Developing an Integrated Self: Academic and Ethnic Identities Among Ethnically Diverse College Students

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The purpose of the present study was to investigate the development of college students’ major selection and whether and how this choice is associated with their developing ethnic identities. Ninety ethnically diverse college students were interviewed in their first, sophomore, and senior years. Mixed-method analyses revealed 5 theoretically consistent pathways of how students configured their ethnic identities and majors over time: low awareness, consciousness-raised, high awareness, integrating, and compartmentalized. These pathways were differentially related to students’ ethnicities and majors, suggesting that students’ identity experiences are moderated by their chosen majors. The results of this study underscore the contribution of a longitudinal, life-span, approach to identity development for understanding the diversity in identity pathways during college. The findings also have implications for practical purposes, particularly for advising, counseling, and curriculum development.

Keywords: identity, ethnicity, academic major, longitudinal, mixed methods

Attending college is often considered to be a consciousness-raising experience, as college students have opportunities to learn about themselves and others through exposure to diverse perspectives, opinions, and ways of living (Azmitia, Syed, & Radmacher, 2008; French, Seidman, Allen, & Aber, 2000; Hurtado, 2003). Accordingly, college has been theorized as instrumental for late adolescents’ and emerging adults’ identity development (Arnett, 2006; Eccles, Templeton, Barber, & Stone, 2003; Shaver, Furman, & Buhrmester, 1985). In particular, college experiences have been linked to the development of social or collective identities—those identities based on group memberships—such as ethnicity (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Ethier & Deaux, 1994; Tajfel & Turner, 1986). What has received less attention is how the development of ethnic identities may impact academic experiences. Most research examining the role of ethnicity for academic experiences has focused on important issues such as academic preparation, social capital, availability of mentors and role models, and institutional racism (for reviews, see Cooper, Chavira, & Mena, 2005; Gándara & Maxwell-Jolley, 1999; Rochin & Mello, 2007). The work in the present study brings a new perspective to the table by highlighting theory and research on identity development through an investigation of how college students’ developing ethnic identities are associated with their choice of academic major.

Broadening the Scope of Identity: Implications of Ethnic Identities for Selecting a Major

Erikson (1968) highlighted work, or occupational choice/career, as particularly important for the identity development process (see also Seginer & Noymann, 2005; Skorikov & Vondracek, 1998). Indeed, there has been a great deal of research on how adolescents select and commit to a career (e.g., Grotevant, Cooper, & Kramer, 1986; Lent, Brown, & Hackett, 1994; Pinquart, Juang, & Silbereisen, 2004; Skorikov & Vondracek, 1998; Vondracek, 2001). For college students, the academic major is a key ingredient in the development of their occupational identity. The bulk of the literature on major selection has focused on cognitive processes (Galotti, 1999; Galotti et al., 2006) or congruence with other aspects of the self, such as personality (e.g., Costa, McRae, & Kay, 1995; Grotevant et al., 1986; Reed, Bruch, & Haase, 2004; Sullivan & Hansen, 2004). For many ethnic minority students, however, ethnicity is an important, or central, part of who they are (Phinney, 1990; Sellers, Smith, Shelton, Rowley, & Chavous, 1998). Therefore, ethnic minority students with high ethnic centrality may feel an additional need or may feel themselves pressured to find a field of study that is compatible with their ethnic identities (Azmitia et al., 2008; Hurtado & Gurin, 2004; Nasir & Saxe, 2003). These challenges can stem from family pressures to major in a subject that will contribute to social advancement, the unavailability of potential mentors with similar backgrounds, or feelings of isolation from other students (Cooper, Domínguez, &...
Identity Integration: A Necessary Developmental Task?

The focus of the present study on the relation between college students’ ethnicity and major is situated within the theoretical construct of identity integration, or the degree to which individuals face the need to synthesize multiple aspects of their selves. There are three primary theories that are important to consider when asking this type of question: social identity theory, Eriksonian, and post-modern. Social identity theory is the least informative about the issue of identity integration, per se, but it is a valuable and widely used theory concerning the links between identities and social contexts. Social identity theory specifies that individuals’ identities become salient when in minority contexts, which leads to greater identification with those identities to derive a positive sense of self (Tajfel & Turner, 1986). Therefore, ethnic minority students who are underrepresented in college settings will likely have a heightened awareness of ethnicity. Conversely, White students who are in the majority on campus would be less likely to be aware of the role of ethnicity for their lives. Social identity theory, however, concerns contextual identity salience and does not offer firm developmental predictions. Nevertheless, it is a useful theory for understanding who will become more aware of their ethnicities in college (ethnic minority vs. White at a predominantly White university).

The notion of identity integration as an important developmental task originated from Erikson’s lifespan theory of identity development. Erikson (1968) believed that identity development takes center stage in adolescence and young adulthood, when advances in cognitive skills, heightened societal pressures, and opportunities to explore future roles prompt youth to focus on the possibilities of their present and future selves. Optimal development is characterized, in part, by an ability to integrate seemingly disparate aspects of the self to arrive at a sense of personal sameness and continuity across time and context. Although Erikson believed identity formation to be a life-long process, he suggested that adolescence and young adulthood were particularly critical developmental periods in which to begin the process of identity integration. For Erikson (1968), the integration of multiple identities is a hallmark of healthy psychosocial development (see also Grotevant, 1987; Harter, 1999; McAdams, 2001). Accordingly, hypotheses generated from the Eriksonian perspective would predict that students would seek some level of integration or compatibility between their ethnic identities and chosen field of study, at least for students that view ethnicity as a central aspect of the self.

As the field of identity development has burgeoned, the expansion in the number of identity domains has corresponded with an increasingly disconnected identity literature (Schwartz, 2005). Indeed, despite Erikson’s emphasis on identity integration, relatively few have examined how youth’s multiple identities may be inter-related. The move away from focusing on identity integration is due, in part, to vocal opposition from identity theorists from post-modern and social constructivist orientations (e.g., Gergen & Gergen, 1986; Kraus, 2007; Rattansi & Phoenix, 1997; Sampson 1985). From these perspectives, an integrated identity is not necessarily a desirable or an adaptive identity to maintain. Indeed, fractured identities have been celebrated through exuberant terms such as the “thrill of dissonance” (Schachter, 2004) and “joyful diffusion” (Kraus, 2007). From a post-modern perspective, students—even those who feel ethnicity is important to who they are—will not necessarily feel as though their ethnic identities need to be expressed in the context of their educational pursuits, such as their choice of major. Thus, there is some debate as to what the optimal identity configuration is in contemporary society. Unfortunately, there is a dearth of empirical evidence to convincingly support either perspective, and consequently the debate continues.

Recently, Schachter (2004) has suggested moving beyond the binary of integrated/fractured identities and has advocated for more individual-level accounts of identity development by highlighting the different identity configurations that individuals adopt. Identity configurations refer to the process by which individuals reconcile their multiple identifications into a single entity. Critical to this perspective, Schachter (2004) notes, “a person may make use of these processes differentially, and this may lead to different types of identity configurations with different patterns of structure and different styles of commitment” (p. 171). Extending this point to the debate between Eriksonian/modern identity and post-modern identity, he suggests that these two different identity configurations are both feasible. On the basis of their social context and life demands, some individuals may adopt an integrated configuration, whereas others may adopt a post-modern identity. The idea that theories of identity may be differentially applicable at the individual level has also been proposed for ethnic identity.

