Investigating Social Mobility: Cultural Frames and Cultural Frame Switching in First-Generation College Students

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Abstract

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My dissertation examines whether people who move between social classes 1) experience social class biculturalism, and 2) engage in social class cultural frame switching. I explore these questions using first-generation college students (FGs), who move from working-class communities into middle-class universities. Studies 1-2b document social class cultural models of education and explore whether these models change as FGs spend time in the university. Study 1 suggests that working-class and middle-class models of education include both overlapping and diverging components and that FGs' models may change as they spend time in the university. Studies 2a and 2b examine how these models are embedded within the networks of associations that guide thoughts, attitudes, and behaviors and suggest that differences in working-class and middle-class models may arise from differences in the underlying networks of associations. Collectively, these studies suggest that FGs' ways of understanding the world may change as they spend time in middle-class universities. Studies 3-5 explore social class cultural

frame switching among FGs. Study 3 examines whether the contexts of family and university can be used to prime social class context. Study 4 replicates a previously documented social class difference in cultural models of agency. Finally, Study 5 examines whether priming FGs with family (working-class cultural context) versus university (middle-class cultural context) elicits different cultural models of agency. While further research is needed to understand the experience of social class biculturalism and cultural frame switching, these studies suggest that moving between social classes may involve the internalization of multiple cultural frames.

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Chapter 1: Introduction

Recent research in social psychology has expanded our understanding of social class and the ways in which social class functions as culture. Psychologists have demonstrated that differences in attitudes and behaviors across social class arise from the divergent cultural values, expectations, and worldviews prevalent in relatively less privileged communities compared to relatively more privileged communities (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012; Snibbe & Markus, 2005; Stephens, Fryberg, & Markus, 2011; Stephens, Markus, Phillips, 2014; Stephens, Markus, & Townsend, 2007). Social class, however, is not a static characteristic or experience, and individuals can move between social classes. For example, by earning a college degree, a working-class individual moves to a higher social class. As individuals move between social classes, they must learn to navigate new social class cultural contexts, becoming familiar with new ways of being—new ways of thinking, behaving, and understanding the world. However, psychological research has yet to examine the phenomenon of moving between social classes and the ways in which people experience and negotiate multiple social class cultures.

To better understand this experience, my dissertation focuses on first-generation college students (i.e., students whose parents have not earned four-year bachelor's degrees; FGs). These students tend to come from working-class families, and they arrive in universities that are predominantly populated with students and faculty from higher socioeconomic status backgrounds (Horn & Nunez, 2000; Hossler, Schmit, & Vesper, 1999; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007). By attending college, FGs not only make gains in education, but also in social status, moving into middle- and upper-class universities, and, upon graduation, into middle- and upper-class careers. Because of this transition, I propose that FGs 1) experience

biculturalism (i.e., the internalization of two cultural ways of being) along the lines of social class, and 2) utilize *cultural frame switching* as a means of navigating their two social class worlds. That is, I expect that when FGs are in working-class contexts, the culture of their working-class background guides their thoughts, attitudes, and behavior, and when they are in middle-class contexts, the culture of their middle-class universities guides their thoughts, attitudes, and behavior.

Across six studies, my dissertation seeks to understand the experience of social class biculturalism and the process of social class cultural frame switching among FGs. I will use two primary sets of demographic comparisons to explore the research questions. First, I will compare FGs to continuing-generation college students (i.e., students with at least one parent who has completed a four-year bachelor's degree; CGs). Because CGs come from middle-class cultural backgrounds, these college generation status comparisons will elucidate where social class cultural models converge and diverge (e.g., Stephens, Markus, & Phillips, 2014). Second, where sample sizes are sufficiently large, I will also compare underclassmen FGs to upperclassmen FGs to explore how the cultural values and ideas that guide FGs' thoughts, attitudes, and behaviors change as they spend more time immersed in a middle-class cultural context (i.e., the university). These comparisons will offer insight into questions regarding the development of biculturalism.

Culture as a Dynamic Process: Mutual Constitution of Culture and Individuals

Research in cultural psychology suggests that culture is a dynamic phenomenon that continually shapes and is shaped by individuals, by interactions between individuals, by institutions, and by broad societal ideas (Bruner, 1990; Hong, Morris, Chiu, & Benet-Martinez, 2000; Markus & Kitayama, 2010; Markus & Conner, 2013; Moscovici, 2001). This process is known as *mutual constitution* (Markus & Kitayama, 2010). When individuals' thoughts,

attitudes, and behaviors align with cultural norms, these thoughts, attitudes, and behaviors are likely to be reinforced by others in the cultural context and thus repeated and habitualized. Thoughts, attitudes, and behaviors that do not align with cultural norms are less likely to be reinforced, repeated, or habitualized (Heine, Lehman, Markus, & Kitayama, 1999). In this way, culture can come to shape the individual such that individuals think and act in line with cultural norms (Stephens, Markus, & Phillips, 2014). Similarly, cultural norms are either maintained or challenged by individuals' patterns of thoughts, attitudes, and behaviors (Moscovici, 2001). When individuals think and behave in line with cultural norms, they reinforce these norms, but when they think and behave in ways that do not conform to cultural norms, they challenge and potentially even change these norms.

This process of mutual constitution produces differences in ways of being and understanding the world, or *cultural models of self* (Cross & Madson, 1997; Markus & Kitayama, 2010; Stephens, Markus, & Phillips, 2014). The predominant cultural models of self are characterized as independent and interdependent. *Interdependent* cultural models of self conceptualize the individual as being connected to others and suggest that the way to be a "good" person is to consider the needs and desires of others and to adjust one's behavior to fit the situation and to promote social harmony. *Independent* cultural models of self, however, conceptualize the individual as being separate and distinct from others and from the social context, and they suggest that the way to be a "good" person is to influence others and act in ways that change the situation to meet one's own needs and desires (Markus & Kitayama, 1991).

Cultural models of self shape individuals' thoughts, attitudes, and behaviors. The process of mutual constitution, through which cultures and cultural models of self are constructed, can operate on a large scale, such as at the level of countries or regions. Indeed,

cultural psychology has shown that differences in cultural models of self give rise to divergent patterns of thought, attitudes, and behaviors for people from different countries or regions of the world. For example, while people in Western countries such as the United States tend to be more independent, conceptualizing the self as an individual, unique entity, people in Eastern countries such as Japan tend to be more interdependent, conceptualizing the self as connected to others and determined in large part by one's relationships (Markus & Kitayama, 1991). These differences in independence and interdependence at the national and regional levels manifest in differences in a variety of individual thoughts and behaviors. For example, Americans, who live in an independent culture that emphasizes individual uniqueness, tend to be self-enhancing. On the other hand, Japanese, who live in an interdependent culture that emphasizes fitting in and promoting social harmony, tend to be self-critical (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). Americans' self-enhancing tendency is shaped by the independent American culture and simultaneously reinforces the ideal of independence, as self-enhancement helps to achieve the goal of distinguishing oneself from others. Similarly, the self-criticizing tendency of Japanese is shaped by the interdependent Japanese culture and simultaneously reinforces the ideal of interdependence, as self-criticism helps to achieve the goal of facilitating social harmony by focusing on how one could improve oneself for the good of others.

At the same time as culture operates at the broad, cross-cultural level, it can also operate to differentiate subgroups of people within a culture. Thus, although the United States is typically characterized as independent, within the United States, there are group-level differences in the extent to which people adopt predominantly independent versus interdependent cultural models of self. As an example, although they live in a society characterized by independence, women and racial/ethnic minorities tend to be more interdependent than men and Whites

(Markus & Conner, 2013). These smaller-scale within-culture differences in independence and interdependence also produce differences in thoughts, attitudes, and behaviors for subgroups of people within the larger cultural context. Compared to men, women tend to score higher on measures of interdependence (Cross, Bacon, & Morris, 2000), and they tend to be more accurate in perceiving others' thoughts and feelings (Hall, 1978), a task that requires paying close attention to others. Similarly, compared to Whites, Native Americans tend to score higher on measures of interdependence, and they perform better in school when schools foster interdependence (Fryberg, Covarrubias, & Burack, 2013). Thus, certain sub-cultural contexts within the larger society promote an interdependent model of self that differs from the independent model of self that is prevalent throughout society at large.

Cultural Models of Self Differ Across Social Class

Recently, social psychology has begun to demonstrate that, like gender and race, social class differences in the United States correspond to differences in cultural models of self (Stephens, Markus, & Phillips, 2014). In working-class and lower income communities where resources such as time and money are relatively scarce, the social and economic conditions promote a predominantly *interdependent* model of self (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, & Phillips, 2014). The relatively unstable and unpredictable social and economic conditions in working-class communities require individuals to continually adjust to changing situations and to both help others and rely on others for help (Lareau, 2003; Stephens, Markus, Phillips, 2014). In middle and upper class communities where resources are relatively abundant, however, the social and economic conditions promote a predominantly *independent* model of self (Stephens et al., 2012; Stephens, Markus, & Phillips, 2014). In these contexts, which are relatively more stable and predictable compared to working-

class contexts, individuals have many opportunities to cultivate their own interests, set themselves apart from others, and influence their surrounding context (Stephens, Markus, & Phillips, 2014).

These social class differences in cultural models of self are in part fostered by (and manifest in) divergent expectations and structures of families, schools, and workplaces across social class contexts (Stephens, Markus, & Phillips, 2014). Within families, for example, approaches to childrearing differ across social class. Middle-class parents focus on preparing their children to live in contexts that are relatively stable, safe, predictable, and rich in material resources. To function well in these contexts, children need to be able to express themselves and act independently. Accordingly, middle-class parents often encourage their children to share their thoughts and feelings. Even when scolding children, middle-class parents may ask indirect questions that allow children to express themselves, such as "Do you really think you should be saying that right now?" Working-class parents, on the other hand, focus on preparing their children to live in contexts that are relatively less stable, safe, predictable, or rich in resources. Rather than encouraging their children to express themselves and act independently, these parents encourage children to follow the rules and adjust to the context. When reprimanding children, they give direct commands that leave less room for self-expression, such as "Do not say that" (Bernstein, 1974, Lareau, 2003; Kusserow, 2004; Stephens, Markus, & Phillips, 2014).

Like families, schools and workplaces also foster different models of self across social class contexts. Working-class schools and workplaces are structured in ways that limit individual freedom, choice, and expression (Lachman & Weaver, 1998; Stephens, Markus, & Phillips, 2014). In these settings, individuals have little opportunity to choose what they want to do and how or when they want to do it. The focus instead is on following the rules and obeying

authority figures. In contrast, middle-class schools and workplaces are structured in ways that promote individual freedom, choice, and expression. These contexts offer more opportunities for individuals to choose what, how, and when to do different tasks (Stephens, Fryberg, & Markus, 2011; Stephens, Markus, & Phillips, 2014).

Just as cultural models of self shape the thoughts, attitudes, and behaviors that differentiate people cross-culturally, they also shape the thoughts, attitudes, and behaviors that differentiate people from different social class backgrounds within the same larger cultural context. Compared to people from higher social class backgrounds, people from lower social class backgrounds tend to experience a lower sense of control (Gallo, Bogart, Vranceanu, & Matthews, 2005), offer more contextual (versus dispositional) explanations for events (Kleugel & Smith, 1986), give a higher percentage of their income to charity (James & Sharpe, 2007), and show more cues of social engagement when interacting with others (Kraus & Keltner, 2009; Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). Each of these differences maps onto differences in the use of independent and interdependent models of self. Taken together, these findings demonstrate that people from lower social class backgrounds tend to behave more interdependently, paying more attention to others and to the situation than to their individual experiences and desires, while people from higher social class backgrounds tend to behave more independently, paying attention primarily to themselves and their individual experiences and desires rather than to others and to the situation.

Culture Clash: Working-Class Students in Middle-Class Universities

While working-class students tend to grow up in schools that promote interdependent norms and expectations that match their families' norms and expectations, this experience changes when these students reach college. Unlike the elementary, middle, and high schools that

many working-class students attend (Lareau, 2003), universities often promote norms and expectations that align with the middle- and upper-class independent model of self (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Markus, & Phillips, 2014). This may not be surprising, as universities have historically catered to middle- and upper-class families. The education model in many U.S. universities is structured such that students are encouraged to explore new interests, pave their own paths, and declare a major that will allow them to pursue their passions. Within classrooms, students are expected to question professors, speak their minds, and advocate for themselves. All of these expectations are rooted in independence (Stephens et al., 2014). Furthermore, universities tend to prioritize these independent expectations over interdependent expectations. When asked to rate their universities' top expectations for students, university administrators from schools across the United States rated objectives such as learning to express oneself, becoming a leader, and solving one's own problems (i.e., independent objectives) as having priority over learning to be a team player, giving back to one's community, asking others for help, or adjusting to others' expectations (i.e., interdependent objectives) (Stephens et al., 2012). In universities, the dominant way of being is independent.

Thus, when FGs—who come from predominantly working-class backgrounds—arrive at universities, they often find that they are expected to think and behave in a way that differs from how they typically think and behave at home. Universities expect them to take charge of the situation, express their opinions, and pursue their interests. But at home, FGs have been taught to adjust to the situation, avoid burdening others, and put others before themselves. In a sense, FGs may be learning to navigate two different cultural contexts, thinking and behaving in a way that is predominantly interdependent at home and thinking and behaving in a way that is

predominantly independent at school. Indeed, some have suggested that FGs often find themselves "straddling" two worlds: the working-class world in which they were raised and the middle-class world of the university (Lubrano, 2004). Similarly, case studies of FGs often tell stories of students attempting to reconcile and meet competing demands and expectations from their families and their universities (e.g., London, 1989). These students are caught at the crossroads of family obligation (interdependence) versus personal discovery and achievement (independence). How does this experience of straddling two social class worlds affect FGs? How do they manage to navigate two different social class cultures?

Biculturalism and Cultural Frame Switching

Previous research suggests that when people move between two (or more) cultural contexts that promote different cultural models of self, they may internalize both independent and interdependent models of self and thus become *bicultural*. Because biculturals have access to multiple ways of being and understanding the world, their thoughts, attitudes, and behaviors often shift depending on the cultural context in which they are embedded. This phenomenon is known as *cultural frame switching*. That is, features of the cultural context in which bicultural individuals are embedded activate the cultural frame (i.e., cultural model of self) that corresponds to that context, and this cultural frame guides the individual's thoughts, attitudes, and behaviors to align with cultural norms (Hong, Morris, Chiu, & Benet-Martinez, 2000; Benet-Martinez, Leu, Lee, & Morris, 2002; Benet-Martinez, Lee, Leu, 2006; Verkuyten & Pouliasi, 2002; Verkuyten & Pouliasi, 2006).

Experimental evidence supports this theory by examining how the thoughts, attitudes, and behaviors of people who are bicultural along the lines of race/ethnicity change depending on the cultural context. For example, typically, people from independent cultural contexts (e.g., the

United States) attribute social behavior more to the individual's disposition than to situational factors, while people from interdependent contexts (e.g., China) attribute social behavior more to situational factors than to dispositional attributions (Morris & Peng, 1994). However, Hong and colleagues (2000) demonstrated that the attributions of bicultural individuals depend upon the cultural context that is activated at a particular moment. When Chinese-American biculturals were primed with American cultural symbols, they exhibited stereotypically American thinking by attributing the cause of a person's behavior to the person's disposition rather than to the situational context. When primed with Chinese cultural symbols, however, these individuals exhibited stereotypically Chinese thinking by attributing the cause of the same person's behavior to the situational context rather than the person's disposition. Ross, Xun, and Wilson (2002) built upon these findings to show that in addition to changing their explanations of others' behavior, biculturals' self-perceptions also change depending on the cultural frame activated. Ross and colleagues asked Chinese-Canadian biculturals to participate in a study in which the instructions were either written in English (i.e., to activate independence) or Chinese (i.e., to activate interdependence). They found that participants who completed the study in Chinese used more collective self-statements when describing themselves (i.e., referred more to other people), rated their self-esteem as lower, and expressed greater agreement with Chinese cultural values compared to participants who completed the study in English. Thus, when the interdependent cultural frame was activated, participants exhibited typically interdependent ways of thinking by focusing on others and engaging in more self-effacing behavior compared to when the independent cultural frame was activated. Taken together, these findings suggest that biculturals have access to multiple ways of understanding the world and that different contexts can evoke different ways of thinking for bicultural individuals.

Cognitive networks mediate cultural frame switching. The cultural frame switching literature suggests that this shift in biculturals' thoughts, attitudes, and behaviors across cultural contexts is rooted in context-dependent changes in the cognitive networks that guide thoughts, attitudes, and behaviors. This literature theorizes that culture is internalized as a "network of domain-specific knowledge structures," or a network of associated concepts that guide people's thoughts, attitudes, and behaviors, and the content and patterns of activation within these networks depend upon the cultural context (Hong et al., 2000, p. 710; Hong & Chiu, 2001). Thus, it is theorized that cultural frames are internalized in individuals' cognitive networks, and through these networks, cultural frames guide individuals' thoughts and behaviors in culturally specific ways. For example, Morris & Peng (1994) hypothesized that Chinese and Americans differed in their tendencies to make situational versus dispositional attributions because they had internalized different implicit causal theories as a results of their different cultural contexts. For Chinese, the implicit theory that situations shape individuals' behavior is widespread in their interdependent cultural context, but for Americans, the implicit theory that individuals are the cause of their own social behavior is widespread in their independent cultural context. Morris and Peng argued that these implicit theories were likely incorporated into Americans' and Chinese' networks of associations and were thus accessible when Americans and Chinese interpreted others' behavior.

More recent theorizing builds on this argument, suggesting not only that certain implicit theories are more chronically accessible to people from some cultural contexts compared to others (Hong & Chiu, 2001; Mendoza-Denton & Mischel, 2007), but also that the activation of these implicit theories within individuals' networks of associations depends upon features of the situation (Hong & Mallorie, 2004). This theory emerged as an explanation for the boundary

conditions identified for some cross-cultural differences. For example, although people from interdependent cultural contexts generally make more situational versus dispositional attributions for others behavior while people from independent cultural contexts generally make more dispositional versus situational attributions for others' behavior, Norenzayan, Choi, and Nisbett (2002) manipulated the salience of situational constraints on behavior and found that this cultural difference only emerged when situational constraints were salient but not when situational constraints were not salient. Thus, the previously established cross-cultural difference in situational versus dispositional attributions depended upon the context in which participants made judgments about others' behavior.

This theory also explains why the thoughts, attitudes, and behaviors of bicultural individuals change depending on the context. That is, when features of the context activate the implicit theories of one cultural frame internalized in bicultural individuals' networks of associations, that cultural frame should guide the bicultural person's thoughts, attitudes, and behaviors to align with the relevant cultural context. Some empirical evidence supports this theory. For example, while cultural frame switching has typically been demonstrated by priming bicultural individuals with cultural symbols of one culture versus another and documenting shifts in thoughts, attitudes, or behaviors (see Benet-Martinez, Lee, & Leu, 2006; Benet-Martinez, Leu, Lee, & Morris, 2002; Hong, Morris, Chiu, & Benet-Martinez, 2000; Verkuyten & Pouliasi, 2002; Verkuyten & Pouliasi, 2006), more recent studies provide initial evidence that the networks of associations underlying individuals' thoughts, attitudes, and behaviors are responsive to changes in cultural context. Pouliasi & Verkuyten (2007) surveyed monocultural Greek and Dutch participants about their endorsement of various values (e.g., respect for parents, modesty, discipline). Using structural equation modeling, the authors determined the strength of

associations between various values for both groups of monoculturals. They also surveyed bicultural Greek/Dutch participants, priming them with one culture or the other. Greek-primed bicultural participants took the survey in the Greek language and viewed Greek cultural symbols at the beginning of the survey. Dutch-primed biculturals took the survey in Dutch and viewed Dutch cultural symbols. When primed with Greek language and culture, Greek/Dutch biculturals' endorsement of values mirrored monocultural Greeks' endorsements in terms of both the structure and strength of associations between values. When primed with Dutch language and culture, Greek/Dutch bicultural participants' endorsements mirrored monocultural Dutch participants' endorsements in terms of the structure and strength of associations.

Taken together, this literature suggests that people who move between cultural contexts may internalize multiple ways of being corresponding to the cultural contexts in which they are embedded. These meaning systems are embedded in the cognitive networks underlying their thoughts, attitudes, and behavior (Mendoza-Denton & Mischel, 2007; Mendoza-Denton & Hansen, 2007; Hong & Chiu, 2001; Hong & Mallorie, 2004), and they are activated when features of the situation trigger one cultural frame versus the other. Thus, bicultural individuals' thoughts, attitudes, and behaviors shift to align with the relevant cultural context (Hong et al., 2000).

Do FGs Experience Social Class Biculturalism and Cultural Frame Switching?

Much of the literature on biculturalism and cultural frame switching has focused on individuals who are bicultural along the lines of nationality/ethnicity. However, by simultaneously inhabiting two different social classes—each with their own dominant cultural model of self—or by moving from working-class contexts into middle or upper class contexts, I anticipate that FGs may experience a similar biculturalism along the lines of social class. That is,

FGs may have two different cultural frames available to use in different situations – one arising from their working-class backgrounds, and one arising from their experience in middle-class universities. In middle-class cultural contexts (e.g., the university), the cultural frame activated for FGs may be informed largely by independent cultural values prevalent in these contexts. Thus, in middle-class contexts, FGs may express predominantly independent thoughts, attitudes, and behavior and endorse predominantly independent values and goals. However, in working-class cultural contexts (e.g., with their families), the cultural frame activated for FGs may be informed largely by the interdependent cultural values prevalent in these contexts. In these contexts, FGs may express predominantly interdependent thoughts, attitudes, and behavior and endorse predominantly interdependent values and goals. My dissertation explores whether FGs experience social class biculturalism and whether they engage in cultural frame switching.

Exploring the development of social class biculturalism. In addition to exploring the questions of whether FGs experience biculturalism and whether they engage in cultural frame switching, I will also explore the question of how people become bicultural. Specifically, I will examine whether evidence of biculturalism arises early after immersion in a new cultural context or whether it requires a substantial amount of time in the new context before an individual internalizes the cultural way of being that is prominent in that particular context. While it is likely that some FGs may not internalize an independent cultural model of self as a result of their experience in middle-class universities, FGs who are successful in college or who stay in college long enough will likely become familiar with, and perhaps even internalize, the independent model of self that is prevalent in universities. For these individuals, the experience of being a college student may be one of biculturalism (Lubrano, 2004; Stephens et al., 2014). Although I predict that FGs' experience in middle-class universities leads these students to become

bicultural along the lines of social class bicultural, it is unclear how much time FGs must spend in the university before they become bicultural. Research on cultural models of self suggests that people are typically familiar with both independent and interdependent cultural models of self, but one of these models of self tends to be more elaborated than the other (Markus & Conner, 2013). Thus, while the predominance of the independent model of self in university settings often disadvantages FGs, who tend to have more elaborated interdependent models of self (e.g., Stephens et al., 2012), with repeated exposure to and immersion in an independent context, FGs may over time elaborate their independent model of self and thus become bicultural. Therefore, it is possible that many FGs do not experience social class biculturalism until they have spent a substantial amount of time in the university context. Previous research on biculturalism has relied upon samples of participants who have already had substantial experience in multiple cultural contexts and thus internalized multiple cultural models of self (e.g., Hong, Morris, Chiu, & Benet-Martinez, 2000; Benet-Martinez, Leu, Lee, & Morris, 2002; Benet-Martinez, Lee, Leu, 2006). Thus, research has not yet explored the developmental aspect of biculturalism, so it is unclear how much exposure to alternative cultural ways of being is necessary for people to internalize different cultural models of self. Where sample sizes are sufficiently large to examine differences in FGs' cultural models of self across time in the university, my dissertation will begin exploring this question of how people become bicultural.

Overview of Studies and Predictions

My dissertation seeks to better understand the psychological experience of social mobility by examining social class biculturalism and social class cultural frame switching in FGs. I propose that 1) FGs develop biculturalism along the lines of social class and that, 2) as they learn to navigate two different social class cultures, they engage in social class cultural

frame switching. Specifically, I propose a) that the thoughts, attitudes, and behaviors of FGs differ depending on the cultural context, and b) that the culturally informed networks of associations underlying these thoughts, attitudes, and behaviors differ as well. I will experimentally test these hypotheses across six studies.

The first three studies presented here examine 1) how social class shapes FGs' and CGs' views of what it means to attend college (i.e., their cultural models of education), 2) how social class shapes the networks of associations in which these cultural models are embedded, and 3) whether FGs' cultural models and networks of associations change as they spend more time in the middle-class university context. Specifically, in Study 1, I will examine similarities and differences in cultural models of education across social class by comparing the cultural models of FGs and CGs. Furthermore, I will examine whether these cultural models may change for FGs as they spend more time in middle-class universities by comparing the cultural models of underclassmen and upperclassmen FGs. I expect that while FGs' and CGs' cultural models of education may share some elements, they will also diverge in ways that reflect FGs' interdependent working-class backgrounds and CGs' independent middle-class backgrounds. I also anticipate that as they spend more time in the university, FGs' cultural models of education will include more elements derived from their experience in an independent middle-class context (i.e., they will show evidence of social class biculturalism).

In Study 2a, I will examine how the culturally informed networks of associations that guide FGs' attitudes and behaviors differ from the culturally informed networks of associations that guide CGs' attitudes and behaviors. While FGs' and CGs' networks may include many of the same concepts, I expect that the associations between these concepts will differ in ways that reflect FGs' interdependent working-class backgrounds and CGs' independent middle-class

backgrounds. In Study 2b, I will examine whether and how these networks differ for underclassmen and upperclassmen FGs. As with cultural models of education, I expect that as FGs spend more time in the middle-class university context, their networks of associations will include more patterns of associations that reflect middle-class independence and thus show evidence of social class biculturalism.

Studies 3-5 focus on understanding whether FGs (but not CGs) engage in cultural frame switching. If FGs engage in cultural frame switching, their thoughts and attitudes will reflect working-class cultural norms when they are primed with working-class cultural contexts and middle-class cultural norms when they are primed with middle-class cultural contexts. To investigate cultural frame switching, I will first present a study exploring ways to prime participants with social class to elicit working-class or middle-class cultural contexts (Study 3). Specifically, I will examine whether the contexts of family and university can be used to prime social class. While I expect the university context to prime a middle-class cultural context for both FGs and CGs, I expect that the family context will prime a working-class cultural context for FGs, who come from working-class families, but a middle-class cultural context for CGs, who come from middle-class families. Thus for CGs, the family and university primes should both bring to mind middle-class cultural contexts, but for FGs, the family prime should bring to mind a working-class cultural context, while the university prime should bring to mind a middle-class cultural context.

Next, I will replicate a published study demonstrating social class differences in middle-class and working-class people's views of choice (i.e., cultural models of agency) to examine whether these cultural differences replicate in the population I will use in my investigation of cultural frame switching (Study 4). Finally, I will use primes tested in Study 3 to examine

whether priming different social class contexts elicits different cultural models of agency for FGs (i.e., elicits frame switching; Study 5). I expect that for FGs, the family prime will elicit a working-class (interdependent) model of agency, but the university prime will elicit a middle-class (independent) model of agency, thus suggesting that FGs have internalized both working-class and middle-class cultural models and that they switch between these models depending on the cultural context (i.e., they engage in cultural frame switching). For CGs, however, I expect that both the family and university context will elicit a middle-class (independent) model of agency.

Chapter 2: Background and Overview of Studies 1-2b

Investigations of cross-cultural differences often focus on documenting how people from different cultural backgrounds think about a particular topic (e.g., education or agency; Fryberg & Markus, 2007; Stephens, Fryberg, & Markus, 2011). The results of these investigations are often called *cultural models* (e.g., "cultural models of education" or "cultural models of agency"), referring to culturally informed ways of making meaning that vary by cultural context. To demonstrate biculturalism, researchers typically demonstrate that people who have experience with multiple cultural contexts have access to the cultural models that correspond to those contexts and thus have access to multiple ways of making meaning of the world (e.g., Hong et al., 2000). I will begin my investigation of social class biculturalism in Studies 1-2b by exploring how FGs and CGs think about education. In other words, I will investigate social class differences in *cultural models of education*: "taken-for-granted patterns of ideas and practices relevant to education that are derived from past experiences that mediate and regulate behavior in the academic domain" (Fryberg & Markus, 2007).

While there is currently no standardized methodology for assessing cultural models, prior research has asked people to free associate to an idea and then used the content of these free associations to infer cultural models (e.g., Fryberg & Markus, 2007). This methodology paints an overall picture of the prominent components of different cultural models, and this is what I seek to do in Study 1, where I will examine whether cultural models of education differ by a) social class and b) year in school. I hypothesize that FGs and CGs will have different cultural models of education that are shaped by their experiences in interdependent working-class contexts (FGs) versus independent middle-class contexts (CGs). Furthermore, I hypothesize that FGs' cultural models of education will depend upon how much time they have spent in the independent

university context – and thus how much exposure they have had to independent cultural norms – which differs from the interdependent contexts in which they were raised. I expect that underclassmen FGs will have access only to a working-class cultural model of education, but that upperclassmen FGs will have access to both working-class and middle-class cultural models of education (i.e., that upperclassmen FGs will show signs of biculturalism). I expect that CGs will have access only to a middle-class cultural model of education, as the middle-class university context corresponds to the middle-class cultural contexts in which they were raised.

Studies 2a and 2b build upon this initial investigation of cultural models of education, but they do so using different analyses to examine how these models are embedded in the networks of associations underlying FGs' and CGs' thoughts, attitudes and behaviors. The typical approach to studying cultural models allows researchers to describe the prominent components of cultural models; however, it is not able to understand these components in a dynamic way. In other words, it gives a sense of the end product of how people from different backgrounds make meaning, but it does not give insight into the cognitive or affective patterns that give rise to these different ways of making meaning across cultures. Increasingly, cultural psychologists have called for a more dynamic approach to understanding cross-cultural and intra-cultural differences in thoughts, attitudes, and behaviors, with a focus on understanding how patterns of cognition mediate these differences (see Hong & Mallorie, 2004). In Studies 2a and 2b, I attempt to answer this call by drawing on the Cognitive Affective Processing System (CAPS) approach (Mischel & Shoda, 1995) and a more recent extension of this work, the Cultural-Cognitive Affective Processing System (C-CAPS) approach (Mendoza-Denton & Mischel, 2007; Mendoza-Denton & Hansen, 2007).

Paralleling the assertions of the biculturalism and cultural frame switching literatures (see

Hong et al., 2000), the CAPS and C-CAPS theories contend that an individual's thoughts, attitudes, and behavior are mediated by a network of cognitive-affective units (CAUs; i.e., a network of associated concepts). This network is proposed to be dynamic, such that the particular set of CAUs activated, as well as the thoughts and behaviors these CAUs induce, depends on the features of the situation in which the individual is immersed (Mendoza-Denton & Mischel, 2007; Mischel & Shoda, 1995). Importantly, the CAPS and C-CAPS theories contend that these networks are shaped in part by an individual's cultural context, such that individuals within a culture may have similar networks of CAUs, and individuals across cultures may have divergent networks of CAUs (Mendoza-Denton & Mischel, 2007; Mischel & Shoda, 1995). Individuals across cultures are hypothesized to differ not only in the accessibility of various CAUs, but also in the organization of these CAUs within their networks of associations (i.e., the likelihood that one particular CAU activates another particular CAU). Thus, the C-CAPS theory parallels the biculturalism literature in arguing that individuals have networks of associations that guide their behavior and that these networks are culturally informed, but it also offers a way to document the networks of associations guiding behavior and examine how elements of these networks are related to one another.

Using the C-CAPS model, I predict that 1) FGs' and CGs' networks of associations will diverge in ways that reflect differences in their cultural backgrounds, and 2) if FGs experience social class biculturalism, then the networks of associations underlying FGs' thoughts, attitudes, and behaviors will include both associations informed by their working-class background and its interdependent model of self and associations informed by their experience in the university and its independent model of self. I test these predictions in Studies 2a and 2b, in which I examine how cultural models of education are embedded within FGs' and CGs' networks of associations.

In Study 2a, I will compare FGs' and CGs' networks of associations. In Study 2b, I will present exploratory analyses examining whether FGs' networks of associations differ depending on how much time they have spent in the university. I expect that underclassmen FGs' networks of associations will likely reflect only their experience in working-class cultural contexts while upperclassmen FGs' networks of associations will reflect their experience in both working-class and middle-class cultural contexts.

Overview of Data Used in Studies 1-2b

Studies 1, 2a, and 2b make use of the same data set with different statistical analyses to answer different questions regarding social class cultural models of education and the networks of associations in which these models are embedded. This data was collected in two stages: a pilot stage and an experimental stage. In the pilot, I asked participants to free associate to the idea of going to college, and I identified major themes that arose in participants' open-ended responses. In the experiment, I asked another set of participants to free associate to the idea of going to college and to the major themes identified in the pilot.

Pilot Method and Results

The goal of the pilot study was to identify the major themes that came to mind when participants thought about the idea of attending college. I intended to use these themes to inform a subsequent experiment that would examine the networks of associations in which cultural models of education are embedded.

Participants. Four hundred and seventeen U.S.-born undergraduate students (271 female, 117 FG) were recruited from the Psychology Subject Pool. A majority of the sample identified as White/Caucasian American (50.1%) or Asian American (31.7%), with the remaining participants identifying as African American (2.4%), Hispanic/Latino American

(4.1%), Native American (.5%), or Multiracial/Other (11.3%). Freshmen comprised over half of the sample (63.3%), followed by sophomores (21.3%), juniors (11%), and seniors (0.2%). A majority of participants entered the university after completing high school (93.5%), with a minority transferring from community colleges (3.8%) or four-year universities (1%). FGs and CGs did not differ on year in school ($\chi(3, N = 417) = 1.50, p = .82$) or type of school attended prior to UW, $\chi(3, N = 417) = 5.90, p = .12$. On average, participants reported parental income ranging from $75,000-100,000 annually, however, FGs (M = $30,000-50,000) reported lower parental income than CGs (M = $75,000-100,000), $t(401) = 9.91, p < .001$.

Procedure. Participants completed a series of open-ended and Likert scale measures during an online study. The question of interest for the current study was an open-ended question asking, *"Please write all the thoughts or ideas that come to mind when you think about the idea of going to college. These thoughts do not have to be things typically associated with college, and you do not need to write a cohesive paragraph; just list whatever comes to mind when you think about the idea of going to college."* [1]

Results. To identify the major themes that arise when people think about the idea of college, I first scanned through a subset of 20 responses, making a list of recurring ideas. After scanning this subset of responses, I identified 11 major themes: *challenge, fulfilling expectations, future career, independence*, *money/financial concerns, moving away from home, new experiences/opportunities, meeting new people, self-doubt*, *stress,* and *studying/academics, and* (See Table 1 for examples of each theme).

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[1] This was the second question that participants answered in the survey. The first question asked participants to list 3 things they associated with the idea of choice (reported in Study 4).

Table 1

Pilot Study Codes and Sample Responses

Code	Example Response
Challenge	*Challenge*; *hard work*; *tough*
Fulfilling Expectations	*Fulfilling expectations*; *taking on responsibilities*; *what society expects every successful student to do*
Future Career	*Preparing for a career*; *resume building*; *having a successful future beyond college*
Independence	*Independence*; *growing as a person*; *making my own decisions*; *find what you are passionate about*
Money	*Money*; *debt*; *student loans*
Moving	*Moving*; *living in the dorms*; *leaving home and family*
New Experiences	*Experiencing new things*; *new opportunities*; *exposing yourself to new things*
New People	*Meeting new people*; *making new friends*; *networking*
Self-Doubt	*Is college the "right" path for me?*; *fear of not graduating*; *scared that I'm not good enough/smart enough*
Stress	*Stress*; *lack of sleep*; *pressure*
Study (Academics)	*Classes*; *professors*; *exams*; *studying*

Coding. Next, I used Atlas.ti software to identify occurrences of each major theme across all participants' responses. For each major theme, I created a set of words indicating that the theme was present in a participant's response (See Table 2). I programmed these word sets into Atlas.ti and used the autocode feature to identify all responses that included one or more words from the list. Finally, I examined all responses identified by Atlas.ti and removed any erroneously coded responses (i.e., the response included a word from the list, but it did not actually reflect the theme coded).

