced and apathetic relationships with identity domains such as school and family (Marcia, 1966). Both of these identity statuses could therefore be thought of as indicating less active and in depth engagement with various domains of one’s life. Perhaps, then, examining meaning-making in academic narratives could reveal a person’s level of development of an engaged student identity. This evidence indicates that positive meaning-making has important psychological outcomes. While research has shown that people who explore the meaning of their experiences and draw integrative meaning for themselves can have higher identity development, greater maturity, and greater well-being, there can also be negative outcomes of meaning-making (McLean &
Pratt, 2006; Pals, 2006). For instance, studies have shown that people can interpret events of their lives negatively and thus form more negative views of the self (Lilgendahl, McLean, & Mansfield, in press). Specifically, a person may form an enduring view of herself as a fundamentally bad person by drawing this negative meaning from an experience in which she committed some sort of moral infraction (Lilgendahl, McLean, & Mansfield, in press). A person may also form a view of herself as having enduring mental or emotional difficulties based on a negative experience in which she received some sort of trauma (Lilgendahl, McLean, & Mansfield, in press). This sort of meaning-making has decidedly damaging effects for a person, causing him or her to form enduring negative views of him or herself. This phenomenon may also apply specifically to academic identity in that certain students may draw negative meaning about themselves from negative academic experiences, thus damaging their academic identities.

The psychological impact of the degree to which a person makes meaning from an experience, and the degree to which this meaning is either positive or negative, may be especially significant in narratives of emotionally trying events. Research has shown that narratives containing meaning are more likely to contain themes of conflict or tension as well, indicating that conflict may be an important impetus for meaning-making (McLean, 2008). Research has also shown that exploratory narrative processes, along with positive resolutions to the narratives, are essential for transformational processing; that is, accommodating a negative experience into the self-story in a way that positively affects the self-concept (Pals, 2006). Exploratory narrative processing describes the process of narration in which the narrator actively tries to understand and draw meaning from a difficult experience and incorporate this meaning into his or her life story. Research has shown that through this process, along with arriving at a
positive resolution, a negative experience can actually solidify a more positive sense of self in the narrative identity, and this can have significant positive outcomes for maturity, well-being, and even physical health (Pals, 2006). However, emotionally negative events also have a greater potential to be interpreted negatively. Therefore people inclined to make negative meaning may be vulnerable to being affected adversely by negative events to a greater degree because of this tendency. Therefore, engagement in active, positive meaning-making in response to negative emotional experiences can have significant positive outcomes for a person, but negative emotional experiences may also serve as a basis for negative meaning-making and negative psychological outcomes for another person.

These three aspects of academic identity—self-concept, centrality, and narrative identity—may together build a person’s individual conceptualization of him or herself as a student. An individual’s experience of school would be filtered through his academic identity, and therefore individual differences in school experience may be greatly affected by differences in academic identity. For example, a bad grade may be more threatening to someone with lower academic self-concept, but may have less emotional impact on someone with a less central academic identity. A bad grade may also have a more negative effect on someone more inclined to make negative meaning in their narratives, but a less negative effect on a person who engages in positive meaning-making processes in her narratives.

Academic identity itself may be formed differently based on differences in people’s experiences and predispositions. Research indicates that lower SES is one factor that affects academic identity. Research also indicates that this effect may be mediated by several factors that have been shown both to impact student identity in various ways, and to impact students of
lower SES differently than students of higher SES. These mediating factors include belonging, sensitivity to SES-based identity discrepancy, stereotype threat, and locus of control (Griffiths, 2006; Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). Therefore, in the present study we predict that these factors will mediate the negative effect of lower SES on academic identity.

**Factors that Mediate the Effect of SES on Academic Identity**

Previous research has connected lower SES to lower feelings of belonging in college, higher feelings of SES-based identity discrepancy (SSID) and stereotype threat, and less internal locus of control. In addition, belonging, SSID, stereotype threat, and locus of control have all been related to parts of academic identity. Therefore we predict that lower SES will have a negative effect on academic identity, and that this effect will be mediated by these factors. For instance, the connection between belonging and lower SES is shown by research which indicates that students from lower SES backgrounds often feel they do not belong in college environments, especially in more affluent college environments (Jervik, 1999; Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). Feelings of belonging in an academic environment, like college, are very important because they have implications for a person’s ability to feel she can perform well in that environment, which implicates that person’s academic identity, primarily her academic self-concept (Gerardi, 1990; Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). Feelings of higher SSID, and stereotype threat, which research also demonstrates impact lower SES students greatly in elite college environments, can also lead students to feel lower belonging, in addition to leading students to feel persistent stress when performing academically (Johnson, Richeson, & Finkel, 2011; Steele, 1997). The experience of these factors can also
damage a student’s academic self-concept and may also push a student to disidentify with academics, making this domain less central to that student’s identity (Johnson, Richeson, & Finkel, 2011; Steele, 1997).

Past studies have also indicated that people from lower SES backgrounds often have a more external locus of control (Griffiths, 2006; Snibbe & Markus, 2005). A more internal locus of control has also been connected to effort and persistence in academic endeavors, and greater academic performance as a result, indicating that having a more internal locus of control may allow a person to have a more engaged academic identity with higher academic self-concept and more central academic identity (Coleman & DeLeire, 2003; Tella, Tella, & Adeniyi, 2009). Therefore, lower SES students would be disadvantaged in this regard. Chronic negative experiences of these variables by lower SES students could also predispose them to more negative meaning-making in their narratives, or disengagement, and thus less meaning-making. Therefore, based on the previous research, we believe that lower SES will have a negative impact on academic identity and that this effect will be mediated by belonging, SSID, stereotype threat, and locus of control.

**Belonging.** A wealth of qualitative investigation has indicated that students of lower SES often feel out of place in college, especially in more elite, private colleges where a culture of affluence may be more obvious (Wentworth & Peterson, 2001; Nelson, Englar-Carlson, Tierney, & Hau, 2006; Ostrove & Long, 2007). Low feelings of belonging for lower SES students may be affected by several factors. For instance, a college culture that emphasizes financial capabilities with visible indicators such as cell phones, computers, and discussions of traveling home for breaks, makes differences in socioeconomic status clear (Ostrove & Long,
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2007). For a student outside of this culture, it may therefore be very obvious to him or her that he or she is in the minority in terms of financial capability level. Differences in cultural capital may exacerbate these low feelings of belonging. To possess cultural capital is to possess mannerisms, experiences, beliefs, and value systems that allow a person to be part of a cultural group, such as a particular class (Bourdieu, 1984). As lower SES students may come from backgrounds with somewhat different cultures than the typical upper or upper-middle class student at a private elite college, they may lack the cultural capital that many of their peers possess, which may highlight their minority status and make them feel especially incapable of fitting in and meeting the standards of the college environment.

Furthermore, for students from lower SES backgrounds, coming to an elite private institution may create a separation from their previous support systems in addition to inciting difficult identity conflicts. The fact that lower SES students experience identity conflict in an elite college environment is illustrated in a study in which the researchers found that lower income students attending elite private colleges had the highest degree of exploration of social class in comparison to a group of higher income elite private college students and a group of state college students (Aries & Seider, 2007). Many lower SES students report that their family and friends from their life before college have difficulty understanding the challenges they face as a college student, and therefore are unable to provide a great deal of support or advice to the student, or may even express feelings that the student is betraying his or her own background (Jervik, 1999; Nelson, Englar-Carlson, Tierney, and Hau, 2006; Wentworth & Peterson, 2001). This can lead a student to feel even more intense isolation in his or her college life. For these
reasons, low SES students may feel intense alienation and lower levels of belonging in college, which may motivate disengagement with the college life and academics.

Research has also shown that whether or not college students feel belonging in college predicts both their adjustment to college life as well as the subjective quality of their experience at college (Ostrove & Long, 2007). In addition, research has shown that belonging is a significant predictor of academic performance and persistence in academic tasks, both of which have been related to academic self-concept and centrality of the academic identity domain, suggesting the possibility that belonging may relate to these aspects of identity (Ostrove & Long, 2007). In fact, a good deal of qualitative research indicates that the feeling of being a minority or not fitting in can lead a student to feel incorrect in the college environment, and these feelings can lead to feelings of inferiority and rejection in the academic sphere, and thus a damaged academic identity (Jervik, 1999; Johnson, Richeson, & Finkel, 2011; Griffiths, 2006). This effect may be exacerbated by the fact that, as was mentioned earlier, students form their academic self-concepts partly based on their comparison of themselves to other students (Brunner et al, 2010; Gerardi, 1990). Therefore, students who feel inferior to their peers as a result of feeling low belonging are at a great risk of sustaining damage to their academic self-concepts, an important part of their academic identity as a whole. Students who sustain damage to their self-concept may also create lasting negative meaning in their narratives about the self as a result of the experience of a negative view of the self. Research shows that the effects of low belonging on self-concept may be lessened by higher levels of integration into college life, which may allow a student to find their niche and thus feel greater belonging (Rubin, 2012). However, the factors that may lead a student to feel low belonging may also discourage them from
engaging in activities of college life and thus integrating themselves more fully into the college environment (Rubin, 2012). Because college is an academics-centered environment, feelings of low belonging in this environment may lead to feelings of estrangement from the domain of academics itself and concerns about the ability to fit in academically and meet the standards of academic performance.

Stereotype Threat and Social Identity Threat. Experiences of stereotype threat may also make students of lower SES feel estranged from the academic domain. Stereotype threat (Steele, 1997) is a process by which people experiencing concern about how part of their identity is stereotyped in a certain domain experience undue pressure when performing in that domain. One possible result of the repeated experience of this pressure is that a person’s identification with a domain is damaged. This phenomenon has been examined extensively in the domain of academics for people with identities that are stereotyped in regard to academic ability. For instance, stereotype threat research has explored the effects of stereotype threat on African Americans, who are often stereotyped as having lower academic abilities in general; and women, who are stereotyped in terms of natural sciences specifically (Steele, 1997). As people of lower SES also experience stigma and stereotypes about their intellectual ability and ability to perform academically, this group is also at risk of experiencing stereotype threat (Croizet & Claire, 1998; Darley & Paget, 1983; Johnson, Richeson, & Finkel, 2011).