1 Asian Americans, as a group, are not considered underrepresented in undergraduate and graduate education. However, this is largely the case for Chinese- and Japanese-heritage students and not for students from other Asian backgrounds, such as those from Southeast Asia (Song & Glick, 2004). Additionally, Asian Americans’ representation in science and engineering majors does not necessarily preclude the possibility that they may also be drawn to majors that can contribute to their developing ethnic identities.
research (e.g., Syed, Azmitia, & Phinney, 2007). An important methodological implication of this approach is the need for qualitative case-based analysis. Case-based analysis is a bottom-up approach that is sensitive to the unique identity configurations that may be adaptive for a given individual within a given context. These cases can then be clustered to reflect broad patterns of identity development. Accordingly, the present study focuses on case-based patterns of how college students negotiate their academic and ethnic identities.

The Present Study

The purpose of the present study was to investigate the development of college students’ major selection and whether and how this choice is associated with their developing ethnic identities. To address this question, I analyzed longitudinal interviews of diverse college students spanning their college career. This methodological approach allowed for an analysis of decisions made relatively close to when they occurred, and therefore were less affected by students’ reconstructions of their past decision making (Galotti, 1999).

I hypothesized five general patterns of change over time in the relation between majors and ethnic identities. These five patterns were informed by the three most pertinent theoretical perspectives of how individuals manage their identities: social identity theory, Eriksonian theory, and post-modernism. These are not considered to be an exhaustive list of all possible patterns that could be informed by the theories, but rather are the most relevant in light of the goals of the study. The five hypothesized patterns were as follows:

1. Some students with low ethnic centrality upon entering college will remain at low levels throughout college. Consistent with social identity theory, these students will more likely be White students than ethnic minority students. Furthermore, students showing this pattern will be more likely to be majoring in science or engineering versus other majors.

2. Upon entering college, some students with low ethnic centrality will gain greater awareness of their ethnicities through their major. On the basis of social identity theory, these students will likely come from ethnic minority backgrounds. Additionally, these students will be majoring in the humanities and social sciences rather than science and engineering.

3. Students with high ethnic centrality upon entering college will be more likely to choose majors in the humanities or social sciences, which will then lead to a stronger ethnic identity. These students will be primarily from ethnic minority backgrounds. This prediction is based on Eriksonian ideas of identity integration, which suggest that students will seek congruence among their multiple important identities.

4. Some students will switch their majors to achieve greater coherence between their major and ethnic identities. The nature of this switch will be from science or engineering to humanities or social sciences, and will most likely occur among ethnic minority students. This prediction is based on Phinney’s (1990) confluence of Erikson’s theory of identity integration and social identity theory. More specifically, students entering a new college context in which they are the minority will become more aware of their ethnicities, and this awareness will lead to a desire for greater integration of their important identities.

5. Some students will find effective ways of compartmentalizing their identities so as to reduce the need to integrate their ethnicities with their majors, such as finding belongingness in ethnicity-related campus organizations, through relationships with family and friends, or other “safe spaces” for ethnicity-related concerns. These students will likely be ethnic minorities in science or engineering. This prediction is based on post-modern theories of identity that suggest that identity integration is not necessary and that fractured or compartmentalized identities should be considered adaptive.

Method

Participants. The participants were 90 college students from ethnically diverse backgrounds (63% women; 87% born in the United States; mean age at Time 1 = 18.00 years, SD = 0.41). Participants’ ethnic background was determined through their responses to the open-ended interview question, “When someone asks ‘what are you?’ or ‘where are you from?’ meaning, ‘what is your cultural or ethnic background?’ What do you say?” This question was included in the winter interview of the students’ first year in college, and information provided at that time was never contradicted by statements made at later time points (e.g., identifying as monoethnic at one time but mixed ethnic at a later time). Aligned with the goals of the study, responses were categorized into the following: 36 students of color (includes 13 Asian American, 11 Latino, six Filipino, and six Black), 30 White (includes seven self-identified as Jewish), and 24 mixed ethnic (includes nine Asian American/White, nine Latino/White, three Filipino/White, two Native American/White, and one Black/White). Socioeconomic status of the participants was assessed using the Hollingshead (1957) two-factor index, which combines parent occupational status and education to classify individuals into one of five social classes. The index was reverse scored so that a higher value indicated a higher social class. The distribution of the five social classes was as follows: 1 = 9%, 2 = 14%, 3 = 33%, 4 = 30%, and 5 = 14% (M = 3.27, SD = 1.13).

The university from which the sample was drawn is composed primarily of White students and is located in a primarily middle- to upper-middle-class White community. In 2002, the year that the participants in the present study entered college, 60% of the incoming students were White, 15% Latino, 15% Asian American, 4% Filipino, 3% Black, 1% Native American, and 2% other ethnicities (the university does not track mixed-ethnic students). Data were collected at five time points: fall, winter, and spring quarters of the students’ first year of college; spring of their sophomore year; and fall of their senior year. The majority of participants (69%) had complete data at all five time points. Sophomore data were missing for 26 participants, and winter data were missing for two participants.

Ethnic minority participants were recruited from a list of all ethnic minority first-year students admitted to the university provided by the office of Educational Opportunity Programs. Potential participants were randomly selected and invited to participate in a longitudinal study of the transition to college in a letter sent prior
to their enrolling in the university. Approximately 50% of the students who were sent a letter returned a postcard indicating their willingness to participate. This response rate did not vary substantially by ethnicity. Additional ethnic minority participants and the White sample were recruited through flyers posted on campus.

Measures. The interview protocol was semistructured, containing questions that addressed the participants’ (a) aspirations and motivations for going to college; (b) academic routines and strategies; (c) views of the resources and challenges afforded by their relationships with family, friends (home community and university), and university personnel; (d) perceptions of fit with and engagement in the university experience (including experiences of isolation and discrimination); and (e) their goals and plans for the future. Although the entirety of the participants’ interviews was examined, the present study focused on specific questions about the participants’ majors, academic experiences, and identities. Questions include what majors they were considering prior to officially declaring their major; what major they chose; the benefits and challenges of studying the major; and whether they felt their ethnicity, gender, or social class played a role in their major selection, future career goals, or college experiences in general.

Procedure. The participants completed a survey and interview individually during the first 5 weeks of each quarter (fall, winter, spring) of their first year of college, during the spring quarter of their sophomore year, and during the fall quarter of their senior year. Only data from the interview, which was conducted following the completion of the survey, are included in the present study. Undergraduate students, graduate students, and faculty served as interviewers, with attempts made to match the gender and ethnicity of interviewers and interviewees, as well as to provide continuity in the interviewer across time.