Theme frequency. With the exception of self-doubt, which occurred in only 3% of responses, the themes occurred in 12-70% of responses (see Table 3). FGs and CGs were equally likely to mention all themes except money, which FGs (39.3%) were more likely to mention than CGs (27%), $\chi 2(1, N = 417) = 6.03$, $p = .01$.

Table 2

Pilot Study Themes and Autocode Search Terms

Theme	Autocode Search Terms
Challenge	Challeng*, hard*
Fulfilling Expectations	Expect*, responsib*, society, oblig*
Future Career	Future, career*, job*, resume*, CV*, internship*, research*, grad* school
Independence	Independen*, own, decision*, grow*, free*, parent*, develop*, matur*, adult*, find*, figur*, passion*
Money	Money, financ*, debt*, loan*, profit*, expens*, bank*, pay*, cost*, afford*
Moving	Move*, moving, leav*, away, separate*, home, liv*, dorm*, roommate*
New Experiences	Experienc*, opportunit*, chang*, things, place*, travel*, city, abroad, adventur*, life, comfort*, bubble, new idea*, different idea*, begin*, transition*, perspective*
New People	Meet*, people, friend*, connect*, network*, mak*
Self-Doubt	Doubt*, can, will, am, fear*, anx*, afraid, ?
Stress	Stress*, sleep*, scar*, fear*, afraid, pressur*, anxiety*, anxious*
Study (Academics)	Class*, stud*, exam*, midterm*, final*, paper*, *night*, lecture*, professor*, TA*, grade*, gpa*, homework, home work, educat*, learn*, major*, minor*, degree*, campus, intelligen*, ACT, SAT, essay*, writ*, scantron, book*, note*

Note. *allows for different endings to root words

Table 3

Frequency of Themes in Pilot Study by Generation Status

Theme	Overall Frequency	CG Frequency	FG Frequency	Chi Square
Challenge	20.1%	21.3%	17.1%	$\chi^2(1, N = 417) = .94, p = .33$
Fulfilling Expectations	12%	12.3%	11.1%	$\chi^2(1, N = 417) = .12, p = .73$
Future Career	43.6%	42.7%	46.2%	$\chi^2(1, N = 417) = .42, p = .52$
Independence	47.7%	49.3%	43.6%	$\chi^2(1, N = 417) = 1.11, p = .29$
Money	30.5%	27%	39.3%	$\chi^2(1, N = 417) = 6.03, p = .01$
Moving	25.2%	25.3%	24.8%	$\chi^2(1, N = 417) = .01, p = .91$
New Experiences	33.3%	32%	36.8%	$\chi^2(1, N = 417) = .86, p = .36$
New People	27.8%	29.3%	23.9%	$\chi^2(1, N = 417) = 1.22, p = .27$
Self-Doubt	3.1%	2.3%	5.1%	$\chi^2(1, N = 417) = 2.18, p = .14$
Stress	27.1%	25.3%	31.6%	$\chi^2(1, N = 417) = 1.69, p = .19$
Study	70.3%	72.7%	64.1%	$\chi^2(1, N = 417) = 2.96, p = .09$

Experiment Method

I designed this experiment to examine cultural models of education among FGs and CGs and to understand how these cultural models were internalized in the cognitive networks that shape FGs' and CGs' thoughts, attitudes, and behaviors. To do this, I again asked participants to free-associate to the idea of going to college and to each of the college-related major themes identified in the pilot. I coded responses and analyzed this coded data in Studies 1, 2a, and 2b.

Participants. Five hundred U.S.-born undergraduate students (309 female, 143 FG) were recruited from the Psychology Subject Pool. A majority of the sample identified as White/Caucasian American (53.2%) or Asian American (28.6%), with the remaining participants identifying as African American (2.4%), Hispanic/Latino American (4.4%), Native American (.8%), or Multiracial/Other (10.6%). Freshmen comprised over half of the sample (67.4%), followed by sophomores (19.2%), juniors (9%), and seniors (3.8%). A majority of participants entered the university after completing high school (92.8%), with a minority transferring from community colleges (4.6%) or four-year universities (1.6%). FGs and CGs did not differ on year in school ($\chi(3, N = 500) = 4.67$, $p = .32$) or type of school attended prior to UW, $\chi(3, N = 500) = 1.12$, $p = .77$. On average, participants reported parental income ranging from \$75,000-100,000 annually, however, FGs (M = \$30,000-50,000) reported lower parental income than CGs (M = \$75,000-100,000), $t(196.26) = 10.76$, $p < .001$.

Procedure. Participants completed an online study in which they were asked to respond to a series of open-ended questions. All participants were first asked to describe what came to mind for them when they thought about the idea of going to college. I used the same open-ended question as in the pilot study. Then, participants were asked to describe what came to mind for them when they thought about the major college-related themes identified in the pilot study. In

addition to the 11 major themes shown in Table 2, I also included the theme of "having a job." While this theme arose for a minority of participants in the pilot study, literature on FGs suggests that one of the challenges they face in college is managing part-time or even full-time jobs while also attending school (Pascarella, Pierson, Wolniak, & Terenzini, 2004). Because this idea has received much attention in discussions of FGs' college struggles, I included it in this study. Participants were randomly assigned to respond to 6 of the 12 college-related themes, which were presented in a randomized order. The wording of the college-theme prompts was identical to the question used in the pilot, except that participants were asked to think about the theme in the context of college (e.g., *"Please write all the thoughts or ideas that come to mind when you think about the idea of challenge, in the context of college."*)

Coding. Three coders blind to participant demographic information independently coded all responses, one prime set at a time.[2] The coding scheme included mentions of all major themes other than the theme with which the participant was primed (e.g., I did not code for mentions of challenge in responses to the *challenge* prime).[3] Reliability on all themes was sufficiently high ($\alpha \geq .70$). Analyses reported in Studies 1, 2a, and 2b use these codes as dependent measures to examine cross-cultural and intra-cultural differences in FGs' and CGs' views of college.

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[2] There were a total of 10 coders involved in this project, with three coders assigned to each prime set. The combinations of coders varied slightly such that the same three coders did not necessarily always code the same prime sets.

[3] In addition to coding for each major theme, I developed a larger coding scheme using a bottom-up approach. For each theme primed, I read through a subset of responses to identify recurring themes beyond the major themes and included codes to reflect these themes. For ease of presentation and for consistency across primes, these additional codes are not reported in the current paper. Instead, I focus on the major themes, which are common across all primes.

Chapter 3: Study 1

Study 1 begins my investigation of social class biculturalism by examining cultural models of education among FGs and CGs. Specifically, I seek to examine whether 1) FGs and CGs have different cultural models of education derived from their experiences in different social class cultural contexts (i.e., FGs' experience in interdependent working-class contexts and CGs' experience in independent middle-class contexts), and 2) whether FGs who have spent more time in the university (i.e., upperclassmen) endorse cultural models of education that reflect elements of both interdependent working-class and independent middle-class ways of being. That is, I aim to explore whether there is evidence of biculturalism in FGs' cultural models of education after they have spent time in the independent university context. To examine these questions, I will employ two sets of comparisons. First, I will compare FGs to CGs to examine cross-cultural differences in cultural models of education. Second, I will examine the interaction between generation status and year in school to examine whether cultural models of education depend upon the amount of time students have spent in the university.

Hypotheses

First, I expected that cultural models would vary by social class. While I anticipated that FGs' and CGs' cultural models would include many of the same components, I hypothesized that divergences in the prevalence of these components within FGs' and CGs' cultural models would reflect differences in FGs' and CGs' experiences and values resulting from their social class backgrounds (i.e., FGs' working-class interdependent backgrounds and CGs' middle-class independent backgrounds).

Second, while I expected that CGs' cultural models of education would remain relatively stable across year in school, I expected that FGs' cultural models of education would depend

upon how much time they had spent in the university context. I hypothesized that underclassmen FGs' cultural models of education would primarily reflect their experiences in working-class interdependent contexts, but that upperclassmen FGs' cultural models of education would include elements that reflected their experiences in both working-class and middle-class contexts. That is, I expected that upperclassmen FGs' cultural models of education would more closely approximate CGs' cultural models of education than would underclassmen FGs' cultural models (i.e., I expected FGs' cultural models to show evidence of social class biculturalism).

Data and Analytic Strategy

In Study 1, I used data collected in the experiment described in Chapter 2. To compare FGs' and CGs' cultural models of education and to examine whether these cultural models differed depending on the amount of time students had spent in the university, I conducted an ANOVA for each open-ended question to which participants free associated (i.e., the idea of going to college and each of the college-related major themes). Each ANOVA included generation status (FG vs. CG), year in school (underclassmen vs. upperclassmen), and the interaction between these variables as predictors of the average number of times each code appeared in participants' open-ended responses. Below I report the results of an ANOVA predicting responses to the idea of going to college, which is most similar to Fryberg and Markus's (2007) investigation of variation in cultural models of education by race/ethnicity. I also report the results of an ANOVA predicting aggregated responses to all major theme primes.[4]

[4] For analyses of responses to each major theme prime disaggregated, see Appendix A.

Results

"Going to college" prime.

Common themes. The most commonly occurring themes when asked about the idea of *going to college* included thoughts of *independence* (M = .63, SE = .07), *new experiences* (M = .52, SE = .06), *self-doubt* (M = .38, SE = .05), *meeting new people* (M = .34, SE = .05), *money* (M = .31, SE = .05), and *moving* (M = .30, SE = .05; see Appendix B for estimated means and standard errors for FGs and CGs).

Generation status effects. When thinking about the idea of *going to college*, FGs thought more about *self-doubt* compared to CGs. However, this effect was qualified by an interaction with year in school (see below). FGs also thought marginally more about *stress*, and marginally less about *independence* and *fulfilling expectations* compared to CGs (see Table 4).

Year in school effects. Upperclassmen thought less about their *future careers*, *money*, and *family* and more about *self-doubt* compared to underclassmen. However, the effects of year in school on *future career*, *money*, and *self-doubt* were qualified by interactions with generation status. Upperclassmen also thought marginally more about *stress* compared to underclassmen (see Table 4).

Interaction effects. There were two significant interactions between generation status and year in school predicting *money* and *self-doubt* and one marginally significant interaction predicting thoughts of one's *future career*. Upperclassmen FGs tended to think less about their *future careers* and *money* but more about *self-doubt* compared to underclassmen FGs and to upper- and underclassmen CGs (see Table 4).

Table 4

Significant Effects on Responses to the Idea of Going to College

Generation Status Effects			
	FG	*CG*	
Independence	0.52 (0.11)	0.75 (0.07)	$F(1, 495) = 2.89$, $p = .09$
Fulfilling Expectations	0.09 (0.05)	0.21 (0.04)	$F(1, 495) = 3.16$, $p = .08$
Stress	0.28 (0.05)	0.18 (0.03)	$F(1, 495) = 3.08$, $p = .08$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Stress	0.18 (0.02)	0.28 (0.05)	$F(1, 495) = 3.00$, $p = .08$
Family	0.17 (0.02)	0.03 (0.06)	$F(1, 495) = 5.87$, $p = .02$
Interactions			
Future Career	*Underclassmen FG*	*Upperclassmen FG*	
	0.21 (0.04)	-0.03 (0.09)	95% CI [0.04, 0.43], $p = .02$
	Underclassmen CG	*Upperclassmen CG*	
	0.17 (0.02)	0.14 (0.06)	95% CI [-0.09, 0.16], $p = .63$
Money	*Underclassmen FG*	*Upperclassmen FG*	
	0.49 (0.06)	0.05 (0.16)	95% CI [0.10, 0.79], $p = .01$
	Underclassmen CG	*Upperclassmen CG*	
	0.33 (0.04)	0.37 (0.11)	95% CI [-0.26, 0.18], $p = .70$
Self-Doubt	*Underclassmen FG*	*Upperclassmen FG*	
	0.21 (0.07)	0.81 (0.17)	95% CI [-0.96, -0.24], $p = .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.26 (0.04)	0.24 (0.11)	95% CI [-0.21, 0.25], $p = .89$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Aggregated analyses.

Common themes. Next, I examined whether the average number of mentions of each code across all open-ended questions differed by generation status and year in school. Across all participants, the most commonly occurring themes were *independence* ($M = .45$, $SE = .03$), *money* ($M = .22$, $SE = .02$), and *new experiences* ($M = .22$, $SE = .02$).

Generation status effects. FGs tended to think more of *self-doubt* and *studying* compared to CGs, however the effect of generation status on *self-doubt* was qualified by an interaction with year in school (see Table 5).

Year in school effects. Upperclassmen tended to think more of *independence* and less of *money* compared to underclassmen, however the effect of year in school on *money* was qualified by an interaction with generation status (see Table 5).

Interaction effects. There were two statistically significant interactions between generation status and year in school. First, while underclassmen and upperclassmen CGs had similarly frequent thoughts of *money*, underclassmen FGs thought more about *money* than upperclassmen FGs. Second, while underclassmen and upperclassmen CGs had similarly frequent thoughts of *self-doubt*, upperclassmen FGs had significantly more thoughts of *self-doubt* compared to underclassmen FGs (see Table 5).

Table 5

Significant Effects on Responses to Aggregated Primes

Generation Status Effects			
	FG	*CG*	
Self-Doubt	0.17 (0.03)	0.10 (0.02)	$F(1, 496) = 5.15$, $p = .02$
Studying	0.13 (0.02)	0.08 (0.01)	$F(1, 496) = 5.34$, $p = .02$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Independence	0.40 (0.02)	0.51 (0.05)	$F(1, 496) = 4.43$, $p = .04$
Money	0.28 (0.01)	0.17 (0.04)	$F(1, 496) = 7.73$, $p = .006$
Interactions			
Money	*Underclassmen FG*	*Upperclassmen FG*	
	0.32 (0.02)	0.10 (0.06)	95% CI [0.09, 0.35], $p = .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.24 (0.02)	0.23 (0.04)	95% CI [-0.08, 0.09], $p = .94$
Self-Doubt	*Underclassmen FG*	*Upperclassmen FG*	
	0.10 (0.02)	0.25 (0.05)	95% CI [-0.26, -0.04], $p = .009$
	Underclassmen CG	*Upperclassmen CG*	
	0.11 (0.01)	0.08 (0.03)	95% CI [-0.04, 0.10], $p = .46$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Discussion

Study 1 sought to explore cultural models of education. Specifically, I wanted to examine whether cultural models of education a) varied by social class (i.e., differed for FGs and CGs), and b) changed as FGs spent more time in the university. Specifically, I wanted to examine whether changes in FGs' cultural models of education reflected social class biculturalism. I will discuss the findings in terms of these questions.

Variation in cultural models by social class. FGs' and CGs' cultural models of education showed a great deal of overlap. Indeed, FGs and CGs did not significantly differ in the extent to which they thought about a majority of the college-related major themes. For both FGs and CGs, thinking about college (and about various aspects of the college experience) brought to mind thoughts of *independence*, *new experiences*, and *money*. This overlap suggests that FGs and CGs may largely view college similarly. However, where FGs' and CGs' cultural models of education consistently diverged was in terms of how they viewed themselves in relation to college. FGs' cultural models reflected a greater degree of *self-doubt* and *stress* regarding college compared to CGs'.

This difference likely stems from the differing experiences FGs and CGs have before and during college. CGs grow up in families where at least one of their parents has attended college, and likely, many of their other family members have also attended college. They are also often enrolled in primary and secondary schools with students from similar socioeconomic backgrounds, and they live in communities where it is normative for people to attend college. Thus for CGs, attending college may be something that is expected of them, and they may not question their suitability for college. Indeed, CGs were marginally more likely than FGs to think about *fulfilling expectations* when they thought about college, and many of their responses

reflected a sense that CGs felt that both society in general and their families in particular had always expected them to attend college. FGs, on the other hand, are the first in their families to attend college. Because they do not have role models or people to turn to for guidance in college, they may question whether they belong in college and whether they can be successful. Indeed, when people do not see others like themselves represented in or succeeding in a context, they often question their belonging (Fryberg & Townsend, 2008). For FGs, without role models and with little guidance, college may indeed be a stressful experience, and the university may be a context in which they continually question whether they belong. This experience may be reflected in the greater prevalence of thoughts of *stress* and *self-doubt* in FGs' cultural models of education compared to CGs'.

Change in cultural models by time spent in the university. I expected that while FGs' and CGs' cultural models of education would differ on average, over time, FGs' cultural models of education would include more elements reflecting experience in middle-class contexts and thus would more closely align with CGs' cultural models of education. Contrary to the hypothesis, upperclassmen FGs' cultural models of education did not appear to approximate CGs' cultural models of education more so than did underclassmen FGs'. This finding may have occurred because FGs' and CGs' cultural models of education largely overlapped (i.e., FGs and CGs did not significantly differ on the extent to which they thought of many of the major themes when thinking about college). Given the great amount of overlap in these cultural models, the only ways for upperclassmen FGs' models to more closely approximate CGs' would be for these models to include more thoughts of *fulfilling expectations* or fewer thoughts of *self-doubt* compared to underclassmen FGs; however, this was not the case. First, upperclassmen FGs' cultural models did not include more mentions of *fulfilling expectations* than underclassmen

FGs' cultural models. Taking into account FGs' social class background, however, I did not necessarily expect to see that FGs' views of college in terms of *fulfilling expectations* would change across the course of college. Even if FGs spend time in the university, they may not view college as an expectation that they are fulfilling, given that their parents did not attend college, and they come from communities where it is normative for people not to attend college. Second, upperclassmen FGs' thoughts of *self-doubt* also failed to more closely approximate CGs' thoughts of *self-doubt*. Importantly, rather than including *fewer* thoughts of *self-doubt* compared to underclassmen FGs' models, upperclassmen FGs' models included *more* thoughts of *self-doubt*. Indeed, the difference in the presence of *self-doubt* in FGs' and CGs' cultural models of education on average appeared to be driven by the thoughts of upperclassmen FGs. Both in analyses of responses to the idea of attending college and in aggregated responses to all primes, upperclassmen FGs expressed more *self-doubt* than underclassmen FGs and more *self-doubt* than both underclassmen and upperclassmen CGs, suggesting that rather than waning over time, self-doubt may grow as FGs progress through college.

Although the differences in FGs' cultural models of self across time in the university did not support myhypothesis, cultural models of education did appear to depend upon how much time FGs had spent in the university. However, rather than incorporating more of the elements present in CGs' models of education (as predicted), upperclassmen FGs' models of education reflected a greater presence of the thoughts that distinguished FGs' and CGs' models of education as a whole (i.e., *self-doubt*). One possible explanation for this pattern is to consider how FGs' experiences in college map onto the content of their pre-existing models of education. As evidenced by the prevalence of self-doubt in FGs' responses, compared to middle-class cultural models, working-class cultural models of education may include a greater degree of

skepticism that education is accessible to or important for people from these backgrounds, or a sense of exclusion from educational opportunities or institutions. Hence, when I compare FGs to CGs as a whole, FGs' cultural models include more thoughts of *stress* and *self-doubt* than CGs' cultural models. This skepticism or sense of exclusion may be reified as FGs spend time in independent middle-class universities that do not value their interdependent ways of being (Stephens et al., 2012). In other words, their experiences in college may seem to confirm their pre-existing trepidation about college, causing this aspect of their cultural model of education to become more pronounced over time. Indeed, FGs often have difficulty transitioning to the college environment (Phinney & Haas, 2003) and struggle academically (Pascarella et al., 2004). Research also suggests that FGs' relatively low socioeconomic status background can cause them to fear that they will not be accepted by others in the university (Rheinschmidt & Mendoza-Denton, 2014) and to feel that they do not belong in college (Johnson, Richeson, & Finkel, 2011). Furthermore, the independent cultural norms promoted in colleges and universities nationwide often signal to FGs that their ways of being are not valued in the university, causing further psychological and academic struggles for FG students (Stephens et al., 2012; Stephens, Townsend, Markus, & Phillips, 2012). Thus, FGs' experiences in college may also explain why *self-doubt* appears to be a more prominent rather than less prominent aspect of FGs' cultural models of education at the end of college compared to the beginning.

Evidence of social class biculturalism. These results could be taken as an indication that FGs do not become bicultural as they spend more time in the university context. I reasoned that biculturalism would manifest in a change in FGs' cultural models such that they more closely approximated CGs' cultural models at the end of college compared to the beginning of college. While I did not find evidence of this type of change, I did find evidence that FGs' cultural

models do change over the course of college. In addition to an increased prevalence of *self-doubt*, examining FGs' and CGs' responses to the individual major theme primes (Appendix A) shows that when there were significant generation status by year in school interaction effects on outcome variables, these interactions were nearly always driven by a difference in underclassmen and upperclassmen FGs' responses, while CGs' responses did not differ by year in school. This pattern suggests that FGs' but not CGs' cultural models may change over the course of college. Furthermore, many of these differences appeared to reflect changes in which FGs' cultural models shifted to look more like CGs' cultural models. For example, overall, CGs' cultural models tended to include more thoughts of *independence* than FGs' cultural models. However, when primed with the ideas of *challenge*, *future career*, *new experiences*, and *meeting new people*, upperclassmen FGs' cultural models included significantly more thoughts of *independence* than underclassmen FGs' cultural models (see Appendix A). These results suggest that FGs' cultural models may change over time, and in some ways, they may come to more closely approximate CGs' cultural models. These changes may be obscured by aggregating responses to different primes, as I did in the analyses presented in Study 1.

Considering these changes vis-a-vis the finding that upperclassmen FGs' cultural models included more elements of self-doubt (which was characteristic of working-class cultural models) suggests that over time, both working-class and middle-class cultural models of education may become more pronounced for FGs. To the extent that it is replicable, this apparent change in FGs' cultural models could give insight into the process of becoming bicultural. It is possible that as people begin to adopt new cultural models, their pre-existing cultural models become more salient or accessible, perhaps because they stand in contrast to the new cultural models. Alternatively, it is possible that rather than being internalized as two separate cultural

models, elements of the new cultural model are simply added to the pre-existing cultural model. That is, rather than internalizing an additional middle-class cultural model, perhaps FGs maintain and modify their pre-existing working-class cultural model, adding new elements to it. Indeed, within the cultural frame switching literature, there is a debate about the extent to which different cultural frames are internalized as separate or integrated knowledge structures (see Benet-Martinez et al., 2002). Given that upperclassmen FGs' cultural models included both more pronounced aspects of working-class cultural models of education (i.e., *self-doubt*) and more pronounced aspects of middle-class cultural models of education (e.g., *independence*), the data may suggest that FGs do become bicultural as they spend time in the university, but that the different cultural ways of being with which they gain experience are integrated into a single, blended knowledge structure.

Finally, assuming that these changes do reflect social class biculturalism among FGs, it is unclear whether these changes capture the full extent to which cultural models change as a person becomes bicultural or whether they reflect only changes that occur at the beginning stages of becoming bicultural. Perhaps the four years FGs spend in middle-class universities are not sufficient for them to fully internalize middle-class ways of being, but this time may be sufficient for them to begin shifting from using predominantly working-class ways of being to using a mixture of working-class and middle-class ways of being, or even to developing a blended cultural way of being that draws from both their working-class background and their experience in middle-class universities. As FGs settle into a higher social class during the years following college, their cultural models may continue to change. Understanding how and when these changes occur can provide insight into the process through which people become bicultural.

Limitations and future directions. The biggest limitation of this study is the cross-sectional nature of the data. Because this data is cross-sectional, it cannot speak to longitudinal changes in FGs' cultural models of education. Following individuals over time to examine how their experiences in multiple social class contexts shape their thoughts, attitudes, and behaviors will be imperative to better understand the psychological experience of social mobility. Although the data cannot speak to such longitudinal effects, the finding that upperclassmen FGs' cultural models of education differ from underclassmen FGs' cultural models suggests either that FGs' cultural models do change over time or that the FGs who persist in college have cultural models that differ from the FGs who do not persist in college. Both of these possibilities are worth investigating further. If the differences in underclassmen and upperclassmen FGs' cultural models do reflect a change that occurs over time, this change can help to inform future work on biculturalism, specifically work investigating the development of biculturalism. On the other hand, if these differences are the result of attrition of certain FGs, they could help to inform efforts to understand why some FGs persist in college and others do not.

Chapter 4: Studies 2a and 2b

Study 1 suggested that FGs' and CGs' cultural models of education contain both overlapping and diverging elements that reflect differences in their social class backgrounds. In Studies 2a and 2b, I will explore how these cultural models of education are internalized in the networks of associations that guide FGs' and CGs' thoughts, attitudes, and behaviors. Specifically, I will examine how the components of these cultural models are related to one another (i.e., I will examine the associations between concepts within FGs' and CGs' networks of associations) to better understand not only the meaning of these components but also the thought processes that produce differences in CGs' and FGs' cultural models of education. In Study 2a, I will compare FGs' and CGs' networks of associations to examine whether patterns of associations differ by generation status and whether these patterns correspond to differences in FGs' and CGs' cultural models of education (see Study 1). In Study 2b, I will compare the networks of upperclassmen and underclassmen FGs and CGs to examine whether the patterns of associations in FGs' networks (but not CGs') change as they spend more time in the university.

Hypotheses

Study 2a. I expect that the same concept (attending college) will activate both overlapping and divergent associations within FGs' and CGs' networks. Furthermore, I hypothesize that the ways in which FGs' and CGs' networks diverge will map onto the existing literature on social class cultural differences (e.g., greater interdependence among FGs/working-class people compared to CGs/middle-class people, more concerns about money or self-doubt among FGs; greater independence among CGs/middle-class people compared to FGs/working-class people, more concerns about individual wellbeing and success among CGs).

Study 2b. I anticipated that FGs' networks of associations would primarily reflect their interdependent working-class backgrounds at the beginning of college, but by the end of college, these networks would also reflect their experience in the independent middle-class university context. I anticipated that CGs' networks of associations, however, would not change over time because the culture of the university matches the culture of CGs' middle-class backgrounds. Thus, I hypothesized that upperclassmen FGs' networks of associations would be more similar to CGs' networks of associations than would underclassmen FGs'.

Study 2a Method

To explore the question of how cultural models of education are internalized in FGs' and CGs' networks of associations, I used data from the experiment described in Chapter 2.

Participants. The sample included 436 U.S.-born undergraduate students (278 female, 124 FG) in their first or second year of college (i.e., underclassmen). For this study, I limited the sample to underclassmen because I hypothesized that FGs' networks of associations would change as they spent more time immersed in the middle-class university, which promotes an independent cultural model of self (see Study 2b). Because the question central to this study focuses on social class differences in cultural models of education and how these cultural models are internalized in FGs' and CGs' networks of associations, limiting the sample to only underclassmen will likely give a more accurate answer to the research question than if upperclassmen FGs were included.

Analytic strategy. Using the coded data, I created composite variables reflecting the average number of times participants mentioned each major theme across all primes.[5] I then used R to create correlation matrices to examine the correlations between each major theme for FGs

[5] See Appendix C for analyses of individual primes.

and for CGs (see Tables 6 and 7). Next, I converted all correlation coefficients to *z* scores, which I used to examine whether the correlations for FGs differed significantly from the correlations for CGs. Finally, I created figures showing the statistically significant (i.e., $p < .05$) correlations for FGs (see Figure 1) and for CGs (see Figure 2), as well as a figure showing the correlations that significantly differed (i.e., $p < .05$) for FGs compared to CGs (see Figure 3).

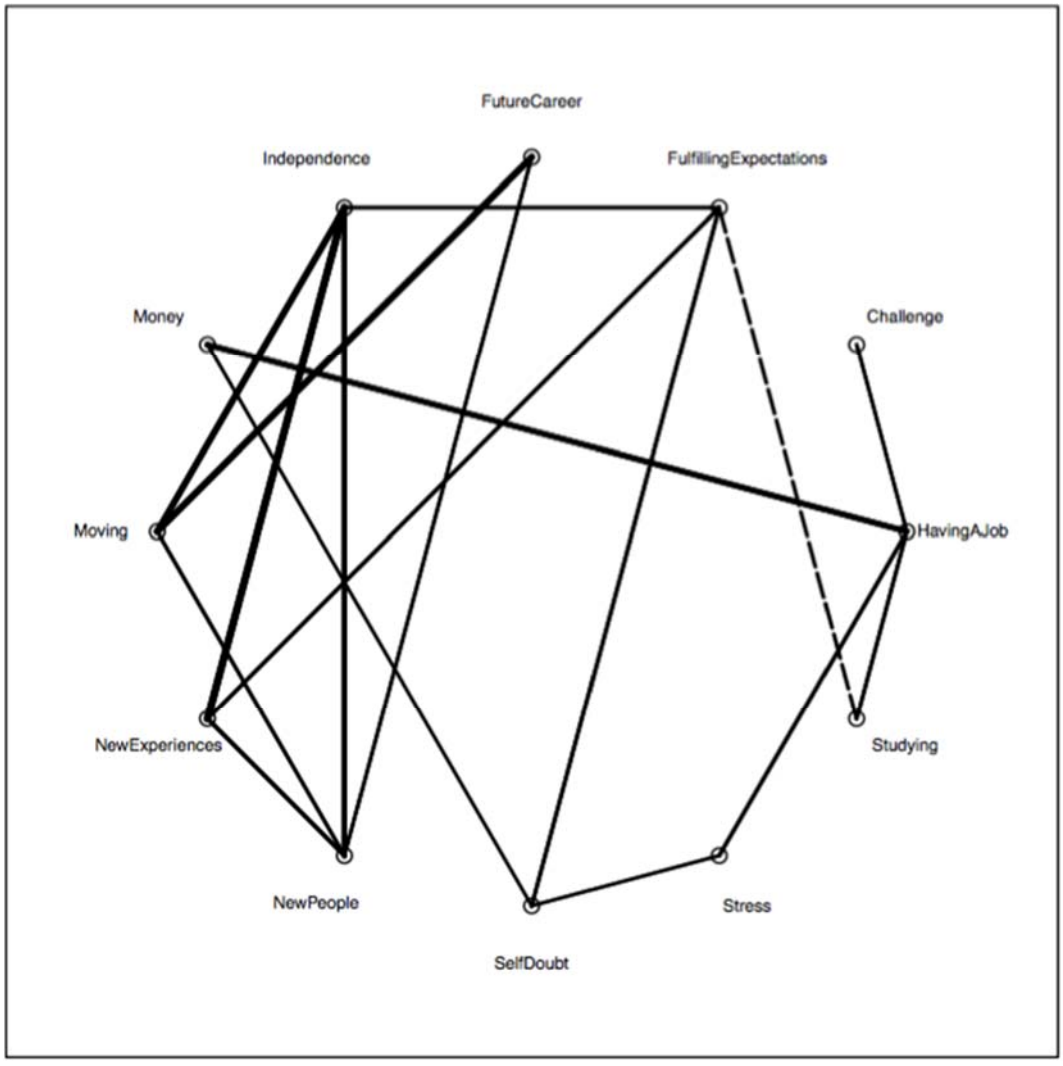


Figure 1. Average Network of Associations for Underclassmen FGs.

Note. Solid lines represent positive relationships. Dashed lines represent negative relationships. All lines reflect correlations significant at $p < .05$.

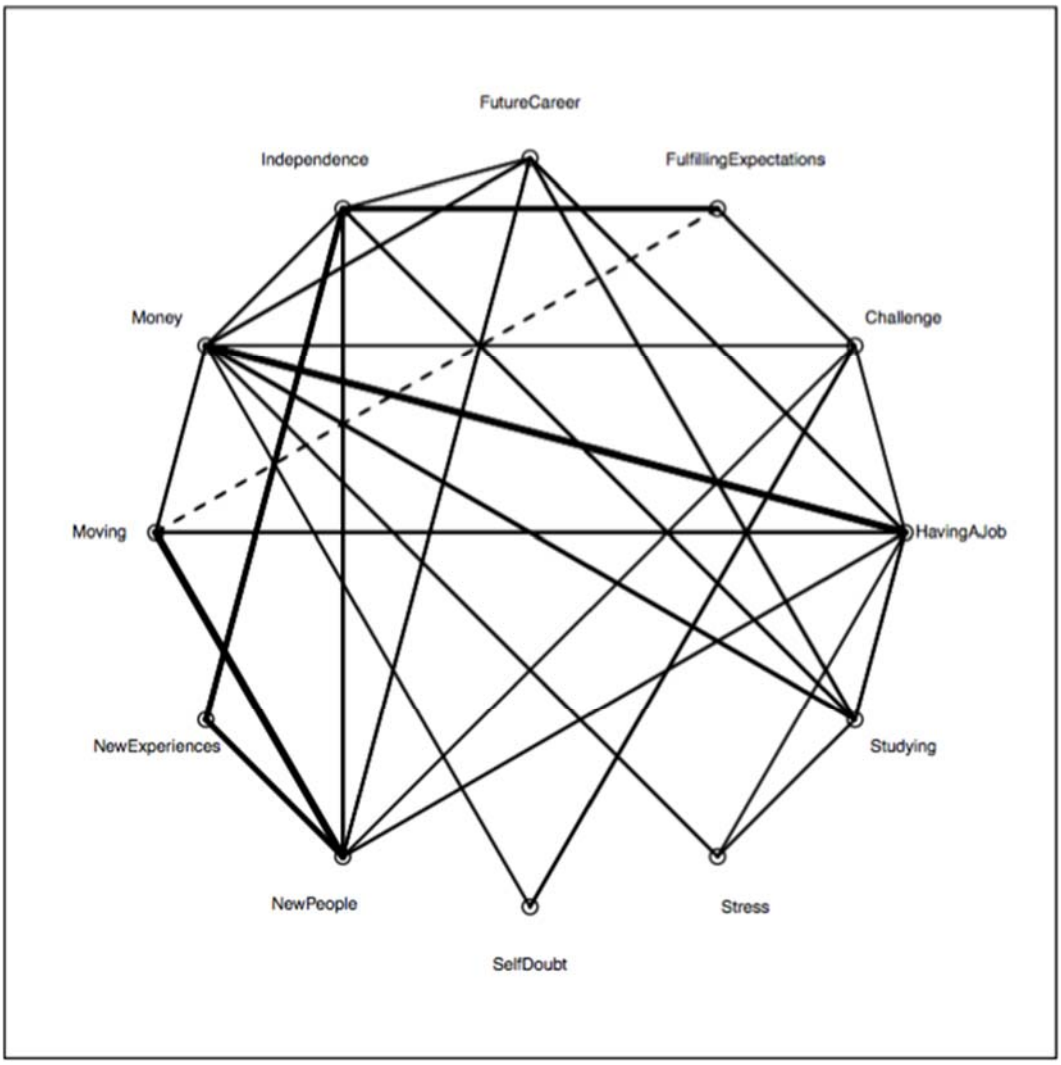


Figure 2. Average Network of Associations for Underclassmen CGs.

Note. Solid lines represent positive relationships. Dashed lines represent negative relationships. All lines reflect correlations significant at $p < .05$.