The theory of stereotype threat is that, for a person who identifies strongly with a domain, such as academics, performance in that domain has a significant impact on that person’s positive feelings towards himself, and therefore that person is motivated to invest in the domain and expend effort to excel in it (Steele, 1997). Therefore, stereotypes concerning the ability of a
group he belongs to in that domain are threatening because they raise doubts about his ability to perform in a domain that is important to him. In addition, these stereotypes create the added pressure of avoiding confirming the stereotypes and condemning the stereotyped group to which he belongs. Research has shown that, because this threat is present for people of stereotyped groups when they are performing in certain domains, it evokes cognitive and affective processes, such as vigilance for cues about stereotypes or anxiety about confirming stereotypes, that inhibit those people from performing to the best of their capabilities in those domains (Croizet & Claire, 1998; Steele, 1997; Johnson, Richeson, & Finkel, 2011).

The chronic experience of this threat can be highly unpleasant. As was discussed previously, domains that offer more potential for positive views of the self are more likely to be central in the overall identity (Hare & Costenell, 1985; Stryker & Serpe, 1994). This implies that chronically experiencing negative emotions in a domain would motivate disengagement with the domain, decreasing its importance -or centrality- to the self-concept or perhaps even eliminating it so that it does not affect one’s self-esteem (Steele, 1997). In addition to which, chronic experience of stereotype threat can make a student vigilant for signs that he or she does not fit in academically, with the result that any such indication has a greater impact on the student’s sense of belonging (Cook, Purdie-Vaughns, Garcia, & Cohen, 2011). As belonging is related to academic self-concept, this impact would also affect academic self-concept (Jervik, 1999; Johnson, Richeson, & Finkel, 2011; Griffiths, 2006).

Research that shows that people do hold negative stereotypes about the academic ability of people of lower SES supports the concern that students of lower SES would experience this process of stereotype threat in an academic environment. For instance, in a study by Darley and...
Paget (1983), researchers found that participants who watched a video of a child taking an academic test rated the child’s academic ability as above grade level if they had been told the child was from a high SES background but rated the child’s academic ability as below grade level if they had been told the child was from a low SES background. This indicates that the participants in this study held stereotypes which affect their expectancies about the child’s performance. Therefore it is not surprising that research has, indeed, shown that low SES is experienced as a stigmatized identity in an academic setting (Johnson, Richeson, & Finkel, 2011).

Somewhat broader than stereotype threat, but strongly related, is the theory of social identity threat, which proposes that the experience of a general environment in which an aspect of one’s identity may be devalued results in performance inhibiting processes similar to those proposed in stereotype threat (Johnson, Richeson, & Finkel, 2011). That is, concerns that one may not fit into an environment may make someone more anxious and vigilant to confirmatory clues, both of which can inhibit performance on tasks. An example of a situation in which these processes would play out would be when a student of a relatively low SES attends a predominantly upper middle class college. These students may have a higher sensitivity to SES-based identity discrepancies between themselves and their peers, which may make them concerned about whether or not their identity is valued in the context, which, as discussed, may affect their performance on tasks relevant to being a student.

These feelings of not fitting in have also been shown to lead to doubts about one’s academic ability in addition to causing one to experience distracting and distressing cognitive and affective processes such as vigilance for cues about stereotypes or anxiety about confirming
stereotypes (Johnson, Richeson, & Finkel, 2011). These effects are illustrated in a study done by Johnson, Richeson, and Finkel (2011). In part of this study participants completed a survey measuring SES, SSID, participants’ sense of their academic fit, and participants’ self-reported ability to self-regulate. The results of this study showed that lower SES students experience greater self-regulatory depletion after discussing academics than did higher SES students. Level of self-regulatory depletion in this study was shown by grams of candy consumed by each participant. In this study more candy was consumed by the lower SES students after discussing academics, indicating that, for lower SES students, discussing academics involves managing cognitive and affective processes evoked by concerns about stereotypes of their SES group, which is depleting. Another of the findings from this study was that SSID predicted academic fit, which was defined as the student’s belief in his ability to meet the college’s academic standards. Therefore, the greater the student’s sensitivity to the discrepancy between his own SES identity and that of his peers, the greater his concern about his academic fit, or, in other words, the greater the negative impact on the academic self-concept. This effect seems to be somewhat separate from the impact of SSID on academic performance.

These findings illustrate that managing concerns about stereotypes can impair performance by depleting self-regulatory resources. This constant concern may pressure disidentification with an academic identity through the process of stereotype threat (Johnson, Richeson, & Finkel, 2011; Steele, 1997). However, in addition, these findings indicate that higher SSID can lead to a negative impact on the academic self-concept apart from performance. This indicates that, in addition to being related to stereotype threat processes, SSID may be quite closely related to feelings of belonging. As discussed in the section on belonging, students
feeling general low belonging in a college environment may conflate these feelings with feeling low belonging in the academic realm and may therefore sustain damage to their academic identity.

_Locus of Control._ Based on previous research, we expect that locus of control and self-efficacy beliefs will play a part in mediating the relationship between socioeconomic status and academic identity. A person’s locus of control can be internal or external and this construct describes the degree to which a person believes the events of their life are controlled by him or herself (internal locus of control) or forces outside of him or herself (external locus of control) (Rotter, 1966). People with a more internal locus of control are more likely to expend more effort and to be more persistent in trying to achieve their goals (Rotter, 1966). A very similar construct is self-efficacy, which is a person’s belief in her ability to achieve a desired outcome through her own efforts (Bandura, 2001). Higher levels of self-efficacy are also related to a greater likelihood that a person will expended effort and persist in attempts to accomplish a goal (Griffiths, 2006). Therefore, an internal locus of control and a higher level of self-efficacy have very similar outcomes.

Past studies have indicated that people of lower SES may also have lower feelings of self-efficacy and more external loci of control (Griffiths, 2006). There are a few possible explanations for the observed differences in locus of control or self-efficacy between people of different SES. First, the difference may lie in general differences in reinforcement experienced by children of different SES backgrounds. Studies have shown that the development of a more internal locus of control is related to parental encouragement of autonomy and parental warmth (Carton & Nowicki, 1994). Studies have also indicated that parents or other caregivers from
lower SES backgrounds tend to make more attempts to “toughen” children, which may result in a subjectively less warm and nurturing experience for children (Snibbe & Markus, 2005). In addition, research has shown that lower SES parents tend to emphasize less pleasant aspects of independence such as self-reliance, which may discourage children from seeking autonomy (Snibbe & Markus, 2005). In addition, more external locus of control is associated with experiencing stressful life events at a young age (Carton & Nowicki, 1994). It seems likely that children from lower SES backgrounds might experience more stressful events at a young age as a function of having fewer resources and opportunities because of their SES, and perhaps because people of a lower SES may be more likely to live in areas where there are stressful environmental factors like higher crime rates. As these situations may be out of a child’s control to a large degree, these experiences could lead to learned helplessness, which has been shown to have similar effects to external locus of control in terms of attributions people make and the degree to which people feel they can affect what happens to themselves and in the world (Dweck, 1975; Hiroto, 1974). It is possible that these factors account for at least part of the difference in locus of control for people from lower and higher SES backgrounds.

There is an extensive literature that supports the idea that having a more internal locus of control predicts greater academic achievement for students by increasing their effort and persistence in their academic endeavors (Coleman & DeLeire, 2003; Tella, Tella, & Adeniyi, 2009). This might occur for students who have a more internal locus of control because they would be more likely to feel that engagement with an academic identity, and the resulting effort expended in that domain, was beneficial to them because they would have a stronger sense that their efforts in that domain would yield positive outcomes. For instance, Coleman and DeLeire
(2003) demonstrated that students with more internal loci of control expected higher incomes than did students with external loci of control if they graduated high school, but expected lower incomes than did students with external loci of control if they dropped out. These findings show that students with more internal loci of control believed that they had the power to directly affect their future income by making the necessary effort to graduate from high school. In addition, the researchers in this study found that locus of control was a significant predictor of whether or not a teenager would graduate from high school.

These findings indicate that having a more internal locus of control makes one more likely to invest in one’s academics because of one’s sense that one can affect one’s experiences through one’s own efforts. This suggests that having a more internal locus of control would contribute to a higher academic self-concept as academic self-concept describes one’s sense of one’s own academic ability, which would be higher for students with greater beliefs in their ability to affect their academic performance through their own efforts. In fact, as was discussed previously, intervention measures that encourage a student to attribute success to his own effort and ability have been shown to enhance academic self-concept (Craven, Marsh, Debus, 1991). In addition, research has shown that academic self-concept is correlated with locus of control, such that students with more internal loci of control have higher academic self-concepts (Reynolds, 1988). These findings indicate that locus of control has an effect on a person’s perception of themselves as a student. Because research indicates that students of lower SES may have lower loci of control and that more internal loci of control relates to more positive academic identity, this indicates that locus of control may mediate the relationship between SES and academic identity.
Identity Exploration as a Moderator of the Effect of SES on Academic Identity

Though previous research indicates that socioeconomic status may have a negative effect on academic identity and that this negative effect may be mediated by locus of control, SSID, stereotype threat, and belonging, it is certainly not the case that all students of lower SES have lower academic identities in comparison to their higher SES peers. Many students from lower SES backgrounds are very successful in college. Although the mediating factors discussed previously would put a disproportionate amount of stress on lower SES students, research suggests that this challenge would cause some students to explore and strengthen their academic identities, even though it may cause others to doubt or disengage with theirs. The process of exploration of an identity has certainly been shown to be beneficial for identity development (Marcia, 1966; Pals, 2006). Besides which, research shows that people who experience a challenge to a part of their identity are more likely to explore that identity (Konik & Stewart, 2004; Marcia, 1966). Based on these findings, it is reasonable to expect that some students of lower SES would explore and develop their student identities in response to the challenge posed to this identity by feelings such as low belonging, high SSID and stereotype threat.

There is a good deal of evidence in the research that difficult experiences, specifically experiences which are difficult in that they highlight a minority aspect of someone's identity, can incite processes of identity exploration. For example, research indicates that people of minority groups may explore their minority group identity in response to the stress of simply being in the minority. Studies have shown, for instance, that sexual-minority-identified people are more likely than heterosexual people to have felt challenged in their sexual identity and are more likely to have explored this identity and reached identity achievement (Eliason, 1995; Konik &
Stewart, 2004). For instance, in a study done by Konik and Stewart (2004), the researchers found that sexual-minority-identified participants were more likely than heterosexual participants to score lower on global identity foreclosure and moratorium and higher on identity achievement, indicating that these participants had explored and committed to their identities in general to a greater degree than had heterosexual participants. They also found that sexual-minority identified participants were more likely to describe the formation of their sexual identity as a process requiring effort, further indicating that these participants had questioned and explored their minority sexual identity to a greater degree. The challenge of being a minority in terms of SES may incite a similar process of exploration.