Interview coding. The coding categories were generated and refined through close examination of a subset of cases, each including all five time points, that were discussed over a period of several months. The discussion group was composed of a graduate student, a faculty member, and three undergraduate students. The group was diverse with respect to ethnicity, gender, social class, and age so as to provide varying perspectives that may be informed by differing social locations (Taylor, Gilligan, & Sullivan, 1996). The discussion centered on the participants’ pathways to and through their academic major(s), how they viewed the connection between their majors and their social identities (i.e., ethnicity, gender, and social class), and how they viewed their social identities more broadly, with particular attention to patterns of change over time in the aforementioned areas. Once the group began to reach consensus on patterns in the data, a preliminary coding manual was prepared, which was then applied to new interviews and refined through an iterative process until the group agreed on the adequacy of the coding manual. After finalizing the coding manual, All interviews for the categories described below were coded, with 20% of cases coded by a trained reliability coder. Reliability between coders was assessed via the intraclass correlation coefficient (ICC; Shrout & Fleiss, 1979). The coding categories used were as follows:

**Major status.** This coding category assessed the degree of the student’s commitment to an academic major (ICC = .95). The four categories were (a) none, indicating that students had no idea what they wanted to major in and were not actively considering any options, (b) undeclared and undecided, used for students who had not yet declared a major but were considering at least one option, (c) undeclared but committed, indicated that the students had chosen a major and showed clear intent to declare that major at some point, but had not yet done so, and (d) declared, used for those students who have actually declared their major or indicated that it was imminent (e.g., needed one more signatures or to submit forms).

**Ethnic awareness.** In addition to determining the relevance of ethnicity for the participants’ majors and/or careers, I also wanted to get a sense of how relevant these identities were for their experiences in general. This relevance was operationalized as the degree of awareness that students’ showed regarding how their ethnic identities have affected their decisions (e.g., “No [ethnicity doesn’t matter]. But I thought it’s kinda funny that there are not that many African Americans in the biology field.”); (c) direct connection, applied when the students made any direct, explicit statement about how their ethnic identities were relevant for their major or future career goals.

**Results**

This section contains three primary subsections. The first subsection reports on quantitative analyses describing change over time in the variables that we coded for. The second subsection contains individual-level analyses on the types of majors that students selected. The purpose of these first two sections is to provide a general developmental picture that will help contextualize the third subsection, which reports on the qualitative analyses of change over time in the relation between students’ majors and ethnic identities.

**Quantitative analyses: Developmental trends in major and ethnic identities.**

**Analysis plan.** Multilevel modeling (Raudenbush & Bryk, 2002; Singer & Willet, 2003) using full-information maximum
likelihood estimation in SAS PROC MIXED was used to assess change over time in students’ declaration of their major, the degree to which they viewed connections between their major and their ethnicity, and their awareness of their ethnicity. Time was measured in months to enhance precision (Singer & Willet, 2003) and scaled so that a value of 0 corresponded to when the participants entered college. Because there were five measurement occasions, I was able to assess whether linear or quadratic models were better suited to the data. Model selection was aided by three fit statistics (Singer & Willet, 2003): the deviance statistic (i.e., likelihood ratio), the Akaike information criterion, and the Bayesian information criterion. Lower values indicate better model fit for all models tested can be found in Table 1.

**Major status.** The unconditional linear growth model indicated that there was significant change over time in students’ declaration of their majors. However, the likelihood ratio test indicated that the quadratic model was a much better fit than the linear model, $\chi^2(1, N = 90) = 19.28, p < .001$. This quadratic model describes a sharp increase toward commitment to a major through the first year of college and into the beginning of the sophomore year, followed by a leveling off once the students have actually declared a major (see Figure 1). More specifically, the value for the intercept ($b_0 = 1.13$) indicates that, on average, students entered college with some ideas about what they wanted to major in but had not yet committed to one. This rate of decision making is consistent with the demands of the university, which expects students to settle on a major by sophomore year in order to graduate in 4 years.

**Ethnicity as related to major/career.** The linear model indicated significant change over time, but the quadratic model was a better fit, $\chi^2(1, N = 90) = 3.71, p = .05$. However, opposite of the major declaration model, the ethnicity connection model indicated relatively flat growth in the first year of college, followed by more rapid growth in the later years of college (see Figure 2).

**Ethnic awareness.** The quadratic model was not a better fit over the linear model, $\chi^2(1, N = 90) = 1.52, p = .22$, and thus the linear model was retained. This model describes steady growth over the college years (see Figure 3).

**Selection of major: Change from first year to senior year.** For purposes of analysis, majors were classified into the five divisions represented at the university: arts, humanities, social sciences, engineering, and physical and biological sciences (see Table 2). In addition to these five, some students did not name any major in the fall quarter of their first year, or named multiple majors that were in different divisions. Because the specific comparison of interest in this study was between majors in the humanities/social sciences versus engineering/sciences, these divisions were combined in the following analyses. The Arts division was retained as a separate group from the other two, as were the students who did not specify a major (the “none” group). Those students who named multiple majors within the divisions that have been combined (e.g., humanities and social sciences) were classified into that group. If the multiple majors were in divisions not combined (e.g., humanities and engineering), then they were coded as “mixed divisions.” Thus, in the first year there were five

![Figure 1. Change in degree of major declaration over time (0 = no major, 1 = undeclared and uncommitted, 2 = undeclared but committed, 3 = declared).](image)

### Table 1

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<td>Quadratic</td>
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*Note. MLM = multilevel modeling; AIC = Akaike information criterion; BIC = Bayesian information criterion; connect. = connection; aware. = awareness.

* $p < .05$
possible classifications based on the majors that students named. In the senior year, however, there were only four possible classifications, as the “none” category was no longer possible.

In the fall quarter of the first year, the majority of students were intending to major in the humanities or social sciences (48%). This was followed by engineering/sciences (18%), none (16%), art (10%), and mixed divisions (8%). In the senior year, this imbalance toward humanities/social sciences was even more pronounced: 70% of students were majoring in one of these two divisions. The next most frequent was engineering/science (11%), then art (10%), and then mixed divisions (8%). Although greatly unbalanced, the university as a whole has a high percentage of students majoring in humanities and social sciences, with 60% of students in one of these majors, compared with 27% engineering/science and 13% art. A one-way chi-square indicated that the sample was representative of the university in the first year, $\chi^2(2, N = 90) = 0.43, p = .81$, but by the senior year there was a higher number of humanities/social sciences majors and a lower number of engineering/science majors than would be expected, $\chi^2(2, N = 90) = 12.10, p = .002$.

The next step was to conduct an analysis of the stability and change in students’ majors. For these analyses, I used the collapsed division categories described above, which comprised five categories in the first year and three categories in the senior year (see Table 3). For art and engineering/sciences, about half the students who named these majors at Time 1 remained with these majors at Time 2 (44%; $n = 4$ and 56%; $n = 9$, respectively). In contrast, 100% ($n = 43$) of students who named humanities/social sciences majors at Time 1 persisted in these majors at Time 2. Of the 15 students who did not name a major at Time 1, the vast majority ended up in humanities/social sciences (73%). No student who named art or humanities/social sciences at Time 1—and only two who did not name a major—ended up in an engineering/sciences major.