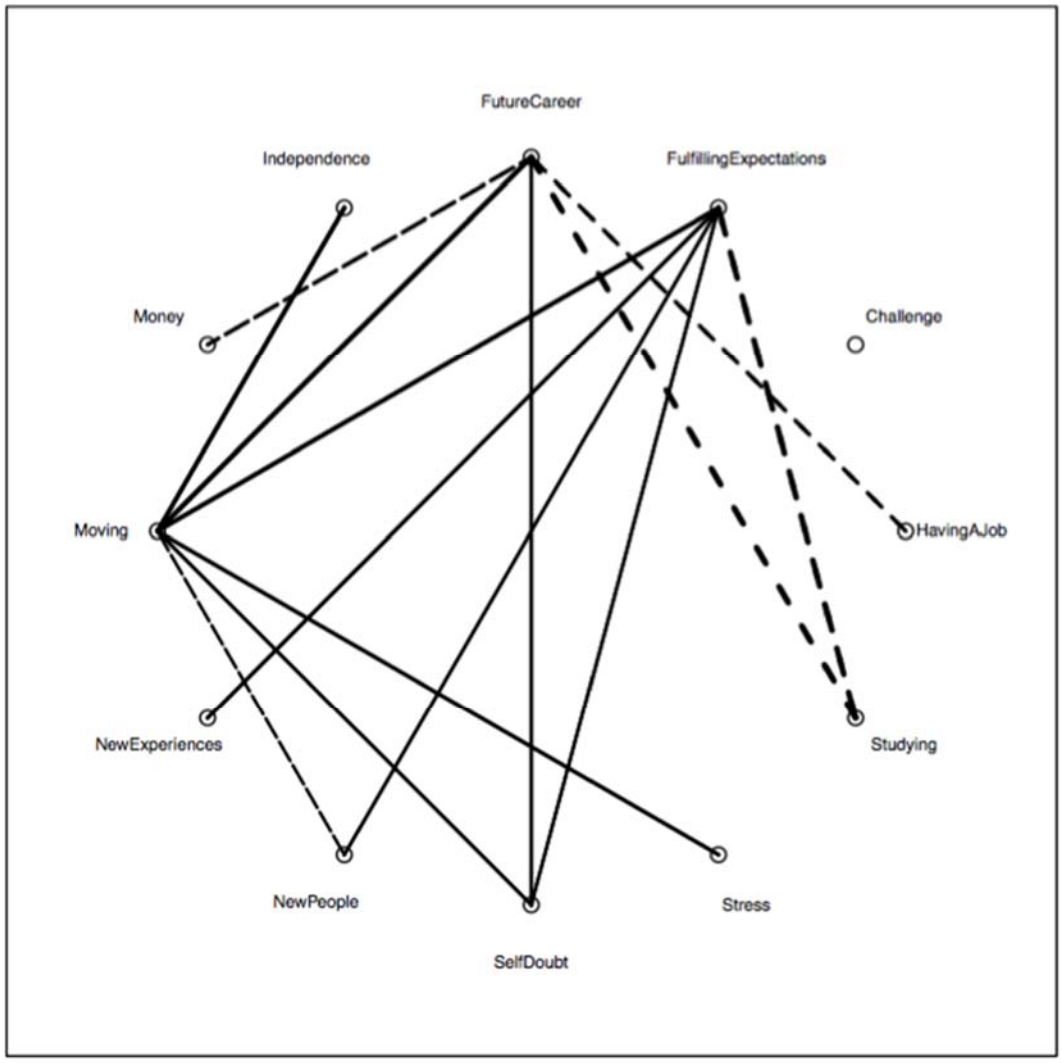


Figure 3. Significant Differences between Average Networks of Associations for Underclassmen FGs and CGs.

Note. Solid lines reflect relationships that were significantly stronger for FGs. Dashed lines reflect relationships that were significantly stronger for CGs. All lines reflect differences significant at $p < .05$.

Table 6

Major Theme Correlations for Underclassmen FGs

	Challenge	Fulfilling Expectations	Future Career	Independence	Money	Moving	New Experiences
Challenge	1.00						
Fulfilling Expectations	0.05	1.00					
Future Career	0.01	0.02	1.00				
Independence	0.06	0.19*	0.13	1.00			
Money	0.08	0.05	-0.05	0.00	1.00		
Moving	-0.05	0.06	0.31*	0.30*	0.06	1.00	
New Experiences	-0.09	0.19*	0.00	0.35*	-0.12	0.07	1.00
New People	0.06	0.07	0.17*	0.26*	-0.14	0.17*	0.20*
Self-Doubt	0.03	0.18*	0.11	-0.01	0.15*	0.15	-0.04
Stress	0.11	0.05	0.05	0.02	0.12	0.13	0.09
Studying	0.04	-0.19*	-0.12	0.01	0.14	0.08	-0.11
Having a Job	0.17*	0.04	-0.04	0.02	0.27*	0.09	0.01

	New People	Self-Doubt	Stress	Studying	Having a Job
New People	1.00				
Self-Doubt	-0.09	1.00			
Stress	0.03	0.15*	1.00		
Studying	0.12	-0.07	0.14	1.00	
Having a Job	0.03	-0.03	0.19*	0.18*	1.00

*$p < .05$

Table 7

Major Theme Correlations for Underclassmen CGs

	Challenge	Fulfilling Expectations	Future Career	Independence	Money	Moving	New Experiences
Challenge	1.00						
Fulfilling Expectations	0.14*	1.00					
Future Career	0.02	-0.04	1.00				
Independence	0.05	0.24*	0.12*	1.00			
Money	0.12*	0.03	0.16*	0.13*	1.00		
Moving	0.03	-0.14*	0.08	0.09	0.14*	1.00	
New Experiences	0.04	0.02	-0.03	0.27*	-0.03	0.06	1.00
New People	0.11*	-0.09	0.16*	0.17*	0.01	0.33*	0.26*
Self-Doubt	0.17*	0.03	-0.07	-0.01	0.12*	-0.01	0.00
Stress	0.06	-0.01	-0.05	-0.05	0.13*	-0.05	0.06
Studying	0.03	0.08	0.15*	0.16*	0.19*	0.07	-0.03
Having a Job	0.11*	0.06	0.16*	0.09	0.33*	0.17*	0.03

	New People	Self-Doubt	Stress	Studying	Having a Job
New People	1.00				
Self-Doubt	-0.02	1.00			
Stress	-0.01	0.04	1.00		
Studying	0.08	-0.07	0.11*	1.00	
Having a Job	0.13*	0.08	0.11*	0.16*	1.00

*$p < .05$

Study 2a Results and Discussion

Examining the significant correlations for FGs (see Figure 1) and CGs (see Figure 2) suggests that there is a great deal of overlap in terms of the magnitude and direction of the relationships between major themes for FGs and for CGs. For example, the more FGs and CGs thought of *independence*, the more they also thought of having *new experiences*. This relationship makes sense, as college is a time of newfound independence (e.g., living away from home, having more responsibility for oneself, getting to make one's own decisions) for many if not most college students. Similarly, the more FGs and CGs thought of *having a job*, they more they also thought of *money*. This connection also makes sense, given that many college students – regardless of generation status – work to help support themselves and pay for their education.

However, examining the statistically significant differences in the correlations for FGs compared to CGs also gives insight into how these groups' networks of associations differ. As Figure 3 suggests, there are several nodes (i.e., themes that are highly connected to other themes) in FGs' and CGs' networks of associations that differ in the strengths of their associations with other themes, and examining these differences suggests that even though many of the same themes appear in FGs' and CGs' cultural models of education (i.e., the themes were activated when they thought about the idea of college), the meaning of themes ideas may differ depending on generation status. Figure 3 shows that there are 4 main nodes of difference in FGs' and CGs' cognitive networks in response to the idea of attending college: *moving*, *future career*, *fulfilling expectations*, and *self-doubt*. I will discuss the differences between FGs' and CGs' networks of associations by focusing on these nodes.

Moving node. Although both FGs and CGs recognize *moving* as being part of the college experience (i.e., *moving* was an element of both FGs' and CGs' cultural models of education),

for FGs, the idea of *moving* is more strongly tied to ideas of *independence*, *stress*, and *self-doubt* than it is for CGs. For CGs, the idea of *moving* is more strongly tied to the idea of *meeting new people*. Thus, while the idea of *moving* is present in both FGs' and CGs' cultural models of education, this idea may be a more negative or anxiety-provoking aspect of what it means to attend college for FGs and a more positive social-oriented aspect for CGs. This difference makes sense in light of the differing cultural models of self that FGs and CGs are predominantly exposed to as a function of their social class backgrounds. FGs come from interdependent backgrounds where close ties to family and friends are particularly important. While relationships are also important to people from independent backgrounds, these relationships are central to *defining* the self in interdependent contexts; people from interdependent contexts not only experience closer ties to family and friends compared to people from independent contexts, but the way they see themselves and understand the world is also filtered through these relationships (Markus & Kitayama, 1991). Thus, while moving is a common experience for college students who often have to leave their families and friends to attend school in another city or even state, this experience may be particularly difficult for FGs, whose close ties to family and friends may be strained by distance. CGs, on the other hand, come from independent cultural backgrounds, where the individual experience, more so than the individual's relationships with others, is central to defining the self (Markus & Kitayama, 1991). For CGs, although moving may come with the same distance and isolation from friends and family, this distance may not cause the same psychological strain as it does for FGs.

Future career node. For FGs, the idea of one's *future career* was more strongly tied to ideas of *moving* and *self-doubt* than it was for CGs. For CGs, the idea of one's *future career* was more strongly tied to ideas of *money*, *studying*, and *having a job* than it was for FGs. As was true

of the differences in the node of associations centered on the idea of *moving*, the differences between FGs and CGs on this node centered on the idea of one's *future career* also appear to reflect a greater sense of anxiety in FGs' cultural models of education compared to CGs'. While both FGs and CGs view college as being a step toward their future careers, FGs view this future career with more trepidation than do CGs. As the first in their families to attend college, FGs are entering unchartered territory not only during college but also after college when they will pursue careers that are likely outside the scope of careers with which their families have experience and that will likely cause them to move away from the working-class communities in which their families live. Furthermore, compared to CGs, FGs may have little guidance from their families in terms of selecting and pursuing their future careers, and they may even encounter resistance from their families who do not understand or support their decision to attend college and pursue white-collar careers (e.g., London, 1989).

The connections in CGs' networks, on the other hand, suggest that when CGs think about their future careers in the context of college, these thoughts are more closely tied to what they are doing in college to facilitate their future careers. For example, CGs thought of *studying* and *having a job* when they thought of their future careers. When CGs mentioned *studying*, they often mentioned choosing a major that would lead to their future career or earning good grades to ensure that they would be competitive candidates for jobs after college. When CGs mentioned *having a job*, many discussed finding a job or internship that would prepare them for their future careers or allow them to make connections that would help them begin their careers after college. Thus CGs may view college in relations to their future careers primarily in terms of the practical aspects of attending college in order to find or be successful in a career in the future.

Fulfilling expectations node. For FGs, thoughts of *fulfilling expectations* were more strongly tied to thoughts of *moving*, having *new experiences*, *meeting new people*, and *self-doubt* than they were for CGs. For CGs, thoughts of *fulfilling expectations* were more tied to thoughts of *studying*. There are a few explanations for this pattern of results. First, it could be that FGs' networks reflect generalized societal representations about what college entails (e.g., living in dorms away from one's family [moving], going new places and encountering new ideas [new experiences], and making new friends [meeting new people]) more so than CGs' networks do. When FGs think about what it means to attend college, their thoughts may more heavily on such representations compared to CGs because FGs may not have as many family members or friends who have attended college and who could tell them about the college experience. Therefore, these connections may reflect a disparity in FGs' and CGs' familiarity with college.

A second possibility is that these differences reflect differences in independence and interdependence across generation status. As with thoughts of *moving* and one's *future career*, for FGs, thoughts of *fulfilling expectations* were connected to thoughts of self-doubt, suggesting that FGs may experience anxiety or uncertainty about their ability to achieve or do what is expected of them during college. CGs, on the other hand, tended to focus more on expectations about their own performance in school, either their own expectations or their parents'. For example, CGs often mentioned getting good grades or getting into a particular major when talking about *fulfilling expectations*. These differences in how the idea of *fulfilling expectations* was embedded in FGs' and CGs' networks of associations maps onto cultural differences in independence and interdependence. While FGs' connections reflect a tendency to pay attention to others' expectations and their ability to meet these expectations (i.e., interdependence), CGs' connections reflect a tendency to focus on the self (i.e., independence).

Self-doubt node. As mentioned above, the idea of *self-doubt* was more strongly connected to the ideas of *moving*, one's *future career*, and *fulfilling expectations* for FGs compared to CGs. The prevalence of *self-doubt* in FGs' networks is not surprising, and it echoes results of the analyses presented in Study 1. College is a new and challenging experience for most students, but it may be especially so for FGs, who are the first in their families – and often even in their communities – to attend college, and for whom the college environment is a new cultural experience (Stephens et al., 2012). Thus, many FGs question whether they belong in college and doubt that they can succeed (Rheinschmidt & Mendoza-Denton, 2014). For many CGs, however, while college brings challenges, it is also an expected part of life. CGs' parents attended college, and many CGs grow up with the expectation that they will follow in their parents' footsteps. Indeed, many CGs even mentioned that their parents expected them to pursue the same careers they had chosen for themselves. For CGs, even in times of challenge, when they think about what it means to attend college, doubting their ability or belonging may not be a central feature of their representations of college.

Study 2b Method

The goal of Study 2b was to examine whether FGs' (but not CGs') networks of associations differed depending on how much time they had spent in the university. Like Study 2a, Study 2b used data collected for the experiment described in Chapter 2.

Participants. In Study 2b, I analyzed data from all participants in the experiment (see Chapter 2 for demographic details). However, these analyses are exploratory, as the cell sizes for upperclassmen are small; there were 19 upperclassmen FGs and 45 upperclassmen CGs.

Analytic strategy. I used the same strategy as Study 2a to analyze the data, however, in addition to comparing FGs to CGs, I compare both FG and CG underclassmen and upperclassmen (see Tables 8 and 9 and Figures 4-6).

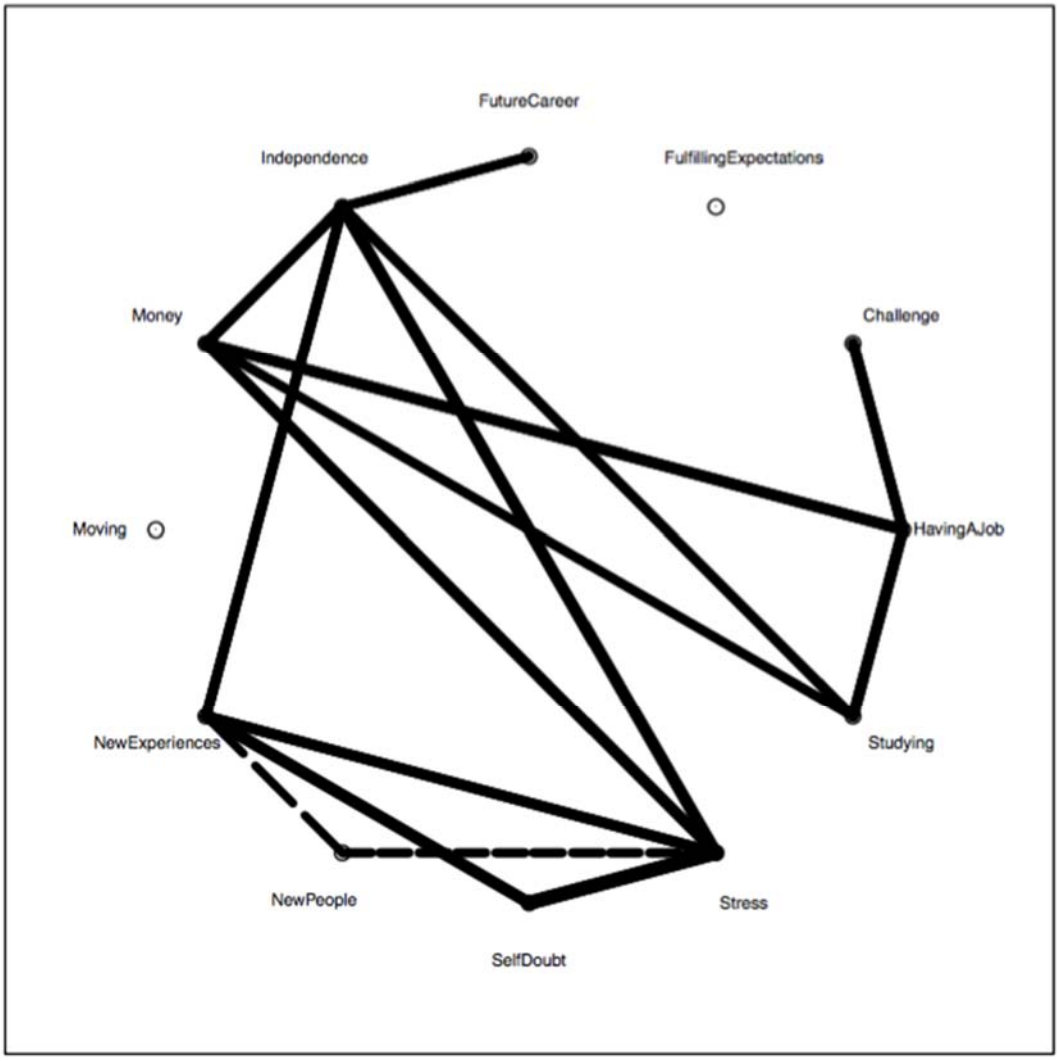


Figure 4. Average network of associations upperclassmen FGs.

Note. Solid lines represent positive relationships. Dashed lines represent negative relationships. All lines reflect correlations significant at $p < .05$.

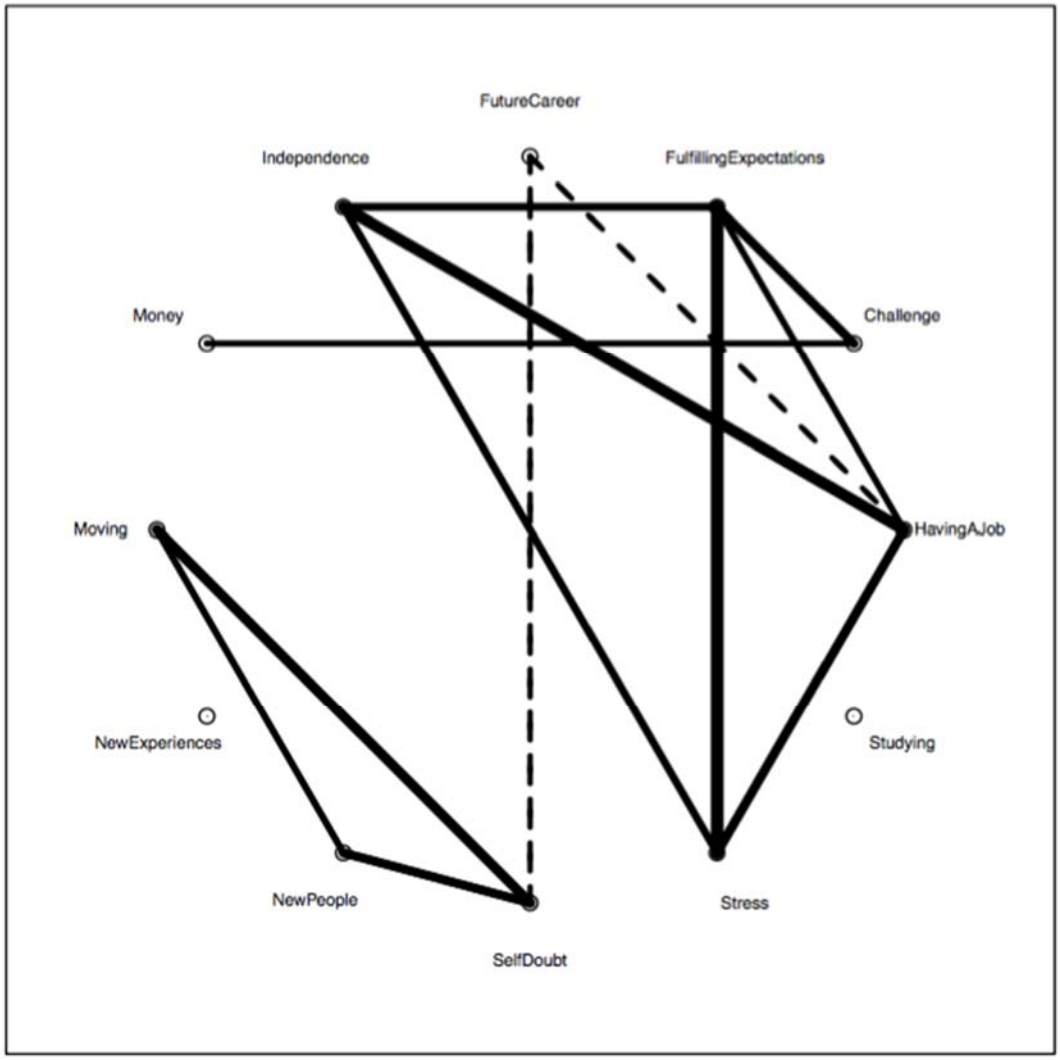


Figure 5. Average network of associations upperclassmen CGs.

Note. Solid lines represent positive relationships. Dashed lines represent negative relationships.

All lines reflect correlations significant at $p < .05$.

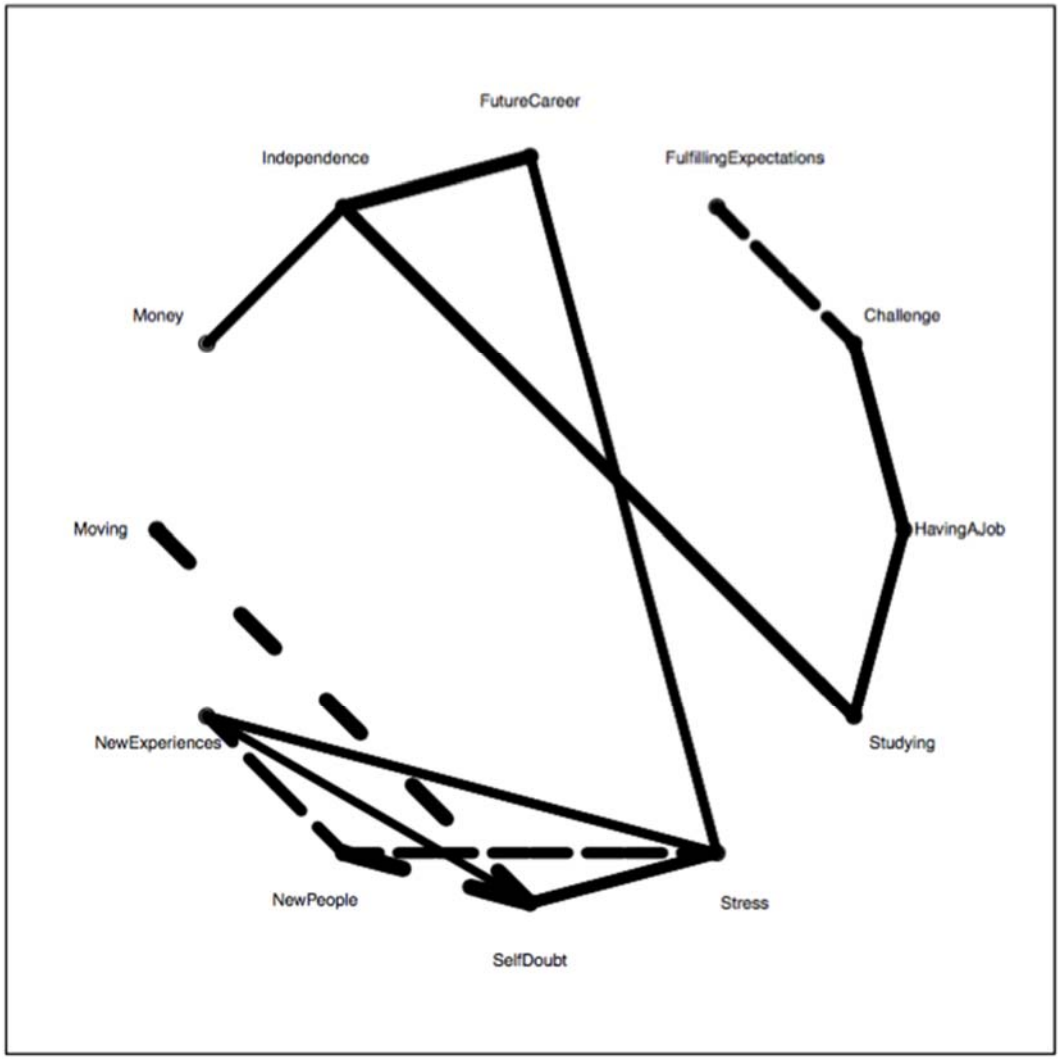


Figure 6. Significant Differences between Average Networks of Associations for Upperclassmen FGs and CGs.

Note. Solid lines reflect relationships that were significantly stronger for FGs. Dashed lines reflect relationships that were significantly stronger for CGs. All lines reflect differences significant at $p < .05$.

Table 8

Major Theme Correlations for Upperclassmen FGs

	Challenge	Fulfilling Expectations	Future Career	Independence	Money	Moving	New Experiences
Challenge	1.00						
Fulfilling Expectations	-0.18	1.00					
Future Career	0.12	-0.07	1.00				
Independence	-0.16	0.30	0.46*	1.00			
Money	0.22	-0.01	0.13	0.53*	1.00		
Moving	-0.31	-0.06	0.10	0.14	-0.05	1.00	
New Experiences	-0.10	0.27	-0.02	0.50*	0.13	-0.06	1.00
New People	0.07	-0.36	0.21	-0.16	-0.24	0.18	-0.41*
Self-Doubt	0.19	0.36	0.01	0.27	0.27	-0.25	0.56*
Stress	0.19	0.28	0.33	0.57*	0.53*	-0.01	0.52*
Studying	0.17	0.10	0.28	0.48*	0.45*	0.06	0.26
Having a Job	0.52*	-0.02	-0.06	0.31	0.54*	-0.06	-0.05

	New People	Self-Doubt	Stress	Studying	Having a Job
New People	1.00				
Self-Doubt	-0.36	1.00			
Stress	-0.45*	0.68*	1.00		
Studying	0.06	-0.04	0.15	1.00	
Having a Job	0.31	0.11	0.05	0.54*	1.00

*$p < .05$

Table 9

Major Theme Correlations for Upperclassmen CGs

	Challenge	Fulfilling Expectations	Future Career	Independence	Money	Moving	New Experiences
Challenge	1.00						
Fulfilling Expectations	0.41*	1.00					
Future Career	-0.17	-0.25	1.00				
Independence	-0.10	0.35*	-0.19	1.00			
Money	0.28	0.22	-0.01	0.04	1.00		
Moving	-0.12	-0.02	-0.11	0.08	0.11	1.00	
New Experiences	-0.01	0.09	-0.13	0.23	-0.06	0.09	1.00
New People	-0.23	0.00	0.06	-0.06	0.11	0.31*	0.16
Self-Doubt	0.03	0.13	-0.26*	0.04	-0.04	0.46*	0.17
Stress	0.17	0.58*	-0.14	0.35*	0.17	0.02	0.06
Studying	0.01	-0.13	-0.01	-0.13	0.09	0.17	0.04
Having a Job	-0.08	0.29	-0.25*	0.53*	0.23	0.23	0.13

	New People	Self-Doubt	Stress	Studying	Having a Job
New People	1.00				
Self-Doubt	0.41*	1.00			
Stress	0.10	0.10	1.00		
Studying	0.05	-0.22	-0.19	1.00	
Having a Job	0.15	0.19	0.43*	0.00	1.00

*$p < .05$

Study 2b Results and Discussion

Compared to the differences between the networks of underclassmen FGs and CGs (see Figure 3), the average network of associations for upperclassmen FGs had fewer statistically significant differences from the average network of upperclassmen CGs (see Figure 6), suggesting that the patterns of associations underlying FGs' thoughts, attitudes, and behaviors may be more similar to CGs' patterns of associations as FGs spend more time in the university. Furthermore, the nodes of difference in upperclassmen FGs' and CGs' networks differed from the nodes of difference in underclassmen FGs' and CGs' networks, both in terms of the concepts on which these nodes were centered, and, where the nodes overlapped, in terms of the concepts to which the central theme was connected. As with the networks of underclassmen, Figure 6 shows that there are 4 main nodes of difference in upperclassmen FGs' and CGs' cognitive networks in response to the idea of attending college: *independence*, *new experiences*, *stress*, and *self-doubt*. I will discuss the differences between upperclassmen FGs' and CGs' networks of associations by focusing on these nodes.

Independence. The first node of difference between upperclassmen FGs' and CGs' networks was centered on the idea of *independence*. When upperclassmen FGs thought of independence, this idea was more strongly tied to thoughts of their *future career*, *studying*, and *money* than it was for CGs. This pattern of results suggests that for upperclassmen FGs, *independence* in the context of college may be focused on their ability to succeed in the future (e.g., to find a job and earn a living to support themselves and their families). Notably, this pattern of associations more closely parallels underclassmen CGs' pattern of associations (see Figure 2) than it does underclassmen FGs' pattern of associations, suggesting that by the end of

college, FGs may think about independence more similarly to how their middle-class counterparts thought of independence at the beginning of college.

New experiences. For upperclassmen FGs, the idea of *new experiences* was more strongly associated with ideas of *stress* and *self-doubt* compared to CGs. For CGs, the idea of *new experiences* was more strongly tied to the idea of *meeting new people* compared to FGs. *New experiences* was one of the common themes that arose for both FGs and CGs when thinking about the idea of going to college (see Study 1), and this pattern of results suggests that this idea may have different meanings for FGs and CGs. For upperclassmen FGs, *new experiences* in college may represent a stressful aspect of the college experience and an aspect which they doubt their ability to handle. This pattern of activation may be informed by the challenges upperclassmen FGs have faced adapting to their new environment (see Study 1 and Study 2a discussions). For upperclassmen CGs, however, *new experiences* appear to be a more neutral aspect of their cultural model of education, one that is tied to the social aspects of college.

Self-doubt. The third node of difference for upperclassmen FGs and CGs was centered on the idea of *self-doubt*. This node of difference also appeared when comparing the networks of underclassmen FGs and CGs, however, the upperclassmen and underclassmen *self-doubt* nodes in terms of the concepts with which *self-doubt* was associated. For upperclassmen FGs, *self-doubt* was more strongly connected to ideas of *new experiences* and *stress* than it was for upperclassmen CGs. For upperclassmen CGs, *self-doubt* was more strongly connected to ideas of *moving* and *meeting new people*. This pattern of results suggests that even as FGs progress through college, *self-doubt* continues to be an important aspect of how they think about college, but the areas in which upperclassmen FGs experience self-doubt may differ from the areas in which underclassmen FGs experience self-doubt. Furthermore, as with the *self-doubt* node in

underclassmen's networks, these findings suggest that FGs and CGs may experience self-doubt in college for different reasons, with FGs doubting themselves in the experiences and changes that college induces and CGs doubting themselves in the social aspects of college.

Stress. The *stress* node largely paralleled the *self-doubt* node in the comparison of upperclassmen FGs' and CGs' networks of associations. For upperclassmen FGs, *stress* was associated more strongly with the ideas of *self-doubt*, *new experiences*, and one's *future career* than it was for upperclassmen CGs. For upperclassmen CGs, *stress* was more strongly associated with *meeting new people* than it was for upperclassmen FGs. As with the *self-doubt* node, the *stress* node suggests that for upperclassmen FGs, *stress* is more strongly tied to the experiences and changes that go along with college, as well as working toward a career than it is for CGs, but for CGs, *stress* is more strongly tied to the social aspect of college.

Study 2a and Study 2b Conclusions

Studies 2a and 2b sought to examine how the cultural models of education illustrated in Study 1 were internalized the networks of associations activated when underclassmen (Study 2a) and upperclassmen (Study 2b) FGs and CGs thought about the idea of college. Results suggest that as hypothesized, FGs' and CGs' networks of associations both overlap and diverge, and where these networks diverge, the differences in associations appear to reflect differences stemming from FGs' and CGs' social class backgrounds (e.g., greater familiarity with and sense of belonging in college among CGs compared to FGs; greater self-doubt in many college-related areas among FGs compared to CGs; greater independence among CGs and greater interdependence among FGs).

Furthermore, by examining how the various components of cultural models of education are related to one another with FGs' and CGs' networks of associations, these studies provide

insight into the social class differences in cultural models of education that I found in Study 1. Study 1 suggested that although there was a great deal of overlap in FGs' and CGs' cultural models of education, *self-doubt* was more prominent in FGs' compared to CGs' models. Study 2a helps to explain this prevalence, as it demonstrated that the idea of *self-doubt* was connected to more elements of FGs' cultural models than CGs'. Because self-doubt is tied to more aspects of FGs' cultural models, it may be more likely to be activated when FGs think about college. Conversely, because self-doubt is tied to more elements of FGs' models compared to CGs', the same elements that appear in FGs' and CGs' cultural models may be shaped more by self-doubt for FGs than for CGs, and thus even where FGs' and CGs' cultural models overlap in terms of content, they may diverge in terms of the valence of this content.

Study 2b offered an exploratory analysis of upperclassmen FGs' and CGs' networks of associations and suggests that overall, there may be fewer differences between FGs' and CGs' networks of associations toward the end of college compared to the beginning. This study also suggested that *self-doubt*, along with *stress*, continues to be a point of divergence in FGs' and CGs' cultural models of education and that over time, representations of *independence* and *new experiences* in FGs' and CGs' networks of associations may also differentiate these groups' cultural models of education. However, the limited sample size warrants caution in interpreting these findings, and more research is needed with larger samples to draw conclusions about the changes in FGs' networks of associations over time in college.

Limitations and future directions. The analyses presented in Studies 2a and 2b give insight into how cultural models of education are internalized in FGs' and CGs' networks of associations by examining the correlations between different elements of these cultural models. Subsequent analyses should examine the causal direction of these associations to better

understand the thought processes underlying the differences between FGs' and CGs' understanding of what it means to attend college. Furthermore, the methodology used in Studies 2a and 2b may also be used to examine cultural frame switching among FGs by examining how changes in the cultural context affect the networks of associations underlying individuals' thoughts, attitudes, and behaviors. For example, researchers could prime cultural context prior to the free association task to examine how the cultural prime influences biculturals' networks of associations. While these context-dependent changes in biculturals' networks of associations are purported to explain why biculturals' thoughts, attitudes, and behaviors are responsive to the changes in the cultural context, research has yet to demonstrate that cultural primes do in fact trigger changes in biculturals' networks of associations. This methodology provides one way to test this tenet of the theory of cultural frame switching.

Chapter 5: Background and Overview of Studies 3-5

Studies 1-2b explore cultural models and biculturalism among FGs, and together, they suggest that FGs' cultural views might change over the course of college, in some ways becoming more similar to CGs' cultural views. This suggests that FGs may experience biculturalism along the lines of social class. More research, especially longitudinal research, is needed to examine whether FGs do in fact *change* their cultural views over the course of college, or whether the patterns of data in Studies 1-2b reflect disparities in the FGs who persist versus those who drop out. However, in the absence of longitudinal data that may help to answer these questions about how social class biculturalism develops, Studies 3-5 turn to examining one of the psychological processes commonly seen among biculturals: cultural frame switching. People who have internalized more than one cultural frame have access to multiple ways of making meaning multiple cultural norms and ideas to guide their thoughts, attitudes, and behaviors, and research suggests they tend to switch between these multiple cultural frames depending on the context (see Hong et al., 2000). In Studies 3-5, I will examine whether FGs engage in cultural frame switching by examining how their ways of making meaning shift depending on the cultural context.

Demonstrations of cultural frame switching typically prime biculturals with one cultural context or another and show that biculturals' thoughts, attitudes, and behaviors change according to the cultural context (e.g., Hong et al., 2000; Ross, Xun, & Wilson, 2002). Cultural primes typically take the form of images related to a cultural context (e.g., the Great Wall to prime the Chinese cultural context or the United States flag to prime the American cultural context; Hong et al., 2000) or language (e.g., Greek versus Dutch; Verkuyten & Pouliasi, 2006). Social class, however, presents a challenge in terms of priming cultural context, as differences in social class

are in many ways less tangible or apparent than other cultural differences. Working-class and middle-class people in the United States speak the same language, and while they may live in different neighborhoods or have possessions of differing quality, there is wide variation in these differences. For example, someone who is working-class may use housing vouchers to move into a middle-class neighborhood or choose to spend their disposable income on luxury brand items that typically signal that a person is wealthy. On the other hand, someone who is middle-class may choose to live in a lower-income neighborhood or eschew brand names or luxury goods and thus not embrace things that signify their relatively advantaged social class. Thus, even though people from higher socioeconomic status backgrounds typically have more options available to them, people of both higher and lower socioeconomic statuses often make choices that obscure their social class, making visual markers of social class less reliable than visual markers of other types of cultural differences, such as racial/ethnic differences.

To my knowledge, no other research has primed social class. The closest manipulation in the literature comes from Kraus, Cote, and Keltner (2010), who manipulated subjective social status by causing people to feel that they were higher or lower on the social ladder compared to others. However, this type of manipulation focuses on where a person falls in relation to others in terms of social rank and not on the differences between working-class and middle-class contexts or cultural values. Because the central question focuses on whether FGs engage in cultural frame switching as they move between working-class and middle-class contexts, I reasoned that social class primes would need to invoke different contexts and the values and norms that go along with these contexts rather than simply invoking differences in one's social position relative to others in society.