Research has shown that lower SES students may feel challenged in terms of their identity as a student who can live up to certain academic standards, due to factors of their SES (Jenik, 1991; Ostrove & Long, 2007). This challenge to a student’s identity can then lead to an exploratory process of questioning one’s established beliefs and values and roles (Jenik, 1991). In a study carried out by Griffiths (2006), the researcher found that low SES females students in a high SES dominated academic environment made up the majority of participants in both the highest identity (achieved) and the lowest (diffused) identity categories. This indicates that minority status may challenge an identity and lead to positive processes of exploration (and commitment) but it may not have this effect and may, in fact, be related to a state of feeling no motivation to explore or commit to an identity. The latter may occur for students who feel overwhelmed by the challenges of college and who may therefore feel unable to explore and establish themselves in college.
These processes of exploration have been shown to relate to positive psychological outcomes like higher identity development. In a qualitative study done by Jervik (1999), he found that, for a student who felt challenged in terms of her identity as someone who could achieve in the college environment, engaging in a process of actively questioning her beliefs and expectations allowed her to reaffirm her beliefs and expectations and thereby establish her identity more firmly. Studies that indicate that people of sexual-minority identities- who are more likely to have felt challenged and explored their sexual identity- tend to score higher on identity achievement also attest to the idea that the exploration provoked by a challenge to an identity has positive outcomes for identity development (Konick & Stewart, 2004). Studies of narrative processes further illuminate the processes by which such a challenge to the identity can lead to a more stable, engaged identity. A study done by Pals (2006) found that negative experiences that challenged people’s understandings of themselves and their worldview could lead to a strongly positive narration of the self through processes of exploration and positive resolution in the narratives such that the narrator acknowledged, accepted, and learned from the negative experience. These findings indicate that challenges to the identity that lead a person to engage in exploration of his or her identity can help that person establish a more comprehensive and developed identity. Therefore, the challenges that lower SES students face that may lead them to feel doubts about their academic identity may also lead these students to explore and affirm their academic identity in terms of their beliefs in their own abilities, the importance of academics to them, and the place of academics in their life story.

Overview of the Current Study
In the present study, we examined the negative effect of lower SES on academic identity that is suggested by past research. We did so in several novel ways. The construct of academic identity that we used is novel in that we created a composite construct that addressed several key facets of the academic identity domain: self-concept, centrality, and narrative identity. We anticipated that the examination of these three facets would allow for a relatively comprehensive description of academic identity. Narrative academic identity itself was also a new concept. Gathering and analyzing narratives of academics in particular allowed us to form a greater understanding of how people form the stories of their academic experiences specifically and how these stories relate to their conceptualizations of themselves as students. In addition, we examined these three facets of academic identity, as well as the proposed mediating factors and exploration, using quantitative methods in order to create a clearer picture of the effect of SES on academic identity. This effect had been implied by much qualitative research but far less quantitative research. We investigated the relationships of these factors using a survey containing measures of all of these factors, which we disseminated among students at a small elite liberal arts college in the northeast United States. Our survey also asked participants to report a narrative of an academic struggle or failure. In these ways we hoped to provide new insight into the effect of SES on academic identity.

Based on past findings, we predicted that students of lower SES would be more likely than their higher SES counterparts to experience a less engaged academic identity because they would be affected differently by certain mediating factors. However, we expected that this effect would be moderated by degree of exploration of the academic identity. More specifically, we anticipated that lower SES would relate to lower academic self-concept, less centrality of the
academic identity, and lower levels of meaning-making or more negative meaning-making in academic narratives. These predictions were partly based in the idea that, because lower SES students tend to have somewhat poorer academic performance, and because aspects of academic identity affect academic performance, lower SES students might have had lower academic identities. We also made this prediction based on literature which shows that such aspects of academic identity are affected by certain experiences that lower SES students have more often than higher SES student.

There is evidence that students of lower SES are more likely to have experiences such as feeling out of place in academic environments, feeling that they are expected to do poorly, or feeling that they do not have the power to do well based on their own abilities and efforts (Griffiths, 2006; Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). These experiences describe negative experiences of belonging, SSID and stereotype threat, and locus of control, respectively. Such experiences would all lower one’s academic self-concept by fostering doubt in one’s own abilities and would motivate disengagement from the academic identity by making it a source of self-doubt and distress (Johnson, Richeson, & Finkel, 2011; Steele, 1997). Feelings of low self-efficacy and more external locus of control would additionally be likely to make a person feel unable to succeed in academics when faced with such pressures, thus exacerbating these effects. In addition, persistently experiencing academics in a negative way could lead to negative meaning-making, or, in the event of disengagement with academics, lower levels of meaning-making. Therefore, we predicted that belonging, SSID, and locus of control would mediate the negative effect of low SES on academic identity.
We hypothesized that the predicted negative effect of lower SES on academic identity would be moderated by exploration. This prediction was based in research which shows that exploration of an identity can be prompted by a challenge to that identity, and that this exploration can lead to positive identity development (Konik & Stewart, 2004; Marcia, 1966; Pals, 2006). Coming to an elite academic environment can be challenging for lower SES students in terms of their academic identity because they may feel low belonging, high SSID and stereotype threat, and more external loci of control (Griffiths, 2006; Jenik, 1991; Johnson, Richeson, & Finkel, 2011; Ostrove & Long, 2007). However, research indicates that those students that are able to work through this challenge by exploring their identities may form even stronger student identities (Jenik, 1991; Pals, 2006). Therefore, we predicted that the effect of lower SES on academic identity would be moderated by exploration, such that lower SES students that explored their academic identities will not show this negative effect, and lower SES students who showed the most adverse outcomes would not have explored academic identity.

**Methods**

**Participants**

In the present study we recruited 105 participants (73 female) from the Haverford student body. 99 participants completed all or the majority of the survey and the rest completed enough of the survey to provide meaningful data. Our participants ranged in age from 18-22 years old. 24.8% of participants were freshmen, 21.9% were sophomores, 25.7% were juniors, and 27.6% were seniors. 4.8% of participants identified as Black or African American, 78.1% identified as White or Caucasian, 15.2% identified as Asian/Asian American/Pacific Islander, 5.7% identified as Latino or Hispanic, and approximately 1% identified as Multiracial or Other. 22.9% of the
sample reported that their parental income was over 200,000. 64.8% reported that their parental income was above 90,000. 9.5% of participants were the first person in their family to attend college, 6.7% were part of the first generation of their family to have members attending college (along with one or more siblings), 10% of participants had one parent who had attended a four-year college and one who had not, and 72.4% of participants had two parents who had both attend at least a four-year college. 35.2% of participants also had a mother who had completed a Masters degree or equivalent, while 32.4% had a father who had done the same; and 15.2% of participants reported that his or her mother had a PhD, JD, or MD, and 33.3% reported that his or her father had a PhD, JD, or MD.

**Procedure**

In order to recruit subjects to participate in the study, researchers made a link to an online survey available in various places such as in emails to potential participants and on an online message board. The survey contained measures of Academic Self-Concept, Centrality, and Narrative Identity, as well as Belonging, SSID, Locus of Control, and Exploration. The survey also contained both objective and subjective measures of socioeconomic status (SES), as well as basic demographic information such as gender, race, and age; in addition to GPA and class year. In the survey, participants were also asked to provide a narrative of a difficult academic experience, which the researchers coded for meaning-making and for specific types of positive and negative self-related meaning-making. A debriefing form followed the online survey, so that after the participants completed the survey, they were able to read the debriefing form. Participants were compensated for their participation with either 10 dollars or partial fulfillment of a requirement for an introduction to psychology course.
Measures

Socioeconomic Status (SES)

SES was measured in both objective and subjective ways. Our measure of objective SES included parental/familial income, educational attainment by mother and father, whether or not other close family members received college education, financial aid status, and socioeconomic status relative to peers in high school. For the parental/familial income variable participants were given a series of income ranges from which to choose. For the educational attainment by parents variable, participants were given a set of options from which to choose for each parent, ranging from “Did not complete high school or equivalent” to “Received a graduate degree of some sort.” To indicate whether or not other close family members received a college education, participants chose one of the following, “I am the first person in my immediate family (parents, siblings) to attend a four-year college, and no one else from previous generations (grandparents, great-grandparents, etc.) has,” “I have an older sibling (or siblings) who has attended a four-year college, but neither of my parents and no one else from previous generations (grandparents, great-grandparents, etc.) have either,” “Neither of my parents attended a four-year college, but at least one person in a previous generation (grandparent, great-grandparent, etc.) has,” “One of my parents attended a four-year college and the other did not,” and “Both of my parents attended a four-year college.” Participants also marked whether or not they were on financial aid at Haverford. Finally, to measure participants’ socioeconomic status relative to their peers in high school, participants indicated a point on a 5-point Likert type scale ranging from, “Of a significantly high socio-economic status than yourself” to “Of a significantly lower socio-economic status than yourself.”
To measure subjective SES we used an adaptation of the MacArthur Scale of Subjective Social Status (Goodman, Huang, Schafer-Kalkhoff, & Adler, 2007). This scale consists of a picture of a ladder with 10 rungs upon which participants were asked to place themselves in terms of their perception of their SES in comparison to the population of the United States.

In addition, we created two composite variables of SES. For the first we made an objective SES composite. We found that parental income, mother’s education, and father’s education were all significantly correlated with one another (Table 1), so we made the objective SES composite from z-scored parental income, z-scored mother’s education, and z-scored father’s education. These objective SES measures had a reliability of $\alpha = .78$. We also created a composite comprised of the objective SES measure and the ladder variable, as this variable was also significantly correlated with the variables used in the objective SES measure (Table 1), for a more complete composite SES variable including objective and subjective measures. The objective SES composite and ladder variable together had a reliability of $\alpha = .69$.

**Race**

We also used participants racial categorizations of themselves to create a variable on which a participant's score indicated either that he or she was White (score of 2) or not White (score of 1). We used this distinction because we did not have significant numbers of participants of any race other than White.