The change that I was particularly interested in was between humanities/social sciences and engineering/sciences. As can be seen in Table 3 (shaded portion), there was movement over time from engineering/sciences to humanities/social science, but not vice versa. The next question, then, was whether movement away from engineering/sciences was more common for ethnic minority students than for White students. Of the seven students who switched, two were Black, two Latino, and three were of mixed race/ethnicity (two Latino/White and one Black/White)—no White student switched from engineering/sciences to humanities/social sciences. In contrast, of the nine students who remained in engineering/sciences, four were White, two were Asian, and three were of mixed race/ethnicity (two Latino/White, one Filipino/White)—no students from full Latino or Black backgrounds. These descriptive findings are supported by quantitative analysis using the likelihood ratio chi-square statistic, which is appropriate for small-sample contingency tables. The significant chi-square indicated that students of color were more likely to switch into humanities/social science, White students were more likely to remain in engineering/sciences, and mixed-ethnic students showed no pattern, $\chi^2(2, N = 16) = 5.97, p = .05, \nu = .51$.

**Qualitative findings: Five ethnic identity-major pathways.** The qualitative analyses presented here focus on the five hypothesized configurations of how students manage their major and ethnic identities as they move through college. Each section below describes the nature of the pattern followed by an illustrative case example.

**Low awareness.** The most frequently occurring pattern in the sample included students who showed persistently low awareness of their ethnicities and little connection between their major and ethnicities (37%; $n = 34$). This high number is due, in part, to the fact that more than half the White students in the sample exhibited...
this pattern. However, some students of color and mixed-ethnic students were also classified into this group. Although there were students from all majors in this category, nine of the 12 engineering/science majors demonstrated low awareness. Thus, the hypotheses, based on social identity theory, that this group would contain more students from White backgrounds and engineering/science majors were supported.

Upon entering college, the students who exhibited the low-awareness pattern did not view ethnicity as a central component of who they were. Consistent with this low ethnic centrality, they generally adopted a color-blind view of ethnicity, believing that ethnicity should not be a factor when understanding people’s experiences. Frequent comments to this effect included, “I don’t see why it should matter” and “Everyone’s equal. It just doesn’t play a role.” Although these were attitudes held by many students upon entering college, the low-awareness group was characterized by generally maintaining their views throughout college.

The low-awareness pattern can be seen in the case of Ryan, a self-identified Irish/Caucasian male from a middle-class background. Ryan, who was initially majoring in computer engineering, had very little to say about ethnicity in his first year of college. When asked about whether his ethnicity was related to his choice of major, he replied that it was not because, “anyone can go into computer science.” He held similar views at the end of his first year, “I see a bunch of ethnicities in all of my classes. So, I just think it’s equal basically. Opportunity’s the same.”

Ryan switched his major a few times—from computer engineering to electrical engineering and ultimately to information systems management—but stayed within the school of engineering. His low-ethnic awareness suggests that his coursework did not offer many opportunities to reflect on his ethnicity, nor did he react to ethnicity-related experiences he may have had in other classes or in the larger university context. In his senior year interview, he demonstrated a loose connection to his Irish background that was often prompted socially by his very Irish-sounding name, particularly in the context of drinking alcohol.

When asked directly about intersections among ethnicity, gender, and social class, Ryan revealed a tendency to minimize ethnicity in favor of gender, which he viewed as more socially relevant:

I think recently the U.S. has become the land of opportunity, and it usually has the highest social class, right, and like everyone can shine here if you put your mind to it, but I think where there’s a quirk I think is in gender, I think that sometimes women are underprivileged and therefore that may affect what kind of social class they fall under, depending on what their expertise is. I think that for the most part, gender is scrutinized a little more than ethnicity nowadays, for the most part.

Thus, although he recognized gender disparities in opportunities and expectations, his view of ethnicity remained one of equal opportunity through hard work and determination.

Consciousness-raised. A large proportion of students (29%; n = 26) displayed change over time that typified the consciousness-raising experiences often discussed in the literature (e.g., French et al., 2000; Hurtado, 2003). As hypothesized, and consistent with social identity theory, this group was predominantly non-White, with a particularly high percentage of mixed-ethnic students (47% of all mixed-ethnic students). Also as hypothesized, all of these students were majoring in arts or humanities/social sciences.

At the beginning of college, interviews of the students showing the consciousness-raised pattern did not read any differently from the low-awareness pattern. Indeed, these students were just as likely as the other students to view ethnicity as not important or relevant to their lives, both personally and socially. However, as they were completing their sophomore year, the students’ understanding of ethnicity began to diverge from the low-awareness pattern. This divergence can be attributed to experiences the students had in classes that “opened their eyes” to new understandings about their own identities as well as the identities of others. Thus, students showing this pattern demonstrated a gradual emergence of integrating their ethnic and academic identities—at least to the extent that they did not see them in conflict.

Mixed-ethnic students in this group frequently demonstrated a shift over time from emphasizing their White identity to focusing more on their ethnic minority identity. This phenomenon is well illustrated by the case of Mary, who was a mixed-ethnic female from an upper-class background. In the fall quarter of her first year in college, not only did she not have a major in mind, but she also felt like she did not have an ethnicity due to her mixed background. In the following quarter, when asked how she describes her ethnic background to others, she stated, “Usually, I’m just like, ‘I’m an American.’ Because I don’t feel like I’m Filipino or English.” In the spring, she cited her Latin American and Latino Studies (LALS) and Sociology classes as providing new perspectives on the world and potential tools for helping others, leading her to double major in LALS and Community Studies. However, in response to questions about whether and how she identifies with her ethnicity, she said:

I don’t feel like I’m the average Filipino, I’m only half, and I was raised pretty much a White kid. So, I don’t know, I would feel weird going somewhere where there were only Filipinos ‘cause the only place I’ve seen, like, that, is my family, and it would be weird.

Thus, the new perspectives that she was exposed to had not yet translated into a greater personal awareness of her ethnicities.

Figure 3. Change over time in students’ ethnic awareness (0 = none, 1 = a little bit, 2 = a fair amount, 3 = a lot).

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6 All names have been changed to protect anonymity.
Mary’s sophomore interview marked a major change in how she spoke about ethnicity. She explicitly noted how her classes were contributing to her identity work, including a class called Filipino Historical Dialogues. Through this class, she learned about the diversity within Filipino culture, which finally allowed her to see how she fit within that group:

It gave me a broader perspective on what Filipinos are, ‘cause there’s different people in there and different kinds of Filipino and they all speak different languages and just like reading about . . . like learning about how the idea of Filipino is totally constructed and that kind of made me feel better ‘cause I was like, well . . . it made me realize that, like, I really am Filipino, and my family really is really Filipino, and I guess I never realized that.

Her involvement with her Filipino ethnicity continued to increase into her senior year. At that time, she identified the class she took in her sophomore year as a major turning point for her identity:

I took the class, Filipino Historical Dialogues, which is the class that I ended up teaching the next year, but it, like, changed my life because I’ve talked to so many people, and they all felt just as confused as I did, and they didn’t know if they counted because they were half, and like it was just, I was like wow, there’s people that feel the same way as me, weird. I thought I was the only one.

In summary, through coursework, both directly related to her major and otherwise, Mary not only became more aware of her ethnicities but also came to understand herself as being mixed-ethnic. She perceived her position as mixed-ethnic as an asset in her education, “I just think that puts me in a really interesting place, and I think that I can see a lot of things that other people might not.”