My goal was to design two contextual primes, one of which would evoke a middle-class cultural context and one of which would evoke a working-class cultural context for FGs. This is what I seek to do in Study 3. To demonstrate cultural frame switching, studies show that biculturals' thoughts, attitudes, or behaviors shift to align with one cultural context or another, depending on which context is activated. These studies typically use dependent measures that have previously shown cross-cultural differences in thoughts, attitudes or behavior. Thus, in Study 4, I aimed to test whether a previously documented social class cultural difference could replicate in the population with which I intended to test the cultural frame switching prediction. Finally, in Study 5, I tested the social class cultural frame switching hypothesis using the primes developed in Study 3 and the dependent measure verified in Study 4.

Chapter 6: Study 3

The goal of Study 3 was to explore differences in FGs' representations of family and school contexts, specifically in terms of the extent to which each context evoked independent (i.e., middle-class cultural model of self) and interdependent (i.e., working-class cultural model of self) ideas or values. As middle-class institutions, universities promote *independent* middle-class values (Bernstein, 1974; Bourdieu & Passeron, 1990; Bourdieu & Wacquant, 1992; Stephens et al., 2012). While this set of values may be familiar to CGs, who come from middle-class, college-educated families, it is likely less familiar to FGs, who come from working-class families that tend to promote *interdependent* values (Horn & Nunez, 2000; Hossler, Schmit, & Vesper, 1999; Stephens et al., 2012; Snibbe & Markus, 2005). However, research has yet to examine whether FGs' representations of family and school contexts reflect the theoretical distinctions between independent and interdependent values. To the extent that family and university contexts represent different social class contexts and evoke the corresponding cultural models of self tied to social class, I expect that FGs will engage in cultural frame switching when they move between these contexts. Thus, examining whether the family context evokes working-class *interdependence* for FGs while the university context evokes middle-class *independence* is a critical first step in myinvestigation of cultural frame switching. In Study 3, I primed participants with the family or university context and coded their open-ended responses to examine whether family and university contexts represent different social class contexts for FGs.

Hypotheses

I created three sets of primes, each including a prime focused on family and a prime focused on the university. I expected that for both FGs and CGs, the university would represent a middle-class cultural context and thus would evoke predominantly *independent* thoughts and

values. However, I expected that family would represent a middle-class cultural context for CGs, who come from middle-class families, but a working-class cultural context for FGs, who come from working-class families. Therefore, I hypothesized that the family primes would evoke more *independent* thoughts and values for CGs than for FGs and more *interdependent* thoughts and values for FGs than for CGs. In other words, I hypothesized that for CGs, family and university contexts would both elicit predominantly *independent* thoughts and values. However, I hypothesized that for FGs, family would elicit more *interdependent* thoughts than would the university context, and that the university context would elicit more *independent* thoughts than would the family context.

Method

Participants. Three hundred forty-eight U.S.-born undergraduate students (198 female, 97 FG) were recruited from the Psychology Subject Pool. One participant was excluded for failing to respond to the prime. A majority of the sample was White/Caucasian American (49.1%) or Asian American (30.5%), with the remaining participants identifying as African American (1.7%), Hispanic/Latino American (6.3%), Native American (0.9%), or Multiracial/other (11.2%). Freshmen comprised over half the sample (59.2%), followed by sophomores (23.9%), juniors (10.6%), and seniors (4.6). A majority of participants entered the university after completing high school (86.8%), with a minority transferring from community colleges (6.9%) or four-year universities (2.9%). FGs and CGs did not differ on year in school ($\chi(4, N = 348) = 7.39, p = .12$) or type of school attended before entering the university, $\chi(4, N = 348) = 2.76, p = .43$. On average, participants reported parental income ranging from $75,001-100,000 annually, however, FGs ($M = 4.89$, $SD = 2.01$; equivalent to a value of $50,001-75,000)

reported lower parental income than CGs ($M = 6.49$, $SD = 1.75$; equivalent to a value between $75,001-100,000 and $100,001-150,000), $t(402) = 9.85$, $p < .001$.

Procedure. In an online study, participants were randomly assigned to one of 7 prime conditions. In all conditions, participants were asked to take a few moments to think about the prime and then write a few paragraphs in response. The Learning prime set asked participants to think about what they learned from either their *family* and home community or the *university* and university community. The Future Self prime set asked participants to think about the type of person their *family* or the *university* hoped they would become. Finally, the Perspective Taking prime set asked participants to imagine that they were explaining to either their *parents*, to the *university dean*, or to the *university admissions committee* why it was important for them to attend college (see Table 10). Following this writing task, I asked participants to indicate the perceived socioeconomic status of the people they thought about when responding to the prime (1 = Lower Income, 2 = Lower-Middle Income, 3 = Middle Income, 4 = Upper-Middle Income, 5 = Upper Income).

Coding. Three coders coded the open-ended responses for thematic content (see Table 11). Coders were blind to all demographic information about participants. Coded themes were determined using a bottom-up approach. I read through a subset of responses in each condition to identify themes and develop an initial coding scheme. Coders used this scheme to code a different subset of responses. I then refined the coding scheme to make category distinctions clearer and add themes that were not initially included but were needed to better characterize the responses. Coders independently coded subsets of 25 responses. I then ran reliability analyses and discussed discrepancies with the coders. After discussing discrepancies, coders independently adjusted their coding and coded another subset of responses. I used this iterative

coding process until reliability was high for all themes coded (i.e., $\alpha \geq .80$). At this point, coders independently coded all remaining responses. The final reliabilities were high for all themes (all αs $\geq .80$). For data analyses, I created composite scores for each coded theme reflecting the mean of all three coders' ratings. I used these composite scores as the dependent measures in analyses.

Table 10

Social Class Prime Sets

Learning Primes		Future Self Primes		Perspective Taking Primes		
University* N = 59	Family^ N = 50	University* N = 51	Family^ N = 66	University Dean* N = 45	University Admissions Committee* N = 36	Parents^ N = 40
Please spend a few minutes thinking about what you have learned from UW and the people in the UW community. Then, write a short paragraph describing what you've learned. What have you learned from UW and the UW community, and why is it important?	Please spend a few minutes thinking about what you have learned from your family and the people in the community where you grew up. Then, write 1-2 paragraphs describing what you've learned. What have you learned from your family and home community, and why is it important?	Take a few moments to think about your university. In 1-2 paragraphs, describe the type of person your university hopes you become and what they hope you achieve.	Take a few moments to think about your family. In 1-2 paragraphs, describe the type of person your family hopes you become and what they hope you achieve.	Imagine that you are applying to college, and you are explaining to the university dean why it's important for you to attend college. Take a few minutes to think about the things you would say to the dean. Then, write 1-2 paragraphs as if you were writing to the dean about why it's important for you to attend college.	Imagine that you are applying to college, and you are explaining to the university admissions committee why it's important for you to attend college. Take a few minutes to think about the things you would say to the admissions committee. Then, write 1-2 paragraphs as if you were writing to the admissions committee about why it's important for you to attend college.	Imagine that you are applying to college, and you are explaining to your parents why it's important for you to attend college. Take a few minutes to think about the things you would say to your parents. Then, write 1-2 paragraphs as if you were writing to your parents about why it's important for you to attend college.

* Primes combined into aggregate *university* condition
^ Primes combined into aggregate *family* condition

Table 11

Study 3 Coded Themes

Interdependent Themes	
Family Support	*"Ultimately my family and the community were truly supportive of me in whatever I did"*
Value Family	*"My family has also taught me to love family first. No matter what happens, family is family, and we will always stick together."*
Help Others	*"…they want me to become a person who can help others. They want me to grow my sense of empathy and be a caring person."*
Do Better Than Family	*"My mother just wants me to be more successful than she became."*
Have Own Family	*"They hope that I [have] a family I love coming home to and supporting"*
Independent Themes	
Make an Impact	*"My family hopes I become…someone who will truly be able to make a contribution in this world"*
Be a Leader	*"My family wants me to become a leader for others to follow."*
Ambition	*"They want me to…have goals and chase them"*
Be Well-Rounded	*"They believe everything should be taken in moderation and that being a well-rounded person is a ticket to a rich life."*
Follow Career Passions	*"I know that they would like me to have a good job, as well as to be able to do what I love"*
Prestige	*"My family hopes that I become a successful woman with integrity, and prestige."*
Be Independent	*"My family hopes that I can be someone who is independent and self supporting."*
Make Career Connections	*"I think the University of Washington hopes me to become a successful person once done with school, with many connections to help me right after graduating"*
Uniqueness/Passions	*"She also wants me to be able to express myself through the ways that I feel most passionate about"*
Experience/Adventure	*"My parents hope that I stay a generous and adventurous person"*
Miscellaneous Themes	
Values/Morals	*"My family hopes that I become a successful woman with integrity, and prestige…They want me to be a good person that gives back, in church, and other philanthropic events."*
Hard Work	*"…they want me to be someone who works hard at what I do"*
Good Judgment	*"My family hopes that I make the right decisions and trusts that I will."*
Success	*"I feel like my parents really wish for me to become successful by getting a good education and job"*
Academic Success	*"They especially want to see me succeed academically, and would always challenge me to put my academics first."*
Career Success	*"My parents hope that I am successful by getting a respectable job that an help support me and my family in the future."*
Specific Career	*"My parents have always wanted to see me become a scientist"*

Make Money	*"She wants me to make enough money in the job that I end up having"*
Open Mind	*"They also have raised me to be very open minded and accepting of everyone and everything."*
Happiness	*"My family hopes not for fame or fortune but for happiness."*
Health	*"They want me to live healthy"*
Value Diversity	*"They hope I come someone who…realizes diversity is the crucible for excellence."*
Represent University Well	*"I think that the university hopes its students become good representatives of the university post education and active alumna."*

Results

Analytic strategy. I expected that the university context would evoke predominantly *independent* themes for both FGs and CGs but that the family context would evoke more *interdependent* themes for FGs compared to CGs and more *independent* themes for CGs compared to FGs. To test this hypothesis, I first conducted separate ANOVAs for the three sets of primes. Each ANOVA predicted the average occurrence (i.e., the average number of mentions across all three coders) of each of the 28 coded themes from prime condition (university vs. family) and participants' college generation status (CG vs. FG). Although the specific themes evoked varied slightly across prime set, results generally suggested that the university primes evoked themes categorized as *independent* for both FGs and CGs and that the family primes evoked more themes categorized as *interdependent* than *independent*, especially among FGs (See Appendix D for results disaggregated by prime set).

However, because the cell sizes were relatively small and because the results across the three prime sets generally trended in the direction hypothesized, I collapsed across the prime sets and conducted a follow-up ANOVA (reported below) using aggregated prime condition (i.e., comparing all university primes collapsed into one university condition to all family primes collapsed into one family condition; see Table 10), generation status, and the interaction between prime and generation status to predict the average occurrence of each theme. Although I aggregated across prime condition, I wanted to retain information about how the thematic

content of participants' responses differed by condition, so I did not aggregate across themes to create a composite *independent* and *interdependent* outcome variable.

Perceived socioeconomic status. To examine whether participants perceived the university and family contexts as differing in terms of socioeconomic status (SES), I conducted an ANOVA predicting perceived SES from prime condition (family vs. university), generation status (CG vs. FG), and the interaction between these variables (see Appendix E for results disaggregated by prime set). I expected that FGs would perceive the family context as being lower in SES than would CGs, but that FGs and CGs would not differ in their perceptions of the SES of the university context. I also expected that FGs would perceive the university context as being higher in SES than the family context but that CGs would perceive these contexts as being similar in SES.

There was a main effect of prime condition such that regardless of generation status, participants primed with the university context ($M = 3.39$, $SE = .08$) reported higher perceived SES than participants primed with the family context ($M = 2.99$, $SE = .08$), $F(1, 343) = 12.17$, $p = .001$. There was also a main effect of generation status such that regardless of condition, CGs ($M = 3.46$, $SE = .06$) reported higher perceived SES than FGs ($M = 2.92$, $SE = .10$), $F(1, 343) = 21.94$, $p < .001$. Contrary to myexpectation, there was no significant interaction between prime condition and generation status, $F(1, 343) = .66$, $p = .42$. However, the pattern of means suggested that the difference in perceived SES across university and family contexts trended toward being greater for FGs (M difference = .50, $SE = .20$, $p = .01$) compared to CGs (M difference = .31, $SE = .12$, $p = .01$). This suggests that although both CGs and FGs thought of higher SES people when primed with the university context compared to the family context, the perceived SES discrepancy between the university and family context was larger for FGs than

for CGs. Furthermore, in both the university (*M* difference = .45, *SE* = .16, *p* = .006) and family (*M* difference = .64, *SE* = .17, *p* < .001) prime conditions, CGs reported greater perceived SES compared to FGs, suggesting that for CGs, both the university and family contexts represent higher SES contexts than they do for FGs (see Figure 8).[6] Because this study was underpowered, it is possible that with a greater sample size, particularly a greater sample of FGs, the omnibus effect would have been statistically significant.

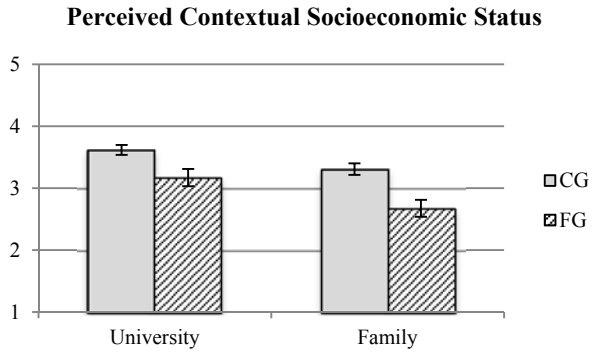


Figure 8. Perceived contextual socioeconomic status by condition and generation status.

Note. 1 = Lower Income, 5 = Upper Income. Error bars represent standard errors.

Main analyses.

Condition effects. There were 15 statistically significant main effects and one marginally significant main effect of condition on the 28 themes coded (see Appendix F for means, standard errors, and significance tests).

Independent themes. Participants primed with the university context were more likely than participants primed with the family context to mention the independent themes of *making*

[6] This pattern of results generally held across prime sets when analyzed individually. Both the Future Self and Perspective Taking primes showed main effects of condition and generation status but no interaction. The Learning primes showed only a main effect of generation status but no effect of condition and no interaction between condition and generation status.

career connections, *making an impact*, and *being well-rounded*. They were also marginally more likely than participants primed with the family context to mention the independent theme of *ambition*.

Contrary to myhypothesis, participants primed with the family context were more likely than those primed with the university context to mention the independent themes of *being independent* and *following one's career passions*.

Interdependent themes. Participants primed with the family context were more likely than participants primed with the university context to mention the interdependent themes of *family support* and *having one's own family*.

Miscellaneous themes. Participants primed with the university context were more likely than participants primed with the family context to mention the miscellaneous themes of *academic success*, *being open-minded*, and *valuing diversity*. Participants primed with the family context were more likely than participants primed with the university context to mention the miscellaneous themes of *pursuing a specific career*, *values or morals*, *using good judgment*, *making money*, and *happiness*.

Generation status effects. There were four statistically significant effects of generation status.

Independent themes. CGs were more likely than FGs to mention the independent theme of *having new experiences or adventures*.

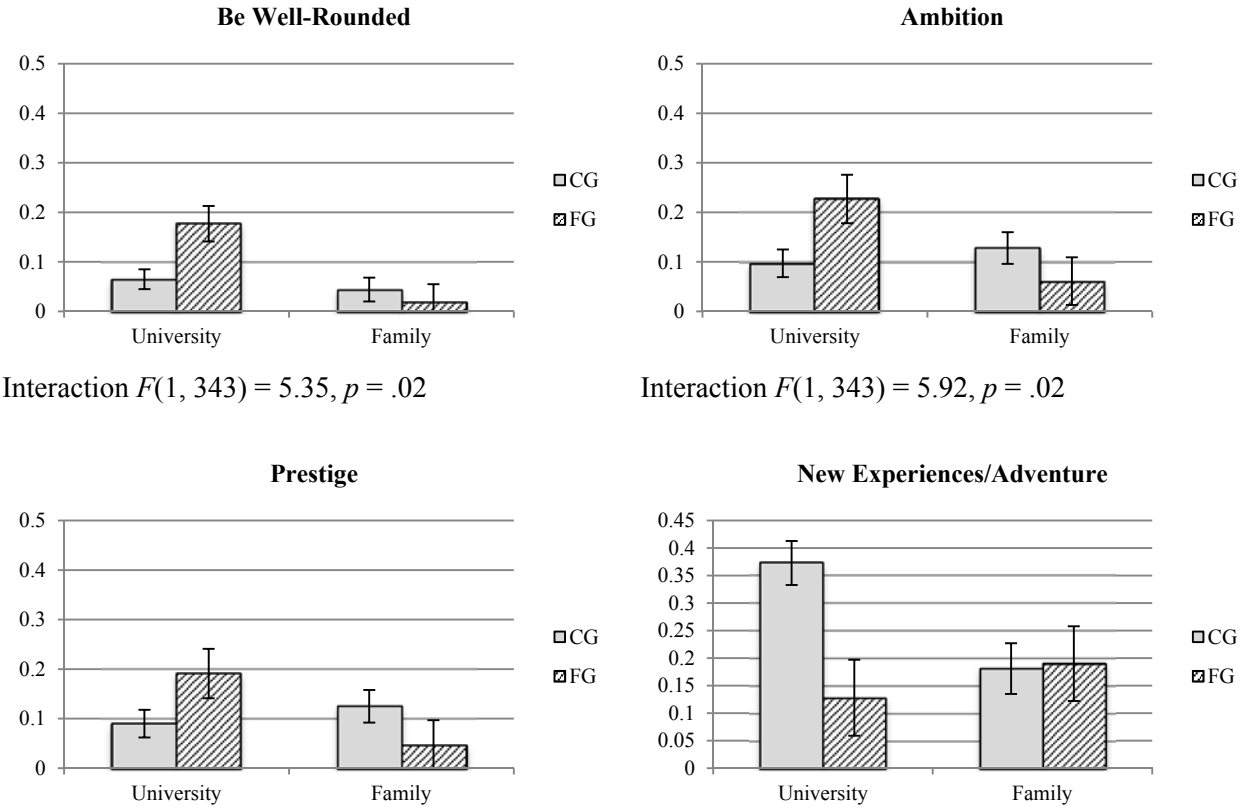
Interdependent themes. FGs were more likely than CGs to mention the interdependent themes of *valuing family*, *doing better than one's family*, and *helping others*.

Miscellaneous themes. There were no generation status effects on miscellaneous themes.

Interactions. There were five statistically significant and one marginally significant interaction between condition and generation status. Four of these interactions were on independent themes (*be well-rounded*, *ambition*, *prestige*, and *having new experiences or adventures*). One interaction was on an interdependent theme (*helping others*), and one was on a miscellaneous theme (*happiness*).

Independent themes. Three of the four interactions on independent themes (*be well-rounded*, *ambition*, and *prestige*) showed the same pattern in which CGs mentioned the themes with similar frequency across conditions, but FGs mentioned the independent theme more when primed with the university context than when primed with the family context (see Figure 9). This pattern of results suggests that, as predicted, family and university contexts evoke similar levels of independent associations for CGs, but for FGs, the university context evokes more independent associations than does the family context. Thus, these results suggest that, as predicted, for FGs, the university represents a more independent context than does family, but for CGs, the university and family contexts are similarly independent.

The fourth independent theme, new experiences and adventure, showed a different pattern of results. FGs mentioned this theme with similar frequency across conditions, but CGs mentioned the theme more when primed with the university context than when primed with the family context.



Interaction $F(1, 343) = 5.35$, $p = .02$

Interaction $F(1, 343) = 5.92$, $p = .02$

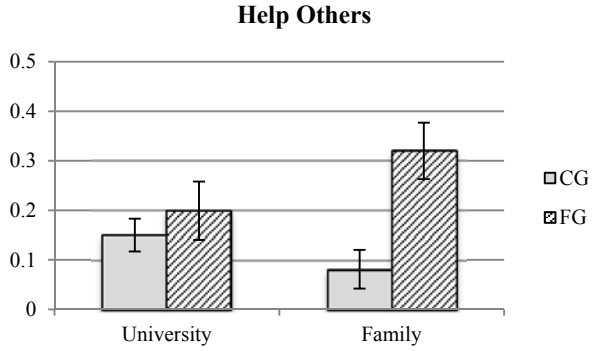
$F(1, 343) = 4.68$, $p = .03$

$F(1, 343) = 4.96$, $p = .03$

Figure 9. Condition by generation status interactions on independent themes.

Note. Error bars represent standard errors.

Interdependent themes. Although neither FGs nor CGs differed in how often they mentioned *helping others* across prime conditions, FGs mentioned *helping others* more than CGs did in the family condition but not in the university condition (see Figure 10). This pattern of results it suggests that, as predicted, the family context represents an interdependent context more so for FGs than for CGs, and, although not statistically significant, the family context tended to represent a more interdependent context than the university context for FGs but not for CGs.

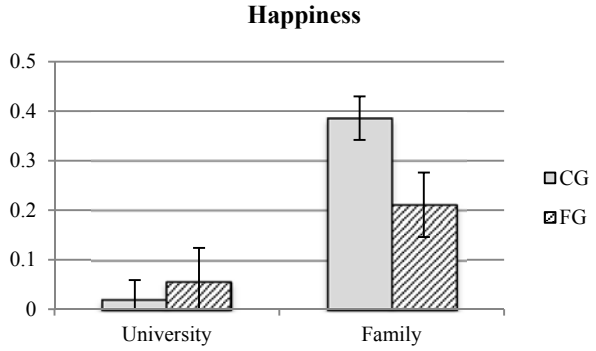


Interaction $F(1, 343) = 3.88$, $p = .05$

Figure 10. Condition by generation status interactions on interdependent themes.

Note. Error bars represent standard errors.

Miscellaneous themes. While FGs mentioned *happiness* with similar frequency across conditions, CGs mentioned *happiness* more when primed with the family context than when primed with the university context (see Figure 11).



$F(1, 343) = 3.68$, $p = .06$

Figure 11. Condition by generation status interactions on miscellaneous themes.

Note. Error bars represent standard errors.

Discussion

Study 3 suggests that for both CGs and FGs, the university context generally evokes more thoughts of independence compared to the family context. When primed with the university, both FG and CG participants thought of developing personally (i.e., being well-rounded) and professionally (i.e., making career connections) and exercising agency (i.e.,

making an impact). These themes all reflect an independent model of self that focuses on the individual's experience and emphasizes the importance of exercising agency (Snibbe & Markus, 2005; Stephens, Markus, & Townsend, 2007; Stephens, Fryberg, & Markus, 2011). In contrast, contrary to myhypothesis, the family context generally evokes thoughts of interdependence for both FGs and CGs. When primed with family, both FG and CG participants thought about their relationships with their family members and the relationships they desired to have in the future.

While I did not expect these main effects of condition, the patterns of data for FGs and CGs within the prime conditions did align with myhypotheses. That is, while both FGs and CGs perceived the family context as being relatively interdependent, as predicted, FGs tended to perceive this context as being more interdependent than did CGs. Additionally, while both FGs and CGs generally perceived the university as an independent context, FGs tended to perceive the university as more independent than did CGs. This pattern of results is slightly different than anticipated but still in line with the hypothesis that there is a greater difference in how FGs perceive the university and family contexts compared to how CGs perceive these contexts. I expected that in the family condition, CGs would mention more independent themes than FGs but that in the university condition, CGs and FGs would mention independent themes with similar frequency.

One possibility these data suggest is that FGs' greater frequency of mentioning independent themes in the university condition compared to the family condition reflects a greater discrepancy in values that these students experience in the university context. If FGs arrive in universities with more elaborated interdependent and less elaborated independent models of self, then the independent model of self promoted in the university context may be particularly salient to them, as it contradicts their normative way of being. Thus, when primed

with the university context, their associations may reflect independence to a greater degree than the associations of CGs, who arrive at universities with more elaborated independent than interdependent models of self. This possibility should be explored further in future research. Regardless of the cause of this pattern in which FGs perceive the university as more independent than do CGs, the overall pattern of data suggests that for CGs, university and family contexts are more similar than they are for FGs.

Study 3 provides evidence that for FGs, the university and family contexts may indeed represent different social class worlds with different cultural ways of being. Thus, it is possible that because they spend time in both of these contexts, FGs have access to multiple cultural frames, one derived from their interdependent working-class background and one derived from their experience in middle-class universities. One question remaining is how FGs negotiate these two potentially incompatible cultural frames. While it is possible that they may integrate these two cultural frames to create a new cultural frame containing components of both the independent and interdependent ways of being, I propose that instead, FGs use their interdependent cultural frame in contexts that promote interdependence and their independent cultural frame in contexts that promote independence. Indeed, previous work on biculturalism suggests that when people internalize multiple cultural frames, features of the context elicit one cultural frame over the other, guiding their thoughts, attitudes, and behaviors to align with the expectations of the context (Hong, Morris, Chiu, & Benet-Martinez, 2000; LaFromboise et al., 1993; Phinney & Devich-Navarro, 1997).

In Study 5 I explore whether FGs engage in cultural frame switching across social class contexts. Demonstrations of cultural frame switching typically rely on cultural priming (i.e., evoking one cultural context or another) to show that people who have internalized more than

one cultural frame (i.e., biculturals) shift their thoughts, attitudes, or behavior to align with the culture with which they have been primed. Thus, these studies typically use a dependent measure on which cross-cultural differences have previously been demonstrated. Because investigations of social class cultural differences are relatively new in social psychology, there are no dependent measures that have shown robust (i.e., highly reproducible) cross-cultural differences. Therefore, before exploring whether FGs engage in cultural frame switching when primed with family versus university contexts, I wanted to first examine whether I could replicate a previously demonstrated social class difference. To this end, I turned to a measure that has shown at least three conceptual replications: social class differences in how people view the idea of choice. Stephens, Fryberg, and Markus (2011) demonstrated that people from working-class backgrounds view choice more negatively than people from middle-class backgrounds. They argue that this difference stems from cultural differences in models of agency across working-class and middle-class communities. Study 4 examines whether this effect is replicable in the population in which I intend to test the social class cultural frame switching hypothesis.

Chapter 7: Study 4

The goal of Study 4 was to examine whether social class differences in how people view the idea of choice are replicable in the subject population in which I intend to test the social class frame switching hypothesis. If the previously documented social class difference replicates, then this measure can be used to examine whether priming FGs with middle-class versus working-class cultural contexts leads to social class cultural frame switching.

Hypotheses

The central hypotheses concerned FGs' and CGs' associations with the idea of choice. I hypothesized that, replicating Stephens, Fryberg, and Markus (2011), both FGs and CGs would view choice positively, but FGs would view choice more negatively than CGs. I also hypothesized that, replicating Stephens et al., CGs would be more likely than FGs to associate the idea of choice with the idea of "freedom" but that FGs would be more likely than CGs to associate the idea of choice with the idea of "difficulty" and "negative affect."

Secondarily, I wanted to examine whether FGs who had spent more time in the university would view choice more positively than FGs who had spent less time in the university. Although I expected that overall, FGs would have more negative and fewer "freedom" associations with choice compared to CGs, I also expected that FGs who had spend more time in the middle-class university context might have internalized middle-class independent values to a greater extent than FGs who had spent less time in the university. Thus, I thought it was possible that upperclassmen FGs' associations with choice might be more similar to CGs' associations with choice (i.e., reflect more middle-class independence) than would underclassmen FGs'. Unlike FGs, I expected that CGs' views about choice would not change across year in the university, as these students come from middle-class backgrounds that match the middle-class university

context. Although the data in this study is cross-sectional, this pattern of results would suggest that FGs might change as a function of time spent in the university, perhaps gradually acquiring middle-class values and ways of being.

Method

Participants. Four hundred eighteen U.S.-born undergraduate students (271 female, 117 FG) were recruited from the Psychology Subject Pool. A majority of the sample identified as White/Caucasian American (50.2%) or Asian American (31.6%), with the remaining participants identifying as African American (2.4%), Hispanic/Latino American (4.1%), Native American (.5%), or Multiracial/Other (11.2%). Freshmen comprised over half of the sample (63.3%), followed by sophomores (21.3%), juniors (11%), and seniors (.2%). A majority of participants entered the university after completing high school (93.5%), with a minority transferring from community colleges (3.8%) or four-year universities (1%). FGs and CGs did not differ on year in school ($\chi(3, N = 417) = 1.51$, $p = .83$) or type of school attended prior to UW, $\chi(3, N = 418) = 5.95$, $p = .11$. On average, participants reported parental income ranging from $75,000-100,000 annually, however, FGs (M = $30,000-50,000) reported lower parental income than CGs (M = $75,000-100,000), $t(402) = 9.85$, $p < .001$.

Procedure. I replicated Stephens, Fryberg, and Markus' (2011) Study 2. In an online study, participants listed three things that they associated with the idea of choice.

Coding. Three coders (2 FGs, 1 CG; 2 European American, 1 Native American) coded responses for valence and thematic content (see Table 12). I used the coding scheme used by Stephens, Fryberg, and Markus (2011). However, I also added codes to characterize responses that could not be characterized using the original coding scheme. Coders were blind to all demographic information about participants. I determined the presence or absence of a given

code for each response by the number of coders who assigned the code to the response. If 2 or more coders agreed that a code was present in a response, I assigned the response a 1 for that code. If only one coder coded a response as having a given code, I did not code the response as having that code. Then, I calculated the proportion of responses (out of three for each participant) that were positive, negative, or neutral in valence, and the proportion that reflected each theme coded.

Table 12

Mean Responses to the Idea of Choice by Generation Status

Coding Categories	Examples	FG	CG
Negative Valence	*consequences*; *wrong*	.06	.05
Neutral Valence	*career*; *food*	.56	.57
Positive Valence	*equality*; *right*	.38	.38
Difficulty	*difficult*; *dilemma*	.02	.01
Negative Affect	*Regret*; *stress*	.00	.00
Freedom*	*freedom*; *liberty*	.16	.21
Significant	*powerful*; *control*	.06	.04
Smart^{+}	*logical*; *reason*	.03	.02
Positive Affect	*happiness*; *desires*	.03	.02
Independent	*independence*; *personal*	.09	.09
Process	*decision*; *options*	.28	.26
Results	*outcome*; *success*	.08	.06
Relationship	*spouse*; *friends*	.03	.03
Daily	*food*; *clothes*	.09	.09
Outside Influence^{+}	*peer pressure*; *outside influence*	.02	.01
Ideology	*politics*; *religion*	.04	.06

Note. Results are reported from Mann Whitney U tests, $N = 418$.
*$p < .05$. + $p < .10$

Results

Replication analyses. I first ran analyses to examine whether the data replicated the findings of Stephens, Fryberg, and Markus (2011). Specifically, I examined whether the valence and content of participants' associations with choice differed as a function of college generation status.

Valence. A Wilcoxon Matched Pairs test demonstrated that, as hypothesized, both FGs (*M* positively valenced associations = .38, *M* negatively valenced associations = .06; $z = -7.14$, $p < .001$) and CGs (*M* positively valenced associations = .38, *M* negatively valenced associations = .05; $z = -12.12$, $p < .001$) had more positively valenced than negatively valenced associations with choice. However, contrary to predictions, and contrary to previous findings by Stephens, Fryberg, & Markus (2011), a Mann-Whitney U Test suggested that, compared to CGs, FGs did not have fewer positively valenced associations with choice (*M* rank = 205.06 vs. 206.46, $z = -.28$, $p = 78$) or more negatively valenced associations with choice (*M* rank = 212.86 vs. 205.39, $z = -.96$, $p = .34$).

Thematic content. Similar to findings by Stephens, Fryberg, and Markus (2011), FGs and CGs overlapped substantially in the content of their choice associations (see Table 12). Replicating Stephens and colleagues, a Mann-Whitney U test revealed that CGs (*M* rank = 214.11) were more likely to associate choice with *freedom* compared to FGs (*M* rank = 190.73), $z = -2.01$, $p = .05$, $d = .24$. Diverging from Stephens and colleagues' findings, however, FGs were not more likely than CGs to associate choice with *difficulty* (*M* rank = 210.12 vs. 206.47, $z = -.84$, $p = .40$) or *negative affect* (*M* rank = 206.77 vs. 207.79, $z = -.41$, $p = .68$).

Secondary analyses. To examine whether FGs' choice associations changed over time in the university (cross-sectionally), I ran a series of moderated linear regression analyses predicting valence and thematic codes (using proportions, as in the previous analyses) from generation status (0 = CG, 1 = FG), year at UW, and the interaction between the two. There was a significant interaction between generation status and year at UW predicting the proportion of associations coded as *positive affect*, $B = .02$, $SE = .01$, $p = .01$. As predicted, CGs reported similar proportions of associations coded as *positive affect* across year in school, but FGs who

had spent more time in the university reported more associations coded as *positive affect* than FGs who had spent less time at the university (see Figure 12). Simple slopes analyses revealed that while year in school did not predict positive affect associations for CGs (β = -.33, *SE* = .26, p = .36), for FGs, there was a marginally significant effect of year in school on positive affect associations such that FGs who had spent more time in the university tended to have more positive affect associations than FGs who had spent less time in the university (β = .64, *SE* = .34, p = .06). No other statistically significant interactions arose, all ps > .05.

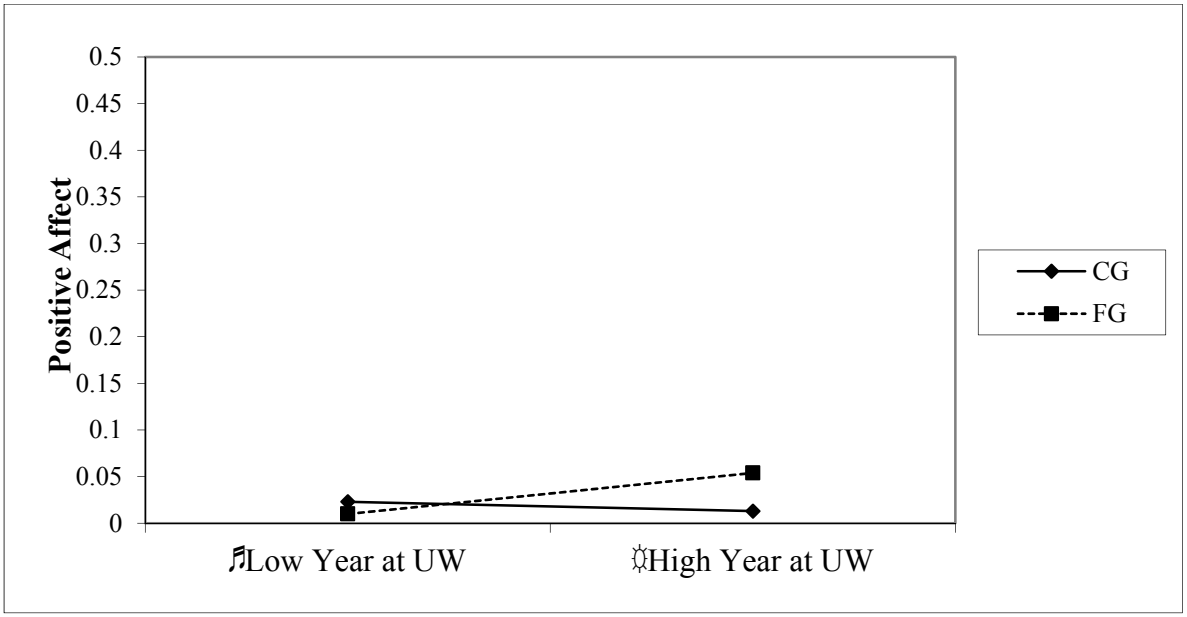


Figure 12. Proportion of responses coded as *positive affect* by year in school and generation status.

Discussion

Study 4 examined whether a previously documented social class difference would replicate in the subject population in which I intended to test the social class cultural frame switching hypothesis. Results from Study 4 partially replicated Stephens, Fryberg, and Markus' (2011) finding that the idea of choice is viewed differently across social class cultural contexts. Like Stephens et al., Study 4 suggests that CGs are more likely to associate choice with the idea

of freedom compared to FGs. Study 4 also replicated Stephens and colleagues' finding that people generally view choice more positively than negatively. However, results of Study 4 diverge from previous findings in that FGs did not view choice more negatively or less positively than CGs. These findings suggest that with a reasonable degree of confidence, I could expect to replicate social class differences in associations of choice with freedom, and thus this measure may be an appropriate measure to use in myexamination of social class cultural frame switching.