**Academic Self-Concept**

Academic self-concept was measured with the Academic Self-Concept Scale (ASCS), developed by Reynolds (1988). This scale consists of 40 items that address the way a student describes and evaluates him or herself in the capacity of being a student. Sample items include,
“Being a student is a very rewarding experience” and “If I try hard enough, I will be able to get good grades” (see Appendix A). The scale is a 4-point Likert-type scale with answers ranging from “strongly disagree” (1) to “strongly agree” (4). This scale had a reliability of $\alpha=.95$.

**Centrality**

We also used a few different measures of centrality. A measure of centrality that we used in the present study is the Disengagement Scale (Major & Schmader, 1998). This scale consists of three subscales, Discounting, Devaluing, and Disengagement, with 12 items total, all of which are meant to be answered on a 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7) (Appendix B). The Discounting scale consists of four items and measures to what extent the participant feels standardized tests are a valid measure of intelligence. Sample items include, “Most intelligence tests do not really measure what they are supposed to.” The Devaluing scale consists of five items and measures how important performing well on academic tests is to the participant. Sample items include “It usually doesn’t matter to me one way or the other how I do in school.” The Disengagement subscale consists of three items and measures how much a participant’s self-concept or emotional state is affected by performance on tests. A sample item from this subscale is, “How I do intellectually has little relation to who I really am.” Reliability for the full Disengagement Scale was $\alpha=.64$. Another scale we included in our survey is the single item Absolute Academic Centrality scale (adapted from Sharabi and Harpaz, 2010). This single-item scale asks, “What is the importance of academics and its meaning in your life?” and it is answered on a 7-point Likert scale ranging from, “one of the least important things in my life” to “one of the most important things in my life.” The final measure of centrality we used was an adaptation of a relative psychological centrality measure used by Stryker and Serpe.
(1994). For this measure we presented participants with five categories that related to being a student- academic, athletic/recreational, extracurricular, friendship or personal involvement (non organizational), and dating - and then used a ranking procedure to have participants compare each activity to each other activity. We asked participants to rank the activities in terms of their importance to the way the participant thought about him or herself.

Narrative Identity and Academic Failure Memory

We gathered narratives of difficult academic experiences from the participants and rated them on general meaning-making as well as on positive and negative self-related meaning. To obtain these narratives, in our survey we asked participants:

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.

In order to code the narratives that were generated by participants from this prompt, three coders first coded 10 of the narratives and discussed the scores each had given to each narrative in order to assure that there was a reasonable amount of agreement on the coding items. Each of the three coders then individually coded each of the rest of the narratives, and reliability for each coding
item was found using the coders’ scores on all of the narratives besides the first 10 which we had discussed together. However, all of the narratives including the first 10 were used in the rest of the analyses.

Whether or not a narrative had meaning was determined by examining whether or not the narrator drew specific meaning about the self or the world from the experience that he or she narrated and used this meaning to make connections between the experience and his or her other experiences or ideas. In the present study we used a coding method for meaning-making adapted from McLean & Pratt (2006). Each narrative was rated on meaning as 1 (no meaning), 2 (lesson meaning, vague meaning, or developing meaning), or 3 (insight). Narratives coded as 1 were those that showed no evidence that the narrator had examined the meaning of the event to him or herself. Narratives given a score of 2 contained a specific lesson the narrator learned but which the narrator did not connect to any broader meaning about the self or world, or signified that the narrative implied a sense of growth or change without specifying the meaning of this phenomenon for the narrator. For example, one participant given a score of 2 on meaning-making reported that, after getting a bad grade on an exam for a course in his/her major, “[He/she] was very discouraged at [his/her] academic direction. [He/she] was doubting [his/her] choice to pursue the bio major. As time went by, however,...[he/she] realized that it wasn’t the end of the world that [he/she] did badly on one test, since there were so many other things going for [him/her].” Finally, narratives coded as 3 included a significant insight described by the narrator that seemed to truly affect the narrator's view of the self or the world outside of the self. For example, in the present study one participant said, “This was important to me as a student because it helped me to redefine my sense of academic value and realize that what I got out of
my academic life did not need to depend solely on my grades.” However, the interrater reliability for this measure was very low (intraclass correlation coefficient for inter-rater reliability for this measure ranged from .41 to .61), so we decided not to use this variable in our analyses.

Narratives were also rated on the degree to which either positive or negative meaning-making was the dominant theme of the narrative; that is, the degree to which any meaning-making that was present was clearly positive (or negative) from the perspective of the narrator or was clearly valuable from an outside perspective. For instance, both of the narratives in the previous paragraph were rated as having some degree of positive meaning-making and no negative meaning-making. Each narrative was rated on both positive and negative meaning-making as 1 (none present), 2 (present, but not well-developed or not the dominant theme), or 3 (present, elaborated, and dominant). Narratives given a score of 1 for positive meaning-making had no positive meaning-making, narratives given a score of 2 showed some positive meaning-making but it may have been underdeveloped or coexisting with obvious negative meaning-making, and narratives given a score of 3 showed well-elaborated positive meaning-making that was clearly dominant over negative meaning-making. For instance, of the two narrative examples presented in the previous paragraph, the first was given a score of 2 on positive meaning-making, while the second was given a score of 3. For the inter-rater reliability of this measure we found that the intraclass correlation coefficient ranged from .75 to .77. The same scoring system was also used for negative meaning-making, but with identifying the presence or absence of negative meaning-making. For example, one narrative given a score of 2 on negative meaning-making read, “I’ve come to realize...that some people are just talented and more
intelligent than I am, even if I do study 5x more than them” while another narrative given a score of 3 on negative meaning-making read, “Sometimes I get discouraged thinking about [my grade on a particular final paper], because it makes me feel like I am just not smart enough to get that perfect grade, and there is nothing in my power I can do to change that.” For the inter-rater reliability of this measure we found that the intraclass correlation coefficient ranged from .36 to .60.

In addition to coding for positive and negative meaning-making, we also coded for certain themes within both positive and negative meaning-making. We decided to code for certain themes upon reading through the narratives and identifying several distinct themes that appeared. For each of these themes, narratives were coded as either demonstrating the theme (score of 1) or not demonstrating the theme (score of 0). The positive meaning-making themes were A) positive change in self emphasizing academic behavior (intraclass correlation coefficient ranged from .40 to .67), B) positive change in self or self-realization involving academic values or interests (intraclass correlation coefficient ranged from .74 to .82), C) confirmation of stable positive characteristics of self (intraclass correlation coefficient ranged from .37 to .79), D) positive self-evaluation of ability level (intraclass correlation coefficient ranged from .47 to .65), E) 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 (intraclass correlation coefficient ranged from .31 to .85), F) other (we did not use this theme in analyses). The negative meaning-making themes were A) negative self-evaluation of ability (intraclass correlation coefficient ranged from .35 to .45), B) disengaging from academics because effort does not make a difference (intraclass correlation coefficient ranged from .65 to
negative change in self towards confusion or uncertainty about academic future (intraclass correlation coefficient ranged from .45 to .57), and D) other (intraclass correlation coefficient ranged from .34 to .57).

Although we had initially conceptualized the academic identity variables (Academic Self-Concept, Centrality, and Narrative Identity) as facets of one construct, we found that the measures of these different aspects of academic identity were not strongly correlated (see Table 2). Therefore, we did not create a composite of these, and in our analyses we treated them separately.

**Belonging**

Belonging was measured with several scales. The first scale we used was the social subscale of the Student Adaptation to College Questionnaire, which is meant to measure how well a student is coping with the interpersonal and social demands of college (Baker & Siryk, 1989). This is a 20-item scale and participants responded to each question on a 9-point Likert-type scale which ranges from “applies very close to me” (A) to “doesn’t apply to me at all” (Appendix C). A sample item from this scale is, “I have difficulty feeling at ease with others in college.” Reliability for this scale was \( \alpha = .88 \). We also used an item adapted from Ostrove & Long (2007) which read “Overall, to what extent do you feel you belong at Haverford College?” Participants responded to this on a 5-point Likert scale ranging from “not at all” (1) to “a great deal” (5). We also measured belonging with an adaptation of a sense of belonging survey (Ostrove, Stewart, & Curtin, 2011). This survey uses 3 items, assessed with a semantic differential task, which measure how the student perceives the climate of his or her school. These three items are welcoming-alienating, respectful-disrespectful, and down-to-earth-
snobbish. Participants rated the climate as it felt to them on a five-point scale ranging from, for example, welcoming-alienating. Reliability for this scale was $\alpha=.76$. As shown in Table 3, we found that these three measures were all correlated with one another, so we created a composite belonging variable by averaging the z-scored versions of each of these belonging variables.

*Sensitivity to SES-based identity discrepancy (SSID)*

The extent to which a student experiences his or her SES identity as similar to or different from his or her peers was measured using an adaptation of the Sensitivity to SES-based identity discrepancy (SSID) scale developed by Johnson, Richeson, & Finkel (2011)(Appendix D). This scale measures a student’s perception of his or her relative SES in his or her school environment and includes items such as, “Most students at Haverford come from a more privileged background than I do.” The scale consists of six items which can be answered on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree”. In the present study this scale had a reliability of $\alpha=.86$.

*Locus of Control*

Locus of Control was measured in this study using the Academic Locus of Control Scale (Trice, 1985)(Appendix E). Trice’s Academic Locus of Control Scale contains 28 items that are answered with either “true” or “false”. The scale is meant to measure a person’s belief in his or her own ability to control the outcomes of his or her academic endeavors. Sample items from this scale include, “There are some subjects in which I could never do well.” This scale had a reliability of $\alpha=.68$.

*Exploration*
We measured exploration using an adaptation of the Ego Identity Process Questionnaire (Balistreri, Busch-Rossnagel, & Geisinger, 1995) (Appendix F). This scale contained sixteen items that measured how much a participant has explored his or her general identity and identity as a student. Participants answered each item by choosing from a series of responses on a 6-point Likert scale ranging from “strongly agree” (6) to “strongly disagree” (1). Sample items from this questionnaire include, “There has never been a need to question my values” (reverse scored). Reliability for this scale was $\alpha = .87$.

Results

In the present study, we hypothesized that socio-economic status (SES) would have an effect on academic identity, that this effect would be mediated by certain variables, and that this mediation would be moderated by exploration. Academic identity was conceptualized as including three main components, academic self concept, centrality of the academic identity, and narrative academic identity. We predicted that SES would have an effect on all of these facets. That is, we hypothesized that students of lower SES would have lower academic self concepts, less central academic identities, and lower levels of meaning-making or more negative meaning-making in academic narratives. The variables that we predicted would mediate the effect of SES on academic identity were sensitivity to SES-based identity discrepancy (SSID), belonging, and locus of control. Implicit in this hypothesis is also the prediction that there would be three-way correlations between the SES variables, proposed mediators, and academic identity variables. That is, we predicted that SES would correlate with the parts of academic identity and each mediator, and that the mediators and parts of academic identity would be correlated with each
other. There were several instances in which such three-way correlations between SES, a mediator, and a part of academic ID occurred.