**High awareness.** A smaller subset of students (16%; n = 15) demonstrated high awareness of their ethnicities upon entering college. An interesting feature of this group is that they frequently tied their ethnic identities directly to their choice of major, demonstrating the integration of these identities that would be expected on the basis of Erikson’s (1968) theory. These students were predominantly students of color and from mixed ethnicities, and came exclusively from arts or humanities/social sciences majors. Interestingly, the two White students demonstrating this pattern identified themselves as Jewish, which was more meaningful to them than their White identity.

<p>| Table 2 |</p>
<table>
<thead>
<tr>
<th>Named Majors Separated by Academic Division</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts</strong></td>
</tr>
<tr>
<td>Art</td>
</tr>
<tr>
<td>Film and Digital Media</td>
</tr>
<tr>
<td>Music</td>
</tr>
<tr>
<td>Theatre Arts</td>
</tr>
<tr>
<td><strong>Engineering</strong></td>
</tr>
<tr>
<td>Computer Engineering</td>
</tr>
<tr>
<td>Computer Science</td>
</tr>
<tr>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>Information Systems Management</td>
</tr>
<tr>
<td><strong>Physical and Biological Sciences</strong></td>
</tr>
<tr>
<td>Biochemistry and Molecular Biology</td>
</tr>
<tr>
<td>Biological Sciences</td>
</tr>
<tr>
<td>Chemistry</td>
</tr>
<tr>
<td>Ecology and Evolution</td>
</tr>
<tr>
<td>Marine Biology</td>
</tr>
<tr>
<td>Molecular, Cell, &amp; Developmental Biology</td>
</tr>
<tr>
<td><strong>Humanities</strong></td>
</tr>
<tr>
<td>American Studies</td>
</tr>
<tr>
<td>Feminist Studies</td>
</tr>
<tr>
<td>History</td>
</tr>
<tr>
<td>Language Studies</td>
</tr>
<tr>
<td>Philosophy</td>
</tr>
<tr>
<td>Social Sciences</td>
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<tr>
<td>Anthropology</td>
</tr>
<tr>
<td>Business Management Economics</td>
</tr>
<tr>
<td>Community Studies</td>
</tr>
<tr>
<td>Economics</td>
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<tr>
<td>Environmental Studies</td>
</tr>
<tr>
<td>Global Economics</td>
</tr>
<tr>
<td>Latin American and Latino Studies</td>
</tr>
<tr>
<td>Legal Studies</td>
</tr>
<tr>
<td>Politics</td>
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<tr>
<td>Psychology</td>
</tr>
<tr>
<td>Sociology</td>
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</tbody>
</table>

**Note.** This list contains majors listed at either time point.

<p>| Table 3 |</p>
<table>
<thead>
<tr>
<th>Distribution of Majors by Time Point, Highlighting Shifts Between Humanities/Social Sciences and Engineering/Science</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time 2 major</strong></td>
</tr>
<tr>
<td><strong>Time 1 major</strong></td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Art</td>
</tr>
<tr>
<td>Humanities or Social Sciences</td>
</tr>
<tr>
<td>Engineering or Science</td>
</tr>
<tr>
<td>Otherwise mixed divisions</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
The forms of connection between their strong ethnic identities and their choice of major varied, but most displayed a social justice orientation, in which they desired to use their education and acquired knowledge to help alleviate societal problems. For some, the target of their beneficence was a large, depersonalized group such as society, underprivileged students, or victims of domestic violence. These students tended to view themselves as activists and organizers, and were often involved in many organizing activities. In contrast, others showed a more personal orientation and were motivated to be successful in order to help their families or home communities. These students exemplified the concept of “looking up and giving back” (Cooper, Domínguez, & Rosas, 2005), referring to the phenomenon of students striving for success and societal advancement to strengthen ties with the family, not to distance themselves from them.

The high-awareness pattern was clearly demonstrated by Andrea, a Japanese-heritage female from an upper-middle-class background. From her first interview in the fall, Andrea demonstrated her high ethnic awareness and active involvement with ethnicity-related activities. The sources of this awareness were many, including her parents, sister, and an Asian American studies class that she took in high school. Although she considered numerous majors within the social sciences, she ultimately settled on American Studies in her sophomore year because she viewed it as the most progressive, liberal, and ethnically diverse major on campus. She believed that this major would contribute to her career goal of becoming a teacher to empower disenfranchised youth:

I want to go into teaching because I want to provide students with like, a strong sense of identity and just teach them—empower them—teach them that they can, like, really do things and affect the world, and how education is really important. And especially for people of color, because they’re so disadvantaged in the education system now.

Her high awareness of ethnicity was not initially accompanied by a high awareness of gender and social class, but over time she became more conscious of the interplay among these identities. When asked about how her gender plays a role in her college experience she said:

I think it’s kind of a combination of being Asian and also being a female. It’s like this stereotype of being really shy, and docile, and very accepting – won’t stand up for themselves, doesn’t really have a voice. So I think it’s suppressing when people see me in a leadership role, or speaking out about something I care about.

Indeed, a feature of the high-awareness group is that they were the most likely to demonstrate a complex understanding of how their experiences were contoured by the intersections of ethnicity, gender, and social class.

As indicated in the above quote, Andrea began to take on leadership roles within the numerous social justice- and ethnicity-oriented organizations that she was involved with. She cast her leadership in terms of personal responsibility:

I feel like I have a responsibility as an Asian American and a person of color to use my voice and stand up for what I think is right. So, I try to do that in classes, where I’m not going to just sit by and let people say things that I don’t agree with, or misconstrue history.

This quote highlights another important point about Andrea and many others showing the high-awareness pattern: that their identity work was not seen as a purely individual project, but rather a component of their burgeoning identities was that they would use their knowledge to help others. For Andrea, this was manifest in her involvement with college outreach for underprivileged high school students, creation of a “safe space” for women of color, and desire to become a high school teacher.

Integrating. There was a small group of students (10%; n = 9) for whom their ethnic identities played a role in their change of major. A definitional characteristic of this pattern was that these students changed their major. Whereas the quantitative analyses of change in major over time showed that these changes were associated with ethnicity, analyses of the qualitative data help illustrate how the changes were actually associated with ethnic identity. That is, their developing ethnic centrality and awareness about their ethnic background, and not their ethnicity per se, is what contributed to their change in major. In this way, this group is also reflective of Eriksonian identity integration. All but two of these participants were students of color or from mixed-ethnic backgrounds, with none switching into engineering/science majors. In fact, as hypothesized, all but one of these students switched into humanities/social sciences.

These students varied in their level of ethnic awareness upon entering college, although most demonstrated low awareness. Those students in the integrating group who showed high awareness at the beginning of college could be distinguished from the high-awareness group in that they did not initially espouse connections between their ethnicities and the majors they were considering. However, by the end of college they all had made these connections. Thus, students in the integrating group started at different points in terms of their ethnic awareness but shared the common experience of becoming aware of how their ethnicities and majors could or should be integrated. Moreover, a key difference between the integrating and consciousness-raised patterns is that the former changed their major in response to identity demands, whereas the latter became aware of their ethnicities in response to experiences associated with their major.