I also conducted analyses examining whether FGs' associations with choice differ depending on how much time FGs have spent in the university. Study 4 results suggest that FGs' choice associations may become more positive (and thus more similar to middle-class views of choice documented in the social class literature) as they spend more time in the middle-class university context.[7] Surprisingly, FGs who had spent more time in the university were more likely than CGs to associate choice with positive affect, regardless of how much time CGs had spent in the university. This pattern should be explored further in future studies, but one possibility it suggests is that upperclassmen FGs may endorse an independent cultural model of self more so than underclassmen FGs, and potentially even more so than CGs. If this pattern holds true in future studies, it could suggest that as FGs spend more time in the university, they internalize independent values, perhaps even to a greater extent than CGs. If this explanation were true, it would suggest that FGs assimilate to the independent university context over time. Alternatively, this pattern of results could suggest that FGs who are high in independence are more likely to stay in college than FGs who are low in independence. If this explanation were

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[7] Notably, this difference did not emerge on the positive valence variable, on which Stephens, Fryberg, and Markus (2011) previously found generation status differences. However, there was a large degree of overlap in the positive valence and positive affect variables, as responses that were coded as positive affect were also coded as positive valence.

true, it would suggest that the independent university setting may be more manageable for FGs whose model of self more closely aligns with the model of self that is prevalent in the university context. Given that FGs have higher college attrition rates than CGs (Pascarella et al., 2004), if this explanation proved viable, it would point to the importance of making university cultures more welcoming to students with interdependent models of self (e.g., Stephens et al., 2012) and of helping FGs understand how they may need to make adjustments to their normative behavior in order to meet university expectations (e.g., Stephens et al., 2014).

Chapter 8: Study 5

Study 5 integrates methods from Studies 3 and 4 to examine whether FGs engage in cultural frame switching across social class contexts. Replicating Stephens et al. (2011), Study 4 showed that FGs associated the idea of "choice" with "freedom" less than did CGs. This difference in associations maps onto cultural differences in models of agency across middle-class and working-class contexts. For CGs, who come from independent middle-class backgrounds, choice is a way of freely expressing oneself and one's individuality. For FGs, however, who come from interdependent working-class backgrounds, choice is less about the freedom of expression and more so an opportunity to fit in with others (Stephens et al., 2011). Study 3 demonstrated that university and family contexts evoked different social class contexts for FGs but similar social class contexts for CGs. In Study 5, I used primes tested in Study 3 to elicit either middle-class or working-class cultural contexts (or a control) and then replicated the association procedure used in Study 4 to examine whether FGs' associations with choice differed depending on the cultural context with which they were primed.

Hypotheses

I expected to replicate findings from Study 4 in the control condition. That is, I hypothesized that when FGs and CGs were not primed with social class context, FGs would associate "choice" with "freedom" less than would CGs.[8] Because these differences in associations with choice are rooted in people's social class backgrounds and corresponding cultural models of self, I expected to find this same pattern of results when participants were

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[8] Study 6 focuses on the social class difference in associations of choice with freedom for two reasons. First, given that Study 5 only showed a significant generation status difference on freedom associations but not valence associations, I only expected to replicate the generation status difference on freedom associations. Second, I could not accurately code for valence with the coding software I used in this study, so I chose not to explore social class differences on these variables.

primed with family (i.e., interdependent working-class cultural context for FGs and independent middle-class cultural context for CGs). When primed with the university context, however, I expected that FGs and CGs would not differ in their associations of "choice" with "freedom". That is, because the university context represents an independent middle-class cultural context for both FGs and CGs, I expected that if FGs engage in cultural frame switching across social class contexts, their associations with choice would not differ from CGs' in a middle-class context.

Method

Participants. Six hundred ten U.S.-born undergraduate students (395 female, 259 FG) were recruited from the Psychology Subject Pool. A majority of the sample was White/Caucasian American (44.6%) or Asian American (32%), with the remaining participants identifying as African American (2.1%), Hispanic/Latino American (9.2%), Native American (0.7%), or Multiracial/other (11.5%). Freshmen comprised over half the sample (62.5%), followed by sophomores (25.5%), juniors (7.7%), and seniors (3.8%). A majority of participants entered the university after completing high school (93.8%), with a minority transferring from community colleges (5.6%) or four-year universities (0.7%). FGs and CGs did not differ on year in school ($\chi(4, N = 608) = 5.66$, $p = .23$) or type of school attended prior to UW, $\chi(4, N = 610) = 3.11$, $p = .21$. On average, participants reported parental income ranging from $100,001-120,000 annually, however, FGs ($M = 4.20$, $SD = 2.92$; equivalent to a value of $60,001-80,000) reported lower parental income than CGs ($M = 8.07$, $SD = 3.84$; equivalent to a value of $140,001-160,000), $t(590) = 13.45$, $p < .001$.

Procedure. Participants completed an online study in which they were randomly assigned to a social class prime condition (university, family, or control) prior to completing a

choice association task. I used the Future Self primes from Study 4 to prime social class context. In the Family Self condition, participants were asked to think and write about the type of person their family hoped they became. In the University Self condition, participants were asked to think and write about the type of person their university hoped they became. In the control condition, participants did not complete a priming task. Following the priming task, participants completed the same choice association task used in Study 4. Specifically, they were asked to list three things they associated with the idea of choice.

Coding. I used the autocode function in Atlas.ti to code participants' "choice" associations. Based on participants' responses in Study 5, for each theme, I created a set of words indicating that the theme was present in a participant's response (See Table 13). I programmed these sets of words into Atlas.ti and used the autocode feature to identify all responses that included one or more words from the list for each code. For each response Atlas.ti identified as including one or more of the search terms for a given code, I read the response and decided whether or not to apply the code Atlas.ti suggested.[9]

Table 13

Study 5 Themes and Autocode Search Terms

Code	Autocode Search Terms
Freedom	free*, lib*, democ*, equal*, rights, volunt*, freewill, fair*, America*, US*, eagle*
Difficulty	diffic*, hard, chall*, tough, stress*, compl*, quandr*, agon*, work, tricky, indecisiv*, constrain*, dilemma, conflict*, limit*, indecision, doubt*, lack, hesitat*
Negative Affect	fear*, afraid, nerv*, anx*, worr*, scar*, unsure, uncertain*, confus*, frust*, regret, overwhelm*
Positive Affect	happ*, excite*, hope*, fun, desir*, want*, love*, wish*, peace*, passion*, like, well*

[9] I piloted this coding system using data from Study 5 and found that I was able to replicate Study 5 findings using the Atlas.ti autocoding process.

Significant	signif*, valuable, crucial, power*, responsib*, opportunit*, just*, important, priv*, priorit*, dut*, affect*, control*, determin*, necessar*, need, will*, respect*, lead*, agen*, impact*
Smart	smart*, wise, wisdom, intelligen*, thought*, think*, mind*, brain*, idea, ideas, logic*, learn*, curious*, curios*, reason*, contemplat*, question, rational*
Independence	independen*, autonom*, self*, individ*, i, me, my*, person*, own*, mine, you*, express*, identi*, confiden*, ability*, grow*, interest*
Process	select*, option*, prefer*, deci*, possib*, alternativ*, choos*, pick*, select*, path*, weigh*, pro*, con*, consider*, variet*, variat*, opinion*, favorit*, judg*, two*, this, that, or, say*, cost*, benefit*, plan*, multip*, variab*, rank*, consider*, many, mak*, discern*, goal*, aspirtation*, risk*, balanc*, choice*, ABC
Results	result*, outcome*, solution*, bad, good, right, wrong, reward*, consequence*, correct, effect*, success*, fail*, win*, los*, run*, first, second, third, answer*, best, worst, punish*, final*, determin*, mistake*, benefit*, ideal, repercussion*
Relationship	relation*, famil*, friend*, sex, marr*, boy*, girl*, who, spouse*, *mate*, partner*
Daily	school*, life*, food, *burger*, lunch*, dinner*, breakfast*, college*, education, class*, acivit*, job*, career*, wear*, cloth*, cereal, video*, tv, television, work*, major*, wak*, hair*, steak, cookies, daily, day*, diet*, occupation*, sports, ice cream, health*, book*, music, movie*, club*, to do, hobb*, fashion*, sorority*, fraternit*, stud*, exercis*, play*, buy*, purchas*
Outside Influence	pressure*, peer, outside, factor*, situation*, societ*, influen*, persua*, circumstan*, tempt*, distract*, obligat*, require*
Ideology	religio*, moral*, politic*, abort*, pro-life, pro life, pro-choice, pro choice, belie*, ethic*, values, faith, vot*, buddhis, view*, women's, birth control, god*

Results

Analytic strategy. To test my hypotheses, I conducted a series of negative binomial logistic regressions predicting the total number of occurrences of each code (out of 3) in participants' "choice" associations from priming condition (with the control condition as the

reference category), generation status (CG = 0, FG = 1), and the interaction between condition and generation status.

Main analyses.

Freedom associations. Contrary to thte hypothesis, FGs and CGs did not differentially associate "choice" with "freedom" across any of the conditions (all *p*s > .18).

Other associations. Although the central hypotheses concerned associations of choice with freedom, mirroring Study 5, I ran analyses predicting the occurrence of all codes in participants' "choice" associations.

Generation status effects. FGs were less likely than CGs to associate "choice" with "independence" (β = -0.60, *SE* = 0.29, *p* = .04) or with "negative affect," β = -28.07, *SE* = 1.23, *p* < .001. FGs were more likely than CGs to associate "choice" with "positive affect," β = 1.62, *SE* = 0.80, *p* = .04.

Condition effects. Participants in the Family Self condition were less likely than participants in the control condition to associate "choice" with "process" (β = -0.50, *SE* = 0.17, *p* = .004) but more likely than participants in the control condition to associate "choice" with "ideology", β = 0.60, *SE* = 0.33, *p* = .07.

There were no other significant effects of generation status, condition, or the interaction between generation status and condition on any of the thematic codes, all *p*s > .05 (see Table 14).

Table 14

Negative Binomial Logistic Regression Results

	Family vs. Control	University vs. Control	FG vs. CG	Family vs. Control x FG vs. CG	University vs. Control x FG vs. CG
Daily	0.11 (0.27)	0.02 (0.26)	0.13 (0.28)	-0.35 (0.41)	0.25 (0.40)
Difficulty	0.42 (0.68)	0.93 (0.61)	0.59 (0.69)	-0.47 (0.94)	-0.85 (0.89)
Freedom	-0.02 (0.18)	-0.03 (0.17)	-0.04 (0.19)	-0.13 (0.28)	-0.40 (0.30)
Ideology	0.60 (0.33)$^{+}$	0.08 (0.35)	-0.21 (0.42)	0.09 (0.52)	-0.11 (0.60)
Independence	-0.33 (0.25)	-0.08 (0.22)	-0.60 (0.29)*	0.76 (0.41)$^{+}$	0.23 (0.41)

Negative Affect	1.11 (0.84)	0.02 (1.01)	-28.07 (1.23)*	-0.94 (0.00)	
Outside Influence	1.29 (0.83)	0.02 (1.01)	0.36 (1.01)	-0.94 (1.24)	-0.98 (1.32)
Positive Affect	1.80 (0.78)	1.12 (0.82)	1.62 (0.80)*	-1.17 (0.91)	-0.67 (0.96)
Process	-0.50 (0.17)	-0.21 (0.15)	-0.10 (0.16)	0.20 (0.26)	-0.33 (0.26)
Relationship	-0.04 (0.35)	-0.44 (0.37)	-0.28 (0.39)	0.17 (0.55)	0.30 (0.60)
Results	0.02 (0.33)	0.09 (0.31)	-0.22 (0.37)	0.28 (0.51)	0.24 (0.51)
Significant	0.19 (0.37)	0.35 (0.34)	0.22 (0.38)	0.23 (0.51)	0.21 (0.49)
Smart	-0.28 (0.57)	-0.27 (0.54)	0.08 (0.54)	0.04 (0.83)	0.64 (0.76)

Note. Numbers outside parentheses are unstandardized betas. Numbers inside parentheses are standard errors.
*$p < .05$. $^{+}p < .07$.

Discussion

Contrary to the hypothesis, FGs did not associate "choice" with "freedom" more when primed with the university (i.e., a middle-class, independent context) compared to the control condition. Indeed, FGs and CGs did not differ in their choice associations across any of the conditions. Thus, I failed to find evidence that FGs engage in cultural frame switching across social class contexts. I also failed to replicate the baseline social class difference in associations of "choice" with "freedom," such as found in Study 4 and have been reported previously (Stephens, Fryberg, & Markus, 2011). Furthermore, although I did not code for positive and negative valence in Study 6, the effects of social class on associations of "choice" with positive and negative affect contradict findings of previous research. While Stephens and colleagues (2011) found that people from working-class backgrounds viewed choice more negatively than people from middle-class backgrounds, the effects of social class on associations of "choice" with positive and negative affect in this sample were exactly opposite this previous finding. In this sample, FGs had significantly more positive and fewer negative associations with "choice."

One potential explanation for these findings is that the manipulation of social class context was not adequate to elicit the frame switching effect I hypothesized. Supplemental analyses from Study 3 suggest that FGs did not perceive the university context as being significantly higher SES compared to the family context. This suggests that the university prime

may not be evoking a middle-class context to the extent that I intended it to or that FGs simply do not perceive the university as being a middle-class context. Additionally, the differences in themes evoked for FGs and CGs within the family condition generally reflected the predicted pattern whereby FGs mentioned interdependent themes more than CGs. Similarly, in the university condition, as predicted, FGs and CGs generally did not differ in the extent to which independent themes were activated. However, the effects of these primes were relatively small, and relative to the number of themes coded, there were relatively few differences between FGs and CGs. This suggests either that the social class primes were relatively weak or that FGs do not perceive the university and family contexts as being as different as theorized both here and in previous literature.

Alternatively, Study 5 findings may suggest that there are boundary conditions to the effect of social class on cultural models of agency. Despite recruiting subjects from the same university subject pool with similar demographic characteristics and administering using the same dependent measure, Studies 4 and 5 offer different conclusions about the effect of social class on cultural models of agency. Even within the control condition of Study 5, which directly replicated the methodology of Study 4, I did not find the predicted (and previously demonstrated) social class difference in the extent to which FGs and CGs associated choice with freedom. Future research should more thoroughly investigate when and how social class shapes people's understanding of agency.

Chapter 9: General Discussion

As people move between social classes, they encounter different cultural ways of being – that is, different ways of making sense of the world and different expectations for how people should think and behave. Yet little is known about the psychological processes involved in moving between social class cultural contexts. I hypothesized that one of the ways in which people negotiate multiple social class cultural ways of being is through social class cultural frame switching. That is, I expected that people who move between working-class and middle-class contexts would internalize both the interdependent cultural model of working-class contexts and the independent cultural model of middle-class contexts and that the cultural model that guides these individuals' thoughts, attitudes, and behaviors would depend upon the social class context. I tested these hypotheses across 6 studies in which I compared the responses of upwardly mobile FGs, who have experiences in both working-class and middle-class cultural contexts, to those of CGs, whose experiences are largely limited to middle-class cultural contexts. In general, I found that there was both overlap and divergence in the cultural models that FGs and CGs use to made sense of the world. Furthermore, I found that FGs' cultural models depended upon how much time they had spend in the university, or in other words, how much experience they had in middle-class cultural contexts. I did not, however, find that FGs engaged in cultural frame switching. Below I discuss these findings in more detail and discuss their significance for research on social class and culture.

Overlap and Divergence in FGs' and CGs' Cultural Models

Studies 1, 3, and 4 all examined cultural models and whether these models differed for FGs, who come from working-class backgrounds, compared to CGs, who come from middle-class backgrounds. All of these studies suggested that there were both similarities and differences

in FGs' and CGs' cultural models. Study 1 demonstrated that while FGs' and CGs' cultural models of education share some overlap (e.g., both cultural models include elements regarding common college experiences such as moving and studying), they also diverge in that FGs' cultural models include more self-doubt than CGs' cultural models. Study 4 replicated previous research on social class cultural models of agency (Stephens et al., 2011), showing that while both FGs and CGs view agency relatively positively, CGs' cultural models equate agency with freedom more so than do FGs' cultural models. Finally, although Study 3 was intended to pilot social class primes, it also speaks indirectly to social class cultural models of university and family contexts. For both FGs and CGs, the university context evoked independence more so than did the family context, and the family context evoked interdependence more so than did the university context. However, the university context tended to evoke more independence for FGs than for CGs, and the family context tended to evoke more interdependence for FGs than for CGs.

All of these studies suggested that while there are similarities in FGs' and CGs' cultural models, there were also differences in these cultural models that mapped onto differences in FGs' and CGs' socioeconomic status and in the dominant cultural models of self in working-class and middle-class communities. The overlap in FGs' and CGs' cultural models likely stems from these groups' shared experience as members of a larger U.S. cultural context that is guided by an independent cultural model. Because FGs and CGs are both immersed in this context, their cultural models are influenced by the dominant independent cultural model. However, FGs and CGs occupy different social class realms within the U.S. context, and while the dominant cultural model in CGs' middle-class communities aligns with the independent cultural model of the larger cultural context, FGs' working-class communities promote an interdependent cultural

model that diverges from the dominant independent model. Just as the independent values of U.S. society at large influence FGs' cultural models, so too do the interdependent values of their working-class communities, and this influence differentiates FGs' cultural models from CGs'.

Contributions beyond previous research. These studies contribute to previous research on social class cultural models in terms of both methodology and theory. First, while research on cultural models typically relies on responses to a single question, Study 1 utilized responses to multiple questions related to the topic of interest. This methodological decision allows for a more robust examination of cultural models, such as in the analyses presented in Study 1, which aggregated across responses to multiple questions regarding education. However, it also allows for a deeper examination of the individual components of cultural models. There are many components of cultural models, and, as Studies 1, 3, and 4 suggest, these components often appear to overlap across cultural models. By using methodologies such as that of Study 1, researchers can come to a better understanding of where and how cultural models overlap and where and how they diverge, which ultimately allows for a better understanding not only of cultural models but of culture more broadly and the ways in which culture shapes how people make sense of the world.

Second, the methodology and analyses of Study 3 offer an advance compared to previous examinations of cultural models by comparing cultural differences in response to multiple targets rather than focusing on only one target. This type of comparison gives greater insight into not only the cultural models of each individual target but also cultural differences more broadly. For example, Study 3 demonstrated that representations of home and family contexts differed from one another in similar ways across social class, but these differences tended to be more

pronounced for FGs than for CGs. Thus, Study 3 illuminated not only cross-cultural differences but also cross-context differences in cultural models.

Finally, while most examinations of cultural models rely on data produced by human coders, Study 4 replicated a previously established cultural difference in qualitative data but used a computerized coding process rather than human coders. While there were limitations to the coding that could be done using the computerized process compared to using human coders, creating an algorithm to code qualitative data not only results in more efficient coding but also in reduced variability in coding, more concrete operationalization of coded variables, and a more reliable way to replicate coding across different data sets. Coding schemes such as this could be used in future research concerning cultural models and could thereby reduce cross-study differences in coding to make results more comparable across studies and labs. Ultimately, such methodologies will allow for a better understanding of how social class and culture shape individuals.

Differences in FGs' Cultural Models Depending on Time in School

In addition to documenting social class cultural differences, this research also documented intra-cultural differences in FGs' cultural models (Study 1) and in the networks of associations in which those cultural models are embedded (Study 2b). Study 1 suggested that FGs' cultural models of education depended upon how much time FGs had spent in middle-class universities. Although on average FGs' and CGs' cultural models of education differed in that FGs' cultural models included a more prominent self-doubt component, upperclassmen FGs, who had spent more time in the middle-class university, endorsed cultural models of education that included an even more pronounced element of self-doubt than the cultural models of underclassmen FGs, who had spent less time in the university and thus had less exposure to

middle-class cultural contexts. This finding differed from my prediction; I expected FGs' cultural models of education to more closely approximate CGs' cultural models of education as they spent more time in the university rather than more strongly reflecting the dimension that distinguished FGs' and CGs' cultural models. However, this finding still suggests that spending time in the middle-class university context may indeed influence FGs' cultural models and thus suggests that FGs may experience social class biculturalism – or a comparable change in their cultural models – shifting the way that they make sense of the world as they gain experience in an alternate social class context.

Study 2b provided further evidence for the possibility that FGs experience biculturalism as they spend time in the university context by showing that the networks of associations in which FGs' cultural models of education are embedded differed for upperclassmen FGs compared to underclassmen FGs. Although the self-doubt component distinguished FGs from CGs both at the under- and upperclassmen level, the components with which self-doubt was associated differed for FGs across year in school, suggesting that their cultural models shifted as they spent time in the university. Together with Study 1, Study 2b suggests that FGs' cultural models may change as they spend time in a middle-class context. Further research is needed to understand whether these changes represent the beginning of biculturalism or a psychological experience that is distinct from biculturalism

Contributions beyond previous research. These findings have implications for both the social class and biculturalism literatures. First, these findings contribute to the literature on social class by examining within-group variation, which is often overlooked in comparisons of working-class and middle-class people. The understanding of how culture varies by social class is relatively new in social psychology, and much of the research so far has focused on

understanding the differences between working-class and middle-class people (or FGs and CGs) on average without an effort to understand variation within social class. There are both theoretical and practical reasons for this failure to consider intra-cultural variability. On a theoretical level, it is important to understand how social class groups differ on average as a function of their cultural contexts and values. Indeed, much of cultural psychology focuses on documenting cross-cultural differences more so than documenting intra-cultural differences with respect to cultural models and their accompanying thoughts, attitudes, and behaviors (Hong & Mallorie, 2004). On a practical level, working-class populations are often difficult to access and recruit. Research often relies upon college samples, and FGs typically comprise only about 20% of the college student population, making them underrepresented in college student samples (Pappano, 2015). When researchers recruit samples outside the community, both money and time become limiting factors, as recruiting from the community typically requires researchers to pay subjects, and working-class people, who often work multiple jobs and have limited free time may simply have less time to participate in research compared to middle-class people who tend to have more leisure time. Because of the difficulty of recruiting working-class populations, studies often conclude with sample sizes that are insufficient to examine intra-cultural variation in this population. However, as Studies 1 and 2b suggest, there may be meaningful differences within working-class populations that are not captured by a mean-level cross-cultural approach. To the extent that it is feasible to recruit larger samples of working-class people, future research should seek to examine variation within social class.

Second, these findings have implications for the literature on biculturalism because they speak to the developmental aspect of biculturalism, suggesting that evidence of biculturalism may not emerge until after people have spent a significant amount of time in a new cultural

context. The existing literature on biculturalism, and particularly on cultural frame switching, utilizes populations of people who can relatively safely be presumed to be bicultural because they have spent much if not all of their lives moving between two cultural contexts (e.g., Asian Americans who grow up with Asian cultural values at home and American cultural values at school; Devos, 2006; Wang, 2008). Because college is the first time that many FGs spend much of their time immersed in a middle-class cultural context, they may not become bicultural until later in college or even after college, when they spend a majority of their time in middle-class workplaces surrounded by other middle-class people. Thus, Studies 1 and 2b offer an initial examination of the development of biculturalism and suggest not only that moving between social class cultural contexts may influence the way people make meaning of the world (i.e., that people may become bicultural along the lines of social class), but also that this change likely takes place over the course of many years of immersion in a new cultural context. Future research investigating social class biculturalism and the development of biculturalism should employ longitudinal and cross-sectional methods that survey upwardly mobile people who have spent more time in middle-class cultural contexts than FGs have.

Cultural Models are Internalized in Networks of Associations

Studies 2a and 2b demonstrated how the social class cultural models of education examined in Study 1 were internalized in the networks of associations that guide FGs' and CGs' thoughts, attitudes, and behaviors. These studies helped to explain why self-doubt was more prominent in FGs' cultural models of education compared to CGs' by showing that self-doubt was associated with more components of FGs' cultural models than CGs' cultural models. That is, self-doubt was a more elaborated component for FGs compared to CGs, and thus was overall more prominent in FG's conception of what it means to attend college compared to CGs'

conception. Furthermore, these studies suggested that even while self-doubt may remain a prominent component of FGs' cultural models throughout college, the reasons that self-doubt is more pronounced among FGs compared to CGs may change over the course of college. Thus, these studies showed both cross-cultural and intra-cultural variation in how cultural models were embedded in the networks of associations that guide FGs' and CGs' thoughts, attitudes, and behaviors.

Contributions beyond previous research. These studies make both methodological and theoretical contributions to the literature on culture—particularly concerning biculturalism and cultural frame switching. First, these studies answer the call to examine culture in a more dynamic way, focusing on cognitive mediators of cultural phenomena and examining both cross-cultural and intra-cultural variation (Hong & Chiu, 2001; Hong & Mallorie, 2004). Hong and Mallorie (2004), for example, have argued that cultural psychology should move away from static representations of cultures and toward an understanding of how context shapes cognition to produce both cross-cultural and intra-cultural differences in thoughts, attitudes, and behaviors. Studies 2a and 2b bridge the theoretical questions of cultural psychology with a methodological approach drawn from personality psychology to better understand the experience of both monocultural and bicultural individuals, and they make not only cross-cultural but also intra-cultural comparisons. While these studies focus on changes in individuals' cognition, the methodology they employ can be used to build out to examine cognition as a mediator of the effects of context on attitudes and behaviors. This approach will be particularly useful in future research investigating biculturalism and cultural frame switching, which theorizes that the cultural context triggers changes in individuals' networks of associations, which in turn cause changes in individuals' thoughts, attitudes, and behaviors (Hong et al., 2000). Thus far, however,

research has not examined whether changes in networks of associations do in fact mediate the effect of context on thoughts, attitudes, and behaviors. The approach used in Studies 2a and 2b will allow researchers to test this unexamined tenet of the cultural frame switching literature.

Second, both the methodology used in Studies 2a and 2b and the finding that FGs' and CGs' networks of associations overlapped have implications for the literature on biculturalism. Within this literature, there is a debate regarding how cultural frames are internalized, as the literature has yet to determine whether biculturals' cultural frames are stored in separate or integrated knowledge structures (see Hong et al., 2000; Ross, Xun, & Wilson, 2002). Thus far, discussion of this topic has been at a stalemate, as studies have not used methodologies that allow researchers to draw strong conclusions about the extent to which different cultural frames are integrated into the same knowledge structures. However, the methodology used in Studies 2a and 2b would allow researchers to begin answering this question. Researchers could identify not only which concepts are contained within both of the cultural frames accessible to bicultural individuals but also how these concepts may be differentially activated across cultural frames.

Lack of Evidence for Social Class Cultural Frame Switching

Finally, contrary to the hypothesis, I did not find evidence that FGs engaged in cultural frame switching across social class contexts. Results of Study 5 suggested that FGs' cultural models of agency did not depend upon whether they were primed with a working-class or middle-class cultural context. However, this study also failed to replicate social class differences in cultural models of agency documented both in Study 4 and in previous literature (Stephens et al., 2011). Thus, there are many potential explanations for the lack of cultural frame switching effect I hypothesized. First and foremost, the failure to replicate the difference in social class cultural models of agency suggests that there may be boundary conditions to the effect of social

class on models of agency. Without reliably replicating the social class effect, it is not likely that I would be able to observe cultural frame switching in cultural models of agency. Even if I were to reliably replicate the previously documented social class differences in cultural models of agency, the methodology of Study 5 may have been insufficient to elicit cultural frame switching. Study 3 suggested that the social class primes I used may need to be strengthened to more effectively evoke a working-class versus middle-class cultural contexts. Additionally, the dependent measure I chose for the cultural frame switching study may have contributed to my failure to find an effect of context on FGs' cultural models. The effects of social class on cultural models of agency as measured them in Studies 4 and 5 are relatively small. Both the original study by Stephens and colleagues (2011) and the replication in Study 3 found small effect sizes (d = .18 in the original study, d = .24 in the replication). By using a quantitative dependent variable that does not require coding and branching out to other attitudinal and behavioral dependent measures that show larger social class effects, we may be more likely to see cultural frame switching effects among FGs.

Limitations and Future Directions

Sample diversity. Participants in the present studies were all recruited from the psychology subject pool. A majority were female undergraduates enrolled in Psychology 101, and most identified as White or Asian American. Thus, the samples were relatively limited in terms of diversity. The racial diversity of the sample in particular poses limitations to the conclusions that can be drawn about cultural differences between FGs and CGs and about social class biculturalism. On average, FGs are more likely than CGs to be underrepresented racial minorities, particularly Latino and African American (Aud, Fox, & Kewal Ramani, 2010), yet even among my FG samples, most of the participants were White or Asian American. Thus my

FG sample is not representative of FGs as a whole in terms of racial diversity. Additionally, because Whites tend to be more independent than racial minorities (Markus & Conner, 2013), my FG samples on average may have been exposed to independent cultural values more so than the typical FG, who is likely to be a racial minority. Finally, all of my participants were recruited from the same university. While most of the research on FGs tends to rely on samples from one or two universities at a time, there are likely cross-university differences that are not captured when samples are limited in this way. For example, not only does the college experience likely differ for FGs who attend top tier and/or private universities compared to lower tier and/or public universities, but the subset of FGs who choose to apply to and attend top tier/private universities likely differ from the subset who attend lower tier/public universities or even community colleges. Future research should aim to recruit more diverse samples of FGs from different racial backgrounds and even different colleges and universities to better understand variation in FGs' psychological processes and college experiences.

Alternate psychological processes. I hypothesized that as FGs spent more time in the university context, they would internalize an independent middle-class cultural model in addition to the interdependent cultural model of their working-class backgrounds. The internalization of multiple cultural models is theorized to be a critical component of biculturalism (Hong et al., 2000), and my hypothesis assumes that the development of biculturalism is the modal way in which FGs negotiate different social class contexts. However, it is likely that FGs also have other ways of navigating the competing cultural values and expectations of their home communities and universities and that many FGs do not become bicultural. For example, some FGs may choose to embrace one cultural model and distance themselves from the other. If FGs embrace the independent cultural model they encounter in universities, this model may come to guide

how they think about and behave in all situations, regardless of social class context. On the other hand, some FGs may never embrace the independent university model and may continue relying on the interdependent model with which they were raised. Both of these strategies have implications not only for how well FGs fare in the university but also for their relationships with their families and friends from their home communities. Thus, future research should investigate other psychological responses to and processes involved in social mobility, as well as the effects of these processes on FGs' social and academic wellbeing.

Additionally, the research presented here focuses on psychological processes involved in upward social mobility. However, as the economic and social circumstances of the United States change, many people may experience downward social mobility. The processes involved in this type of social mobility may differ from those involved in upward mobility. For example, for downwardly mobile people, the experience of moving between social classes may be one of disappointment or regret more so than the experience of upwardly mobile people. For these reasons, downwardly mobile people may be less likely to engage with the cultural models of their new social class context and thus less likely to engage in cultural frame switching. Future research should consider both upward and downward social mobility and how the psychological experiences and processes involved in moving between social classes differ depending on whether a person moves up or down in status.

Conclusion

As the United States has turned its attention to the problems of income inequality and made a more concerted effort to extend opportunities to historically disenfranchised groups, FGs have begun to enter four-year universities at unprecedented rates (Brooks, 2004; Housel & Harvey, 2009; Schmidt, 2010; Rimer, 2007). With proposals to further expand access to college

and decrease the cost of higher education (Saul & Flegenheimer, 2016), these high numbers of FGs entering universities are likely to persist. If successful, these efforts will enable more students from working-class communities to move up the social ladder into the middle class. The research presented here suggests that along with social mobility come changes in how people make sense of the world, and ultimately, it suggests that social mobility is a psychologically and culturally dynamic experience. Previous research has documented the struggles that FGs face in college settings that do not understand or value their cultural worldview (Stephens et al., 2012). My research dovetails with this work, suggesting that if colleges want to better understand FGs' experiences and find ways to help these students succeed, they should pay attention to the cultural crossroads at which many of these students find themselves and work to understand the cultural values that FGs bring to the university and the challenges that university cultural values present for these students.

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Appendix A: Analyses of Individual Primes from Study 1

Challenge

Across all participants, the most commonly occurring themes when thinking about the idea of *challenge* in the context of college were academics (M = 1.78, SE = .16), independence (M = .72, SE = .09), social life (M = .35, SE = .07), and balance (M = .30, SE = .07).

When thinking about *challenge* in the context of college, FGs thought less about their social life and more about studying compared to CGs (see Table A1).

Upperclassmen thought marginally less about how to balance competing demands on their time compared to underclassmen. Upperclassmen also thought more about independence compared to underclassmen. However, this effect was qualified by an interaction with generation status. Pairwise comparisons suggest that while underclassmen and upperclassmen CGs did not differ in their thoughts of independence in response to the idea of challenge, upperclassmen FGs thought more about independence compared to underclassmen FGs.

Table A1

Significant Effects on Responses to the Idea of Challenge

Generation Status Effects			
	FG	*CG*	
Social Life	0.22 (0.11)	0.47 (0.06)	$F(1, 242) = 3.83$, $p = .05$
Studying	0.27 (0.07)	0.11 (0.04)	$F(1, 242) = 4.97$, $p = .03$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Balance	0.43 (0.05)	0.17 (0.14)	$F(1, 242) = 3.37$, $p = .07$
Interactions			
Independence	*Underclassmen FG*	*Upperclassmen FG*	
	0.48 (0.10)	1.16 (0.29)	95% CI [-1.28, -0.09], $p = .03$
	Underclassmen CG	*Upperclassmen CG*	
	0.58 (0.07)	0.64 (0.16)	95% CI [-0.39, 0.27], $p = .73$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Fulfilling Expectations

Across all participants, the most commonly occurring themes when thinking about *fulfilling expectations* in the context of college were academics (M = 1.05, SE = .13), future goals (M = .66, SE = .08), family (M = .58, SE = .07), independence (M = .49, SE = .09), one's own expectations (M = .56, SE = .07), and parental expectations (M = .49, SE = .07).

When thinking about *fulfilling expectations* in the context of college, the most commonly occurring themes across all participants were academics, future goals, family, expectations from parents, one's own expectations, and independence (see appendix). FGs and CGs did not significantly differ in the frequency of mentioning any of the themes coded.

Upperclassmen were marginally more likely to think of hard work and independence and less likely to think of money compared to underclassmen (see Table A2).

There were no statistically significant interactions between generation status and year in school.

Table A2

Significant Effects on Responses to the Idea of Fulfilling Expectations

Year in School Effects			
	Underclassmen	*Upperclassmen*	
Hard Work	0.08 (0.02)	0.19 (0.06)	$F(1, 235) = 3.06$, $p = .08$
Independence	0.36 (0.05)	0.62 (0.13)	$F(1, 235) = 3.70$, $p = .06$
Money	0.16 (0.03)	0.00 (0.08)	$F(1, 235) = 3.20$, $p = .08$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Future Career

Across all participants, the most commonly occurring themes when thinking about one's *future career* in the context of college included academics (M = 1.14, SE = .13), future goals (M = 1.04, SE = .10), uncertainty (M = .45, SE = .08), and self-doubt (M = 30, SE = .07).

When thinking about their *future career* in the context of college, the most commonly occurring themes across all participants were academics, future goals, uncertainty, independence, and money (See appendix). FGs thought more about independence, studying, and social pressure and less about family and stress compared to CGs. FGs also thought marginally less about money and stress compared to CGs. However, the generation status differences on independence, studying, money, family, and social pressure were qualified by interactions with year in school (see Table A3).

Upperclassmen thought more about independence, balance, and social pressure and less about future goals compared to underclassmen.