We predicted that there would be a main effect of SES on each of the facets of academic identity that we examined. As shown in Table 4, this prediction was partially supported by the fact that several measures of SES were related to the academic self concept variables. Our measure of academic self concept was significantly positively correlated with our SES composite variable (which included the objective SES composite variable and the ladder variable measuring subjective SES)- in addition to being positively correlated significantly with subjective SES individually- and was significantly positively correlated with the participants’ mothers’ level of education (see Table 4). These findings support the predicted relationship between academic self concept and SES.

Of the measures of academic centrality we used, only disengagement was significantly correlated with any of the SES variables- providing limited support for our hypothesis that SES would predict all the facets of academic identity, including centrality-and neither of our narrative academic identity variables correlated with SES, providing no support for this aspect of our hypotheses (Table 4). Disengagement was significantly negatively correlated with both subjective SES and parental income, which supports our prediction that lower SES would relate to a less central academic identity (Table 4). Although we did not find relationships between all the variables that we predicted would be related, the relationships that we did find provide support for our hypothesis that there would be a relationship between SES and academic identity. This hypothesis was also somewhat indirectly supported by the findings that SES and GPA were correlated (see Table 5), which also indicates a connection between SES and academic identity.
as academic performance measures like GPA have been connected to certain facets of academic identity (Croizet & Claire, 1998; Leonhardt, 2005; Ostrove & Long, 2007; Gerardi, 1990).

Next, as shown in Table 6, we found relationships between several measures of SES and several of the mediation variables, partially supporting our prediction that SES would be related to the mediators we examined. Of the proposed mediation variables, all but locus of control showed significant correlations with one or more measures of SES (Table 6). Most notably, all of our measures of SES were significantly negatively correlated with SSID, and all of the measures of belonging were significantly positively correlated with the SES composite variable, the measure of subjective SES, and participants’ fathers’ education (Table 6). In addition, all the measures of belonging were significantly positively related to our objective SES composite variable, except one (sense of belonging), which was marginally related to the objective SES composite variable (Table 6). These findings support our hypotheses lower SES is related to higher SSID and lower levels of belonging, but do not support our hypothesis that lower SES is related to more external locus of control.

As shown in Table 7, there was also evidence of a relationship between the mediators and some facets of academic identity, which partially supports our hypotheses that the mediators would have an effect on all three facets of academic identity we examined. Academic self concept was significantly negatively correlated with SSID, significantly positively correlated with all of the measures of belonging, and was also significantly positively correlated with locus of control (Table 7). Positive meaning making was also correlated with all of the measures of belonging. Positive meaning making was significantly positively correlated with the social adjustment variable, belonging single item, and belonging composite variable, and was also
marginally positively correlated with the sense of belonging variable (Table 7). Negative meaning making was significantly negatively correlated with the social adjustment variable (Table 7). All of these correlations indicate relationships between the mediator variables and academic identity in the expected direction.

Across Tables 4, 6, and 7, we found a few cases of three-way correlations between SES variables, mediators, and academic identity variables—indicating possible mediation effects. Specifically, overall SES and academic self-concept were correlated with each other and with SSID and belonging, so we tested whether these last two variables mediated the relationship between SES and academic self-concept. To test this, we conducted multiple regression to test for mediation for both of these mediators. First, multiple regression was used to examine whether belonging mediated the relationship between SES and academic self concept, using our belonging composite variable as our measure of belonging. The criteria for testing mediation was met in that each of the three variables were correlated with each other: SES and belonging (Table 6), belonging and academic self concept (Table 7), and SES and academic self concept (Table 4). Having found this to be true, we then regressed academic self concept on SES and belonging, with SES entered in the first step and belonging entered in the second step. Consistent with mediation, the effect of SES in the first step ($\beta = .23, p<.05$) was reduced to non-significance ($\beta = .14, p=.20$) when belonging was included in the second step of the analysis, and the effect of belonging remained significant ($\beta = .27, p<.01$)(Fig 1). A Sobel test confirmed that belonging significantly mediated the relationship between SES and academic self concept ($Z=2.02, p<.05$). This supports our hypothesis that belonging would mediate a relationship between SES and academic self concept, such that lower levels of belonging experienced by
participants with lower SES would at least partially account for the finding that participants with lower SES show lower academic self concepts.

In addition, this mediation was significant even when controlling for the effect of GPA and race. To test if the mediation was significant when controlling for GPA and race, we reran the multiple regression, this time including GPA and race in the second step. We found, again, that the effect of SES in the first step ($\beta = .23, p < .05$) was reduced to non-significance ($\beta = -.12, p = .31$) when belonging and GPA and race were included in the second step of the analysis, and the effect of both belonging and GPA remained significant ($\beta = .31, p < .01$) ($\beta = -.40, p < .01$), while race did not ($\beta = .16, p = .11$). This shows that belonging mediates the relationship between SES and academic self concept, even when controlling for GPA and race.

We also found that SSID mediated the relationship between the SES composite variable and academic self concept. We had predicted that this would be the case based on the idea that having a lower SES would likely lead to one having a different SES from many other students at an elite, private institution, which would be likely to heighten one’s awareness of his SES, meaning that he would have higher SSID. We believed that this would increase one’s risk of experiencing stereotype threat and feelings of concern about performing at the college, including academically, which, again, means that one would have a lower academic self concept. The criteria for testing for this mediation was met as each of the three relevant variables were correlated with each other: SES and SSID (Table 6), SSID and academic self concept (Table 7), and SES and academic self concept (Table 4). To find this mediation effect, we regressed academic self concept on SES and SSID, with SES entered in the first step and SSID entered in the second step. Consistent with mediation, the effect of SES in the first step ($\beta = .23, p < .05$)
was reduced to non-significance ($\beta = -0.04, p = 0.97$) when SSID was included in the second step of the analysis, and the effect of SSID remained significant ($\beta = -0.33, p < 0.05$) (Fig 2). A Sobel test confirmed that SSID significantly mediated the relationship between SES and academic self concept ($Z = 2.27, p < 0.05$). This finding supports our prediction that SSID would mediate the relationship between SES and academic self concept, meaning that higher levels of SSID experienced by participants with lower SES would at least partially account for the finding that participants with lower SES show lower academic self concept.

This mediation was also significant even when controlling for the effect of GPA and race. To test if the mediation was significant when controlling for GPA and race, we reran the multiple regression, this time including GPA and race in the second step. We found, again, that the effect of SES in the first step ($\beta = 0.23, p < 0.05$) was reduced to non-significance ($\beta = -0.15, p = 0.28$) when SSID, GPA, and race were included in the second step of the analysis, and the effect of both SSID and GPA remained significant ($\beta = -0.28, p < 0.05$) ($\beta = -0.37, p < 0.01$), while race did not ($\beta = 0.07, p = 0.48$). This indicates that the mediation effect of SSID is independent of GPA and race.

We predicted that exploration would buffer the hypothesized mediation effects, so that people who experienced high SSID, low belonging, and more external loci of control related to their SES would not experience a negative effect on academic identity if they showed high levels of exploration. To test whether the mediations we had found we moderated by exploration, we ran a few moderated multiple regressions for both of the mediations we had found (Aiken & West, 1991). First, to see if exploration moderated the relationship between SES and academic self concept, we conducted a hierarchical multiple regression in which SES and exploration were entered in the first step and the term representing their interaction was entered in the second step.
In the second step it was found that SES was a significant predictor of academic self concept, while exploration was not ($\beta = .21, p<.05; \beta = -.11, p=.30$). In addition, the interaction term was not significant ($\beta = .02, p=.87$) indicating that exploration did not moderate the relationship between SES and academic self concept. Furthermore, this finding precludes the possibility that exploration moderates any mediation by a third variable of the effect between SES and academic self concept.

Although exploration did not moderate the relationship between SES and academic self-concept, we persisted in investigating whether exploration moderated the effect of belonging or SSID on academic self-concept. To do so we conducted a hierarchical multiple regression in which exploration and belonging were entered in the first step and the term representing their interaction (created by multiplying exploration and belonging together) was entered in the second step. In the second step we found that belonging was a significant predictor of academic self concept ($\beta = .37, p<.01$) and exploration was not ($\beta = -.18, p=.06$), but that the interaction term was significant ($\beta = .20, p<.05$), indicating a moderation by exploration of the relationship between belonging and academic self concept. We then used Aiken and West’s (1991) procedure for graphing moderator effects to delve further into this interaction. In keeping with Aiken and West’s procedure, we solved the regression equation for academic self concept separately for scores positive and negative one standard deviation on both exploration and belonging as shown in Figure 3. People with low belonging and high exploration had the lowest academic self concepts. This interaction remained significant when we controlled for GPA and race. When we reran this regression with GPA and race added in the second step, the interaction term remained significant ($\beta = .20, p<.05$), showing that this moderation effect is not explained
by GPA or race. This contradicts our prediction that exploration would buffer negative effects of SES or mediators on academic identity.

In addition, exploration moderated the relationship between SSID and negative theme B so that negative theme B appeared the most in narratives of people with high SSID and high exploration. To find this, we again used a moderated multiple regression (Aiken & West, 1991). We conducted a hierarchical multiple regression in which exploration and SSID were entered in the first step and the term representing their interaction (created by multiplying exploration and SSID together) was entered in the second step. In the second step we found that neither SSID nor exploration were significant predictors of negative theme B ($\beta = .16, p = .10$) ($\beta = .13, p = .20$), but that the interaction term was significant ($\beta = .42, p < .01$), indicating a moderation by exploration of the relationship between SSID and negative theme B. We then used Aiken and West’s (1991) procedure for graphing moderator effects to delve further into this interaction. In keeping with Aiken and West’s procedure, we solved the regression equation for negative theme B separately for scores positive and negative one standard deviation on both exploration and SSID and found that people with high SSID and high exploration had the lowest academic self concepts (see Fig.4). We also found that when we reran this regression with GPA and race added in the second step, the interaction term remained significant ($\beta = .44, p < .01$), showing that this moderation effect is not explained by GPA or race. Therefore, quite contrary to our prediction that exploration would buffer negative effects on academic self concept, exploration seems to exacerbate the negative effects of low belonging and high SSID on aspects of academic identity that we had previously found.
We also found a few relationships between mediators and narrative themes, which also supports the idea that there is a relationship between mediators and narrative identity as well as illuminating the participants thought process to some degree. We found that negative theme B (disengaging from academics because effort does not make a difference) was significantly negatively correlated with the single item measure of belonging as well as the composite measure of belonging (Table 8). In addition, we found that negative theme B was significantly positively correlated with SSID (Table 8). Finally, we found that negative theme D (negative theme not further specified) was significantly correlated with SSID. Besides indicating a relationship between these mediators and the way a participant told their narrative generally, the connection of a particular theme to these particular mediators suggests a possible pattern of the thought processes that may relate to the experience of this particular mediator for participants. However, in the case of negative theme D, this connection does not actually give us much new information, as this was not actually a particular theme.

