AN EXAMINATION OF ADOLESCENTS' SOCIAL AND SCHOOL INFLUENCES ON ETHNIC IDENTITY DEVELOPMENT IN EMERGING ADULTS

by

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DISSERTATION ABSTRACT

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Title: An Examination of Adolescents' Social and School Influences on Ethnic Identity Development in Emerging Adults

Ethnic identity is an important aspect of individuals' sense of self. For individuals identified as ethnic minorities, ethnic identity has been found to be a potential protective factor for overall well-being. Multiracials (i.e., individuals identified with two or more races) are one of the fastest growing minority populations in the United States. Limited research examining multiracials' ethnic identity development currently exists. Furthermore, there is a paucity of ethnic identity literature examining longitudinal ethnic identity growth from adolescence to emerging adulthood. Ethnic minority adolescents, such as multiracials, and emerging adults are often at higher risk for lower psychological well-being and higher substance use. Therefore, understanding developmental trajectories and factors that contribute to ethnic identity development allows for clinicians to work with ethnic minority individuals in ways that are empowering and facilitate success.

The current study utilizes Hierarchical Linear Modeling (HLM) to examine longitudinal growth trajectories of ethnic identity among multiracial and monoracial groups (White, Black, Latino/a, and Other [includes Asian, Pacific Islander, Native American, and Other]). HLM was also used to examine the relationships between social factors (i.e., experiences of discrimination, teasing by peers, and bullying) and school contextual factors (i.e., school climate, school safety, and perception of teachers) factors in the development

of ethnic identity over time. The present study drew from an ethnically diverse sample of individuals living in the Pacific Northwest who were assessed each year from grade 6 to 9 and once during emerging adulthood ($N = 593$). Results indicated small linear increases of ethnic identity over time. In general, ethnic identity increased from Grades 6 through 8, decreased from Grade 8 to 9, and increased again from Grade 9 to emerging adulthood. Multiracials' ethnic identity growth, however, did not differ from the identity growth of individuals within monoracial groups. Negative peer interactions significantly contributed to decreases in ethnic identity scores for individuals from Grade 8 to 9. School context did not significantly contribute to changes in ethnic identity growth. Findings suggest that individuals' ethnic identity changes over time, and is significantly impacted by peer interactions.

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DEDICATION

I dedicate this dissertation to my parents, Supaporn and Richard Peterson, for their unending love, support, and faith in me. I love you both. Thank you.

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CHAPTER I

INTRODUCTION

Psychologists and developmental researchers consider the formation of ethnic identity to be a critical and important developmental process during adolescence, regardless of ethnic background. Although the formation of identity is a lifelong process, Erikson's developmental model of identity suggests that adolescence marks the beginning of exploration into issues related to ethnic identity (Erikson, 1968; Phinney, 2006). During the developmental period of adolescence, youth experience and explore personal identities and sense of self within changing social contexts (Erikson, 1968). A developmental approach is required to fully understand ethnic identity development, as it is a multidimensional and dynamic process influenced by many factors, including individual strengths and contextual stressors.

This study aims to examine the development of ethnic identity in individuals identified as multiracial, White, Latino/a, Black, or Other (i.e., Asian, Native American, Pacific Islander, or Other) from adolescence through emerging adulthood. Furthermore, the study examines the relationships between social (i.e., experiences of discrimination, teasing by peers, and bullying) and school contextual (i.e., school climate, school safety, and perception of teachers) factors in the development of ethnic identity over time. In addition, the study quantifies associated links between social factors, school contextual factors, and ethnic identity development in emerging adults.

In this chapter, the developmental literature on emerging adulthood will be reviewed to provide a context for the current study. Next, a discussion of multiracial populations and how ethnic identity develops within this subpopulation of ethnic

minorities will be reviewed. Then, the literature on ethnic identity will be presented to demonstrate how ethnic identity unfolds across developmental periods. The chapter will conclude with a review of the study's research aims and hypotheses.

Emerging Adulthood

On average, people in industrialized nations are settling into adult roles later in life (Arnett, 2000). For many, entry into adulthood has been altered through extended educational endeavors and delayed marriage and childrearing (Arnett & Taber, 1994). Postponement of such milestones related to adulthood has created a new developmental period termed *emerging adulthood*. Emerging adulthood, which is generally associated with the ages of 18 to 25 (Arnett, 2000) occurs after adolescence and before adulthood. Individuals within this time period tend to report a subjective sense that they left adolescence but have yet to fully enter adulthood (Arnett, 2007). According to Arnett (2004), a general sense of instability and prolonged exploration of identity exemplify emerging adulthood. Furthermore, Arnett (2000) conceptualizes emerging adulthood as an age of self-focus, feeling in-between, instability, and future possibilities. For many individuals, exploration of identity continues to occur through emerging adulthood and is influenced by experiences during childhood and adolescence (Phinney, 2006). As social contexts and roles change in emerging adulthood, individuals often reexamine various aspects of identity, including ethnic identity. Role changes in social relationships and in school or work environments often influence emerging adults to reexamine concepts of identity. Reexamination of these concepts occurs by focusing on distinctive ethnic, religious, or occupational factors. Research examining role changes during emerging adulthood have primarily involved samples of monoracial individuals or very small

samples of multiracials (e.g., Ravert & Gomez-Scott, 2015). Not much is known, however, about how ethnic identity development during emerging adulthood is experienced by individuals who identify as multiracial.

Multiracial Literature

The ethnic makeup of the United States population has shifted to become increasingly diverse, with over 35% of the population identifying as non-White (United States Census Bureau, 2015). By the year 2050, Lee and Bean (2004) project that approximately 20% of the United States population will identify as multiracial. As shifts in demographics continue, researchers should critically examine the unique aspects of multiracial identity development (Shih & Sanchez, 2005). Currently, limited research has examined the impact of identifying with multiple racial and ethnic backgrounds on outcomes of health and well-being (Campbell & Eggerling-Boeck, 2006; Cooney & Radina, 2000; Milan & Keiley, 2000; Shih & Sanchez, 2005; Udry, Li, & Hendrickson-Smith, 2003).

According to the limited research on multiracial youth, youth engage in higher rates of substance use (Choi, Harachi, Gillmore, & Catalano, 2006), and are more likely to engage in negative behaviors (e.g., fighting, stealing, and encountering problems with police; Jackson, 2009) compared to their White counterparts. In addition, multiracial youth experience higher rates of depression, negative outcomes in school, and lower feelings of self-worth compared to monoracial White youth (Campbell & Eggerling-Boeck, 2006; Cooney & Radina, 2000; Milan & Keiley, 2000; Udry et al., 2003). Campbell and Eggerling-Boeck (2006) found that multiracial youth who identified as American Indian/White reported higher levels of negative outcomes (i.e., depression,

considering suicide, feeling socially unaccepted, not feeling close to others at schools, and participating in limited extracurricular activities) compared to other multiracial youth combinations (i.e., Black/White, Asian/White, Black/American Indian, Other multiracial). Multiracial youth also tend to report higher levels of depression when compared to their monoethnic majority peers, but not when compared to their monoethnic minority peers (Shih & Sanchez, 2005).

In contrast, when multiracial individuals integrate and accept aspects of their multiracial identity they have positive mental health outcomes (Jackson, Yoo, Guevarra, & Harrington, 2012). Multiple protective factors associated with multiracial identity impact development, such as access to support from ethnic communities and the ability to bridge friendship gaps (Campbell & Eggerling-Boeck, 2006; Kahn & Denmon, 1997; Quillian & Redd, 2009; Shih & Sanchez, 2005). In contrast, Kerwin and Ponterotto (1995) state that experiences of potential rejection from extended family and community are unique risk factors for positive identity development for multiracials. Further exploration of protective and risk factors related to ethnic identity of multiracials may help clarify these conflicting findings.