An important point regarding this group is that the decision to change their major was not contingent upon a singular “turning point” event, but rather, tended to be a slow process of accumulated experiences that nudged them toward a new orientation. This process can be seen clearly in the case of Graciela, a Mexican-heritage female from a low-income background who was the first in her family to attend college. Graciela came into college committed to majoring in biology to fulfill her dream of becoming a pediatrician, a dream she had held since childhood. At this time she did not perceive ethnic identity as relevant for her experiences, both academically and more broadly. However, across her first year of college, she gradually became more aware of her ethnicity. The spark for this awareness began in a sociology class she took in the fall quarter. In that class, she befriended another student—also Chicana—who convinced her to take Introduction to Latin American and Latino Studies (LALS) in the winter quarter. She so enjoyed the readings in that class that in the spring, she enrolled in Latinos in the U.S., again with her friend. At the end of her first year, she attributed her deeper connection with her ethnicity to her experiences in classes: “I’ve learned so much about, like, where I came from—it just makes me more aware of who I am, I guess.” Her shift toward greater awareness of her ethnicity was accompa-
nied by an increasingly Mexican-heritage peer group, which she viewed as strange due to her multiethnic peer group in high school.

Come sophomore year, Graciela was majoring in Health Sciences (a branch of biology) but had added an LALS minor. Although she continued to pursue her dream of becoming a pediatrician, the dream was modified to incorporate her cultural background:

Cause I want to be a doctor in California, and most of the people in California, especially L.A., are minorities, and most minorities are Latinos right now. So I decided if I minor in LALS, I’m a Latina, but we all have different stories, and therefore I’ll be able to better understand my patients and that way help them when they come to me with problems.

Despite this position, she frequently downplayed the importance of her ethnicity both for her major/career and for her life in general. When asked about whether her ethnicity played a role in her major or future plans, she stated,

Not really. I don’t really think I’m minoring in LALS because I’m Latina, I’m minoring in it to just understand other people and better help them. I’ve never felt my ethnicity has ever played a role in anything I’ve done.

Nevertheless, she continued to increase her awareness through classes, signaled in part by her switch from using the ethnic label “Hispanic,” which is viewed unfavorably in this university context, to the more politically correct “Latina.”

In her senior year, Graciela’s previous minor, LALS, had become her major. Despite this change, she was completing an emphasis in Latino health and was still committed to becoming a pediatrician. Part of the reason for this switch was that she failed her biology series, thus raising questions about her ability to succeed in that major. However, she did very well in other science classes such as microbiology, biochemistry, and organic chemistry, which is widely considered the most challenging course at the university, and therefore ability cannot adequately account for the switch. For Graciela, there were stark differences in climate between the majors:

In LALS, [classes] are a lot smaller, they’re a lot more personal. You get to know the people in your class. I feel that’s a very good. I mean, you’re sort of mixing your education with your social life. . . that’s the word. . . I don’t know. You get to know the people while learning. Whereas, like, biology classes, they’re so much larger, they’re so horrible. You don’t get enough support. Like, they’re trying to kick you out of the major, I feel.

In summary, Graciela demonstrated a slow progression of moving toward greater integration of ethnicity and major that was facilitated by opportunities in her environment (e.g., classes) and motivated by key agents (e.g., peers). She believed that she was able to carve out an alternative path to eventually achieve her same career goal of becoming a pediatrician. Whether or not her dreams were fulfilled is unknown, but her move out of the biology major and into LALS was certainly a hindrance.

Compartmentalized. There was a small group of students (7%; n = 6) who reflected a post-modernist conception of fractured, disintegrated, or compartmentalized identities. This group included four students of color, one mixed-ethnic student, and one White student, and was evenly split between engineering/science and humanities/social sciences. These students demonstrated high awareness of their ethnicity, but this awareness was completely removed and disassociated from their major.

The forms of compartmentalized identities among the students were not uniform, but they shared the common experience of leading “parallel lives” in which the ethnicity domain was almost completely separated from the academic domain. Students in this pattern shared some similarities with the integrating group, but rather than changing their major to facilitate identity integration, they adopted different strategies to manage their multiple identities. As post-modern theorists suggest, this group did not explicitly demonstrate conflict, tension, or distress regarding their compartmentalized identities. Rather, they appeared to have adopted a strategy for managing their multiple identities that served them quite well.

Nicole was an African-heritage female from a working-class background. She came into college wanting to major in Business to become a fashion designer or own a company. In her first year of college, she noted the lack of diversity at the university, in particular the dearth of African American students. Despite these observations, she did not feel that she was “being held back” or discriminated against because of her ethnicity. However, later in her interview, she expressed the value of the African/Black Student Alliance (ABSA), “It’s given me a sense of community. I feel that I belong here. I don’t feel like an outcast or anything.”

In the spring quarter of her first year, Nicole reported taking some classes outside of her major that provided opportunities for learning about her ethnic background, “I’m taking classes that have to do with my ethnicity, and it’s really interesting. We’re learning about slavery, and it’s a very powerful stuff. I like it. I think it’s easier for me to focus on something I’m interested in.” In contrast to the integrating pattern, in which such experience might have been a first step toward changing her major, Nicole remained a business major and therefore viewed these classes as affording her ethnic identity development but did not feel the need to switch majors to continue down that path.

Her ethnic awareness continued to increase throughout college, as she became more critical of the underrepresentation of African Americans that she noticed at the beginning of college. Through involvement in ABSA and discussions with friends, she became more conscious of the opportunity structure and her own privilege as an African American college student. Notably, this awareness did not arise through her classes, but was more associated with her involvement with numerous organizations:

Just being a part of organizations, it’s like you have to make these connections. And then just working in the Ethnic Resource Center is a social connection because you meet all these different people from ethnic backgrounds, and then you find a better sense of your own culture by working there, too.

Nicole remained a business major, and was considering a career as a fraud examiner for the IRS. The importance of both her ethnic

7 Although there was no explicit evidence of conflict, the possibility remains that some of the participants were experiencing conflicts that were not immediately apparent. Furthermore, the assessment of the lack of conflict only pertains to the identity domains under consideration, ethnicity and major, and is not meant to apply to their overall psychological state.
and academic identities is further reflected in the fact that she helped form a campus chapter of the National Association for Black Accountants, thereby creating a third space where her identities could converge. Despite her seemingly strong commitment to a business-oriented career, in her senior interview Nicole hinted strongly at changing her career orientation:

I came in as a Business major thinking, “I’m gonna be an accountant. I’m gonna make lots of money.” But I felt like it was more important to me to make differences and impact my community. So I want to go into social work and urban planning and start non-profits by just promoting higher education, where it’s not really talked about or people don’t really have incentive to go.

Thus, although throughout her college years Nicole’s ethnic and academic identities were largely independent, toward the end of her college career, she began to show evidence of potential convergence. This case highlights an important point: that finishing college may signal the end of an aspect of individuals’ lives but does not mark the end of the identity development process.

**Summary of qualitative analyses.** The qualitative analyses of the five configurations demonstrate that there are subgroups that correspond to the major theoretical perspectives on how students manage their multiple identities. It is important to keep in mind that these configurations are descriptive of longitudinal patterns—not momentary snapshots of individuals’ identities. Students who showed different longitudinal patterns may look similar at any given moment in time, but they look very different when considering how they weave their multiple identities over time. In particular, most students did not look very different at the beginning of college, in that few were highly aware of their ethnicities and how they might be associated with their academic experiences. It was not until the end of the first year or the sophomore year that these multiple pathways really began to diverge.