**General Discussion**

Of the three facets of academic identity which we examined, academic self-concept showed the strongest relationship with SES. Although academic self concept was not correlated with all of the measures of socioeconomic status, which would have lent greater support to our hypothesis, it was connected to our SES composite variable, in addition to being correlated with both mother’s education and the measure of subjective SES (ladder variable). Therefore it seems quite reasonable to assert that there is a strong connection between socioeconomic status and academic self concept, as we predicted there would be. We predicted that this relationship would appear for a few reasons. First, because past research has shown both that SES is related
to academic performance and that academic self concept has been shown to relate to academic performance, this suggests the possibility that SES would also be related to academic self concept (Croizet & Claire, 1998; Leonhardt, 2005; Ostrove & Long, 2007; Gerardi, 1990). We did, in fact, find in our study that SES and GPA were positively correlated, illustrating the relationship between SES and academic performance. In addition, academic self concept in particular has been shown to relate to certain factors that may be experienced differently by people of lower SES, such as belonging and SSID (Ostrove & Long, 2007; Johnson, Richeson, & Finkel, 2001). These relationships also led the researchers in the present study to suspect that factors such as belonging and SSID might mediate the relationship that we expected between SES and academic identity. As will be discussed later, both SSID and belonging did, in fact, mediate the relationship between SES and academic self concept, lending support to this explanation, although locus of control-another factor which we expected to be a mediator- did not.

Of our measures of centrality -another proposed facet of academic identity- disengagement was the only measure that showed a significant relationship with socioeconomic status. One possible explanation for this is that absolute academic centrality and relative academic centrality frequencies were both quite skewed in the positive direction, meaning that students in our sample typically viewed academics as a very important part of their lives, so there was not much variability for these measures. This is not surprising, as our sample was drawn from college students at a highly academics-focused school.

In addition, while absolute academic centrality and relative academic centrality measure the importance of academics to the participant simply by asking the participant to rate its
importance to her, items on the disengagement scale present a conception of academics that is very focused on intelligence and performance on academic tests (e.g. “I always feel good about myself when I do well on an academic test”). However, different people may value different conceptions of academics. For instance, studies have shown that, while some people see their relationship with academics in terms of their performance on tests, others see their relationship with academics more in terms of a process of learning and growth, while others see committing to academics as an obligation they have to their families (Bachman, 2005). It is possible that people of different SES backgrounds typically show certain conceptions of academics for various reasons. One reason that this might occur is if academic or other intelligence tests are culturally biased in their language or structure to favor people from higher SES backgrounds, which might cause these tests to seem more confusing or irrelevant to ideas of intelligence for people of lower SES background. Perhaps, also, if these intelligence tests are confusing because they are culturally biased, it would be beneficial to one’s self esteem to dismiss their significance. This process might be similar to the theory of the process of stereotype threat, which proposes that a person would disengage from identity categories when stereotypes about one’s group create unpleasant pressure for the person when performing in such identity categories (Steele, 1997). Therefore, it is possible that people of different SES groups are more or less likely to hold certain conceptions of academics, making them more or less likely to have higher scores on the disengagement measure independent of how important their conception of academics is to them.

Contrary to our hypothesis, neither of the narrative academic identity variables we used in the analysis-positive and negative meaning making-were significantly related to any measures of SES. Perhaps the lack of relationship between SES and these narrative variables can be
explained by the possibility that the negative experiences of academics that we predicted students of lower SES would have, in terms of the proposed mediators, could be interpreted in a variety of ways. Though we found evidence that students of lower SES would experience both higher SSID and lower belonging, it seems entirely possible that people across SES groups could make either positive or negative interpretations of these experiences for themselves, perhaps due to individual differences such as personality traits more so than SES factors. However, as certain measures of belonging and SSID are related to positive and negative meaning-making as well as SES, there is an indirect connection between SES and valenced meaning-making through these variables (Table 7, Table 6). It is also possible that our coding categories for positive and negative meaning were too simplistic and therefore not sensitive to different types of meaning making. In addition, it seems quite possible that obtaining one narrative of a failure experience would provide a somewhat weak measure of meaning-making, especially positive meaning-making. It seems possible that even students who tend to make more positive meaning from their experiences would be less likely to do so when prompted to describe an instance of failure.

Although we did not find all of the mediation effects that we had expected, we did find that two of our mediators—both SSID and belonging—mediated the relationship between SES and academic self concept. We looked for these mediations because we wanted to explore possible processes by which socioeconomic status might relate to academic identity. We did find SES and academic identity to be related, and then, of the possible mediators we examined, only SSID and belonging mediated the relationship between SES and academic identity. Both of these mediators relate to a student’s feeling out of being out of place in the environment of the college they attend to a greater degree than locus of control does. Therefore, the fact that these two variables
mediated the relationship between SES and part of academic identity, while locus of control did not, indicates that feeling out of place in a college environment has a very important impact on lower SES students. These findings indicate that in the process of formulating one’s academic identity, SES factors are very important. These findings also suggest important mechanisms by which this process can be different for people of different SES backgrounds; namely that feelings of not fitting into an academics-focused community because of SES differences impact a person’s view of her ability to perform academically.

SSID has also been shown to relate to distracting and distressing cognitive processes—such as heightened vigilance for clues that one’s identity is not valued—that some research has shown can pressure a person to disidentify with an identity domain, as in the theory of stereotype threat (Johnson, Richeson, & Finkel, 2011; Steele, 1997). Low belonging may also relate to these processes if feeling low belonging causes one to be more aware of differences between one’s own and one’s peers’ SES. Feeling these cognitive processes and, potentially, disidentification, may manifest in some ways as a lowered academic self-concept as they may make one feel distressed and distracted in the context of performing academically, which may make a person feel less capable of performing well.

These processes may affect one’s academic self-concept even if these processes do not actually affect one’s academic performance. In fact, these mediations held when controlling for GPA and race (though GPA and race were both related to SES and SSID and academic self-concept (Table 5)). This illustrates that feelings of belonging and possible stereotype threat processes in our study were independent of academic achievement and therefore the relationship between SES, SSID and belonging, and academic self-concept is not merely a reflection of one’s
knowledge of her academic performance but may illustrate the relationship between feeling like an outsider for reasons independent of academics (SES, in this case) that nevertheless impact one’s belief in one’s academic ability, and that SES-related stereotype apprehension may impact one’s belief in one’s academic ability. In addition, the fact that race did not explain this mediation indicates that SES was significant apart from race.

Contrary to our hypotheses, academic identity exploration did not serve as a buffer for lower SES students in terms of negative effects on academic self-concept. We had predicted that this moderation would occur because of past research which indicates that challenge to an identity can prompt exploration of that identity, and exploration of an identity has also been shown to lead to more well-developed identities (Konik & Stewart, 2004; Marcia, 1966). Furthermore, we anticipated that identifying with a lower SES group might be experienced as a challenging identity at an elite, affluent college, where a lower SES student would be in the minority (Ostrove & Long, 2007). However, our measure of exploration did not correlate with any of our measures of academic identity, suggesting that our belief that exploration of the academic identity would strengthen this identity may have been incorrect. In addition, past studies have shown that exploration is sometimes related to anxiety and that this may occur when people engage in ruminative exploration, which is marked by brooding and worrying (Luyckx, et al, 2007). Therefore, exploration may actually be related to poor psychological outcomes. In fact, we found a few moderations that support this possibility.

Though we did not find the moderated mediation we expected, we did find that exploration moderated some other relationships that we found, including the relationship between belonging and academic self concept. Exploration moderated this relationship such that
participants with low belonging and high exploration had the lowest academic self concept, contradicting our hypotheses that exploration would buffer negative effects on academic identity. Belonging is one’s sense of one’s own fit in a certain environment, which, in our study, is an academic environment. Though our measures of belonging measured general feelings of fitting in versus feeling alienated from the community, we predicted that these feelings would relate to one’s feelings of belonging in terms of the academic environment specifically, meaning how one felt as a member of a class discussion, whether one felt comfortable talking with peers and professors about academics related topics, and so on. If this is the case, it would make a lot of sense for belonging to be related to academic self concept, which measures one’s sense of one’s own ability to do well in school, as part of feeling belonging may be feeling able to perform academically. If a student explores their academic identity while feeling low belonging, it makes sense that they may be evaluating themselves and their relationship with academics in the most negative light. As past studies have shown that exploration can be a negative, ruminative process, this supports the idea that exploration may be related to more negative interpretations of whatever is being explored (Luyckx, et al, 2007). Therefore, exploration of one’s academic identity by those feeling low belonging may exacerbate the effect of low belonging on academic self concept, as our moderation finding indicates. It is also notable that this moderation was found when controlling for race and GPA, indicating that neither one’s race nor academic performance control this relationship.

We also found that exploration moderated the relationship between SES-based sensitivity to identity discrepancy (SSID) and negative theme B (disengaging from academics because effort does not make a difference), so that the combination of high SSID and high exploration
was related to the highest likelihood of including negative theme B in one’s narrative of academic failure. One possible explanation for this is that having higher SSID may make a person more likely to feel devalued in a college environment, more anxious, and more vigilant to clues that she does not belong (Johnson, Richeson, and Finkel (2001)). If a person is critically examining her academic identity in this state of mind, it seems quite possible that she would be more likely to come to negative conclusions about academics and the place of academics in her life, such as those expressed in negative theme B. For example, one participant with a high SSID score (6.17, on a scale with 7 being the highest SSID score) whose narrative was coded as demonstrating negative theme B said he or she felt as though he or she was, “at the bottom of the barrel,” and eventually came to feel, “[he/she] was producing the same results, whether [he/she] tried really hard on an assignment or put forth no effort.” Based on our theory, this may illustrate a case of a person feeling out of place and unable to live up to academic standards in relation to feeling out of place based on SES. As exploration can be negative, it is reasonable to predict that the combination of high SSID and exploration may be more stressful and relate to more negative outcomes than SSID alone (Luyckx, et al, 2007). The moderation by exploration of the relationship between SSID and negative theme B was also significant even when controlling for race and GPA, indicating that this relationship reflects more than the relationship between any of these factors and academic performance or racial background. It is important to note, however, that only three of our participants expressed this theme in their narratives, therefore this finding is not very reliable.