Ethnic Identity

According to Erikson (1968), a central task during adolescence is identity formation. Marcia's (1980) individual identity status model conceptualizes the complex processes that occur during identity formation. This model identifies two interconnected processes – exploring alternative possibilities and making a commitment – to describe individuals' achievement of identity formation. Exploring alternative possibilities refers to partaking in a broad range of behaviors and adopting various attitudes. This process

eventually helps individuals commit to behaviors and beliefs that align with particular identities. Identity formation, therefore, occurs within a variety of domains often associated with group membership such as gender roles, ideology, lifestyle, occupation, and religion. From a social psychology perspective, group membership is an important element of self-concept (Tajfel, 1981) including ethnic identity. According to social identity theory (Tajfel & Turner, 1986), identifying as a member of a group, known as self-categorizing, may change over time. Thus, ethnic identity, a result of identity formation, may also change over time. Combining Marcia's (1980) identity status model and Taijfel and Turner's (1986) social identity theory, Phinney (1989) proposed a formation of ethnic identity and development model focusing specifically on individuals' changes in self-categorization through exploring alternative possibilities, and making a commitment to an ethnic group over time.

Phinney (2003) defines ethnic identity as individuals' development of sense of self as a member within an ethnic group. The development of ethnic identity often includes feelings of belonging to specific ethnic groups by sharing a common history, physical features, knowledge about cultural values and traditions, and understanding and interpreting their ethnicity (Phinney, 1996; Phinney & Ong, 2007). A strong sense of ethnic identity is associated with numerous positive psychological outcomes such as happiness, life satisfaction, increased self-esteem, and decreased loneliness and depression (Kiang, Yip, Gonzales-Backen, Witkow, & Fuligni, 2006; R. O. Martinez & Dukes, 1997; Rivas-Drake, Seaton, et al., 2014; Rivas-Drake, Syed, et al., 2014; Roberts et al., 1999). The relationship between ethnic identity and positive psychological adjustment may provide a protective factor for ethnic minority youth and emerging

adults. Further research on this relationship may identify additional protective factors. To date, a large number of studies establishing the construct validity of ethnic identity measures and ethnic identity levels during adolescence for different ethnic groups (e.g., Latino/a, Asian, Black, and White) have been conducted (see Fuligni, Witkow, & Garcia, 2005; Phinney, 1989; Roberts et al., 1999). Research, has yet to thoroughly explore how contextual and social experiences, such as discrimination, influence ethnic identity outcomes in emerging adults (Smith & Silva, 2011). Finally, limited longitudinal studies examine how ethnic identity development changes over the course of emerging adulthood.

Ethnic Identity Development

Ethnic identity development for individuals progresses and changes over time regardless of their racial group (Phinney, 2003, 2006; Phinney & Ong, 2007; Phinney, 2003; Rew, Arheart, Johnson, & Spoden, 2015). Similar to the prototypical identity development model proposed by Erikson (1968), the development of ethnic identity begins in childhood (Ruble et al., 2004). Significant changes occur in adolescence and emerging adulthood due to exploration and commitment processes (Phinney, 1989, 1992). According to a developmental perspective, individuals, particularly minorities, engage in ethnic-racial labeling of self and others in early to middle childhood. This labeling likely increases ethnic-racial knowledge. In addition, this helps prime children to future meaning-making and interpretation of ethnic identity (Umaña-Taylor et al., 2014).

Early family and parent-child relationships help shape the development of self-identity and ethnic identity (Erikson, 1968; Phinney, 1992). As children transition into adolescence, they further delineate their ethnic identity development. This development

often occurs through increases in cognitive abilities and social interactions which facilitate the development of empathy towards the diverse experiences of different ethnic groups (Quintana, 1994). Social cues within and outside the family begin to inform ethnic minority youth on how to think and conceptualize their interpretations of race and ethnicity (Coll et al., 1996). For Black and Latino/a adolescents, levels of ethnic affirmation generally increase during the transition into middle school years, helping drive ethnic identity exploration (French, Seidman, Allen, & Aber, 2006).

Labeling of self and others and the process of ethnic identity development account for known changes in ethnic identity levels, which have been observed to generally increase during early and middle adolescence, especially for adolescents identifying as Black or Latino/a (Matsunaga, Hecht, Elek, & Ndiaye, 2010; Pahl & Way, 2006). Many of the aforementioned studies examined ethnic identity within Latino/a or Black racial groups compared to White groups. To date, there are limited longitudinal ethnic identity development studies that include examination of multiracials' ethnic identity development. One such study by Huang and Stormshak (2011) followed participants from Grade 6 through 9, and found increasing ethnic identity growth trajectories over the 4 years. Other studies, such as Pahl and Way (2006), suggest that ethnic identity development primarily occurs during mid-adolescence, and by late adolescence individuals have completed their ethnic identity exploration. While researchers have proposed slightly different ethnic identity development timeframes, taken together, ethnic identity continuously changes and progresses over time as individuals are socialized and developed.

One catalyst for ethnic identity development and change is school transitions. A study by French and collogues (2006) found that the transition to middle school did not elicit increases in ethnic identity; however, the transition from middle to high school did. Increases in ethnic identity continued until Grade 10 and then plateaued. Altschul, Oyserman, and Bybee (2006) also found increases in ethnic identity scores as individuals' transitioned to high school. Once again, transition into high school provides a consciousness-raising opportunity for ethnic identity exploration.

Research focused on understanding the development of ethnic identity is an important first step to finding potential protective factors for individuals, including ethnic minorities who engage in high risk behaviors (Umaña-Taylor & Shin, 2007). Ethnic minorities often hold less power and status within the majority-dominated society and thus experience greater levels of discrimination compared to ethnic majorities (e.g., White). In addition, ethnic minority youth who possess defining ethnic phenotypic characteristics (e.g., ethnic skin tone or hair) may have a heightened sense of their ethnic background and experience frequent reexamination of their ethnic identity. Ethnic identity development reflects how social contextual factors increase awareness of ethnic identity. This awareness often catalyzes the formation of ethnic identity. Activating ethnic identity may serve as a protective factor for ethnic minority individuals (i.e., Asian, multiracial, Latino/a, Middle Eastern, and Black), as ethnic minorities are able to gain equality, acceptance, and recognition (Syed & Juang, 2014).

Overall, studies examining ethnic identity primarily focus on minority monoracial groups such as Asian, Latino/a, and Black in comparison to the majority White racial group. Limited studies have focused on individuals who identify as multiracial, and those

that do often compare outcomes of multiracials to their White counterparts. Refined understanding of ethnic identity development for individuals who identify as multiracial is needed to help detect protective factors for this unique ethnic minority subgroup.

Social context and ethnic identity development. Ethnic identity development varies by social contexts, such as ethnic group representation in regions and formulation of peer hierarchies that value certain identities over others (Way, Santos, Niwa, & Kim-Gervey, 2008). Adolescents use ethnic or racial group membership to inform their own understanding of ethnic identity development (Syed & Azmitia, 2008). Expressions of ethnic identity are exhibited differently if adolescents engage with similar or different ethnic peers (Kiang & Fuligni, 2009; Kiang, Witkow, Baldelomar, & Fuligni, 2010a). For example, Asians who engage with peers who hold different ethnic identities from themselves report lower levels of ethnic identity (Yip, 2014).

Research has found that peer influences differ for younger and older adolescents. Younger adolescents depend on their peers and examine their ethnic identity through peer influences (Douglass, Mirpuri, & Yip, 2016; Yip, 2014). These younger adolescents are less likely to outwardly resist peer pressure, and instead exhibit conforming behaviors. Older adolescents, on the other hand, tend to resist peer pressure and are increasingly independent regarding decision-making about their ethnic identity (Umaña-Taylor et al., 2014). Older adolescents begin engaging in increased ethnic identity exploration by participating in ethnic activities and discourse (Syed & Mitchell, 2013); for example, through engaging in ethnic minority student groups and ethnic studies courses. Therefore, exploration and commitment to ethnic identity varies and changes as adolescents develop and become independent from their peers' influence.