Table A3

Significant Effects on Responses to the Idea of Future Career

Generation Status Effects			
	FG	*CG*	
Stress	0.01 (0.05)	0.11 (0.03)	$F(1, 243) = 3.49$, $p = .06$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Balance	0.03 (0.01)	0.11 (0.04)	$F(1, 243) = 4.98$, $p = .03$
Future Goals	1.29 (0.07)	0.80 (0.19)	$F(1, 243) = 5.63$, $p = .02$
Interactions			
Independence	*Underclassmen FG*	*Upperclassmen FG*	
	0.16 (0.06)	0.71 (0.18)	95% CI [-0.92, -0.18], $p = .004$
	Underclassmen CG	*Upperclassmen CG*	
	0.19 (0.04)	0.07 (0.10)	95% CI [-0.09, 0.34], $p = .26$
Studying	*Underclassmen FG*	*Upperclassmen FG*	
	0.04 (0.02)	0.13 (0.05)	95% CI [-0.20, 0.02], $p = .12$
	Underclassmen CG	*Upperclassmen CG*	
	0.02 (0.01)	-0.00 (0.03)	95% CI [-0.04, 0.09], $p = .46$
Money	*Underclassmen FG*	*Upperclassmen FG*	
	0.38 (0.07)	-0.06 (0.21)	95% CI [-0.01, 0.87], $p = .06$
	Underclassmen CG	*Upperclassmen CG*	
	0.27 (0.05)	0.52 (0.12)	95% CI [-0.51, 0.00], $p = .05$
Family	*Underclassmen FG*	*Upperclassmen FG*	
	0.08 (0.03)	-0.01 (0.10)	95% CI [-0.11, 0.30], $p = .37$
	Underclassmen CG	*Upperclassmen CG*	
	0.05 (0.02)	0.27 (0.06)	95% CI [-0.33, -0.10], $p < .001$
Social Pressure	*Underclassmen FG*	*Upperclassmen FG*	
	0.00 (0.01)	0.13 (0.03)	95% CI [-0.19, -0.07], $p < .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.01 (0.01)	0.00 (0.02)	95% CI [-0.03, 0.04], $p = .58$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Independence

Across all participants, the most commonly occurring themes when thinking about *independence* in the context of college were personal responsibility ($M = 1.70$, $SE = .18$), freedom ($M = .45$, $SE = .08$), family ($M = .44$, $SE = .06$), money ($M = .34$, $SE = .08$), academics ($M = .27$, $SE = .07$), social life ($M = .22$, $SE = .05$), and balance ($M = .22$, $SE = .05$).

When thinking about *independence* in the context of college, FGs thought marginally less about balance and significantly less about their social life compared to CGs (see Table A4).

There were no mean-level differences between underclassmen and upperclassmen, however there were two marginally significant interactions between generation status and year in school. Upperclassmen FGs were less likely to think about their families compared to underclassmen FGs and to CGs, and the responses of upperclassmen FGs were less negative in valence than the responses of underclassmen FGs and of upper- and underclassmen CGs.

Table A4

Significant Effects on Responses to the Idea of Independence

Generation Status Effects			
	FG	*CG*	
Balance	0.14 (0.09)	0.31 (0.04)	$F(1, 251) = 3.18$, $p = .08$
Social Life	0.11 (0.10)	0.32 (0.05)	$F(1, 215) = 3.94$, $p = .05$
Interactions			
Family	*Underclassmen FG*	*Upperclassmen FG*	
	0.50 (0.07)	0.23 (0.21)	95% CI [-0.17, 0.70], $p = .23$
	Underclassmen CG	*Upperclassmen CG*	
	0.42 (0.04)	0.62 (0.10)	95% CI [-0.41, 0.03], $p = .09$
Negative Valence	*Underclassmen FG*	*Upperclassmen FG*	
	0.34 (0.07)	0.01 (0.21)	95% CI [-0.11, 0.75], $p = .15$
	Underclassmen CG	*Upperclassmen CG*	
	0.27 (0.04)	0.40 (0.10)	95% CI [-0.35, 0.09], $p = .24$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Money

Across all participants, the most commonly occurring themes when thinking about *money* in the context of college were the unaffordability of college (M =.83, SE = .09), academics (M = .74, SE = .11), school expenses (M = .63, SE = .10), living expenses (M = .56, SE = .10), and debt or loans (M = .47, SE = .09).

When thinking about *money* in the context of college, FGs thought more about fulfilling expectations compared to CGs, however this main effect was qualified by an interaction with year in school (see Table A5). FGs also thought marginally less about moving compared to CGs.

Upperclassmen thought more about fulfilling expectations and having enough money compared to underclassmen. Upperclassmen also thought marginally more about inequality and marginally less about having a job and going to school compared to underclassmen.

There were two statistically significant and two marginally significant interactions between generation status and year in school. Upperclassmen FGs tended to think more about fulfilling expectations and future goals compared to underclassmen FGs and to CGs. While underclassmen and upperclassmen CGs thought relatively equally about debt and loans, upperclassmen FGs thought less about this idea than underclassmen FGs. Finally, underclassmen and upperclassmen FGs thought relatively equally about the pay off that would come from college, while upperclassmen CGs thought less about this idea than underclassmen CGs.

Table A5

Significant Effects on Responses to the Idea of Money

Generation Status Effects			
	FG	*CG*	
Moving	-0.01 (0.02)	0.05 (0.02)	$F(1, 244) = 3.02$, $p = .083$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Enough Money	0.03 (0.02)	0.18 (0.05)	$F(1, 244) = 9.24$, $p = .003$
Inequality	0.15 (0.03)	0.28 (0.07)	$F(1, 244) = 3.33$, $p = .069$
Work and School	0.23 (0.03)	0.07 (0.09)	$F(1, 244) = 2.90$, $p = .09$
Interactions			
Fulfilling Expectations	*Underclassmen FG*	*Upperclassmen FG*	
	0.01 (0.01)	0.11 (0.03)	95% CI [-0.16, -0.05], $p < .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.00 (0.00)	0.00 (0.02)	95% CI [-0.04, 0.04], $p = .91$
Future Goals	*Underclassmen FG*	*Upperclassmen FG*	
	0.18 (0.06)	0.50 (0.15)	95% CI [-0.64, 0.01], $p = .05$
	Underclassmen CG	*Upperclassmen CG*	
	0.27 (0.04)	0.08 (0.11)	95% CI [-0.03, 0.43], $p = .09$
Debt/Loans	*Underclassmen FG*	*Upperclassmen FG*	
	0.74 (0.10)	0.18 (0.26)	95% CI [0.07, 1.11], $p = .05$
	Underclassmen CG	*Upperclassmen CG*	
	0.45 (0.06)	0.50 (0.19)	95% CI [-0.44, 0.34], $p = .81$
Pay Off	*Underclassmen FG*	*Upperclassmen FG*	
	0.10 (0.04)	0.19 (0.11)	95% CI [-0.32, 0.15], $p = .46$
	Underclassmen CG	*Upperclassmen CG*	
	0.19 (0.03)	0.01 (0.08)	95% CI [0.01, 0.35], $p = .04$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Moving

Across all participants, the most commonly occurring themes when thinking about *moving* in the context of college included thoughts of independence ($M = 1.47$, $SE = .12$), family ($M = .53$, $SE = .08$), and social life ($M = .32$, $SE = .06$).

When thinking about *moving* in the context of college, FGs thought more about stress compared to CGs, however this main effect was qualified by an interaction with generation status (see Table A6). FGs also thought marginally less about their future career and about being close to home compared to CGs.

Upperclassmen thought less about family compared to underclassmen. Upperclassmen also thought marginally more about their future careers and stress compared to underclassmen.

There was one significant and two marginally significant interactions between generation status and year in school. Upperclassmen FGs thought more about stress compared to underclassmen FGs or CGs (significant interaction). Upperclassmen FGs also had more positively valenced responses compared to underclassmen FGs and to CGs (marginally significant interaction). Upperclassmen CGs, however, thought more about their future careers compared to underclassmen CGs and to upper- or underclassmen FGs.

Table A6

Mean-Level Differences in Response to the Idea of Moving

Generation Status Effects			
	FG	*CG*	
Close to Home	0.01 (0.07)	0.16 (0.05)	$F(1, 241) = 3.33$, $p = .07$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Family	0.69 (0.06)	0.38 (0.14)	$F(1, 241) = 4.01$, $p = .05$
Interactions			
Stress	*Underclassmen FG*	*Upperclassmen FG*	
	0.03 (0.02)	0.15 (0.05)	95% CI [-0.22, -0.03], $p = .01$
	Underclassmen CG	*Upperclassmen CG*	
	0.01 (0.01)	0.00 (0.03)	95% CI [-0.06, 0.08], $p = .71$
Future Career	*Underclassmen FG*	*Upperclassmen FG*	
	0.00 (0.01)	0.00 (0.02)	95% CI [-0.04, 0.04], $p = .96$
	Underclassmen CG	*Upperclassmen CG*	
	0.00 (0.00)	0.05 (0.01)	95% CI [-0.08, -0.02], $p = .001$
Positive Valence	*Underclassmen FG*	*Upperclassmen FG*	
	0.33 (0.08)	0.70 (0.19)	95% CI [-0.77, 0.04], $p = .08$
	Underclassmen CG	*Upperclassmen CG*	
	0.38 (0.05)	0.27 (0.14)	95% CI [-0.17, 0.41], $p = .43$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

New Experiences

Across all participants, the most commonly occurring themes when thinking about *new experiences* in the context of college included thoughts of social life (M = .98, SE = .12), self-growth (M = 79, SE = .08), independence (M = .82, SE = .08), meeting new people (M = .51, SE = .07), and academics (M = .42, SE = .08).

When thinking about *new experiences* in the context of college, FGs thought less about academics and more about independence compared to CGs. FGs also thought marginally more about family compared to CGs (see Table A7). However, the effects of generation status on independence and family were qualified by interactions with year in school.

Upperclassmen thought more about independence and family compared to underclassmen.

Upperclassmen FGs tended to think less about self-growth compared to underclassmen FGs and to CGs. However, Upperclassmen FGs tended to think more about independence, moving, and family compared to underclassmen FGs and to upper- or underclassmen CGs.

Table A7

Mean-Level Differences in Response to the Idea of New Experiences

Generation Status Effects			
	FG	*CG*	
Academics	0.25 (0.13)	0.59 (0.08)	$F(1, 245) = 5.05$, $p = .025$
Interactions			
Independence	*Underclassmen FG*	*Upperclassmen FG*	
	0.50 (0.10)	1.46 (0.27)	95% CI [-1.52, -0.41], $p = .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.64 (0.06)	0.69 (0.16)	95% CI [-0.39, 0.29], $p = .77$
Family	*Underclassmen FG*	*Upperclassmen FG*	
	0.07 (0.04)	0.37 (0.10)	95% CI [-0.49, -0.09], $p = .006$
	Underclassmen CG	*Upperclassmen CG*	
	0.09 (0.02)	0.13 (0.06)	95% CI [-0.16, 0.09], $p = .59$
Self-Growth	*Underclassmen FG*	*Upperclassmen FG*	
	0.94 (0.10)	0.42 (0.27)	95% CI [-0.05, 1.08], $p = .07$
	Underclassmen CG	*Upperclassmen CG*	
	0.78 (0.07)	1.02 (0.16)	95% CI [-0.58, 0.11], $p = .17$
Moving	*Underclassmen FG*	*Upperclassmen FG*	
	0.26 (0.07)	0.50 (0.19)	95% CI [-0.64, 0.15], $p = .22$
	Underclassmen CG	*Upperclassmen CG*	
	0.36 (0.05)	0.20 (0.11)	95% CI [-0.08, 0.40], $p = .18$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Meeting New People

Across all participants, the most commonly occurring themes when thinking about *meeting new people* in the context of college included thoughts of social life ($M = 1.87$, $SE = .18$), friends ($M = .64$, $SE = .08$), new experiences ($M = .60$, $SE = .08$), and academics ($M = .55$, $SE = .08$).

When thinking about *meeting new people* in the context of college, FGs thought more about having new experiences, stress, and competition compared to CGs. All of these generation status effects were qualified by interactions with year in school (see Table A8).

Upperclassmen thought more about competition and marginally more about stress compared to underclassmen.

There were four significant interactions between generation status and year in school. Upperclassmen FGs thought more about new experiences, independence, stress, and competition compared to underclassmen FGs and to upper- or underclassmen CGs.

Table A8

Mean-Level Differences in Response to the Idea of Meeting New People

Interactions			
New Experiences	*Underclassmen FG*	*Upperclassmen FG*	
	0.49 (0.10)	1.08 (0.26)	95% CI [-1.13, -0.05], $p = .03$
	Underclassmen CG	*Upperclassmen CG*	
	0.48 (0.06)	0.33 (0.18)	95% CI [-0.23, 0.52], $p = .45$
Independence	*Underclassmen FG*	*Upperclassmen FG*	
	0.02 (0.06)	0.40 (0.16)	95% CI [-0.72, -0.05], $p = .02$
	Underclassmen CG	*Upperclassmen CG*	
	0.21 (0.04)	0.17 (0.11)	95% CI [-0.19, 0.27], $p = .72$
Stress	*Underclassmen FG*	*Upperclassmen FG*	
	0.01 (0.03)	0.22 (0.07)	95% CI [-0.35, -0.06], $p = .007$
	Underclassmen CG	*Upperclassmen CG*	
	0.04 (0.02)	0.00 (0.05)	95% CI [-0.07, 0.14], $p = .54$
Competition	*Underclassmen FG*	*Upperclassmen FG*	
	0.00 (0.01)	0.19 (0.03)	95% CI [-0.24, -0.13], $p < .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.00 (0.01)	0.00 (0.02)	95% CI [-0.04, 0.04], $p = .89$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Self-Doubt

Across all participants, the most commonly occurring themes when thinking about *self-doubt* in the context of college included thoughts of academics ($M = 1.21$, $SE = .10$), future goals ($M = .49$, $SE = .06$), insecurity ($M = .37$, $SE = .07$), and social life ($M = .28$, $SE = .07$).

When thinking about *self-doubt* in the context of college, FGs thought less about their future goals compared to CGs. FGs also thought marginally less about their social life and marginally more about failure compared to CGs (see Table A9).

Upperclassmen thought less about academics and more about their future goals, self-confidence, and resilience compared to underclassmen.

There were no significant interactions between generation status and year in school.

Table A9

Mean-Level Differences in Response to the Idea of Self-Doubt

Generation Status Effects			
	FG	*CG*	
Social Life	0.15 (0.11)	0.41 (0.08)	$F(1, 247) = 3.61$, $p = .06$
Future Goals	0.37 (0.10)	0.60 (0.07)	$F(1, 247) = 3.74$, $p = .05$
Failure	0.22 (0.05)	0.09 (0.04)	$F(1, 247) = 3.50$, $p = .06$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Academics	1.41 (0.08)	1.00 (0.18)	$F(1, 247) = 4.34$, $p = .04$
Future Goals	0.33 (0.05)	0.65 (0.11)	$F(1, 247) = 7.34$, $p = .007$
Self-Confidence	0.06 (0.02)	0.18 (0.04)	$F(1, 247) = 7.54$, $p = .006$
Resilience	0.06 (0.02)	0.19 (0.05)	$F(1, 247) = 5.26$, $p = .02$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Stress

Across all participants, the most commonly occurring themes when thinking about *stress* in the context of college were thoughts of academics ($M = 1.90$, $SE = .23$), future goals ($M = .37$, $SE = .07$), social life ($M = .43$, $SE = .12$), balance ($M = .38$, $SE = .08$), and the ubiquity of stress ($M = .36$, $SE = .07$).

When thinking about *stress* in the context of college, FGs thought more about their future goals and self-doubt compared to CGs, however the generation status effect on self-doubt was qualified by an interaction with year in school (see Table A10).

Upperclassmen thought less about balance and more about fulfilling expectations and self-doubt compared to underclassmen.

The only significant interaction between generation status and year in school was on thoughts of self-doubt. Upperclassmen FGs were more likely to think about self-doubt when thinking about stress compared to underclassmen FGs and to upper- or underclassmen CGs.

Table A10

Mean-Level Differences in Response to the Idea of Stress

Generation Status Effects			
	FG	*CG*	
Future Goals	0.51 (0.13)	0.23 (0.07)	$F(1, 259) = 3.79$, $p = .05$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Balance	0.55 (0.05)	0.21 (0.16)	$F(1, 259) = 4.08$, $p = .04$
Fulfilling Expectations	0.07 (0.02)	0.21 (0.07)	$F(1, 259) = 4.04$, $p = .05$
Interactions			
Self-Doubt	*Underclassmen FG*	*Upperclassmen FG*	
	0.18 (0.05)	0.79 (0.17)	95% CI [-0.95, -0.27], $p = .001$
	Underclassmen CG	*Upperclassmen CG*	
	0.06 (0.03)	0.00 (0.09)	95% CI [-0.13, 0.25], $p = .55$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Studying

Across all participants, the most commonly occurring themes when thinking about *studying* in the context of college included thoughts of academics ($M = 1.99$, $SE = .16$), the great amount of time devoted to studying ($M = .55$, $SE = .06$), challenge ($M = .31$, $SE = .05$), and balance ($M = .28$, $SE = .05$).

When thinking about *studying* in the context of college, FGs thought marginally less about meeting new people and their responses were marginally less positively valenced compared to CGs, however this marginal effect was qualified by an interaction with year in school (see Table A11).

Upperclassmen thought more about their future careers and less about independence compared to underclassmen.

There was one significant interaction between generation status and year in school predicting positive valence in participants' responses. The responses of upperclassmen FGs were

less positively valenced than the responses of underclassmen FGs or of under- or upperclassmen CGs.

Table A11

Mean-Level Differences in Response to the Idea of Studying

Generation Status Effects			
	FG	*CG*	
Meeting New People	0.00 (0.01)	0.03 (0.01)	$F(1, 247) = 3.33$, $p = .07$
Positive Valence	0.18 (0.09)	0.37 (0.06)	$F(1, 247) = 3.21$, $p = .07$
Year in School Effects			
	Underclassmen	*Upperclassmen*	
Future Career	0.00 (0.01)	0.06 (0.02)	$F(1, 247) = 10.66$, $p = .001$
Independence	0.19 (0.03)	0.01 (0.07)	$F(1, 247) = 6.16$, $p = .01$
Interactions			
Positive Valence	*Underclassmen FG*	*Upperclassmen FG*	
	0.39 (0.08)	-0.04 (0.15)	95% CI [0.10, 0.86], $p = .01$
	Underclassmen CG	*Upperclassmen CG*	
	0.29 (0.04)	0.44 (0.12)	95% CI [-0.28, 0.08], $p = .26$

Note. Numbers outside parentheses represent estimated marginal means. Numbers in parentheses represent standard errors.

Appendix B: Means and Standard Errors in Response to Study 1 Primes

Table B1

Estimated Means and Standard Errors in Response to Study 1 Primes

	Going to College		**Challenge**		**Fulfilling Expectations**	
	CG	FG	CG	FG	CG	FG
Academics	1.387 (.130)	1.564 (.201)	1.689 (.160)	1.870 (.288)	.950 (.148)	1.158 (.207)
Challenge	.230 (.052)	.238 (.081)	N/A	N/A	.143 (.048)	.122 (.067)
Fulfilling Expectations	.206 (.035)	.093 (.054)	.032 (.019)	.080 (.034)	N/A	N/A
Future Career	.157 (.032)	.091 (.049)	.038 (.016)	.004 (.029)	.115 (045)	.148 (.063)
Independence	.748 (.074)	.517 (.114)	.608 (.084)	.821 (.151)	.544 (.080)	.434 (.113)
Money	.349 (.056)	.270 (.087)	.198 (.061)	.222 (.110)	.063 (.050)	.093 (.070)
Moving	.341 (.049)	.249 (.075)	.157 (.036)	.065 (.065)	.004 (.012)	.007 (.017)
New Experiences	.568 (.066)	.485 (.102)	.326 (.057)	.143 (.102)	.100 (.043)	.116 (.060)
New People	.349 (.049)	.334 (.075)	.214 (.044)	.145 (.079)	.065 (.046)	.141 (.065)
Self-Doubt	.248 (.059)	.510 (.091)	.079 (.041)	.042 (.073)	.105 (.061)	.096 (.086)
Stress	.176 (.031)	.275 (.048)	.128 (.034)	.044 (.062)	.187 (.044)	.123 (.061)
Studying	.212 (.033)	.238 (.051)	.106 (.036)	.271 (.065)	.058 (.036)	.089 (.051)
Work and School	.088 (.025)	.155 (.039)	.103 (.038)	.081 (.067)	.030 (.014)	.009 (.019)

	Future Career		Independence		Money	
	CG	FG	CG	FG	CG	FG
Academics	1.037 (.135)	1.243 (.232)	.231 (.066)	.315 (.129)	.796a (.126)	.689 (.178)
Challenge	.130 (.040)	.152 (.069)	.057 (.024)	.039 (.047)	.064 (.028)	.033 (.039)
Fulfilling Expectations	.046 (.023)	-.003 (.039)	.018 (.013)	.006 (.025)	.001 (.010)	.061 (.014)
Future Career	N/A	N/A	.085 (.037)	.106 (.073)	.080 (.041)	.079 (.058)
Independence	.133 (.055)	.438 (.094)	N/A	N/A	.031 (.031)	.062 (.044)
Money	.394 (.065)	.160 (.111)	.448 (.071)	.238 (.140)	N/A	N/A
Moving	.018 (.011)	.008 (.018)	.281 (.047)	.233 (.092)	.045 (.017)	-.007 (.024)
New Experiences	.084 (.029)	.075 (.049)	.221 (.048)	.253 (.093)	.028 (.024)	-.004 (.033)
New People	.071 (.042)	.017 (.072)	.021 (.170)	.007 (.033)	.003 (.005)	-.003 (.007)
Self-Doubt	.219 (.067)	.378 (.115)	.026 (.027)	.015 (.053)	.023 (.029)	.043 (.040)
Stress	.106 (.028)	.005 (.048)	.029 (.012)	.008 (.023)	.128 (.048)	.093 (.067)
Studying	.010 (.017)	.086 (.028)	.048 (.019)	.024 (.038)	.006 (.011)	.006 (.016)
Work and School	.005 (.005)	.000 (.009)	.107 (.032)	.067 (.063)	.169 (.053)	.131 (.075)

	Moving		New Experiences		New People	
	CG	FG	CG	FG	CG	FG
Academics	.054 (.029)	.041 (.041)	.593 (.080)	.248 (.130)	.481 (.095)	.611 (.136)
Challenge	.070 (.032)	.084 (.045)	.039 (.024)	-0.009 (.039)	.212 (.059)	.245 (.085)
Fulfilling Expectations	.014 (.023)	.074 (.032)	.082 (.026)	.006 (.043)	.000 (.000)	.000 (.000)
Future Career	.024 (.007)	.000 (.010)	.012 (.011)	.008 (.017)	.003 (.011)	.011 (.015)
Independence	1.444 (.144)	1.494 (.202)	.660 (.086)	.981 (.141)	.191 (.059)	.212 (.085)
Money	.100 (.059)	.211 (.083)	.032 (.024)	.074 (.039)	.000 (.000)	.000 (.000)
Moving	N/A	N/A	.278 (.061)	.377 (.099)	.055 (.027)	.069 (.038)
New Experiences	.340 (.070)	.260 (.098)	N/A	N/A	.402 (.096)	.788 (.138)
New People	.061 (.038)	.124 (.053)	.548 (.069)	.474 (.113)	N/A	N/A
Self-Doubt	.004 (.008)	-.002 (.011)	.020 (.020)	-.015 (.033)	.110 (.052)	.020 (.075)
Stress	.007 (.018)	.089 (.025)	.013 (.013)	-.008 (.021)	.019 (.026)	.115 (.037)
Studying	.011 (.012)	.015 (.017)	.034 (.027)	.020 (.045)	.062 (.031)	.031 (.044)
Work and School	1.137E-5a (.013)	.024 (.018)	.038 (.016)	.018 (.026)	.056 (.023)	.041 (.033)

	Self-Doubt		Stress		Studying	
	CG	FG	CG	FG	CG	FG
Academics	1.237 (.115)	1.173 (.162)	2.020 (.221)	1.779 (.399)	2.125 (.191)	1.858 (.260)
Challenge	.064 (.027)	.043 (.038)	.087 (.053)	.183 (.097)	.268 (.055)	.343 (.074)
Fulfilling Expectations	.052 (.017)	.014 (.024)	.146 (.034)	.133 (.062)	.034 (.017)	.032 (.023)
Future Career	.148 (.032)	.098 (.045)	.070 (.024)	.045 (.044)	.023 (.010)	.035 (.014)
Independence	.097 (.049)	.134 (.069)	.117 (.044)	.064 (.079)	.113 (.044)	.085 (.059)
Money	.047 (.029)	.046 (.041)	.191 (.067)	.210 (.121)	.019 (.019)	.001 (.026)
Moving	.009 (.017)	.025 (.024)	.052 (.023)	.009 (.041)	.000 (.000)	.000 (.000)
New Experiences	.030 (.023)	.056 (.032)	.077 (.034)	.020 (.062)	.028 (.016)	.034 (.022)
New People	.103 (.043)	.055 (.060)	.087 (.032)	.023 (.059)	.031 (.010)	-0.001 (.014)
Self-Doubt	N/A	N/A	.035 (.048)	.482 (.087)	.050 (.038)	.073 (.052)
Stress	.043 (.027)	.081 (.038)	N/A	N/A	.124 (.040)	.197 (.055)
Studying	.031 (.026)	.084 (.036)	.141 (.050)	.120 (.091)	N/A	N/A
Work and School	.008 (.011)	.003 (.016)	.090 (.044)	.192 (.079)	.001 (.007)	.010 (.010)

	Work and School	
	CG	FG
Academics	.976 (.085)	1.242 (.126)
Challenge	.242 (.054)	.366 (.081)
Fulfilling Expectations	.087 (.032)	.181 (.047)
Future Career	.418 (.074)	.391 (.110)
Independence	.235 (.052)	.114 (.077)
Money	.811 (.109)	.715 (.161)
Moving	.003 (.007)	.001 (.010)
New Experiences	.090 (.026)	.030 (.039)
New People	.029 (.021)	.034 (.031)
Self-Doubt	.034 (.023)	.025 (.034)
Stress	.248 (.054)	.225 (.080)
Studying	.114 (.044)	.306 (.065)
Work and School	.597 (.060)	.505 (.089)

Appendix C: FG and CG Networks of Associations Disaggregated by Prime

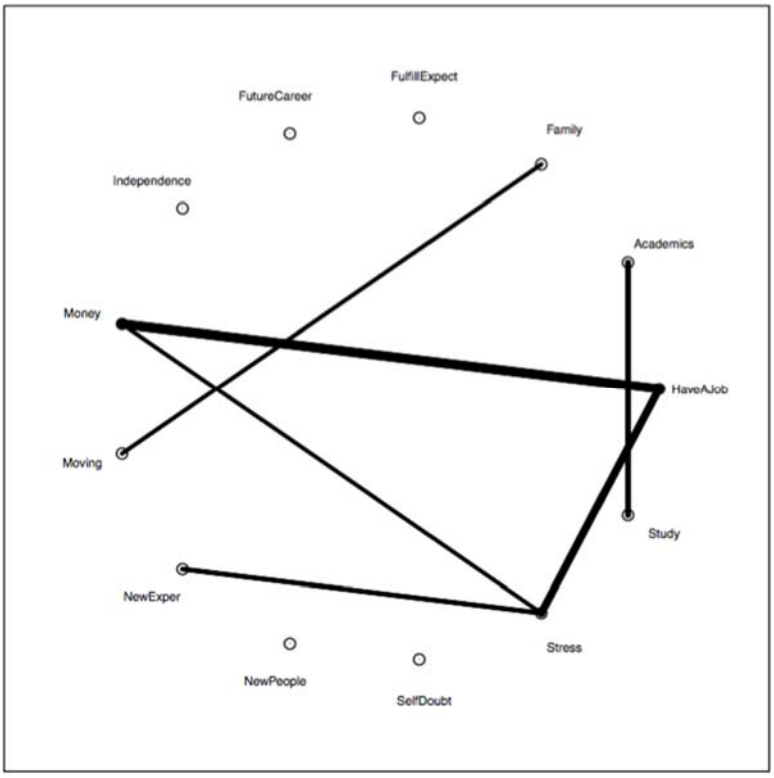

Figure C1. Average network of associations for underclassmen FGs in response to challenge

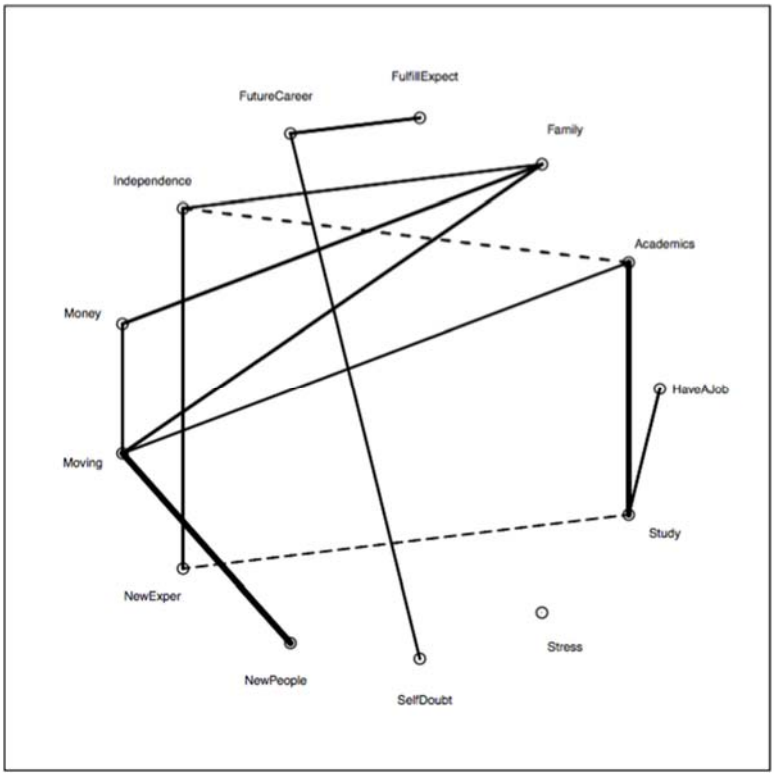

Figure C2. Average network of associations for underclassmen CGs in response to challenge

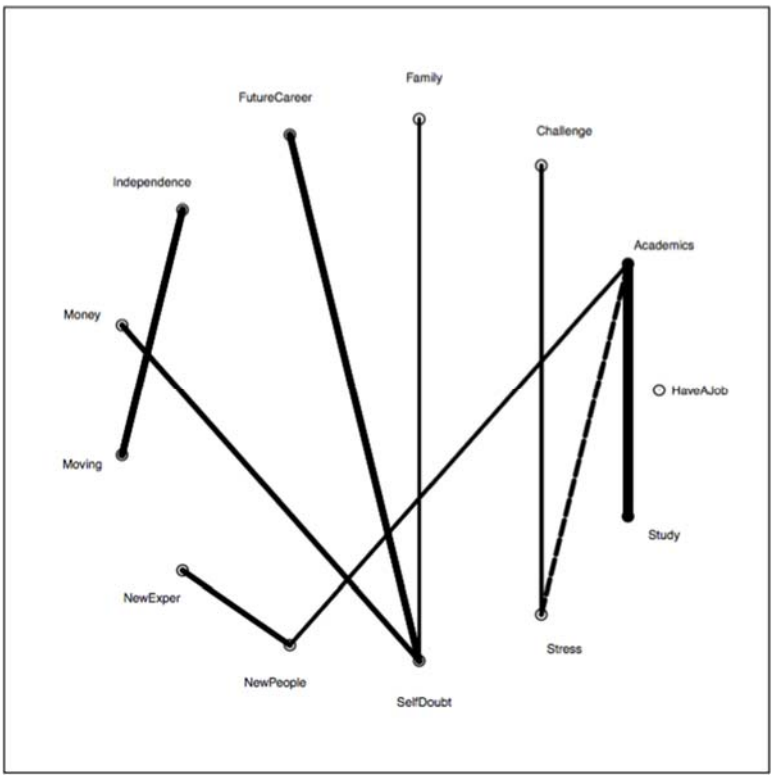

Figure C3. Average network of associations for underclassmen FGs in response to fulfilling expectations

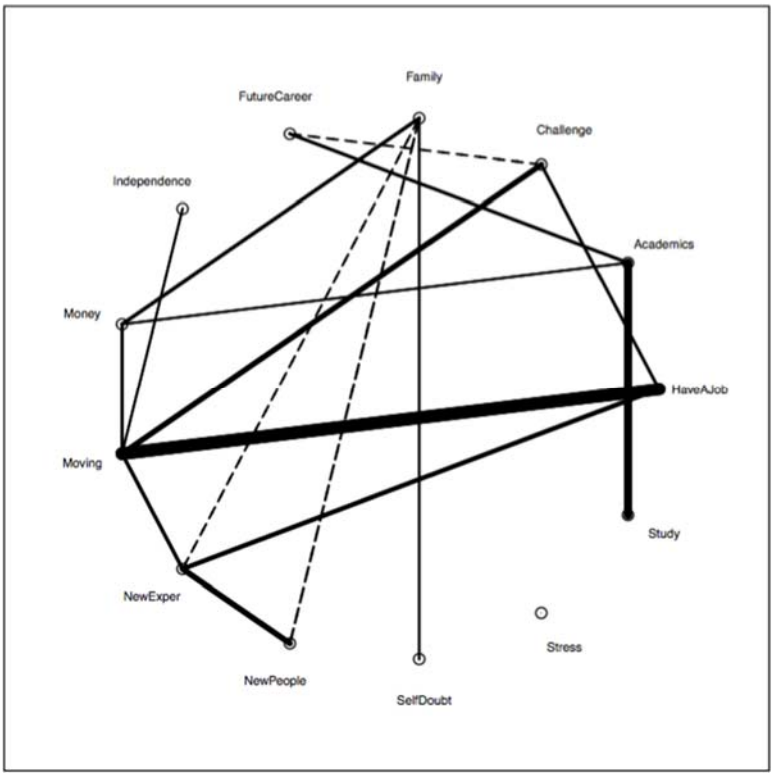

Figure C4. Average network of associations for underclassmen CGs in response to fulfilling expectations

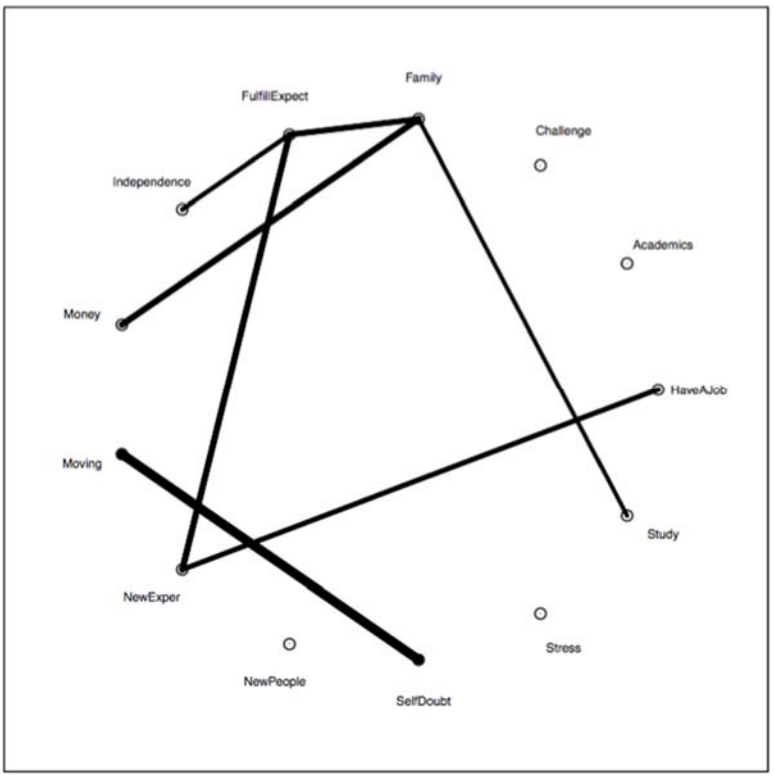

Figure C5. Average network of associations for underclassmen FGs in response to future career