The above mediations and moderations provide interesting evidence both in support and in opposition to our hypotheses. In addition to the above findings, we also found several results
that supported the more secondary parts of our hypotheses. For instance, we found support for our prediction that our proposed mediator variables would relate to SES. We found that sensitivity to SES-based identity discrepancy was strongly negatively correlated with all of our SES variables, which was in line with our predictions. This may simply indicate that the participants were good at judging their own socioeconomic status relative to the general population at Haverford to a certain degree. Several measures of belonging were also correlated with SES measures. Most notably, the belonging composite variable was significantly correlated with our objective SES composite variable, subjective measure of SES (ladder variable), and our SES composite (including the objective SES composite variable and the ladder variable). We predicted that this would be the case based on a good deal of qualitative and quantitative evidence from past research showing that students of low SES often feel low belonging at college, especially at elite private colleges, which are normally populated largely by students of the upper middle class (Ostrove & Long, 2007; Johnson, Richeson, & Finkel, 2011).

This past research indicates that students from lower SES backgrounds feel out of place, as if they are in the minority and therefore outsiders who do not have the ability to perform as necessary to be a member of the community (Ostrove & Long, 2007). A different possible interpretation is that students who feel out of place due to their SES may express low belonging due to a sense that the community is not fulfilling their needs or not representing their values, as opposed to making negative attributions about the self. However, the idea that SES affects one’s sense of one’s belonging in terms of one’s own abilities is supported by our finding that belonging in our study is also correlated with academic self concept, which represents one aspect of a person’s sense of her ability to perform in the college environment (Table 7). However, it is
important to note that as the mediation by belonging of the relationship between SES and academic self concept was independent of GPA, this indicates that the relationship between SES, belonging, and academic self-concept is not explained by academic performance. That is, students of lower SES backgrounds do not simply feel low belonging and low academic self-concept because they perform more poorly than students of higher SES backgrounds. So it seems that the feeling of belonging itself impacts academic self-concept. This is also particularly interesting as our measures of belonging focused on social fit as opposed to academic fit, indicating that whether or not a student feels like she belongs in the general culture of an academic environment impacts her sense of her ability to perform academically.

We did not find locus of control to relate to any of our measures of SES. Though previous research has shown that college students from lower SES backgrounds also tend to have relatively low self efficacy, these studies have been done at larger state universities which almost certainly have a very different environment from that of the college where we ran our study (Griffiths, 2006). As the college where we ran our study was small and elite, it is possible that the students who apply to this college would be students who felt they could get in if they tried even in the face of relatively low acceptance rates, which may mean that more students with more internal loci of control would apply and get in. Therefore, students from lower SES groups who attend this school may have unusually internal loci of control because they would have to believe in their ability to succeed at an elite school in order to apply and attend, especially, in the face of the stereotypes and feelings of low belonging that we have discussed students of lower SES may feel in such an environment. Therefore, the students from lower SES groups at Haverford may not truly represent general trends in lower SES people in terms of locus of
control. On the other hand, in terms of SES, our sample of participants was skewed towards the higher end of our SES measurement. Therefore our study may not have included a significant number of people who would truly be vulnerable to the negative effects of SES on locus of control.

Of our academic identity variables, the one that showed the strongest relationship with the proposed mediators was academic self concept. Academic self concept was significantly correlated with all of the mediation variables in the expected direction, supporting our hypothesis that our proposed mediators would relate to academic self concept. We expected each mediator to correlate with academic self concept for various reasons. We expected that both low belonging and high SSID would lead a student to have doubts about her academic ability by raising doubts in her ability to perform in the academic environment by making her feel out of place in the environment in general which is academics-focused. We also thought that high SSID and low belonging might affect academic self-concept by making one more concerned about stereotypes concerning academics that applied to groups participants were part of, but this may not have had an impact on the direct relationships between SSID and academic self-concept and belonging and academic self-concept as it is unlikely that our participants were generally concerned about stereotypes. We expected that locus of control would be connected to academic self concept in the first place because this has been shown in past literature (Reynolds, 1988). This also seemed quite reasonable to expect, as academic self concept is a measure of a student’s sense of her academic ability, and, locus of control is a measure of someone’s belief in her ability to control the events of her life, which could include her academic outcomes and therefore could overlap quite a bit with her sense of her academic ability.
Narrative academic identity also showed relationships with some of the mediators. That is, positive and negative meaning making each correlated with at least one measure of belonging in the expected direction. This is in keeping with our prediction that negative academic experiences could lead to more negative meaning-making. In addition, negative theme B correlated with SSID, the single item of belonging, and the belonging composite variable; while negative theme D correlated with SSID. As negative theme D is an unspecified negative theme, this does not provide much additional information beyond the idea that SSID is connected with more negative understandings of academic experiences. However, the relationship between negative theme B (disengaging from academics because effort does not make a difference) and SSID and belonging indicates that high SSID and low belonging are related to a negative experience of academics in a specific way. It is interesting that this particular theme relates to SSID and belonging, which are both measures of feeling a lack of fit in the environment, as this theme also indicates a feeling of lack of fit. To a certain degree it also indicates a sense of defeat, a sense that attempting to understand the standards and fit in is futile. This relationship therefore has some interesting implications for the relationship between SSID and belonging and academic identity.

Our study had several limitations. First, as our study was correlational and not experimental, we did not gain any information about cause and effect. In addition, for a few of our constructs, there were ways in which the measures could have been improved. For instance, some of the constructs may have been measured in such a way as to overlap conceptually. Academic locus of control and academic self concept, for example, both measure the student’s belief in her ability to perform academically. It may be useful in future research to examine the
relationship of locus of control to SES and academic identity with a measure of more general locus of control.

In addition, SSID and belonging both relate to one’s feeling that she does or he does not fit into the community of the college. SSID represents one’s sense of whether his SES is abnormal in the environment and therefore feeling of fitting in or not based on her SES, while belonging measures one’s actual level of comfort and adjustment in the environment. It may be useful to have another measure of the possible impact of heightened awareness of one’s SES which may illuminate other processes related to this awareness. For instance, besides heightening one’s risk of feeling out of place and therefore feeling low academic fit and concerns about ability to perform academically, we predicted that SSID would relate to stereotype threat processes. These processes are thought to incite anxiety and other performance-inhibiting emotional and cognitive processes and -through repeated experience of these unpleasant phenomenons-to pressure disidentification with an identity (Steele, 1997). Perhaps a more direct measure of the presence or absence of this process would have provided more or clearer information about the mechanisms by which SSID and academic self concept are related, for instance a measure that provided information on how distracting or distressing a person found differences between their and others’ SES backgrounds. Future research could include such a measure.

Besides cases in which constructs’ were measured in overlapping ways, there were also other ways in which measures could be improved in future research. As discussed, our measure of disengagement measured a very performance-based meaning of academic identity and it may therefore be useful in future research to have a measure which measures disengagement in terms
of a less specific conceptualization of academics or which measures disengagement in terms of a
greater variety of academic meanings. Similarly, it may be interesting in future research to
include a more general measure of exploration (as opposed to our measure, which focused on
academic exploration) to see if the experience of low SES in an academic environment,
particularly an affluent academic environment, affects exploration in general or exploration of
other identities. Furthermore, for all of our variables it may have been useful to have a greater
variety of measures so as to be able to examine each variable in a more nuanced way. It may
also have been useful to include implicit measures of all of our variables.

There are a few other ways in which future research could expand on our study. For
instance, though there was a wide range of socioeconomic statuses, the distribution was skewed
towards the higher SES end, and therefore our results may not be as valid as we would have
liked. Studies in the future could attempt to correct for this by making efforts to recruit more
lower SES participants. Future studies may also examine whether the effects that we found seem
to generalize to other types of academic environments. In addition, while we examined
exploration in our study, we did not examine commitment. While exploration when paired with
commitment to an identity (i.e. identity achievement) has been shown to relate to many positive
psychological outcomes-such as perseverance, and resilience to stress as well as resilience to
negative information about the self, this is not as true for people who demonstrate exploration
without commitment to an identity (i.e. moratorium)(Marcia, 1966). Therefore it seems likely
that exploration of an identity paired with commitment to certain type of that identity could have
a very different relationship with academic experience than exploration on its own. Therefore,
future research should examine these different relationships.
Furthermore, a longitudinal study of students’ experiences adapting to an elite college environment would provide further insight into the relationships of the variables we examined. A study that followed students’ experiences in this type of environment over the course of their college careers could reveal how SES, our mediators, and academic identity interact over time. This could provide more complete information on the processes by which students’ academic identities form and which variables relate to better or worse adaptation to the elite college environment over time. This could help us to better understand why some students succeed and some do not.

Our study had a variety of interesting implications. Our findings provide evidence that there is a relationship between socioeconomic status and academic self concept, and that this relationship is mediated by sensitivity to SES-based identity discrepancy and belonging. This is an important finding because it helps to illuminate a process by which students of lower SES groups may have relatively difficult experiences of college. It is particularly important to examine this process because receiving a college education can have a very significant positive impact on a person’s life. Therefore, in light of these findings, steps should be taken to ensure that all students have experiences that are as positive as possible so that everyone can achieve and grow as much as possible. Our findings indicate that addressing ways in which the culture of a college may make disparities in wealth obvious or favor a culture of affluence in other ways may be beneficial in terms of making the community welcoming to students of all SES backgrounds. Measures to address this issue could also include actively providing support for students of lower SES backgrounds, such as affinity groups in which people could openly
address their experiences and therefore potentially feel less low belonging and concern about
SES disparities.