Discrimination and ethnic identity. Experiences of discrimination contribute to adolescents' ethnic identity cognitive formation and interpretation process (McCoy & Major, 2003; Operario & Fiske, 2001; Romero & Roberts, 2003; Wilton, Sanchez, & Garcia, 2013). Negative social experiences, such as discrimination, influence adolescents' ethnic identity development (Fisher, Wallace, & Fenton, 2000). Low self-esteem, poor academic performance, and increased depression and substance use are associated with higher levels of discrimination for minorities (DuBois et al., 2002; Niwa, Way, & Hughes, 2014; Wong, Eccles, & Sameroff, 2003).

Ethnic identity helps alleviate negative effects for individuals experiencing discrimination from beliefs perpetuated in society (Outten et al., 2009). Despite this, individuals with higher levels of ethnic identity are also likely to be attuned to interethnic dynamics and report experiences of distress from discrimination more often than individuals with lower levels of ethnic identity (McCoy & Major, 2003; Syed & Azmitia, 2008, 2010). Concurrently, ethnic identity development increases for these same individuals as ethnic discrimination experiences occur (Pahl & Way, 2006). Further examination of the relationship between discrimination and ethnic identity development may help clarify understanding of potential protective and risk factors for the well-being of ethnic minorities.

Discrimination within schools. As previous research has found (e.g., Pahl & Way, 2006), discrimination, although a negative experience, helps individuals to explore and understand ethnic identity. Thus, discrimination in social contexts, such as schools, can provide individuals with opportunities to deepen their understanding of ethnic identity. Self-segregation by ethnicity within schools may also contribute to increased

discrimination and ethnic identity development (Huang & Stormshak, 2011; Kiang, Witkow, Baldelomar, & Fuligni, 2010b). Segregation by ethnic group (e.g. students socializing with other students based within schools reflects dynamics where ethnic minority students, such as Asians or Latino/as, are perceived by their peers to have lower social status and less favorable characteristics (Peguero, 2009; Qin, Way, & Rana, 2008). Experiences of peer discrimination and rejection due to ethnicity increases ethnic identity development (Rivas-Drake, Hughes, & Way, 2009; Romero & Roberts, 2003). Adolescents respond differently to discrimination depending on the perpetrator. For example, adolescents experiencing discrimination from peers often report psychological maladjustment. In contrast, adolescents experiencing discrimination from school personnel often have poorer academic performance (Benner & Graham, 2013).

Ethnic minority students experience significant discrimination by adults within the schools, with these students often receiving lower Grades (Fisher et al., 2000). Stone and Han (2005) found that Latino/a students who perceived discrimination by peers and teachers were likely to experience lower academic performance and negative attitudes about school. In addition, Black and Latino/a students often receive more office referrals for aggression, disrespect, delinquency, and poor attendance compared to White students (Losen & Gillespie, 2012; Losen, Hodson, Keith, Morrison, & Belway, 2015; A. Martinez, McMahon, & Treger, 2016). Latino/a students are likely to experience lower sense of belonging at school when perceiving discrimination from peers and teachers (Faircloth & Hamm, 2005). In addition to experiences of discrimination at school, school environments provide adolescents with increased opportunities and experiences to explore their ethnic identity.

School context and ethnic identity. Ethnic identity development varies within school contexts. Transitions to different schools (e.g., middle school to high school) allow for ethnic identity development, with negotiation and exploration of identity in regards to family, friends, and society (see Shaver, Furman, & Buhrmester, 1985). Ethnic socialization occurs within the school context through students' interactions with teachers, staff, and peers. Teachers and staff within the school have an especially powerful impact on adolescents' ethnic identity development. Adolescent identity is impacted by teachers as students feel that they have less autonomy at school and fewer opportunities for input regarding activities occurring in their classes (Booth & Sheehan, 2008). Therefore, students' perceptions of their teachers may contribute to both ethnic identity development as well as healthy adolescent development. Viewed collectively, teachers, staff, and peers within the school context impact ethnic minority students' sense of belonging, perceptions of school climate, and ethnic identity development.

Watt (2003) found that school climate plays a significant role in students' adjustment and is related to behaviors and attitudes. School climate is defined as attitudes and feelings derived by individuals' school environment via academic (i.e., monitoring of students' progress and reporting academic issues to parents), social (i.e., equitable and fair treatment of students by teachers and staff), and physical (i.e., availability and resources, safety) dimensions (Loukas, 2007). School climate can also be understood as the shared influences of values, beliefs, and attitudes among administrators, teachers, and students (Cohen, McCabe, Michelli, & Pickeral, 2009). Cohen and colleagues (2009) further describe school climate as teachers' and students' experiences of school life that support feeling physically, emotionally, and socially safe in school. Individuals'

perception of school climate is subjective. Students' adjustments and achievements can be affected by their perceptions of school climate. Changes in students' perceptions of school climate significantly reduces behavior problems (Wang, Selman, Dishion, & Stormshak, 2010), such as delinquency (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005), use of substances (Brand, Felner, Shim, Seitsinger, & Dumas, 2003), bullying, and victimization (Gage, Prykanowski, & Larson, 2014; Nansel et al., 2001).

In a 2015 study of 4,067 students, Aldridge, Ala'i, and Fraser (2015) identified associations between secure ethnic identity and positive perceptions of school climate. They concluded that elements of school climate should be addressed to promote positive ethnic identity development. Creating opportunities for the positive development of ethnic identity through these school contexts may help promote not only the development of ethnic identity, but also positive well-being. Ethnic minorities, particularly multiracial individuals, may benefit the most from these opportunities due to increased risks for outcomes related to negative well-being (Campbell & Eggerling-Boeck, 2006; Cooney & Radina, 2000; Milan & Keiley, 2000; Udry et al., 2003). Unfortunately, limited research exists on ethnic socialization, school climate, and development of ethnic identity for multiracial individuals within the school context (Gonzales-Backen, 2013). This is of particular relevance to the current study as it aims to explore associations between school context and ethnic identity.

Current Study

The proposed study examines changes in ethnic identity over time within five different groups: (a) multiracial, (b) White, (c) Latino/a, (d) Black, and (e) Other racial groups. Currently, little information exists on the developmental trajectories of

multiracial youth and their ethnic identity (Huang & Stormshak, 2011), because most studies have examined the development of ethnic identity for monoracial individuals (e.g., Black and Latino/a) and excluded multiracial individuals. Furthermore, these studies compared monoracial minority groups to monoracial majority White individuals.

To examine ethnic identity over time, the current research used existing data from the Project Alliance 2 [PAL2], study which followed the same individuals from Grade 6 through emerging adulthood (i.e., ages 19-21). The PAL2 study was designed to intervene and prevent risk behaviors in youth by supporting families during the transition from middle school to high school. All students and their families across three public middle schools in an urban area of the Pacific Northwest were asked to participate in the study. During recruitment, 80% of all parents and students agreed to participate.
The current study sample was diverse with the following racial/ethnic composition at recruitment: (a) 36% European American; (b) 18% Latino/Hispanic; (c) 15% African American; (d) 9% Asian/Pacific Islander; (e) 2% American Indian; and (f) 19% biracial/mixed ethnicity.

Research aims and hypotheses. The first research aim examines ethnic identity growth trajectories with the goal of understanding the growth patterns of ethnic identity over time and comparing trajectories of multiracial youth to monoracial youth. It is postulated that ethnic identity development will increase over time for all individuals and multiracial ethnic identity growth trajectories will differ from other monoracial groups (Huang & Stormshak, 2011; Matsunaga et al., 2010; Pahl & Way, 2006). It is predicted that multiracials will have greater ethnic identity growth compared to White individuals, and less ethnic identity growth compared to Latino/a and Black individuals.