**Discussion**

The purpose of the present study was to investigate college students’ major selection and whether and how this choice was associated with their developing ethnic identities. I used a multilevel analytic procedure that allowed for an understanding of general trends of development along with subgroups of change over time. In general, the findings support the contention that college students’ majors are important identity-related domains that have implications for their concurrently developing ethnic identities.

**The development of ethnic identity awareness in college.** The multilevel modeling analyses of change over time in students’ major, the connections made between their major and ethnic identities, and their awareness of their ethnic identities more broadly were valuable for describing the landscape of the college identity experience. As Erikson (1968) noted long ago, and many are again beginning to recognize (e.g., Arnett, 2000; Côté, 1996; Cross & Cross, 2008), the identity development process is clearly continuing beyond the high school years. Although students’ ethnic awareness increased steadily, connections made between their ethnicity and major were relatively flat until the end of their sophomore year. This was about the same time they were making firm commitments to a major so as to graduate in 4 years. Taken together, the findings provide some support for the idea that identities generally develop individually and do not begin to blend together until a sufficient level of meaning has been achieved (Azmitia et al., 2008; Erikson, 1968). This assertion was not explicitly tested in the present study, but it is an important area for future research to explore. Another useful direction for future research is to determine the causes of the observed changes, with particular attention to the transition experience and peer interactions. For the time being, however, these findings provide a crucial backdrop for understanding the larger goal of this study, namely, whether and how awareness of ethnic identities are associated with student’s choice of college major.

**Choosing a major: More than one path, more than one theory.** The patterns that emerged when mapping change over time in students’ choice of major provided evidence for important forms of both stability and change. Without exception, students who intended to major in the humanities or social sciences when coming to college remained in one of these majors. In contrast, students interested in the arts or engineering/sciences remained in these majors only half the time. When taking a closer look at students who desired to major in engineering and the sciences, I found a pattern that is consistent with the hypotheses in the study and with a large body of past research: Ethnic minority students tended to switch their majors out of engineering/sciences, whereas White students who came to college intending to major in engineering/sciences did just that.

The qualitative analyses provided greater insight as to why the patterns observed might have occurred. The findings supported the hypothesis that there would be subgroups of longitudinal pathways that corresponded to the three primary relevant theories: social identity theory, Eriksonian identity theory, and post-modernism. Although not an exhaustive set of all possible configurations, these theoretically informed subgroups reflect the diverse identity configurations that students enact as they seek to integrate potentially conflicting identities.

Although representing different pathways, many of the subgroups shared similar experiences. Indeed, at particular points in their college careers any two subgroups might look very similar to one another. What distinguishes them is not their momentary identity work, but rather their pattern of identity work throughout their college careers. This fact highlights the importance and contributions of longitudinal research for understanding how individuals manage their multiple identities (Cooper, Domínguez, & Rosas, 2005; Hammack, 2006; Rutter, 1988). Comparisons of selected pathways help to illustrate this point.

At the beginning of college, the students from the high-awareness and integrating patterns looked very different. The high-awareness group was quite facile with talking about their ethnicities and how they inform their experiences. In contrast, the integrating group mostly demonstrated low awareness of their ethnicities. When it was present, their views were generally disconnected from other aspects of their lives, such as being couched in terms of understanding where they “come from” but not in terms of affecting their everyday experiences. However, by the end of college, there were not substantial differences between the two groups in terms of their ethnic awareness and connections they made between their ethnicities and majors. Thus, these two groups, which are representations of Erikson’s (1968) theory, seem to illustrate the same developmental processes occurring on different developmental timetables. That is, the process of becoming aware
of their ethnicities and integrating this awareness with their academics was similar, but the high-awareness group engaged in this identity work primarily before college, whereas the integrating group did not begin until college. Linking these different timetables to different contextual factors, such as diversity of hometown, peer relations, and family socialization (e.g., Ashmore et al., 2004; Eccles et al., 2003; Santos et al., 2007), is an important next step that would make a valuable contribution to identity theory.

Whereas the high-awareness and integrating patterns represent a form of developmental convergence—they started at different places but ended up similar—other patterns represent forms of developmental divergence. The compartmentalized pattern supports the notion that it is possible and adaptive for individuals to have disconnected identities (Gergen & Gergen, 1986; Rattansi & Phoenix, 1997), although few students exhibited this pattern. Again, the integrating pattern serves as an interesting contrast. The integrating group started out college similar to the compartmentalized group in that they did not view connections between their ethnicities and majors as important. Although the compartmentalized group sustained this view, the integrating group experienced the tensions that would be predicted from Eriksonian theory, as evident in their need to make an adjustment to their academic life by changing their major. Thus, although the compartmentalized pattern is a case of a sustained post-modern identity, the integrating pattern can be considered a case of an initially post-modern identity that could not be maintained. A crucial future direction for understanding differences between these two pathways is to continue to follow these students' development beyond college to discern whether the compartmentalized group maintains this configuration. For example, the case study of Nicole indicated that she was just starting to view connections between her ethnicity and major/career as she was finishing college. If these students do not maintain distinct identities post-college, then the compartmentalized group may also reflect the same developmental processes on different developmental timetables as the integrating group, in that their need for identity integration comes after college in response to new experiences and contexts. In this way, the "thrill of dissonance" (Schachter, 2004) experienced during college may only be temporary and challenged by subsequent contexts that necessitate integration.

Another form of developmental divergence is captured by the low-awareness and consciousness-raised groups. Students from these two groups looked virtually identical at the start of college but began to diverge in their second year. Which pathway the student took could be predicted by ethnicity and major: As hypothesized, White students majoring in science and engineering were most likely to remain low, whereas students of color and mixed-ethnic students majoring in art, social sciences, and humanities were more likely to have their consciousness raised. This contrast falls in line with social identity theory (Ashmore et al., 2004; Tajfel & Turner, 1986), namely that students in minority contexts will become more aware of their minority identities than will those in the majority. Mixed-ethnic students were particularly likely to be in the consciousness-raised group. Many of these students came to college never having thought much about their multiple ethnicities and were primarily White-identified, as they had never been questioned by peers and friends that they had known for many years. Upon entering college, these students not only began to learn more about their ethnicities in their classes but were also faced with the new experience of having their ethnicities questioned—and denied—by others (Townsend, Markus, & Bergsieker, 2009). Thus, many mixed-ethnic students became aware that they were considered by others as neither White nor a person of color and consequently adopted a "mixed" identity (Brown & Douglass, 1996).

Implications for theory: The importance of thinking longitudinally. The findings in this study suggest the need for greater connection between theories of identity development and the time period under investigation. Evidence for differing theories was available within the same pattern at different cross-sectional moments in students' college experiences. However, when considering the college years as a whole, the evidence shifted. For example, the integrating pattern would provide some support for post-modernism when looking at the first year of college only, but when looking across the college years, this pattern is a prime example of Eriksonian theory. The fact that the evidence would potentially shift again if this study were expanded to include high school or postcollege experiences underscores the need for lifespan developmental theories of identity if we are truly interested in how identities are created, discarded, revised, and recycled over time (Côté, 1996; Cross & Cross, 2008; Erikson, 1968; Josselson, 2009; McAdams, 2001). Although long-term longitudinal studies are difficult to implement, thinking longitudinally in short-term and cross-sectional studies may be helpful for advancing identity as a life-long task.