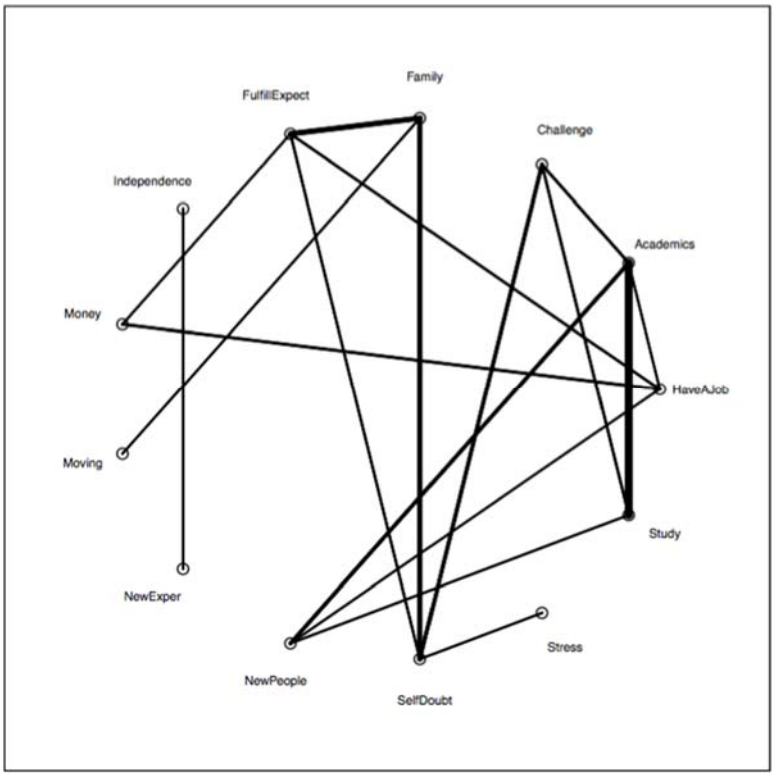

Figure C6. Average network of associations for underclassmen CGs in response to future career

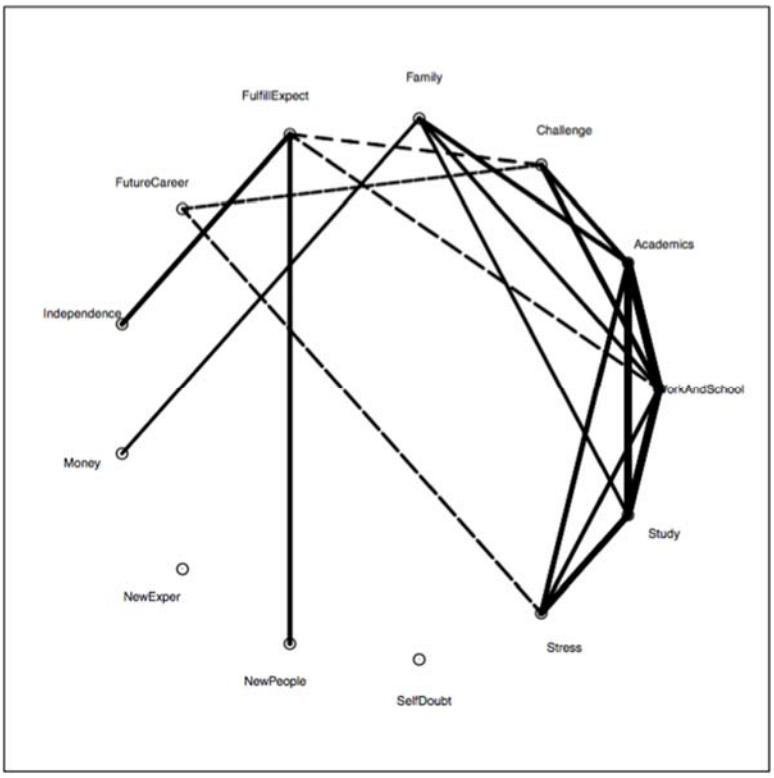

Figure C7. Average network of associations for underclassmen FGs in response to having a job

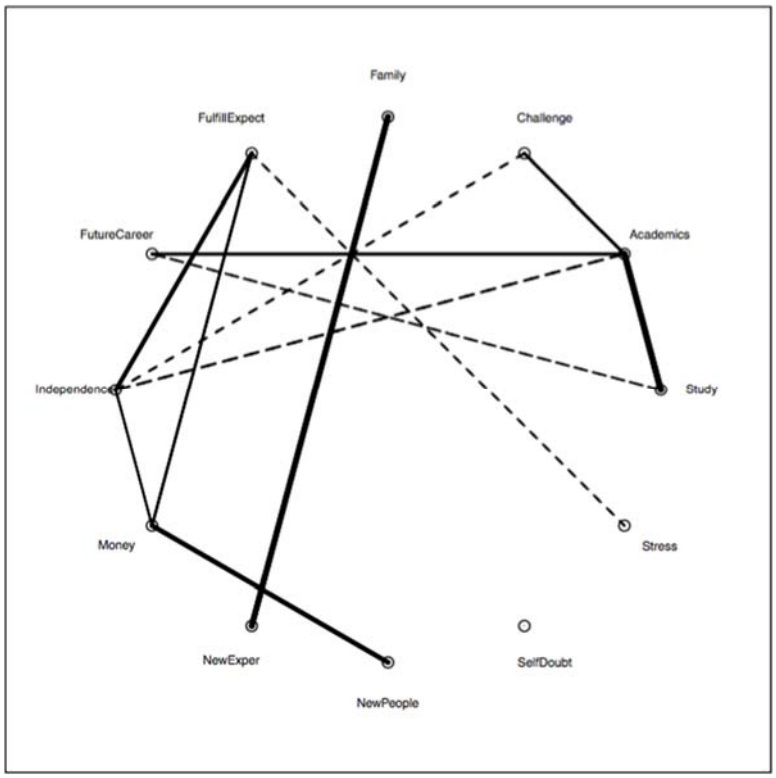

Figure C8. Average network of associations for underclassmen CGs in response to having a job

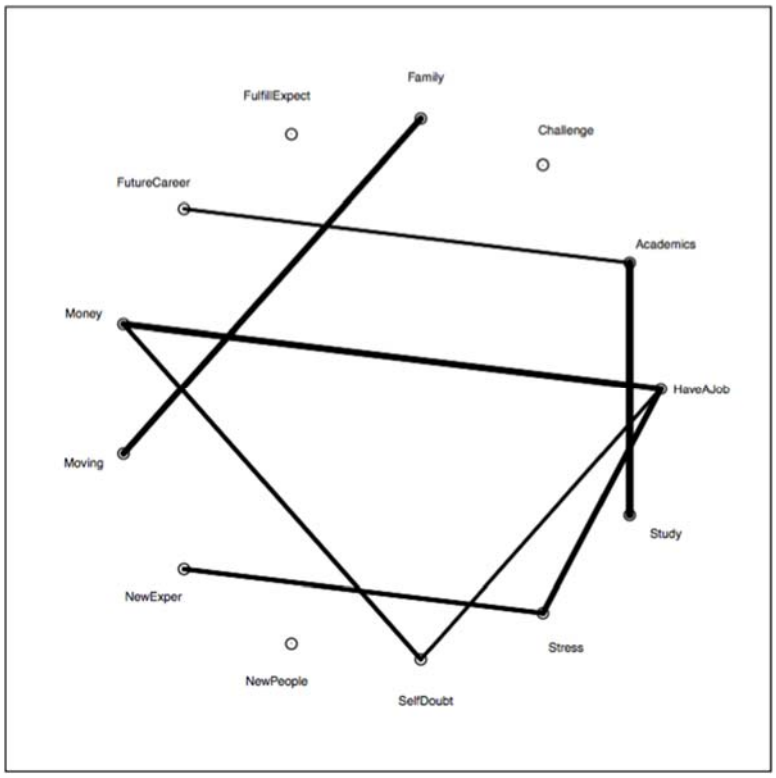

Figure C9. Average network of associations for underclassmen FGs in response to independence.

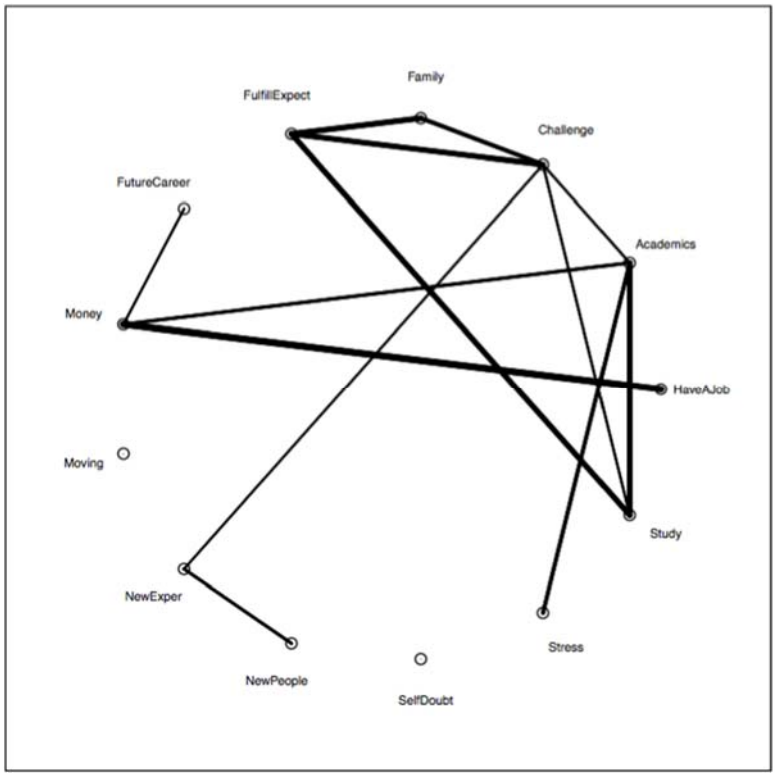

Figure C10. Average network of associations for underclassmen CGs in response to independence

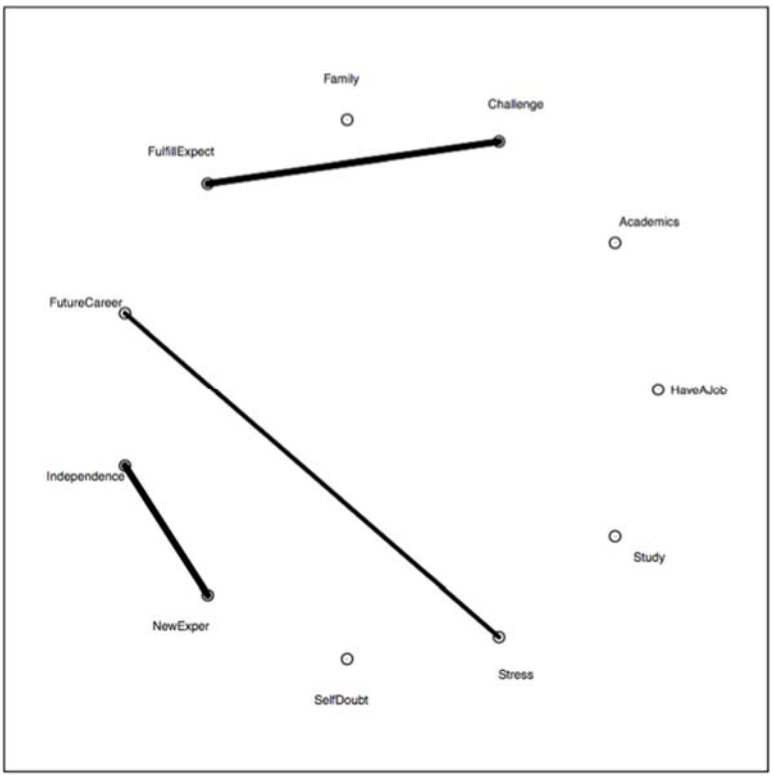

Figure C11. Average network of associations for underclassmen FGs in response to money.

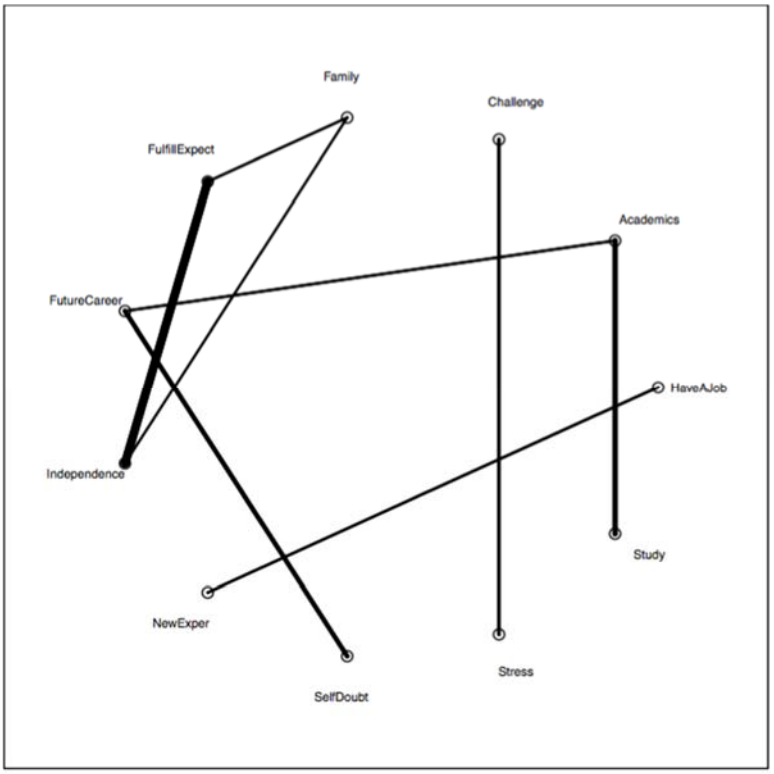

Figure C12. Average network of associations for underclassmen CGs in response to money.

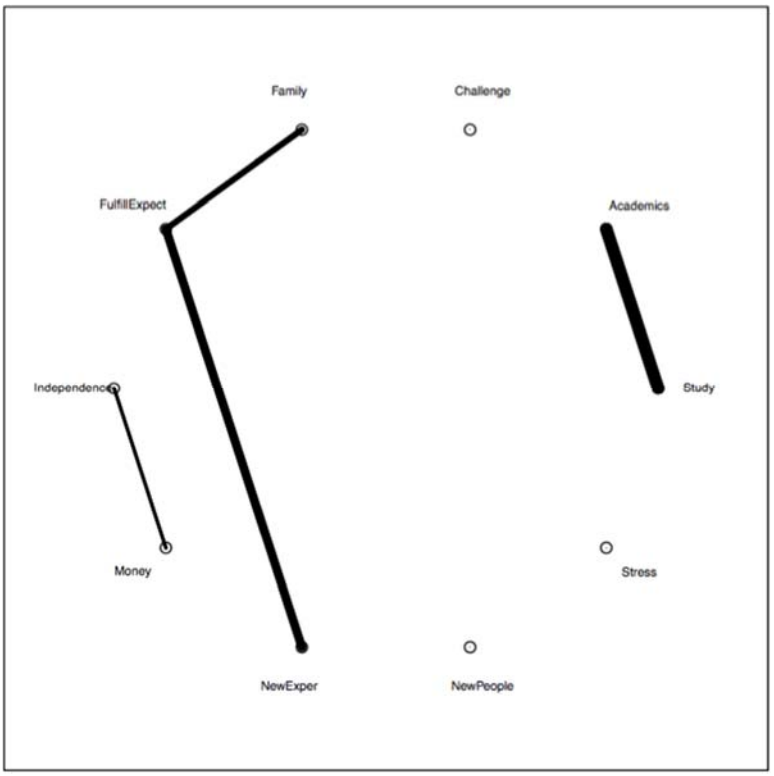

Figure C13. Average network of associations for underclassmen FGs in response to moving.

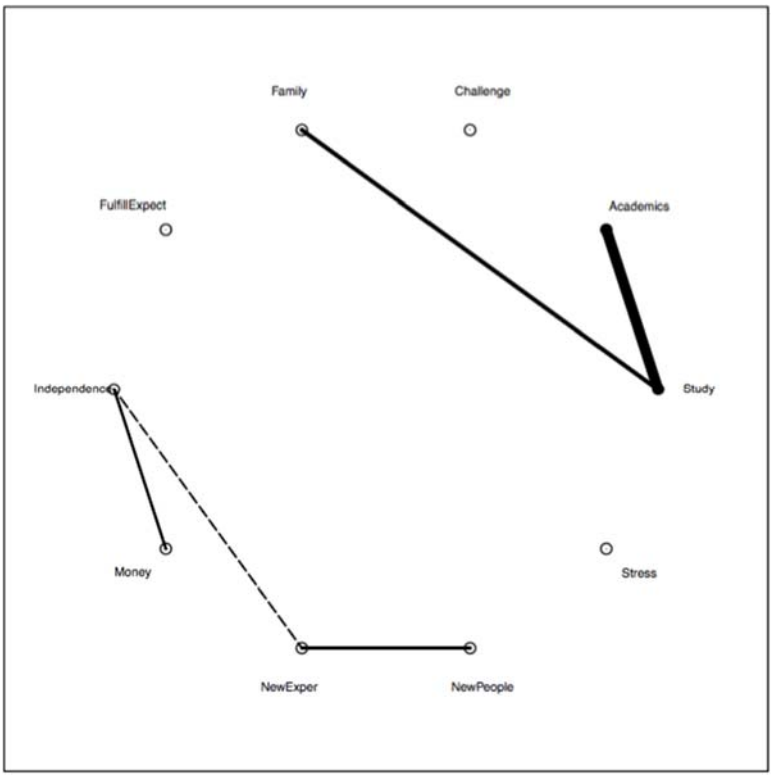

Figure C14. Average network of associations for underclassmen CGs in response to moving.

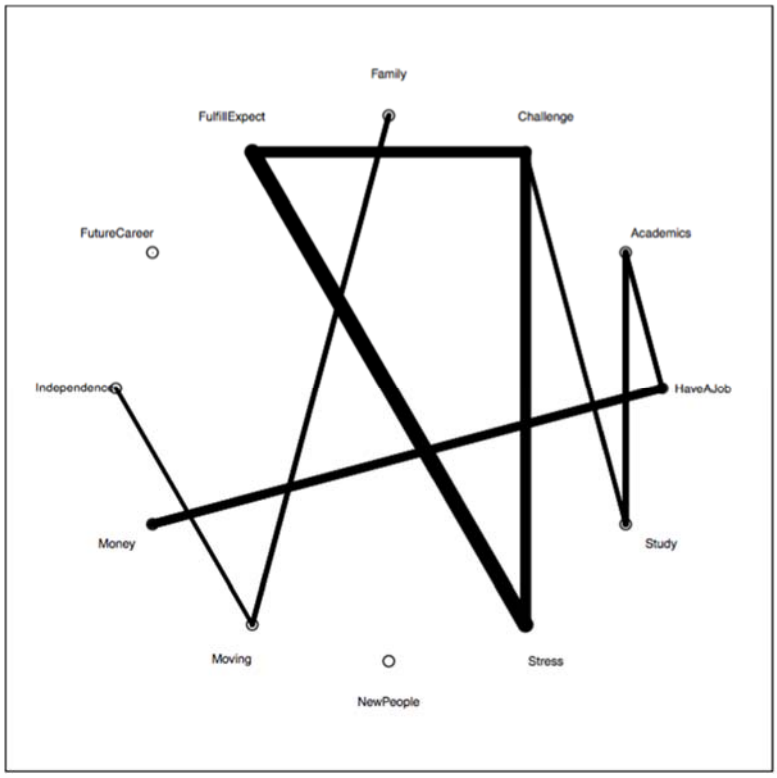

Figure C15. Average network of associations for underclassmen FGs in response to new experiences.

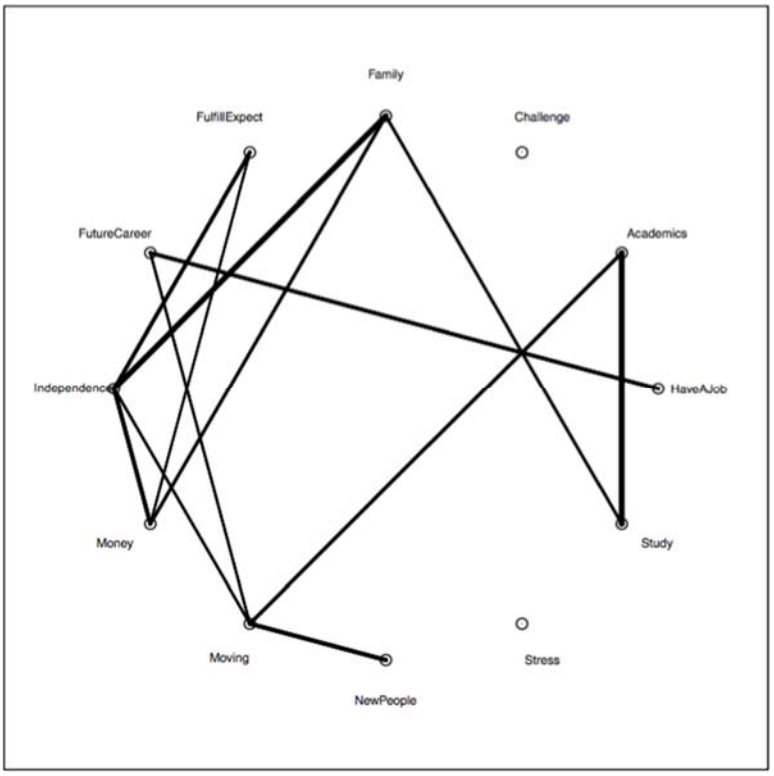

Figure C16. Average network of associations for underclassmen CGs in response to new experiences.

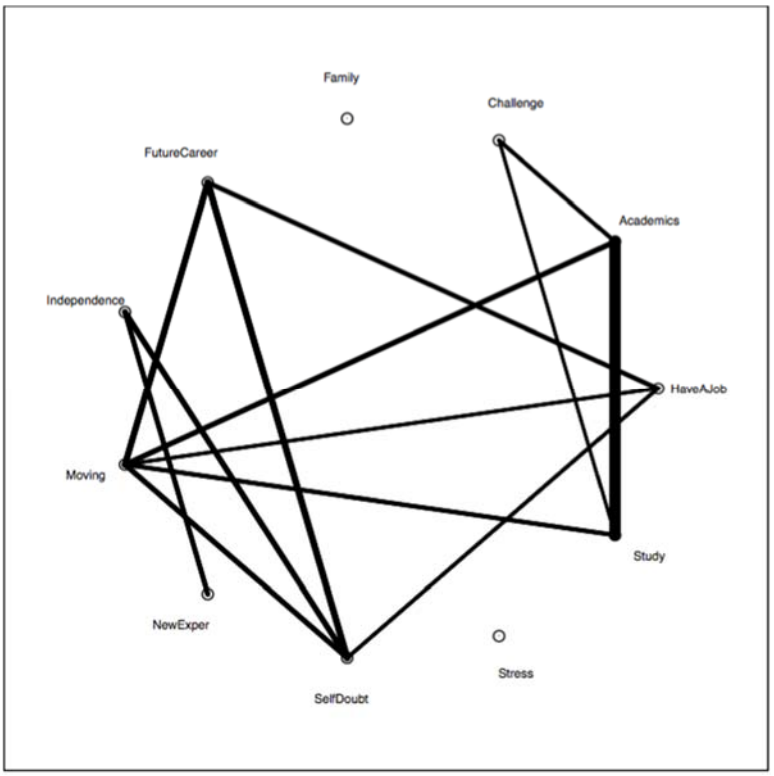

Figure C17. Average network of associations for underclassmen FGs in response to new people.

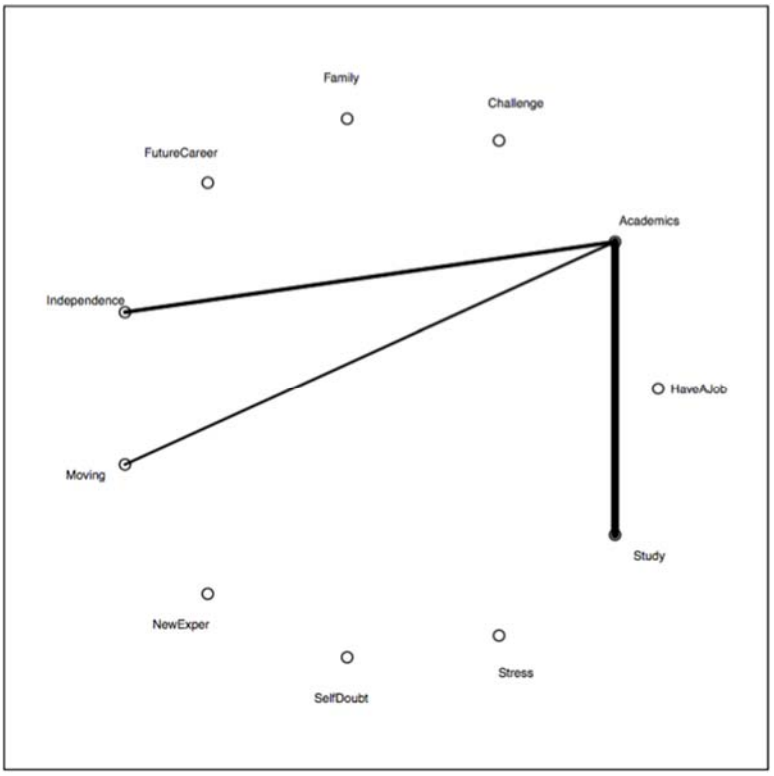

Figure C18. Average network of associations for underclassmen CGs in response to new people.

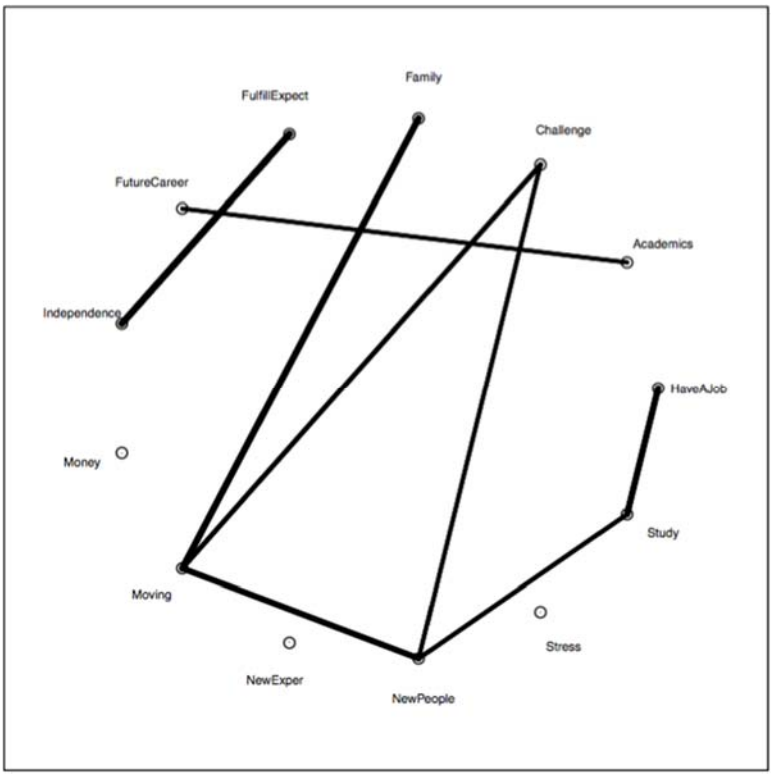

Figure C19. Average network of associations for underclassmen FGs in response to self-doubt.

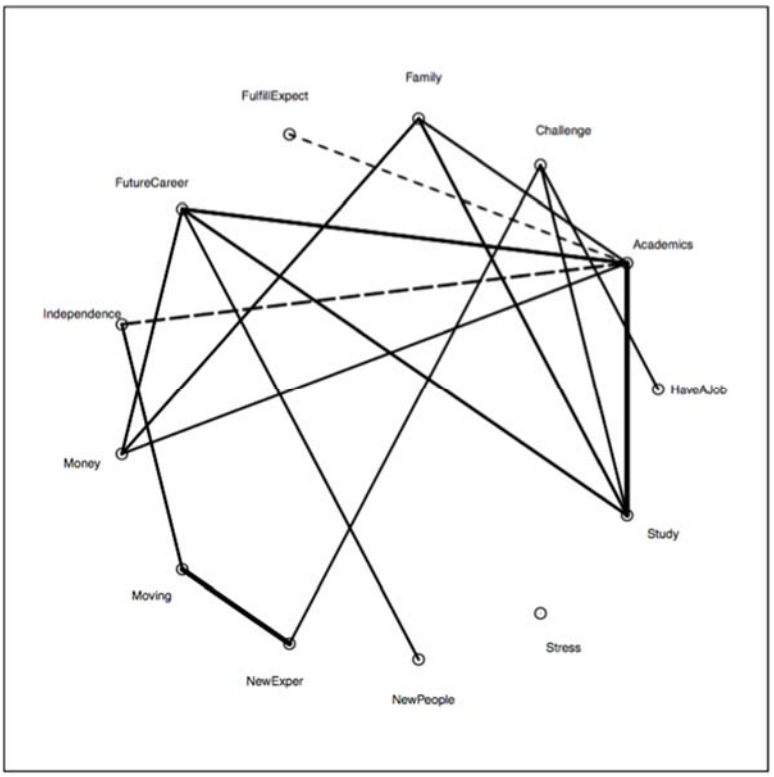

Figure C20. Average network of associations for underclassmen CGs in response to self-doubt.

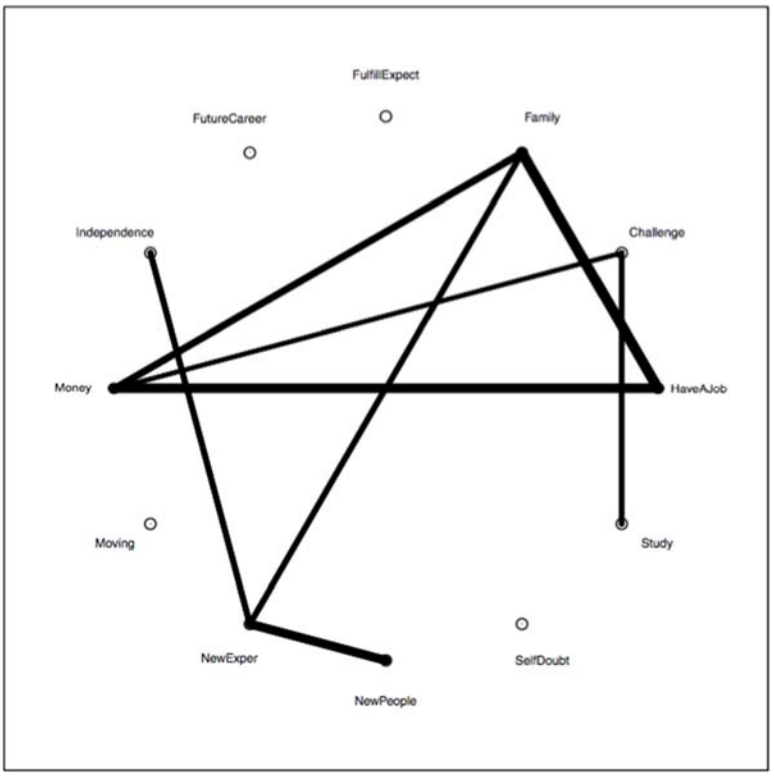

Figure C21. Average network of associations for underclassmen FGs in response to stress.

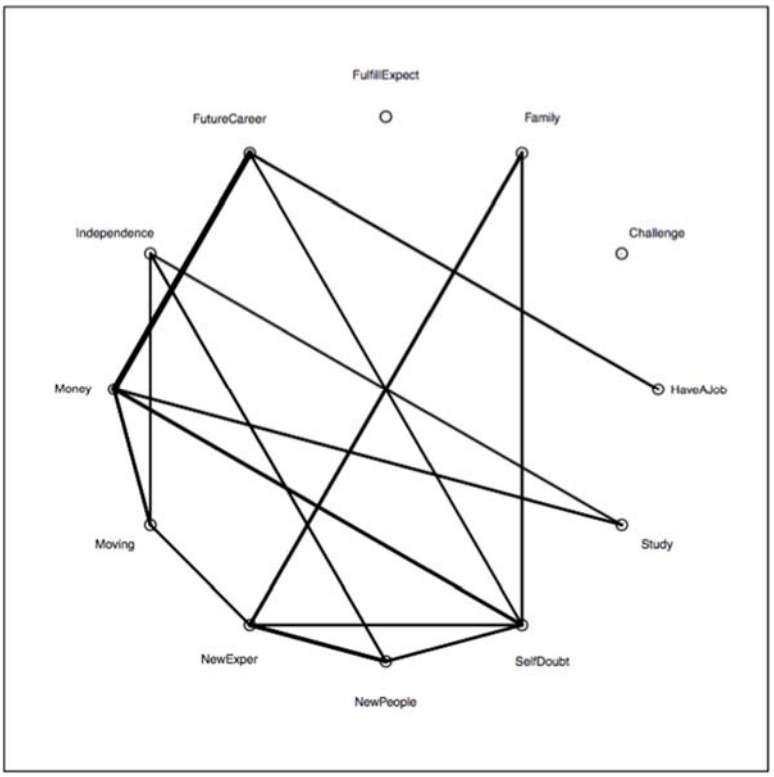

Figure C22. Average network of associations for underclassmen CGs in response to stress.

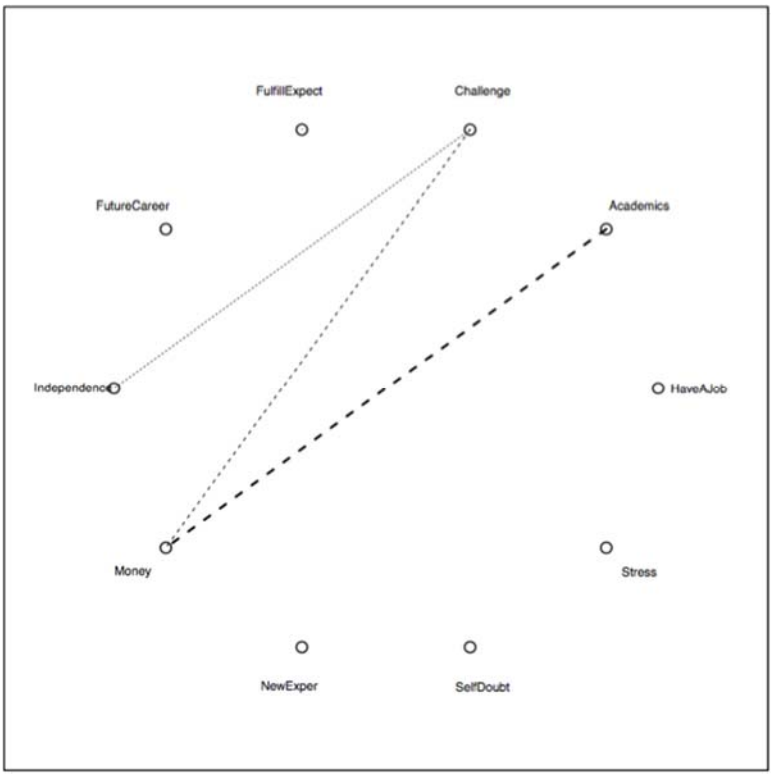

Figure C23. Average network of associations for underclassmen FGs in response to studying.

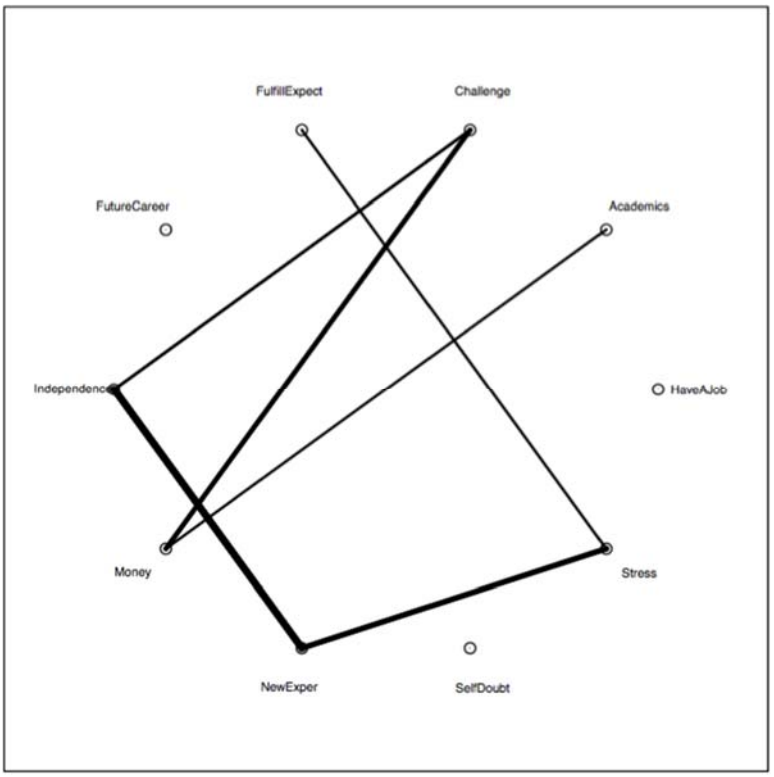

Figure C24. Average network of associations for underclassmen CGs in response to studying.