Entry to high school is a time period with increased opportunities for ethnic identity exploration, as it allows individuals to engage with new peers, social structures, and social, academic, and extracurricular opportunities. Additionally, cognitive maturation allows for further self-reflection. Therefore, the second and third research aims utilize grade 9 social and school contexts to examine influences on ethnic identity development during emerging adulthood. It is predicted that higher levels of perceived discrimination (a social context) will be associated with greater growth in ethnic identity development scores (i.e., steeper slopes) from grade 9 through emerging adulthood (Pahl & Way, 2006; Umaña-Taylor & Guimond, 2012). Lastly, it is hypothesized that a positive perception of school context will to contribute to greater growth of ethnic identity development (i.e., steeper slopes) in individuals from grade 9 though emerging adulthood, regardless of ethnic group.

CHAPTER II

METHODS

Sample

The current study uses existing data from a longitudinal intervention study (Project Alliance 2 [PAL2], DA018374). The PAL2 study was designed to intervene and prevent at risk behaviors in youth by supporting families during the transition to high school. The current study only used adolescent and emerging adulthood data. Data were collected from participants annually from Grades 6 through 9 and again after high school during the emerging adults years. Data was not collected from participants during grades 10 through 12 due to funding limitations. Challenges arose while reestablishing contact with emerging adults once funding was restored due to participants changing physical addresses and contact information. Difficulty in follow-up created delays in data collection, hence the range in age (19 -21 years old) during the final data time point. Retention of participants from grade 6 through emerging adulthood was 74%.

This study includes individuals from a Pacific Northwestern urban population self-identifying as multiracial (two or more races), monoracial White, monoracial Latino/a, monoracial Black, or monoracial Other, including individual who identified as monoracial Asians, Pacific Islanders, Native American, or Other. These individuals were compiled into a monoracial Other category due to low numbers in their unique individual racial groups. A total of 593 participants were included in the study sample at 6^{th} grade. The mean age of these participants at grade 6 was 11 years of age; females and males represented 48.5% and 51.5% of the sample, respectively.

Table 1 contains the number of participants who identify as multiracial, White, Latino/a, Black, and Other at each time point. Approximately 78% of multiracials identified with two races. Three races were identified by 17% of multiracials, and 5% of multiracials identified with four or more races. The majority of multiracial combinations included a combination of White and some other race or races. Due to the limited number of multiracial specific combinations, further analyses of within multiracial group combinations are not included.

Procedures

All parents of Grade 6 students were invited to participate in the study, and approximately 80% of parents and students agreed to do so. Consent forms were sent home with students or mailed to parents. Participants (i.e., parents and students) received $20 for completing surveys at Grade 6 through Grade 9, and $100 in the emerging adult years. Self-reported measures adapted from prior research (Metzler, Biglan, Rusby, & Sprague, 2001) were administered to all participants. Surveys were collected at the schools during spring semester for students at grade 6 through grade 9. Data was collected during emerging adulthood (ages 19-21) by sending surveys to participant's place of residence.

Measures

Data used in this study consists of self-reported survey data generated during five time points. Sex will be used as a potential control variable in the analyses.

Ethnic identity. Campbell and Eggerling-Boeck (2006) suggest self-identification of race provides a more appropriate indicator of multiracial identity when examining how a participant interacts with their environment. Participants' self-identified

race/ethnicity by marking as many racial groups they felt appropriate. Participants checking two or more boxes at any time point were categorized as multiracial. In contrast participants checking only one box (e.g., Latino/a or White) at any time point were classified as monoracial (e.g., monoracial Latino/a or monoracial White).

Multigroup Ethnic Identity Measure (MEIM). The MEIM (Phinney, 1992) is a self-report instrument designed to measure individuals' commitment to, and achievement of, ethnic identity. The MEIM was developed from Phinney's (1989) model of ethnic identity and measures ethnic identity across various ethnic groups. Measures are generated by examining individuals' attitudes about, identification with, and sense of belonging to their ethnic group. The MEIM has been demonstrated to be reliable for adolescents ($\alpha = .81$; Roberts et al., 1999). Participants respond to questions such as "I know what being in my ethnic group means to me" and "I feel a strong connection with my ethnic group." Responses ranged from *strongly disagree* (coded as 1) to *strongly agree* (coded as 4). Participants with higher scores have higher levels of positive ethnic identity association. The ethnic identity mean score is generated using all items in the measure. A seven-item adapted version of the MEIM was used to obtain participants' self-reported ethnic identity for grades 6 through 9. In this study the MEIM has a reliability of .91 at grade 6, .91 at grade 7, .93 at grade 8, and .93 at grade 9. The MEIM was revised in 2007 to represent a 2-factor model: exploration and commitment (Phinney & Ong, 2007). The resulting MEIM revised (MEIM-R) consists of 6 items and has been demonstrated to be reliable for emerging adults, with a full-scale alpha of .88 (Yoon, 2011). In this study the MEIM-R was used to obtain participants' ethnic identity during emerging adulthood. The MEIM-R in this study exhibits an alpha score of .91.

Perceived social context. Perceived social context was measured at Grade 9 and included a number of questionnaires evaluating participants' self-reported experiences of discrimination, teased by peers, and experiences of bullying inside and outside of school. The following measures are used to create the latent construct of social context.

Experiences of discrimination. Participants indicated how bothered they were by unfair treatment from other people, police, and racist statements made towards them on six items (α = .88). Responses ranged from *not at all* (coded as 1) to *all of the time* (coded as 5). Participants with higher scores on the instrument have higher frequency of being bothered by discrimination.

Teased by peers. Participants' self-reported experience of peer teasing on seven questions including "I am teased by kids at school for how I look or what I wear," "I am ignored or avoided by kids at school because of my race or skin color," and "I am teased by kids at school for no reason" (α = .84). Responses ranged from *never* (coded as 1) to *always* (coded as 5). Participants with higher scores on the instrument have higher instances of being teased by peers.

Experiences of bullying. Participants responded to eight questions regarding their experiences with bullying (α = .68). Participants' were asked to respond *yes* (coded as 1) or *no* (coded as 0) if "this year, going to and from school" they had "been picked on" for individual reasons including "race or skin color," "about your group of friends," "about your weight, acne, or how you look," or "for no reason." Item responses were summed to create the bullying variable. Participants with higher scores on the instrument have higher instances of being bullied.

Perceived school context. Perceived school context was measured during Grade 9. This was measured using questions evaluating participants' self-report of school climate, feelings of safety at school, and perception of teachers. The following measures are used to create the latent construct of school context.

School climate. School climate, as reported by the participant at grade 9, was measured using the questionnaire developed by Metzler et al. (2001), which asks participants to respond to nine questions including "I feel safe at my school," "my teachers can relate to someone who is my same race," and "my teachers treat some kids better than others" on a scale from *never* (coded as 1) to *almost always* (coded as 5). Items showed adequate internal consistency reliability ($\alpha = .68$). Participants with higher scores on the instrument have higher levels of positive school climate.

Safety at school. School safety during grade 9 was assessed using seven items ($\alpha = .95$). Participants rated their perceived level of safety in school within areas such as hallways, restroom, and locker rooms. Responses ranged from *not at all safe* (coded as 1) to *very safe* (coded 5). Participants with higher scores on the instrument have higher feelings of perceived safety.

Perceptions of teachers. During grade 9, youth were ask to provide their personal perceptions of their teachers during the past month along seven continua: (a) Unfair-Fair; (b) Cold-Warm; (c) Mean-Nice; (d) Unfriendly-Friendly; (e) Dishonest-Honest; (f) Cruel-Kind; and (g) Bad-Good. A score of 1 was associated with the first word in each pair, and a score of 5 was associated with the second word, and youth could choose any point in between. Ratings were internally consistent ($\alpha = .93$). Participants with higher scores on the instrument have a more positive perception of their teachers.