On a similar note, it is becoming clear that change in identity is a slow process. Despite terms such as trigger and encounter used in the ethnic identity literature (Cross, 1995; Phinney, 2003), and turning point in narrative identity research (McLean & Pratt, 2006), identity development does not seem to occur in response to a singular event or discrete series of events. Rather, it appears to be based on a gradual accumulation of events in addition to new meanings made about old experiences (Josselson, 2009). Perhaps it is necessary to make a distinction between an individuals' conscious recognition of a singular experience as motivating identity change at the moment it occurred versus how that experience is reconstructed down the road. That is, when looking back on their lives, individuals may be more likely to target a single event as the catalyst for subsequent identity pathways, but this event is not perceived as such at the time. This can be seen in the case of Mary, which was used to illustrate the consciousness-raised pattern. In her senior year, she identified taking the course Filipino Cultural Dialogues as a turning point in her life, but 2 years prior when she was taking the class, she described it simply as an interesting and educational experience. Continuing research into both of these perspectives on identity change will be valuable for understanding developmental processes involved in identity making.

Implications for policy and practice. Although this study makes contributions to theoretical issues in identity development, it was inspired by practical, real-world problems and may have some implications to that end. These suggestions are preliminary, as they need to be buttressed by additional research, but nevertheless may provide some directions for putting the findings into action.

One important implication of these findings may be for advising. At the high school level, ethnic minority students need to be made aware of the challenges they may face in engineering and science majors, and perhaps should be encouraged to seek out
ethnicity-related support early on in their college years as prepa-
ration. However, this recommendation is complicated by the fact
that the students who need it most (e.g., the integrating pattern)
tend not to view ethnicity as central to who they are in high school
or at the beginning of college, and therefore may not be as
responsive to such advice due to feeling that their academics are
—and should be—independent from their ethnic background.
Thus, it may be important for university departments in all fields
to consider how to incorporate culturally relevant material into the
curriculum. Doing so would ensure that all students will be ex-
posed to ethnic and cultural issues within the context of their
major, rather than having to seek it out via coursework outside of
their major. Although it is not immediately clear how to incorpo-
rate culturally relevant issues into science and engineering curric-
ulum, a starting point may be to offer a course that discusses the
role of ethnic minorities in these fields as well as highlight how
these fields can contribute to many of the social justice issues that
ethnic minority students are interested in.

Another important advising point is that students who are inter-
ested in majoring in sciences and engineering need to make that
decision before they begin college. These majors tend to have
greater degree requirements and a more sequenced curriculum, and
therefore students must begin taking classes for their major in the
first year. The pressure to finish college in 4 years was very high
at the university in this study, and was often even higher for
students from low-income backgrounds concerned about funding
their studies. These pressures precluded the possibility of students
entering a science or an engineering major after their first year. In
this sample, there was a Mexican-heritage female who wanted to
major in science or math but did not realize it until her sophomore
year. She was told by her counselor that it was too late to go into
one of those fields, so she ended up doing a film major. In her
senior year, she continued to lament her missed opportunity,
feeling like a victim of institutional barriers.

Lastly, it is important to note that only students who entered as
first-year students and made it through the 4 years of college to
graduation were included. However, this line of research may be
helpful for understanding leaving college before graduation, which
occurs disproportionately among ethnic minority students. It may
be that students on some of these pathways are more likely to drop
out along the way. The integrating group is of great interest in this
regard. This group, although small, comprised mostly ethnic mi-
nority students initially majoring in science and engineering who
experienced some degree of tension. Although the students in this
study switched their major to social sciences or humanities as a
means for coping with this tension, another possible response
would be to leave college altogether. Accordingly, applying
knowledge of the different pathways may be helpful in preventing
students from leaving college.

Limitations and future directions. Although this study con-
tributed to an initial understanding of how youth integrate their
ethnic and academic identities, there were a few limitations worth
considering. Although students were randomly selected to partici-
strate in the study, because only students with complete data were
included, the findings may be susceptible to selection issues. In
particular, this could be part of the reason we had so few students
majoring in the sciences or engineering. It may be that these
students are less likely to continue to participate in research
studies—or agree to participate in the first place—due to their
burdensome workloads or disinterest in the topic of the study.
Although this limitation is mitigated by the fact that our partici-
pants represented a wide range of views of ethnicity, and thus we
did not only retain students enthusiastic about the topic, the small
numbers of science and engineering students remain an important
limitation. Furthermore, some of the pathways observed in the
study (e.g., compartmentalized) involved very few students, so
studies with larger samples would be helpful to fully understand
the variability in identity processes. This limitation is also miti-
gated by the fact that a tremendous amount of information was
known about each participant due to having in-depth interview
data at five time points.

The findings of this study should be considered in light of the
university context from which the sample was drawn. The
university was a 4-year residential school with a fairly liberal
curriculum and student body, and thus may have afforded
greater opportunities for ethnic identity development. The uni-
versity was also predominantly White, and thus the patterns
found in this study may not be applicable to students at His-
torically Black Colleges and Universities or other minority-
serving institutions. Furthermore, the findings are only poten-
tially generalizable to the U.S. educational context. There are
numerous cultural factors, including institutional tracking and
obligatory military service, that can have a profound impact on
identity and academic pathways (Hamilton & Hamilton, 2006;
Nurmi, Poole, & Seginer, 1995).

Finally, the addition of pre- or postcollege data would have
been useful in this study. In particular, postcollege data would
have allowed for an analysis of what career choice they had
actually made. However, most would likely not be in a career
shortly after completing college as individuals are taking longer
and longer to settle in to adult roles (Arnett, 2000). Indeed,
when asked about postcollege plans, nearly all of the partici-
pants in this study replied with some variant of “probably
graduate school after some time off.” Nevertheless, charting
how identity development continues postcollege, and how the
new contexts youth face afford and constrain this development,
is a key step in this line of research.

Conclusions. The purpose of the present study was to fur-
ther theory and research on how youth negotiate their multiple
identities by examining the relation between college students’
ethnicity and their academic majors. The findings suggest that
ethnicity is of prime concern during the college years for many
students and that there are diverse ways in which college
students view the relation between their ethnicities and aca-
demic majors. The results in this study underscore the need for
a longitudinal life-span approach to identity development to
fully embrace the diversity in identity pathways. Taken to-
gether, the findings in this study move the identity literature
forward by contributing to an understanding of how youth stitch

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8 This conclusion is based on what they talked about in their interviews. It is likely that these students will report strong ethnic identities via a
rating-scale instrument (e.g., Multidimensional Ethnic Identity Measure; Phinney, 1992) even if they are not able to verbalize their thoughts and
feelings about their ethnicity. However, empirical research is needed to
support this contention.
together their multiple identities to foster meaningful and productive lives.

References