Appendix D: Results Disaggregated by Prime Set

Learning Primes

Family Condition. The most common responses in the family learning condition regarded values or morals (FG $M = 1$, $SD = 1.15$, CG $M = 1.18$, $SD = .95$), working hard (FG $M = .67$, $SD = 1.03$, CG $M = .25$, $SD = .67$), and success (FG $M = .49$, $SD = .73$, CG $M = .33$, $SD = .84$). FGs and CGs did not differ in the frequency of the occurrence of these themes in their responses (all $ps > .08$). Only two themes differed by generation status. CGs ($M = .18$, $SD = .44$) were marginally more likely to think about having their family's support compared to CGs ($M = .02$, $SD = .08$), $t(37.67) = .056$. CGs ($M = .14$, $SD = .36$) were also more likely to think about using good judgment compared to FGs ($M = 0.0$, $SD = 0.0$), $t(33) = .03$.

University Condition. The most common responses in the university learning condition regarded valuing diversity (FG $M = 0.55$, $SD = 0.61$, CG $M = 0.65$, $SD = 0.89$), being open-minded (FG $M = 0.60$, $SD = 0.59$, CG $M = 0.41$, $SD = 0.52$), and success (FG $M = 0.48$, $SD = 0.60$, CG $M = 0.42$, $SD = 0.57$). FGs and CGs did not differ in the frequency of the occurrence of these themes or any other themes in their responses (all $ps > .08$; See Table D1 for all means, standard deviations, and significance tests).

Future Self Primes

Family Condition. The most common responses in the family future self condition regarded success (FG $M = 1.45$, $SD = 1.12$, CG $M = 1.43$ $SD = 1.12$), values or morals (FG $M = 1.07$, $SD = 1.20$, CG $M = 0.95$, $SD = 1.20$), happiness (FG $M = 0.35$, $SD = 0.57$, CG $M = 0.81$, $SD = 0.94$), succeeding academically (FG $M = 0.65$, $SD = 0.49$, CG $M = 0.54$, $SD = 0.72$), making money (FG $M = 0.65$, $SD = 0.83$, CG $M = 0.56$, $SD = 0.75$), and helping others (FG $M = 0.48$, $SD = 0.83$, CG $M = 0.08$, $SD = 0.26$). Of these themes, CGs were more likely to mention

happiness compared to FGs ($t(57.30) = 2.45$, $p = .02$), while FGs were more likely to mention helping others compared to CGs ($t(20.71) = -2.14$, $p = .05$). The other themes did not differ by generation status (all ps > .40; See Table D2 for all means, standard deviations, and significance tests).

There were also generation status differences in the frequencies of less commonly occurring themes. CGs were more likely than FGs to talk about having a career they were passionate about ($t(49) = 1.86$, $p = .07$), making an impact ($t(45) = 2.20$, $p = .03$), and being well-rounded ($t(45) = 2.38$, $p = .02$). CGs were marginally more likely than FGs to talk about being a leader ($t(45) = 1.74$, $p = .08$).

University Condition. The most common responses in the university future self condition regarded success (FG $M = 0.91$, $SD = 0.80$, CG $M = 0.91$ $SD = 0.74$), being well-rounded (FG $M = 0.49$, $SD = 0.47$, CG $M = 0.12$, $SD = 0.32$), making an impact (FG $M = 0.47$, $SD = 0.52$, CG $M = 0.24$, $SD = 0.48$), succeeding academically (FG $M = 0.32$, $SD = 0.51$, CG $M = 0.47$, $SD = 0.52$), and being open-minded (FG $M = 0.44$, $SD = 0.82$, CG $M = 0.20$, $SD = 0.47$). Of these themes, FGs were more likely to mention being well-rounded compared to CGs ($t(19.67) = -2.78$, $p = .01$). The other themes did not differ by generation status (all ps > .10).

The only other generation status difference emerged in regards to the idea of representing the university well. CGs ($M = 0.22$, $SD = 0.52$) were more likely to mention this theme compared to FGs ($M = 0.00$, $SD = 0.00$), $t(35) = 2.58$, $p = .01$.

Perspective Taking Primes

Family Condition. The most common responses in the family perspective taking condition regarded success (FG $M = 1.10$, $SD = 0.76$, CG $M = 1.72$ $SD = 0.87$), having a successful career (FG $M = 0.56$, $SD = 0.52$, CG $M = 0.65$, $SD = 0.48$), succeeding academically

(FG M = 0.23, SD = 0.44, CG M = 0.58, SD = 0.64), being independent (FG M = 0.33, SD = 0.53, CG M = 0.54, SD = 0.68), making money (FG M = 0.54, SD = 0.65, CG M = 0.42, SD = 0.67), and having new experiences or adventures (FG M = 0.38, SD = 0.65, CG M = 0.48, SD = 0.70). Of these themes, CGs were statistically significantly more likely to mention success (t(38) = 2.17, p = .04) and succeeding academically (t(33.06) = 2.02, p = .051) compared to FGs. The other themes did not differ significantly by generation status (all ps > .30; See Table D3 for all means, standard deviations, and significance tests).

The only other generation status difference emerged in regards to the idea of ambition. CGs (M = 0.11, SD = 0.29) were marginally more likely to mention this theme compared to FGs (M = 0.00, SD = 0.00), t(26) = 1.98, p = .06.

University Dean Condition. The most common responses in the university dean perspective taking condition regarded success (FG M = 2.17, SD = 1.13, CG M = 1.72 SD = 1.03), succeeding academically (FG M = 1.17, SD = 0.78, CG M = 0.90, SD = 0.70), having a successful career (FG M = 0.63, SD = 0.63, CG M = 0.65, SD = 0.51), working hard (FG M = 0.50, SD = 0.64, CG M = 0.20, SD = 0.46), ambition (FG M = 0.50, SD = 0.76, CG M = 0.11, SD = 0.31), and having new experiences or adventures (FG M = 0.08, SD = 0.24, CG M = 0.42, SD = 0.54). Of these themes, CGs were statistically significantly more likely than FGs to mention having new experiences or adventures, t(25.66) = 2.79, p = .01). The other themes did not differ significantly by generation status (all ps > .10).

The only other generation status difference emerged in regards to the idea of valuing diversity. CGs (M = 0.11, SD = 0.31) were more likely to mention this theme compared to FGs (M = 0.00, SD = 0.00), t(36) = 2.09, p = .04.

University Admissions Committee Condition. The most common responses in the university admissions committee perspective taking condition regarded success (FG $M = 1.57$, $SD = 0.83$, CG $M = 1.88$ $SD = 0.88$), succeeding academically (FG $M = 0.93$, $SD = 0.58$, CG $M = 1.03$, $SD = 0.59$), doing better than one's family (FG $M = 0.70$, $SD = 0.79$, CG $M = 0.06$, $SD = 0.23$), having a successful career (FG $M = 0.37$, $SD = 0.58$, CG $M = 0.63$, $SD = 0.52$), valuing one's family (FG $M = 0.57$, $SD = 0.77$, CG $M = 0.04$, $SD = 0.20$), and having new experiences or adventures (FG $M = 0.17$, $SD = 0.28$, CG $M = 0.54$, $SD = 0.65$). Of these themes, FGs were statistically significantly more likely than CGs to mention doing better than one's family ($t(9.60) = -2.50$, $p = .03$) and marginally more likely to mention valuing family ($t(9.45) = -2.14$, $p = .06$). CGs were statistically significantly more likely than FGs to mention having new experiences or adventures, $t(33.13) = 2.38$, $p = .02$. The other themes did not differ significantly by generation status (all ps $> .20$).

There were also generation status differences in the frequencies of less commonly occurring themes. CGs were statistically significantly more likely than FGs to talk about making career connections ($t(25) = 2.95$, $p = .01$), and marginally more likely than FGs to talk about making an impact ($t(25) = 1.79$, $p = .09$), and using good judgment ($t(25) = 1.81$, $p = .08$).

Table D1

Mean Frequencies of Themes in Learning Prime Responses.

	Family Condition Learning Prime			University Condition Learning Prime		
Theme	**CG**	**FG**	***t***	**CG**	**FG**	***t***
Academic Success	0.25(0.63)	0.31(0.60)	$t(48) = -0.36$, $p = .72$	0.35(0.53)	0.26(0.51)	$t(57) = 0.54$, $p = .60$
Ambition	0.15(0.48)	0.08(0.26)	$t(48) = 0.50$, $p = .62$	0.05(0.21)	0.00(0.00)	$t(57) = 0.91$, $p = .37$
Be a Leader	0.25(0.67)	0.67(1.03)	$t(48) = 0.68$, $p = .50$	0.00(0.00)	0.07(0.27)	$t(13) = -1.00$, $p = .34$
Be Independent	0.16(0.37)	0.23(0.38)	$t(48) = -0.64$, $p = .53$	0.10(0.28)	0.10(0.28)	$t(57) = 0.10$, $p = .92$
Be Well-Rounded	0.00(0.00)	0.00(0.00)	N/A	0.02(0.15)	0.00(0.00)	$t(57) = 0.55$, $p = .58$
Career Passion	0.03(0.17)	0.00(0.00)	$t(48) = 0.68$, $p = .50$	0.17(0.31)	0.24(0.48)	$t(57) = -0.62$, $p = .54$
Career Success	0.01(0.06)	0.06(0.25)	$t(15.74) = -0.83$, $p = .42$	0.01(0.05)	0.00(0.00)	$t(57) = 0.55$, $p = .58$
Do Better Than Family	0.00(0.00)	0.15(0.40)	$t(15) = -1.45$, $p = .17$	0.04(0.18)	0.00(0.00)	$t(57) = 0.91$, $p = .37$
Experience/Adventure	0.07(0.24)	0.17(0.37)	$t(21.49) = -0.98$, $p = .34$	0.00(0.00)	0.00(0.00)	N/A
Family Support	0.18(0.44)^	0.02(0.08)^	$t(37.67) = 1.97$, $p = .06$	0.39(0.58)	0.19(0.45)	$t(57) = 1.19$, $p = .24$
Good Judgment	0.14(0.36)*	0.00(0.00)*	$t(33) = 2.23$, $p = .03$	0.01(0.07)	0.00(0.00)	$t(57) = 0.79$, $p = .43$
Happiness	0.11(0.30)	0.14(0.32)	$t(48) = -0.41$, $p = .69$	0.02(0.15)	0.02(0.09)	$t(57) = -0.04$, $p = .97$
Hard Work	0.25(0.67)	0.67(1.03)	$t(21.21) = -1.49$, $p = .15$	0.01(0.05)	0.10(0.28)	$t(13.27) = -1.19$, $p = .26$
Have Own Family	0.03(0.17)	0.00(0.00)	$t(48) = 0.68$, $p = .50$	0.19(0.44)	0.05(0.18)	$t(52.58) = 1.71$, $p = .09$
Health	0.03(0.17)	0.00(0.00)	$t(48) = 0.68$, $p = .50$	0.00(0.00)	0.00(0.00)	N/A
Help Others	0.15(.41)	0.31(0.60)	$t(21.85) = -1.00$, $p = .33$	0.03(0.16)	0.12(0.31)	$t(15.11) = -1.04$, $p = .32$
Make an Impact	0.03(0.13)	0.02(0.08)	$t(48) = 0.25$, $p = .81$	0.03(0.16)	0.02(0.09)	$t(57) = 0.13$, $p = .90$
Make Career Connections	0.01(0.06)	0.00(0.00)	$t(48) = 0.68$, $p = .50$	0.00(0.00)	0.02(0.09)	$t(13) = -1.00$, $p = .34$
Make Money	0.07(0.24)	0.08(0.19)	$t(48) = -0.21$, $p = .83$	0.00(0.00)	0.00(0.00)	N/A
Open Mind	0.29(0.52)	0.33(0.53)	$t(48) = -0.25$, $p = .81$	0.41(0.52)	0.60(0.59)	$t(57) = -1.10$, $p = .28$
Prestige	0.10(0.52)	0.02(0.08)	$t(48) = 0.59$, $p = .56$	0.04(0.21)	0.00(0.00)	$t(57) = 0.79$, $p = .43$
Pursue Specific Career	0.01(0.06)	0.00(0.00)	$t(48) = 0.68$, $p = .50$	0.00(0.00)	0.00(0.00)	N/A
Represent University Well	0.00(0.00)	0.00(0.00)	N/A	0.02(0.15)	0.00(0.00)	$t(57) = 0.55$, $p = .58$

Success	0.33(0.84)	0.48(0.72)	$t(48) = -0.60$, $p = .55$	0.42(0.57)	0.48(0.60)	$t(57) = -0.31$, $p = .76$
Uniqueness/Passions	0.12(0.33)	0.19(0.40)	$t(48) = -0.65$, $p = .52$	0.18(0.39)	0.21(0.58)	$t(57) = -0.27$, $p = .79$
Value Diversity	0.15(0.36)	0.21(0.45)	$t(48) = -0.52$, $p = .61$	0.65(0.89)	0.55(0.61)	$t(57) = 0.41$, $p = .69$
Value Family	0.21(0.39)	0.35(0.63)	$t(20.77) = -0.87$, $p = .39$	0.00(0.00)	0.00(0.00)	N/A
Values/Morals	1.18(0.95)	1.0 (1.15)	$t(48) = 0.57$, $p = .57$	0.07(0.23)	0.14(0.31)	$t(57) = -0.88$, $p = .38$

Note. Values in parentheses represent standard deviations.
*$p < .05$. ^$p < .08$.

Table D2

Mean Frequencies of Themes in Future Self Prime Responses.

	Family Condition Future Self Prime			University Condition Future Self Prime		
Theme	**CG**	**FG**	***t***	**CG**	**FG**	***t***
Academic Success	0.54(0.72)	0.65(0.49)	$t(52.40) = -0.70$, $p = .49$	0.32(0.51)	0.47(0.52)	$t(49) = -0.91$, $p = .37$
Ambition	0.12(0.37)	0.08(0.26)	$t(64) = 0.44$, $p = .66$	0.16(0.34)	0.29(0.42)	$t(49) = -1.17$, $p = .25$
Be a Leader	0.06(0.23)^	0.00(0.00)^	$t(45) = 1.74$, $p = .08$	0.00(0.00)	0.00(0.00)	N/A
Be Independent	0.22(0.49)	0.27(0.53)	$t(64) = -0.32$, $p = .75$	0.11(0.36)	0.09(0.23)	$t(49) = 0.22$, $p = .83$
Be Well-Rounded	0.10(0.29)*	0.00(0.00)*	$t(45) = 2.38$, $p = .02$	0.12(0.32)*	0.49(0.47)*	$t(19.67) = -2.78$, $p = .01$
Career Passion	0.32(0.46)^	0.13(0.33)^	$t(49) = 1.86$, $p = .07$	0.01(0.06)	0.00(0.00)	$t(49) = 0.64$, $p = .52$
Career Success	0.30(0.51)	0.47(0.51)	$t(64) = -1.19$, $p = .24$	0.22(0.40)	0.24(0.43)	$t(49) = -0.18$, $p = .86$
Do Better Than Family	0.17(0.38)	0.28(0.56)	$t(64) = -0.98$, $p = .33$	0.00(0.00)	0.00(0.00)	N/A
Experience/Adventure	0.09(0.26)	0.08(0.21)	$t(64) = 0.06$, $p = .96$	0.18(0.38)	0.07(0.19)	$t(47.36) = 1.38$, $p = .18$
Family Support	0.33(0.56)	0.37(0.59)	$t(64) = -0.22$, $p = .83$	0.00(0.00)	0.00(0.00)	N/A
Good Judgment	0.06(0.23)	0.15(0.33)	$t(26.89) = -1.13$, $p = .27$	0.01(0.06)	0.00(0.00)	$t(49) = 0.64$, $p = .52$
Happiness	0.81(0.94)*	0.35(0.57)*	$t(57.30) = 2.45$, $p = .02$	0.00(0.00)	0.00(0.00)	N/A
Hard Work	0.21(0.49)	0.07(0.23)	$t(63.52) = 1.61$, $p = .11$	0.11(0.30)	0.02(0.09)	$t(45.82) = 1.63$, $p = .11$
Have Own Family	0.29(0.53)	0.17(0.41)	$t(64) = 0.92$, $p = .36$	0.03(0.17)	0.00(0.00)	$t(49) = 0.64$, $p = .52$
Health	0.07(0.30)	0.08(0.26)	$t(64) = -0.14$, $p = .88$	0.00(0.00)	0.00(0.00)	N/A
Help Others	0.08(0.26)*	0.48(0.83)*	$t(20.71) = -2.14$, $p = .05$	0.21(0.40)	0.13(0.35)	$t(49) = 0.67$, $p = .51$
Make an Impact	0.08(0.25)*	0.00(0.00)*	$t(45) = 2.20$, $p = .03$	0.24(0.48)	0.47(0.52)	$t(49) = -1.51$, $p = .14$
Make Career Connections	0.00(0.00)	0.00(0.00)	N/A	0.03(0.17)	0.02(0.09)	$t(49) = 0.12$, $p = .90$
Make Money	0.56(0.75)	0.65(0.83)	$t(64) = -0.44$, $p = .66$	0.07(0.29)	0.02(0.09)	$t(49) = 0.68$, $p = .50$
Open Mind	0.09(0.29)	0.05(0.22)	$t(64) = 0.61$, $p = .54$	0.20(0.47)	0.44(0.82)	$t(17.87) = -1.06$, $p = .30$
Prestige	0.15(0.38)	0.07(0.23)	$t(64) = 0.94$, $p = .35$	0.20(0.37)	0.24(0.41)	$t(49) = -0.35$, $p = .73$
Pursue Specific Career	0.28(0.52)	0.13(0.29)	$t(64) = 1.14$, $p = .26$	0.09(0.36)	0.02(0.09)	$t(49) = 0.74$, $p = .46$
Represent University Well	0.00(0.00)	0.00(0.00)	N/A	0.22(0.52)*	0.00(0.00)*	$t(35) = 2.58$, $p = .01$

Success	1.43(1.12)	1.45(1.12)	$t(64) = -0.05$, $p = .96$	0.91(0.74)	0.91(0.80)	$t(49) = -0.02$, $p = .99$
Uniqueness/Passions	0.25(0.49)	0.12(0.27)	$t(64) = 1.11$, $p = .27$	0.03(0.17)	0.00(0.00)	$t(49) = 0.64$, $p = .52$
Value Diversity	0.04(0.21)	0.02(0.07)	$t(64) = 0.56$, $p = .58$	0.08(0.28)	0.31(0.50)	$t(17.86) = -1.67$, $p = .11$
Value Family	0.13(0.35)	0.05(0.16)	$t(63.72) = 1.26$, $p = .21$	0.00(0.00)	0.00(0.00)	N/A
Values/Morals	0.95(1.20)	1.07(1.20)	$t(64) = -0.37$, $p = .72$	0.24(0.53)	0.16(0.31)	$t(49) = 0.59$, $p = .56$

Table D3

Mean Frequencies of Themes in Perspective Taking Prime Responses.

	Family Condition Perspective Taking Prime			University Dean Perspective Taking Prime		
Theme	**CG**	**FG**	***t***	**CG**	**FG**	***t***
Academic Success	0.58(0.64)*	0.23(0.44)*	$t(33.06) = 2.02$, $p = .05$	0.90(0.70)	1.17(0.78)	$t(43) = -0.95$, $p = .35$
Ambition	0.11(0.29)^	0.00(0.00)^	$t(26) = 1.98$, $p = .06$	0.11(0.31)	0.50(0.76)	$t(7.53) = -1.44$, $p = .19$
Be a Leader	0.00(0.00)	0.00(0.00)	N/A	0.05(0.20)	0.00(0.00)	$t(43) = 0.65$, $p = .52$
Be Independent	0.54(0.68)	0.33(0.53)	$t(38) = 0.98$, $p = .33$	0.14(0.40)	0.17(0.36)	$t(43) = -0.21$, $p = .84$
Be Well-Rounded	0.00(0.00)	0.08(0.28)	$t(12) = -1.00$, $p = .34$	0.11(0.34)	0.13(0.35)	$t(43) = -0.13$, $p = .90$
Career Passion	0.15(0.36)	0.31(0.48)	$t(18.81) = -1.06$, $p = .30$	0.03(0.16)	0.13(0.35)	$t(7.67) = -0.77$, $p = .47$
Career Success	0.65(0.48)	0.56(0.52)	$t(38) = 0.54$, $p = .59$	0.65(0.51)	0.63(0.63)	$t(43) = 0.11$, $p = .91$
Do Better Than Family	0.00(0.00)	0.08(0.28)	$t(12) = -1.00$, $p = .34$	0.10(0.29)	0.17(0.47)	$t(43) = -0.53$, $p = .60$
Experience/Adventure	0.48(0.70)	0.38(0.65)	$t(38) = 0.42$, $p = .68$	0.42(0.54)*	0.08(0.24)*	$t(25.66) = 2.79$, $p = .01$
Family Support	0.04(0.19)	0.08(0.28)	$t(38) = -0.53$, $p = .60$	0.04(0.17)	0.08(0.24)	$t(43) = -0.66$, $p = .51$
Good Judgment	0.01(0.06)	0.00(0.00)	$t(38) = 0.69$, $p = .50$	0.00(0.00)	0.00(0.00)	N/A
Happiness	0.01(0.06)	0.08(0.28)	$t(12.62) = -0.83$, $p = .42$	0.07(0.25)	0.00(0.00)	$t(43) = 0.81$, $p = .42$
Hard Work	0.15(0.36)	0.10(0.28)	$t(38) = 0.40$, $p = .69$	0.20(0.46)	0.50(0.64)	$t(43) = -1.56$, $p = .13$
Have Own Family	0.04(0.19)	0.05(0.18)	$t(38) = -0.22$, $p = .83$	0.08(0.28)	0.13(0.35)	$t(43) = -0.39$, $p = .70$
Health	0.04(0.19)	0.00(0.00)	$t(38) = 0.68$, $p = .50$	0.00(0.00)	0.00(0.00)	N/A
Help Others	0.00(0.00)	0.08(0.28)	$t(12) = -1.00$, $p = .34$	0.22(0.42)	0.38(0.60)	$t(43) = -0.88$, $p = .38$
Make an Impact	0.04(0.19)	0.00(0.00)	$t(38) = 0.69$, $p = .50$	0.33(0.55)	0.21(0.40)	$t(43) = 0.61$, $p = .55$
Make Career Connections	0.22(0.42)	0.15(0.38)	$t(38) = 0.50$, $p = .62$	0.11(0.27)	0.13(0.35)	$t(43) = -0.15$, $p = .88$
Make Money	0.42(0.67)	0.54(0.65)	$t(38) = -0.53$, $p = .60$	0.29(0.45)	0.25(0.39)	$t(43) = 0.23$, $p = .82$
Open Mind	0.11(0.29)	0.03(0.09)	$t(34.68) = 1.38$, $p = .18$	0.05(0.23)	0.00(0.00)	$t(43) = 0.66$, $p = .51$
Prestige	0.11(0.33)	0.05(0.18)	$t(38) = 0.60$, $p = .55$	0.06(0.27)	0.38(0.74)	$t(7.40) = -1.17$, $p = .28$
Pursue Specific Career	0.30(0.47)	0.28(0.61)	$t(38) = 0.08$, $p = .94$	0.10(0.28)	0.21(0.59)	$t(43) = -0.80$, $p = .43$
Represent University Well	0.00(0.00)	0.00(0.00)	N/A	0.00(0.00)	0.00(0.00)	N/A

Success	1.72(0.87)*	1.10(0.76)*	$t(38) = 2.17, p = .04$	1.72(1.03)	2.17(1.13)	$t(43) = -1.09, p = .28$
Uniqueness/Passions	0.11(0.29)	0.13(0.29)	$t(38) = -0.17, p = .86$	0.10(0.38)	0.00(0.00)	$t(43) = 0.74, p = .46$
Value Diversity	0.07(0.23)	0.00(0.00)	$t(26) = 1.65, p = .11$	0.11(0.31)*	0.00(0.00)*	$t(36) = 2.09, p = .04$
Value Family	0.04(0.19)	0.08(0.28)	$t(38) = -0.53, p = .60$	0.07(0.25)	0.25(0.46)	$t(7.91) = -1.05, p = .32$
Values/Morals	0.04(0.19)	0.00(0.00)	$t(38) = 0.69, p = .50$	0.03(0.16)	0.00(0.00)	$t(43) = 0.46, p = .65$

	University Admissions Committee Perspective Taking Prime		
Theme	**CG**	**FG**	***t***
Academic Success	1.03(0.59)	0.93(0.58)	$t(34) = 0.42, p = .68$
Ambition	0.08(0.24)	0.23(0.35)	$t(34) = -1.54, p = .13$
Be a Leader	0.00(0.00)	0.00(0.00)	N/A
Be Independent	0.26(0.49)	0.07(0.21)	$t(33.43) = 1.62, p = .12$
Be Well-Rounded	0.00(0.00)	0.00(0.00)	N/A
Career Passion	0.13(0.43)	0.23(0.32)	$t(34) = -0.70, p = .49$
Career Success	0.63(0.52)	0.37(0.58)	$t(34) = 1.31, p = .20$
Do Better Than Family	0.06(0.23)*	0.70(0.79)*	$t(9.60) = -2.50, p = .03$
Experience/Adventure	0.54(0.65)*	0.17(0.28)*	$t(33.13) = 2.38, p = .02$
Family Support	0.01(0.07)	0.23(0.45)	$t(9.15) = -1.56, p = .15$
Good Judgment	0.12(0.33)^	0.00(0.00)^	$t(25) = 1.81, p = .08$
Happiness	0.00(0.00)	0.13(0.32)	$t(9) = -1.31, p = .22$
Hard Work	0.06(0.23)	0.30(0.67)	$t(9.82) = -1.08, p = .31$
Have Own Family	0.04(0.20)	0.03(0.11)	$t(34) = 0.08, p = .94$
Health	0.04(0.20)	0.00(0.00)	$t(34) = 0.62, p = .54$
Help Others	0.18(0.34)	0.40(0.58)	$t(11.48) = -1.12, p = .29$
Make an Impact	0.13(0.37)	0.00(0.00)	$t(25) = 1.79, p = .09$
Make Career Connections	0.28(0.49)*	0.00(0.00)*	$t(25) = 2.95, p = .01$
Make Money	0.28(0.51)	0.40(0.62)	$t(34) = -0.59, p = .56$

Open Mind	0.05(0.15)	0.07(0.14)	$t(34) = -0.27$, $p = .79$
Prestige	0.05(0.26)	0.23(0.45)	$t(11.47) = -1.21$, $p = .25$
Pursue Specific Career	0.14(0.45)	0.13(0.28)	$t(34) = 0.05$, $p = .96$
Represent University Well	0.00(0.00)	0.00(0.00)	N/A
Success	1.88(0.88)	1.57(0.83)	$t(34) = 0.98$, $p = .33$
Uniqueness/Passions	0.12(0.33)	0.10(0.32)	$t(34) = 0.13$, $p = .90$
Value Diversity	0.05(0.20)	0.13(0.42)	$t(34) = -0.79$, $p = .43$
Value Family	0.04(0.20)^	0.57(0.77)^	$t(9.45) = -2.14$, $p = .06$
Values/Morals	0.05(0.20)	0.13(0.42)	$t(34) = -0.79$, $p = .43$

Appendix E: Perceived Contextual Socioeconomic Status Disaggregated by Prime Set

Learning Primes

There was no effect of prime condition on perceived socioeconomic status, $F(1, 105) = 1.07$, $p = .30$, however, there was an effect of generation status such that FGs ($M = 2.88$, $SE = .15$) reported lower perceived SES compared to CGs ($M = 3.41$, $SE = .10$), $F(1, 105) = 8.55$, $p = .004$. There was no significant interaction between prime condition and generation status, $F(1, 105) = 1.21$, $p = .27$, however, pairwise comparisons suggested that while FGs and CGs did not differ in perceived SES in the university condition (M difference = .33, $p = .20$), CGs reported higher perceived SES than FGs in the family condition (M difference = .72, $p = .005$). This suggests that when primed with the university context, FGs and CGs thought of people with similarly high relative SES, but when primed with the family context, CGs thought of people with higher relative SES than did FGs. Although pairwise comparisons suggested that perceived SES did not differ across priming conditions for CGs (M difference = -0.01, $p = .95$) or FGs (M difference = -0.38, $p = .31$), the pattern of means trended in the predicted direction such that FGs tended to perceive a greater difference in SES between university and family contexts than did CGs (See Figure E1). Had this study been sufficiently powered to detect an interaction, this pattern of results may have reached statistical significance.

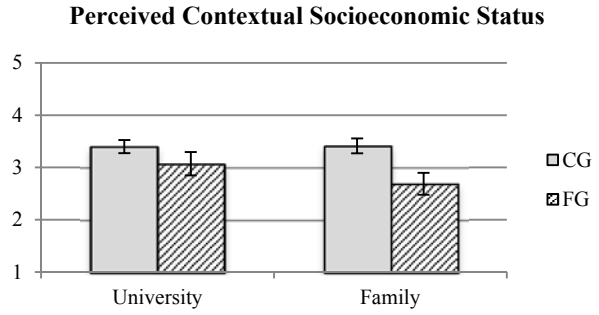

Figure E1. Perceived contextual socioeconomic status by Learning prime condition and generation status.

Future Self Primes

Participants in the university prime condition (M = 3.52, SE = .14) reported greater perceived SES than participants in the family condition (M = 2.30, SE = .12), $F(1, 113) = 7.95$, p = .006. As with the Learning prime set, FGs (M = 3.01, SE = .16) reported lower perceived SES than CGs (M = 3.51, SE = .10), $F(1, 113) = 7.14$, p = .009. There was no interaction between prime condition and generation status, $F(1, 113) = .003$, p = .95, however, as with the Learning primes, pairwise comparisons suggested that FGs and CGs thought of people with similarly high relative SES when primed with the university context (M difference = .51, p = .07), but CGs thought of people with higher relative SES than did FGs when primed with the family context (M difference = .49, p = .05). While CGs (M difference = .54, p = .01) reported higher perceived SES in the university condition than the family condition, FGs (M difference = .52, p = .10) did not differ in perceived SES across conditions (See Figure E2).

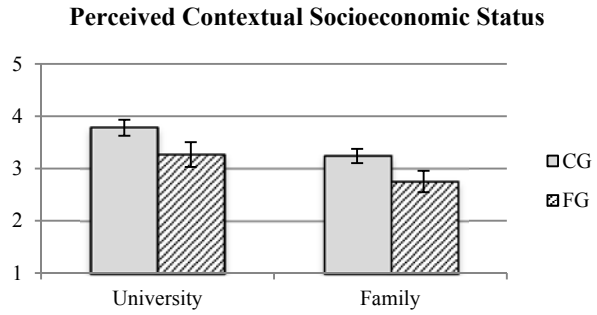

Figure E2. Perceived contextual socioeconomic status by Future Self prime condition and generation status.

Perspective Taking Primes

There was a main effect of prime condition, $F(1, 115) = 3.32$, p = .04. Pairwise comparisons suggested that participants primed with family (M = 2.92, SE = .19) reported lower perceived relative SES than participants primed with the university dean (M = 3.65, SE = .22), M difference = -.73, SE = .29, p = .01. However, participants primed with family did not differ from

participants primed with the admissions committee (M = 3.25, SE = .21), M difference = -.33, SE = .28, p = .24. Participants primed with the university dean did not differ from those primed with the university admissions committee, M difference = .40, SE = .30, p = .18. As with the Learning and Future Self prime sets, FGs (M = 2.99, SE = .20) reported lower perceived SES than CGs (M = 3.56, SE = .12), $F(1, 115) = 5.88$, p = .02. As with the other prime sets, there was no interaction between condition and generation status (See Figure E3), $F(1, 115) = 1.16$, p = .32.

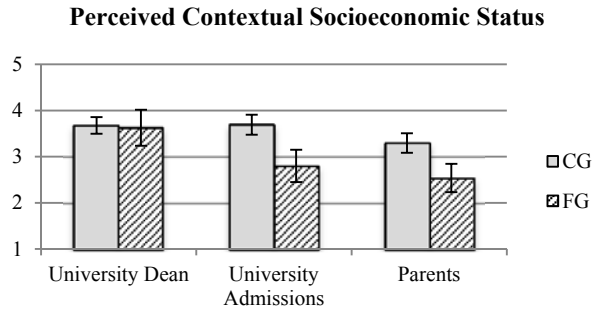

Figure E3. Perceived contextual socioeconomic status by Perspective Taking prime condition and generation status.

Appendix F: Means and Standard Errors for Coded Themes

Table F1

Study 3 Means and Standard Errors by Condition and Generation Status

	Condition		Generation Status	
Interdependent Themes	University	Family	CG	FG
Family Support	.04 (.03)	.19 (.03)***	.11 (.02)	.12 (.03)
Value Family	.09 (.03)	.14 (.03)	.08 (.02)	.16 (.03)*
Help Others	.18 (.03)	.20 (.04)	.12 (.03)	.26 (.04)**
Do Better Than Family	.11 (.03)	.13 (.03)	.05 (.02)	.18 (.03)***
Have Own Family	.03. (.02)	.11 (.02)*	.09 (.02)	.06 (.03)
Independent Themes				
Make an Impact	.18 (.03)***	.03 (.03)	.11 (.02)	.10 (.03)
Be a Leader	.02 (.01)	.01 (.01)	.02 (.01)	.01 (.01)
Ambition	.16 (.03)^	.09 (.03)	.11 (.02)	.14 (.03)
Be Well-Rounded	.12 (.02)**	.03 (.02)	.05 (.02)	.10 (.03)
Follow Career Passions	.05 (.03)	.16 (.03)**	.11 (.02)	.10 (.03)
Prestige	.14 (.03)	.09 (.03)	.11 (.02)	.12 (.03)
Be Independent	.12 (.04)	.28 (.04)**	.21 (.03)	.19 (.04)
Make Career Connections	.12 (.02)*	.05 (.02)	.10 (.02)	.07 (.03)
Uniqueness/Passions	.10 (.03)	.16 (.03)	.14 (.02)	.11 (.04)
Experience/Adventure	.25 (.04)	.19 (.04)	.28 (.03)*	.16 (.05)
Miscellaneous Themes				
Values/Morals	.11 (.06)	.78 (.07)***	.45 (.05)	.44 (.08)
Hard Work	.16 (.04)	.24 (.04)	.18 (.03)	.22 (.05)
Good Judgment	.02 (.02)	.07 (.02)*	.05 (.01)	.03 (.02)
Success	1.14 (.09)	1.10 (.09)	1.15 (.07)	1.09 (.11)
Academic Success	.62 (.06)*	.44 (.06)	.53 (.04)	.53 (.07)
Career Success	.31 (.04)	.33 (.04)	.32 (.03)	.31 (.05)
Specific Career	.07 (.03)	.16 (.03)*	.14 (.02)	.10 (.04)
Make Money	.14 (.04)	.40 (.04)***	.26 (.03)	.29 (.05)
Open Mind	.27 (.04)*	.15 (.04)	.18 (.03)	.24 (.04)
Happiness	.04 (.04)	.30 (.04)***	.20 (.03)	.13 (.05)
Health	.03 (.02)	.04 (.02)	.03 (.01)	.04 (.02)
Value Diversity	.28 (.04)***	.08 (.04)	.17 (.03)	.18 (.05)
Represent University Well	.03 (.02)	0 (.02)	.03 (.01)	0 (.02)

Note. *s are placed in the column with the significantly greater value. Numbers outside parentheses represent estimated marginal means. Numbers inside parentheses represent standard errors.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.