Analytical Plan

The purpose of the current study centers on the comparison of the trajectories for ethnic identity development in participants self-identifying as multiracial to those self-identifying as monoracial (e.g., Latino/a or White). In addition, this study provides information on possible adolescent contributing contextual factors (i.e., social and school contexts) to ethnic identity development in emerging adults. In the preliminary analysis, survey data was tested for violations of assumptions to normality, linearity, homoscedasticity, and sphericity. During data analysis, descriptive and associative techniques were used to ensure that variables do not exhibit multicollinearity.

Hierarchical Linear Modeling (HLM), through HLM7 software for Windows, was used to examine research aim one regarding ethnic identity growth trajectories. Specifically, HLM was used to examine how multiracial adolescents' ethnic identity developmental trajectories differ over time (Grade 6 through emerging adulthood) from monoracial ethnic identity development. HLM techniques are particularly useful for simultaneously modeling between and within group effects, as well as examining interdependent variations caused by data clustering (e.g., individuals nested within communities). Furthermore, analysis of longitudinal data using HLM accounts for nesting of repeated measures within individuals.

For the current study, HLM procedures outlined by Raudenbush and Bryk (2002) were used. A two-level model design assessed the research aims, with participants' trajectories of change estimated as a function of time (Level 1) nested within racial group (Level 2). Level 2 slope and intercept coefficients were modeled as a function of time-invariant factors (racial group identification). HLM was used to test differences in ethnic

identity scores according to the MEIM and MEIM-R across time five periods, and to test within and between racial group differences (i.e., multiracial, monoracial White, monoracial Latino, monoracial Black, and monoracial Other). Multiracial was used as the reference group for all analysis examining race. Effect sizes were used to examine the differences in ethnic identity scores, as the original MEIM uses a 4-point Likert scale, while the MEIM-R uses a 5-point Likert scale. According to Bloom, Hill, Black, and Lipsey (2008), effect size is helpful when comparing effects observed from different measures of the same construct over time (i.e., MEIM at grades 6 through 9 compared to MEIM-R at emerging adulthood. Restrictions of this approach will be discussed within the limitations section of the discussion chapter.

Analyses using HLM were conducted in two stages to address the second research aim examining associations between social context during Grade 9 and ethnic identity development in emerging adults (ages 19-21). In the first stage, confirmatory factor analysis was used to create the latent variables describing social context. In the second stage, HLM models were generated from the exploratory factor analysis for all ethnic groups. The same two-stage approach was used to address the third research aim. The third aim examines the association between school context during Grade 9 and ethnic identity development in emerging adults. Although following the same stage analysis as the second aim, school context replaces social context.

Missing Data

Missing Value Analysis was conducted to determine if cases were systematically different from those without missing values.

CHAPTER III

RESULTS

Before the analyses were conducted, an examination of missing data determined the potential influence of missing variables on the final results. The plan for analyses occurred in the following steps. First, construction of social and school latent variables was created using exploratory factor analysis and confirmatory factor analysis. Second, Hierarchical Linear Modeling (HLM) examined ethnic identity score growth trajectories in a group of individuals identified as multiracial and differences in ethnic identity growth between racial groups. Third, Hierarchical Linear Modeling (HLM) procedures examined associations between social and school context factors and ethnic identity scores. Finally, using statistical models and visual presentations, a summary of the analyses is provided.

Missing Data

Bennett (2001) suggests bias may be a concern in studies with more than 10% missing data. Using SPSS, analysis of missing data in the current study revealed 18% missing data for each variable. Little's MCAR test indicated that level 2 data were not missing completely at random, χ^2 (195) = 245.67, $p < .01$. To address missing data, all analyses used Full Information Maximum Likelihood (FIML) analysis. This estimation method obtains parameter estimates by maximizing the likelihood function of the incomplete data.

Attrition differences in gender, race, and ethnic identity scores were examined among participants who dropped out of the study after the first time point (Grade 6). No attrition patterns were observed between race and if participants

dropped out by emerging adulthood; χ^2 (4, N = 503) = 1.80, p = 0.77. Attrition varied by gender; χ^2 (1, N = 503) = 5.75, p < .05. Men were more likely to drop out and women were more likely to stay in the study. There was a significant difference in ethnic identity scores during Grade 6 for those who stayed in the study (M = 2.92, SD = 0.85) and those who eventually dropped out (M = 2.71, SD = 0.96); t(227) = -2.28, p < .05. Overall, participants who dropped out of the study had lower ethnic identity scores.

Social and School Context Variable Construction

In order to define factors for social and school contexts taken from multiple survey instruments, an exploratory factor analysis (EFA) on a random sample of half the data was conducted. Half the sample was used as a preliminary screening to explore relationships among variables and the resulting factor structure. Additionally, using a random sample of the data mitigated over-fitting the data during the confirmatory analysis procedure while also addressing Type I error.

The EFA used principal axis factoring (PAF) and a direct oblimin (oblique) rotation. As recommended by Russell (2002), estimations used oblique rotation because the underlying dimensions or factors were likely correlated. Visual inspection of the scree plot and eigenvalues informed the extraction of the optimal number of factors (Klien, 2015). Extraction of factors used Kaiser's rule (eigenvalues > 1.0). Items dropped from analyses exhibited communalities below .30. As an indicator of internal consistency, reliability analyses on retained items used Cronbach's alpha. Acceptable reliability levels included an alpha greater than or equal to .70, with .80 considered good (Zimmerman, Zumbo, & Lalonde, 1993).

Social context. The social context EFA initial results indicated a 3-factor solution accounting for 76.89% of the total variance (see Table 2 for EFA outcomes for social context factors). Raw mean scores (based on a scale of 1 through 5, with higher scores on the instrument indicating higher instances of being bothered or teased) for each factor are reported in Table 2. The three identified factors for social context were labeled: (a) *Bothered by Racism/Prejudice*, (b) *Teased by Others*, and (c) *Experiences of Racism/Prejudice* The first factor *Bothered by Racism/Prejudice* consisted of 4 items with a Cronbach's alpha of .89. Pattern coefficients for *Bothered by Racism/Prejudice* ranged from .74 to .91. The second factor, *Teased by Others* consisted of 3 items with a Cronbach's alpha of .77. Pattern coefficients for *Teased by Others* ranged from .64 to .90. The third factor, *Experiences of Racism/Prejudice* consisted of 2 items with a Cronbach's alpha of .85. Pattern coefficients for *Experiences of Racism/Prejudice* ranged from -.66 to -.91.

School context. Initial results of the school context EFA also indicated a 3-factor solution (see Table 3 for EFA outcomes for school context factors). The three factors accounted for 73.62% of the total variance. Raw mean scores for each factor are reported in Table 3 with higher scores indicating a more positive perception of the following factors. The three identified factors for school context were labeled: (a) *Perceptions of Teachers*, (b) *School Safety,* and (c) *Opportunities for School Involvement*. The first factor *Perceptions of Teachers* consisted of 7 items with a Cronbach's alpha of .93. Pattern coefficients for *Perceptions of Teachers* ranged from .76 to .86. The second factor *School Safety* consisted of 7 items with a Cronbach's alpha of .96. Pattern coefficients for *School Safety* ranged from -.73 to -.91. The third factor *Opportunities for School*

Involvement consisted of 3 items with a Cronbach's alpha of .71. Pattern coefficients for *Opportunities for School Involvement* ranged from .58 to .84.

According to Henson and Roberts (2006), Confirmatory Factor Analysis (CFA) verifies a factor structure of a set of variables. CFA allows for further model refinement for final factor structures (Floyd & Widaman, 1995). A CFA refined the final factor structures of the initial EFA based on 50% of the data.