References


Table 1
*Correlations between parental income, mother’s education, father’s education, and subjective measure of SES*

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**p<.01; *p<.05, † p<.1

PI: parental income, MEd: mother’s education, FEd: father’s education, Ladder: subjective measure of SES
### Table 2
**Correlations between academic identity variables**

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**p<.01; *p<.05, † p<.1**

Table 3
Correlations between measures of belonging

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**p<.01; *p<.05, † p<.1
Social Adjust: Social Adjustment to College, Belong Single: Belongingness Single-Item Measure
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*Correlations between SES variables and academic identity variables*

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**p<.01; *p<.05, † p<.1

PI: parental income, MEd: mother’s education, FEd: father’s education, OFEd: other family education, FA: financial aid, Ladder: subjective measure of SES, objectiveSES: composite variable (parental income, mother’s education, and father’s education) SEStotal: composite variable (objectiveSES and Ladder)

Academic SC: academic self-concept, Ab Aca Central: Absolute Academic Centrality, Rela Aca Central: Relative Academic Centrality
### Table 5

*Correlations between race and GPA and other main variables*

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**p<.01; *p<.05, † p<.1

SEStotal: composite variable (objectiveSES and Ladder), SSID: Sensitivity to SES-Based Identity Discrepancy, Belong total: composite variable (Social Adjustment to College, Belongingness Single-Item Measure, and Sense Belonging), Academic SC: academic self-concept, Ab Aca Central: Absolute Academic Centrality, Rela Aca Central: Relative Academic Centrality
Table 6

*Correlations between SES variables and mediation variables*

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PI: parental income, MEd: mother’s education, FEd: father’s education, OFEd: other family education, FA: financial aid, Ladder: subjective measure of SES, objectiveSES: composite variable (parental income, mother’s education, and father’s education) SEStotal: composite variable (objectiveSES and Ladder)

Table 7
Correlations between mediation variables and academic identity variables

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Academic SC: academic self-concept, Ab Aca Central: Absolute Academic Centrality, Rela Aca Central: Relative Academic Centrality
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**p<.01; *p<.05, † p<.1
**SES AND ACADEMIC IDENTITY**

**Fig. 1**

![Diagram showing the relationship between SES, Belonging, and Academic Self-Concept.](image)

**SES**: composite variable (objective SES and Ladder), **Belonging**: composite variable (Social Adjustment to College, Belongingness Single-Item Measure, and Sense Belonging)

**Fig. 2**

![Diagram showing the relationship between SES, SSID, and Academic Self-Concept.](image)

**SES**: composite variable (objective SES and Ladder), **SSID**: sensitivity to SES-based identity discrepancy

**Notes**:
- **p<.01; *p<.05**
- Sobel’s z = 2.02*
- Sobel’s z = 2.27*

SES: composite variable (objective SES and Ladder), Belonging: composite variable (Social Adjustment to College, Belongingness Single-Item Measure, and Sense Belonging)
Academic Self-Concept

 SES AND ACADEMIC IDENTITY

Fig.3

![Graph showing the relationship between academic self-concept and exploration for low and high belonging.

- Academic Self-Concept axis ranges from -0.8 to 0.6.
- Exploration axis is labeled with 'low exploration' and 'high exploration'.
- The graph illustrates the trend where academic self-concept decreases as exploration increases for both low and high belonging.

Legend:
- Dark line: low belonging
- Light line: high belonging

Note: The exact values and interpretations would require numerical data from the graph.
Fig. 4

Negative Theme B

SSID

low

high

explore

low SSID high SSID

low explore high explore
Appendix A:

Academic Self-Concept Scale (Reynolds, 1980)

Listed below are a number of statements concerning school-related attitudes. Rate each item as it pertains to you personally. Base your ratings on how you feel most of the time. Use the following scale to rate each statement:

SD. Strongly Disagree
D. Disagree
A. Agree
SA. Strongly Agree

1. Being a student is a very rewarding experience.
2. If I try hard enough, I will be able to get good grades.
3. Most of the time my efforts in school are rewarded.
4. No matter how hard I try I do not do well in school.
5. I often expect to do poorly on exams.
6. All in all, I feel I am a capable student.
7. I do well in my courses given the amount of time I dedicate to studying.
8. My parents are not satisfied with my grades in college.
9. Others view me as intelligent.
10. Most courses are very easy for me.
11. I sometimes feel like dropping out of school.
12. Most of my classmates do better in school than I do.
13. Most of my instructors think that I am a good student.
14. At times I feel college is too difficult for me.
15. All in all, I am proud of my grades in college.
16. Most of the time while taking a test I feel confident.
17. I feel capable of helping others with their class work.
18. I feel teachers' standards are too high for me.
19. It is hard for me to keep up with my class work.
20. I am satisfied with the class assignments that I turn in.
21. At times I feel like a failure.
22. I feel I do not study enough before a test.
23. Most exams are easy for me.
24. I have doubts that I will do well in my major.
25. For me, studying hard pays off.
26. I have a hard time getting through school.
27. I am good at scheduling my study time.
28. I have a fairly clear sense of my academic goals.
29. I'd like to be a much better student than I am now.
30. I often get discouraged about school.
31. I enjoy doing my homework.
32. I consider myself a very good student.
33. I usually get the grades I deserve in my courses.
34. I do not study as much as I should.
35. I usually feel on top of my work by finals week.
36. Others consider me a good student.
37. I feel that I am better than the average college student.
38. In most of the courses, I feel that my classmates are better prepared than I am.
39. I feel that I do not have the necessary abilities for certain courses in my major.
40. I have poor study habits
Appendix B:

Disengagement Scale (Major and Schmader, 1998)

Please indicate the extent to which you agree or disagree with the following statements.

1 strongly disagree 2 3 4 5 6 7 strongly agree

1. I feel that standardized achievement tests are fair tests of my abilities.
2. In general, I feel that standardized achievement tests are a good measure of my intelligence.
3. Most intelligence tests do not really measure what they are supposed to.
4. I feel that standardized achievement tests are definitely biased against me.
5. I always feel good about myself when I do well on an academic test.
6. Being good at academics is an important part of who I am.
7. Doing well on intellectual tasks is very important to me.
8. I care a great deal about performing well on tests of my intellectual ability.
9. It usually doesn’t matter to me one way or the other how I do in school.
10. I really don’t care what tests say about my intelligence.
11. No intelligence test will ever change my opinion of how intelligent I am.
12. How I do intellectually has little relation to who I really am.
Appendix C

Social Adjustment Subscale of the Student Adaptation to College Questionnaire (Baker & Siryk, 1989)

Please use the following scale to indicate the extent to which you feel the following statements apply to you.

A       B      C       D       E       F       G       H       I
doesn’t apply to at all applies very closely to me

I consider myself someone who…
1. Fits in well with college environment
2. Is very involved with college social activities
3. Is adjusting well to college
4. Has several close social ties
5. Has adequate social skills
6. Is satisfied with social participation
7. Is satisfied with social life
8. Is meeting people and making friends
9. Has informal contact with professors
10. Gets along well with roommates
11. Has difficulty feeling at ease with others at college
12. Does not mix well with opposite sex
13. Feels different from others in undesirable ways
14. Has good friends to talk about problems with
15. Is lonesome for home
16. Feels lonely a lot
17. Would rather be home
18. Is pleased about decision to attend this college
19. Enjoys living in a dormitory
20. Is satisfied with extracurricular activities
Appendix D:

Sensitivity to SES-based Identity Discrepancy (adapted from Johnson, Richeson, & Finkel, 2011)

Please indicate the extent to which you agree with each of the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree Somewhat</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. Most students at Haverford come from a more privileged background than I do.
2. Most students at Haverford have had more opportunities (for success) than I have.
3. I come from a very different socioeconomic background than most Haverford students.
4. Compared to most students at Haverford, I have had to work hard to overcome obstacles to get to a school like Haverford.
5. I am similar to the typical Haverford student.
6. My family background/upbringing is similar to that of the typical Haverford student.
Appendix E:

Academic Locus of Control Scale (Trice, 1985)

Please mark each of the following statements as either true or false:

1. College grades most often reflect the effort you put into classes.
2. I came to college because it was expected of me.
3. I have largely determined my own career goals.
4. Some people have a knack for writing, while others will never write well no matter how hard they try.
5. I have taken a course because it was an easy good grade at least once.
6. Professors sometimes make an early impression of you and then no matter what you do, you cannot change the impression.
7. There are some subjects in which I could never do well.
8. Some students, such as student leaders and athletes, get free rides in college classes.
9. I sometimes feel that there is nothing I can do to improve my situation.
10. I never feel hopeless—there is always something I can do to improve my situation.
11. I would never allow social activities to affect my studies.
12. There are many more important things for me than getting good grades.
13. Studying every day is important.
14. For some courses it is not important to go to class.
15. I consider myself highly motivated to achieve success in life.
16. I am a good writer.
17. Doing work on time is always important to me.
18. What I learn is more determined by college and course requirements than by what I want to learn.
19. I have been known to spend a lot of time making decisions which others do not take seriously.
20. I am easily distracted.
21. I can be easily talked out of studying.
22. I get depressed sometimes and then there is no way I can accomplish what I know I should be doing.
23. Things will probably go wrong for me some time in the near future.
24. I keep changing my mind about my career goals.
25. I feel I will someday make a real contribution to the world if I work hard on it.
26. There has been at least one instance in school where social activity impaired my academic performance.
27. I would like to graduate from college, but there are more important things in my life.
28. I plan well and I stick to my plans
Appendix F:

Ego Identity Process Questionnaire (adapted from Balistreri, Busch, Rossnagel, and Geisinger, 1995)

Please indicate the extent to which you agree with each of the following statements:

1  2  3  4  5  6
strongly disagree strongly agree

1. I have considered adopting different approaches to academics.
2. There has never been a need to question my academic values.
3. My ideas about my role as a student have never changed as I became older.
4. I have engaged in several discussions concerning behaviors involved going to school.
5. I have considered different majors thoughtfully.
6. I have never questioned my views concerning what kind of study habits are best for me.
7. I have not felt the need to reflect upon the importance I place on academics.
8. I have tried to learn about different majors to find the best for me.
9. I have undergone several experiences that made me change my views on my role as a student.
10. I have consistently re-examined many different academic values in order to find ones which are best for me.
11. I have questioned what type of course is right for me.
12. I have evaluated many ways in which I fit into the academic world.
13. I have never questioned my study habits.
14. I have had many experiences that led me to review the qualities that I would like my professors to have.
15. I have discussed what motivates me academically with a number of people who feel differently than I do.
16. I have never questioned my academic aspirations.