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA), using all of the Project Alliance 2 data, tested the hypothesized factor structure for social and school contexts identified from the EFA. Multiple fit indices were used to evaluate model-data fit (Schreiber, Nora, Stage, Barlow, & King, 2006). The CFA for latent variables social context and school context used the software program Amos for SPSS Version 24 (Arbuckle, 2016). The CFA analysis used variance – covariance matrices with ML estimation. As recommended by Hu and Bentler (1999) multiple indicators of goodness of fit (GOF) were used to interpret model results. Good model fit is indicated by a non-significant Chi-square test, a Root Mean Square Error of about .08 or lower, and a Comparative Fit Index (CFI) greater than .95 (Hu & Bentler, 1999). Cronbach's alpha was also used to provide reliability estimates for each identified factor of social and school context.

Social context. The data came from a final sample size of 593 with 9 questions measuring experiences of discrimination, teasing by peers, and experiences of bullying (see Table 4). Examination of the data for assumptions of multivariate normality and linearity indicated no univariate or multivariate outliers. GOF indices for this model were a CFI of .97, an RMSEA of .06, and a statistically significant chi-square test, χ^2 (25) =

86.68, $p < 0.001$. Based on Hu and Bentler (1999) indictors of GOF, two of the three indices indicated acceptable model fit. Squared multiple correlation (SMC) values for the items within the social context factors had the highest and lowest variances; .81 (In last month target child is teased by kids at school for no reason) was the highest and .32 (Going to and from school target child is picked on for no reason) was the lowest. All standardized regression coefficients were statistically significant ($p < .05$). The CFA for social context indicated adequate model fit and supported the factors defined in the EFA: (a) *Bothered by Racism/Prejudice*, (b) *Teased by Others*, and (c) *Experiences of Racism/Prejudice.*

School context. The data came from a sample of size of 593, with 17 questions on a 5-point Likert scale measuring perceptions of teachers, school climate, and perceived safety (see Table 4). Examination for assumptions of multivariate normality and linearity indicated no univariate or multivariate outliers. GOF indices for the school context CFA were a CFI of .95, an RMSEA of .07, and a statistically significant chi-square test, χ^2 (116) = 408.73, $p < 0.001$. Based on Hu and Bentler (1999) indictors of GOF, two of the three indices indicated acceptable model fit. Squared multiple correlation (SMC) values indicated items within the school context factors with the highest and lowest variances; .78 (safety in hallways) and .36 (opportunities to be involved in sports and school activities). The CFA for school context indicated adequate model fit and supported the factors defined in the EFA: (a) *Perceptions of Teachers*, (b) *School Safety*, and (c) *Opportunities for School Involvement*. The CFA on the entire sample revealed confirmation of variables loading onto factors in the EFA.

Final social and school context variable construction. Table 5 and Table 6 contain EFA outcomes for final social and school context factors. The first social context EFA based on half of the data explained 76.89% of the total variance and included the following three factors: (a) *Bothered by Racism/Prejudice*, (b) *Teased by Others*, and (c) *Experiences of Racism/Prejudice* (see Table 3). An EFA using the social and school items, with missing variables imputed on the entire date set, resulted in the final social and school context factors. The final social context factors changed from a three-factor model to a two-factor model accounting for 66.50% of the total variance. The two identified factors for social context included: (a) *Bothered by Racism/Prejudice* (accounting for 42.63% of variance) and (b) *Negative Experiences with Peers* (accounting for 21.88% of variance). Pattern coefficients for social context construct ranged from .63 to .90. Cronbach's alpha of .83 indicated good scale reliability. The final school context factors remained the same three factor model: (a) *Perceptions of Teachers* (accounting for 43.21% of variance), (b) *School Safety* (accounting for 21.02% of variance), and (c) *Opportunities for School Involvement* (accounting for 8.38% of variance), accounting for 72.61% total variance. Pattern coefficients for school context construct ranged from -.90 to .88. Cronbach's alpha of .91 indicated excellent scale reliability.

Descriptive and Preliminary Analysis of the Ethnic Identity Data

An examination of mean, standard deviation, and frequency distributions indicate tenability of assumptions required for the proposed statistical analysis. The values for standard deviation of all variables indicated homogeneity of variance across all study variables. An inspection of skewness and kurtosis values (see Table 7) revealed all study

variables met the recommended limits of -3.0 to +3.0 for skewness and kurtosis (Kline, 2015). Investigation between independent variables and bivariate correlations indicated an absence of multicollinearity. Positive correlations between ethnic identity scores at each time point were observed (see Table 8). Results of analysis revealed no significant differences between participants' ethnic identity scores at any time point and identification as multiracial (see Table 9). Examination of level 1 and level 2 residuals tested HLM model assumptions of linearity and normality. Assumptions of normality, linearity, and homoscedasticity were met.

Hierarchical Linear Modeling

Next, the trajectories of multiracial adolescents were examined over time for differences in rate of ethnic identity growth compared to monoracial groups. Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) used time periods (level-1) nested within respondents (level-2). To examine change trajectories of ethnic identity as a function of time, model fit to determine the final multi-level model used the following model building steps: (a) unconditional model with no predictors, (b) linear model, (c) linear and quadratic model, (d) linear, quadratic, and cubic model, and (e) conditional models with predictors of ethnic identity trajectories.

Unconditional (null) model. To estimate model parameters FIML estimation allowed for the comparison of models with both fixed effects and variance components (Garson, 2013). With FIML, nested models can be compared using the likelihood ratio test (i.e., deviance difference test; Hox, Moerbeek, & van de Schoot, 2010). Variables representing the coding of time were entered uncentered at level 1. The unconditional model showed significant variation in individuals in their initial ethnic identity scores at

time 1 (intercepts), $\tau(561) = 3304.87$, $SD = 0.66$, $p < 0.001$ (see Table 11). An intra-class correlation (ICC) calculated the percentage of variance in ethnic identity scores associated with individuals rather than overall variation in scores or residual variance. The ICC was 0.5373, which indicates that 54% of the variance of ethnic identity scores was associated with differences between individuals.

Longitudinal model building. See Table 11 for longitudinal model building results. To determine the appropriate model of change over time in ethnic identity scores, model building began by testing a linear model. Additional polynomial representations of change over time (i.e., quadratic and cubic) were added in each additional step of the model building process. Deviance dropped from 5,412.15 in the null model to 5,101.45 in the final level 1 time function model. Model comparison test showed that this model significantly reduced the error variance from the null model, χ^2 (12) = 310.70, $p < 0.001$.

Model fit was tested for each additional time function. Addition of the linear effect to the unconditional model resulted in significant improvement in model fit; $\Delta\chi^2$ (3) = 31.70, $p < .001$. Although addition of the linear effect of growth explained greater variance in ethnic identity scores, the linear slope term was not statistically significant; $b = 0.02$, $SE = 0.01$, $p = 0.09$. Addition of the quadratic effect to the linear model resulted in increased model fit and a significant increase in variance in ethnic identity scores accounted for; $\Delta\chi^2$ (4) = 136.48, $p < .001$. In this model, neither linear change ($b = 0.02$, $SE = 0.02$, $p = 0.40$) nor quadratic change ($b = 0.00$, $SE = 0.01$, $p = 0.99$) were statistically significant. Finally, a cubic effect was added to the linear-quadratic model and resulted in a statistically significant improvement in model fit, $\Delta\chi^2$ (5) = 142.52, $p < .001$. Thus, the final model for functional form of ethnic identity score trajectories

included linear, quadratic, and cubic effects. Slopes for linear effects of time were significant; $b = 0.14$, $SE = 0.07$, $p < .05$.

The model assessing ethnic identity score trajectories suggested that individuals began on average with an ethnic identity score of 2.88. The average ethnic identity score at time 1 (Grade 6) was 2.88. There was significant linear growth in ethnic identity scores of about 0.14 scale units per occasion ($b = 0.14$, $SE = 0.06$ $p < .05$). To provide further context for changes in ethnic identity scores over time, effect sizes were calculated examining the magnitude of change in scores from one time point to the next adjacent time point (see Table 12 and Bloom et al., 2008). Generally, individuals started with varying ethnic identity scores at Grade 6 with small linear increases of ethnic identity over time. Specifically, only very small increases in ethnic identity scores occurred at Grade 6 to 7 and Grade 7 to 8. Decreases in ethnic identity scores were observed from Grade 8 to 9. Ethnic identity scores eventually increased again from Grade 9 to emerging adulthood but this change is confounded by the difference in instrument described above. An examination of confidence intervals revealed that accelerations and deceleration between time periods were not statistically significant. See Figure 1 for illustration of overall effect size changes in ethnic identity scores between each time point.

Controlling for sex. The addition of sex as a predictor at level 2 in the HLM analysis allowed for the control of the variable on the model. Sex was added into the model as uncentered due to the dichotomous nature of the variable (1 = Male, 0 = Female). Addition of sex as a predictor resulted in a nonsignificant improvement in model fit; therefore, sex was removed from the model; $\Delta\chi^2$ (4) = 3.86, $p > .50$.

Ethnic Identity Growth Trajectories

To examine if monoracial groups' ethnic identity score trajectories differed when compared to the multiracial group, all racial groups were entered into the model as uncentered dummy coded predictors. The multiracial group served as the reference group. The conditional racial groups model resulted in significantly better model fit, with deviance dropping from 5,101.45 in the cubic time model to 4,963.06 in the final race model; $\Delta\chi^2$ (16) = 138.40, $p < .001$. The final model is provided below (see Table 13 for final race model outcome and Figure 2 for ethnic identity scores for each racial group).

Level-1 Model

$$MEIM_{ti} = \pi_{0i} + \pi_{1i}*(LINEAR_{ti}) + \pi_{2i}*(QUAD_{ti}) + \pi_{3i}*(CUBIC_{ti}) + e_{ti}$$

Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(WHITE_i) + \beta_{02}*(LATINO_i) + \beta_{03}*(BLACK_i) + \beta_{04}*(OTHER_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(WHITE_i) + \beta_{12}*(LATINO_i) + \beta_{13}*(BLACK_i) + \beta_{14}*(OTHER_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20} + \beta_{21}*(WHITE_i) + \beta_{22}*(LATINO_i) + \beta_{23}*(BLACK_i) + \beta_{24}*(OTHER_i) + r_{2i}$$

$$\pi_{3i} = \beta_{30} + \beta_{31}*(WHITE_i) + \beta_{32}*(LATINO_i) + \beta_{33}*(BLACK_i) + \beta_{34}*(OTHER_i) + r_{3i}$$

In the racial groups model, the average ethnic identity score during Grade 6 for the multiracial group was 2.83 ($SE = 0.08$, $p < .001$). Individuals identified as monoracial White had significantly lower ethnic identity scores at Grade 6 compared to individuals identified as multiracial; $b = -0.35$, $SE = 0.10$, $p < .001$. Compared to multiracials, Latino/as demonstrated higher ethnic identity scores at Grade 6 ($b = 0.40$, $SE = 0.12$, $p < .01$), along with Blacks ($b = 0.38$, $SE = 0.12$, $p < .001$), and Others ($b = 0.38$, $SE = 0.12$, $p < .01$). The average linear change in ethnic identity score for the multiracial group was 0.21 over each occasion, with an average quadratic deceleration of -0.14 per occasion,

and a small cubic acceleration of 0.03 per occasion. None of the monoracial groups differed significantly from the multiracial group in the rate of linear, quadratic, or cubic change over time.

Overall, Whites had lower ethnic identity scores compared to multiracials at Grade 6. Latino/as, Blacks, and Others reported higher ethnic identity scores compared to multiracials at Grade 6. Multiracial ethnic identity growth trajectories did not significantly differ from monoracial ethnic identity growth. Multiracials did not differ from all monoracial groups in their ethnic identity scores linear growth. Furthermore, multiracial ethnic identity score deceleration and acceleration were similar to all monoracial groups over time.

According to changes in effect size, the following acceleration and decelerations were observed between time periods. In general, multiracial ethnic identity scores increased from Grade 6 to 7, decreased from Grade 7 to 8, and then slightly increased from Grades 8 through emerging adulthood. An examination of confidence intervals revealed that accelerations and deceleration between time periods were not statistically significant. Whites reported increases in ethnic identity scores from Grade 6 to 8, and decreases in ethnic identity scores from Grade 8 onward. Latino/as reported decreases in ethnic identity scores from Grade 6 to 7, and gradual increases from Grade 7 onwards. Blacks had the flattest ethnic identity growth, with decreases in Grade 8 to 9, and subsequent ethnic identity growth during Grade 9 through emerging adulthood. Others had gradual ethnic identity score increases from Grade 6 through 8, decreases in Grade 8 to 9, and ethnic identity score acceleration from Grade 9 through emerging adulthood.

Changes in ethnic identity scores from Grade 9 to emerging adulthood are confounded by the change in instrument described above.

A one-way ANOVA examined ethnic identity score differences among racial groups during emerging adulthood (see Table 14). Significant differences in ethnic identity scores during emerging adulthood were found; $F(4, 395) = 74.48$, $p < .01$. Tukey post-hoc analysis indicated significant difference between the following pairs of groups ($p < .05$). White ($M = 2.46$, $SD = 0.85$) and Multiracial ($M = 3.17$, $SD = 1.07$), White and Latino ($M = 3.44$, $SD = 0.84$), White and Black ($M = 3.52$, $SD = 1.07$), and White and Other ($M = 3.23$, $SD = 1.08$). Significant differences in ethnic identity scores among racial groups were between individuals who identified as White compared to all other racial groups (see Table 15).

Influence of Social Context on Ethnic Identity

To examine the association between individuals' perception of social context during Grade 9 with ethnic identity scores, social context factors were entered in the model at level 2 (see Table 16 for final social context model outcome and Figure 3). The final model is provided below.

Level-1 Model

$$MEIM_{ti} = \pi_{0i} + \pi_{1i}*(LINEAR_{ti}) + \pi_{2i}*(QUAD_{ti}) + \pi_{3i}*(CUBIC_{ti}) + e_{ti}$$

Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(SOCIAL\_B_i) + \beta_{02}*(SOCIAL\_N_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(SOCIAL\_B_i) + \beta_{12}*(SOCIAL\_N_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20} + \beta_{21}*(SOCIAL\_B_i) + \beta_{22}*(SOCIAL\_N_i) + r_{2i}$$

$$\pi_{3i} = \beta_{30} + \beta_{31}*(SOCIAL\_B_i) + \beta_{32}*(SOCIAL\_N_i) + r_{3i}$$

Social factors were continuous and therefore entered as grand mean centered. The social context model resulted in better model fit, with deviance dropping from 5,101.45 in the level 1 time function model to 5,079.00 in the social context model; $\Delta\chi^2$ (12) = 24.45, $p < .01$. The average ethnic identity score during Grade 6 for individuals with average responses to the *Bothered by Racism/Prejudice* factor and the *Negative Peer Interactions* factor was 2.86. There was no significant difference in ethnic identity scores for individuals who reported different degrees of being bothered by racism/prejudice. Individuals with higher levels of perceived negative interactions with peers reported significantly lower levels of ethnic identity at Grade 6; $b = -0.10$, $SE = 0.04$, $p < .05$. The average linear change in ethnic identity scores over time for individuals with average responses to the *Bothered by Racism/Prejudice* factor and the *Negative Peer Interactions* factor was 0.14 and was statistically significant ($SE = 0.06$, $p < .05$). There was no significant difference in the rate of linear change in ethnic identity scores for individuals who reported different degrees of being bothered by racism/prejudice. Individuals who reported more negative interactions with peers had greater positive change in their slopes over time, with ethnic identity scores increasing faster; $b = 0.13$, $SE = 0.06$, $p < .05$. Perceived negative social interactions with peers also contributed to a quadratic deceleration in ethnic identity scores; $b = -0.11$, $SE = 0.05$, $p < .05$. This was also evidenced by a negative effect size during Grade 8 to 9. Individuals who experienced higher levels of negative peer interactions had increases in ethnic identity scores from Grade 9 to emerging adulthood; $b = .02$, $SE = 0.01$, $p < .05$. This was also evidenced by a positive effect size during Grade 9 to emerging adulthood, however, acceleration in ethnic identity scores are confounded by the change in instrument in emerging adulthood.

Additionally, higher ethnic identity scores at Grade 7 positively correlated to *Bothered by Racism/Prejudice* ($r = .09$, $p < .01$; see Table 8). Higher ethnic identity scores at Grade 8 ($r = -.09$, $p < .01$) and Grade 9 ($r = -.18$, $p < .05$) were negatively correlated with the *Negative Experiences with Peers factor.* Social context factors and emerging adulthood ethnic identity scores yielded no significant correlations. Identifying as multiracial during Grade 9 was positively correlated to being *Bothered by Racism/Prejudice* ($r = .09$, $p < .01$; see Table 10). Overall, individuals who reported higher ethnic identity scores at Grade 7 were more likely to be bothered by racism/prejudiced at Grade 9. Positive interactions with peers at Grade 9 were associated with higher levels of ethnic identity during Grade 8 and 9. Social context factors were not associated with ethnic identity scores during emerging adulthood.

Results suggest that social context contributed to individuals' changing ethnic identity over time. Individuals who experienced negative peer interactions during Grade 9 reported a deceleration in ethnic identity growth from Grade 8 to 9 as observed in effect size changes. Effect size changes also indicated ethnic identity scores acceleration from Grade 9 through emerging adulthood for individuals who perceived more negative peer interactions during Grade 9. Acceleration of ethnic identity scores from grade 9 through emerging adulthood is confounded by the change in ethnic identity instrument used in emerging adulthood.

Influence of School Context on Ethnic Identity

To examine the association between individuals' perception of school during Grade 9 with ethnic identity scores, school context factors were entered in the model at level 2. School factors were continuous and therefore entered as grand mean centered.

The model resulted in better model fit, with deviance dropping from 5,101.45 in the level 1 time function model to 5,077.20 in the school context model; $\Delta\chi^2$ (12) = 24.27, $p < .05$ (see Table 17 for final school context model outcome). The final model is provided below.

Level-1 Model

$$MEIM_{ti} = \pi_{0i} + \pi_{1i}*(LINEAR_{ti}) + \pi_{2i}*(QUAD_{ti}) + \pi_{3i}*(CUBIC_{ti}) + e_{ti}$$

Level-2 Model

$$\pi_{0i} = \beta_{00} + \beta_{01}*(SCH\_PER_i) + \beta_{02}*(SCH\_SAFE_i) + \beta_{03}*(SCH\_INVO_i) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(SCH\_PER_i) + \beta_{12}*(SCH\_SAFE_i) + \beta_{13}*(SCH\_INVO_i) + r_{1i}$$

$$\pi_{2i} = \beta_{20} + \beta_{21}*(SCH\_PER_i) + \beta_{22}*(SCH\_SAFE_i) + \beta_{23}*(SCH\_INVO_i) + r_{2i}$$

$$\pi_{3i} = \beta_{30} + \beta_{31}*(SCH\_PER_i) + \beta_{32}*(SCH\_SAFE_i) + \beta_{33}*(SCH\_INVO_i) + r_{3i}$$

School factors contributed to reducing the variance of ethnic identity scores when compared to time functions alone, therefore, school factor was kept in the model. The average ethnic identity score during Grade 6 for individuals with average responses to *Perceptions of Teachers*, *School Safety*, and *Opportunity for School Involvement* factors was 2.83; $b = 2.83$, $SE = 0.04$, $p < .001$. There was no significant difference in ethnic identity scores for individuals who reported different degrees of perceptions of teachers and school safety. Individuals with higher levels of perceived opportunity for school involvement reported significantly higher levels of ethnic identity at Grade 6; $b = 0.11$, $SE = 0.05$, $p < .05$. The average linear change in ethnic identity scores over time for individuals with average responses to the *Perceptions of Teachers, School Safety, and Opportunity for School Involvement* factors was 0.13 and was statistically significant ($SE = 0.06$, $p < .05$). There was no significant difference in the rate of linear change in ethnic

identity scores for individuals who reported different degrees of the previously mentioned three factors. Changes in effect size indicated that ethnic identity scores increased from Grades 6 through 8, decreased from Grade 8 to 9, and increased again from Grade 9 through emerging adulthood. Acceleration of ethnic identity scores from Grade 9 through emerging adulthood is confounded by the change in instrument in emerging adulthood.

Correlations between ethnic identity scores and predictors (social and school context) are provided in Table 8. Positive perceptions of *Opportunity for School Involvement* ($r = .11$, $p < .01$) significantly related to higher ethnic identity scores at Grade 6. Similarly, higher ethnic identity scores at Grade 7 were significantly correlated with positive perceptions of *Opportunity for School Involvement* ($r = .10$, $p < .01$). During Grade 8, higher ethnic identity scores significantly correlated to positive perceptions of *Opportunity for School Involvement* ($r = .13$, $p < .05$). For students in Grade 9, similar relationships resulted from higher ethnic identity scores and *Opportunity for School Involvement* ($r = .09$, $p < .01$). Ethnic identity during Grade 9 and positive *Perceptions of Teachers* was positively correlated; $r = .14$, $p < .01$. School context factors and emerging adulthood ethnic identity scores yielded no significant correlations.

Overall, individuals who reported positive perceptions of opportunity for school involvement generally reported higher ethnic identity scores from Grade 6 through Grade 9. Positive perceptions of teachers during Grade 9 were associated with higher levels of ethnic identity during Grade 9. Social and school context factors were not associated with ethnic identity scores during emerging adulthood.

Summary

In sum, HLM results indicated that ethnic identity scores at Grade 6 varied across individuals. There was a statistically significant but very small increase in ethnic identity scores from Grade 6 through emerging adulthood. Individuals who identified as White had significantly lower ethnic identity scores at Grade 6 compared to individuals who identified as multiracial. Latino/a, Black, or Other had significantly higher ethnic identity scores compared to multiracials during Grade 6. Overall, multiracial ethnic identity developmental trajectories did not differ from White, Latino/a, Black, and Other racial groups. Perception of negative interactions with peers was associated with change in ethnic identity scores. Specific changes reported included decreases in ethnic identity scores during Grade 8 to 9 and increases from Grade 9 to emerging adulthood although this result was difficult to interpret due to simultaneous changes in instrument and response scale. Ethnic identity outcomes were not associated with being bothered by racism/prejudice. School context factors *Perceptions of Teachers*, *School Safety*, and *Opportunities for School Involvement* did not affect change in ethnic identity scores over time. The next chapter provides a discussion of the results, implications of the findings, and limitations of the study.

CHAPTER IV

DISCUSSION

The current study sought to expand upon the multiracial and ethnic identity literature. Key findings from the current study suggest that multiracial ethnic identity growth trajectories do not differ from monoracial groups. Social context was found to play an important role within emerging adults' ethnic identity. Specifically, negative peer interactions during Grade 9 resulted in ethnic identity growth through emerging adulthood. Different degrees of perceptions towards school context did not contribute to consistent change of ethnic identity scores over time.

Ethnic Identity Growth Trajectories

Individuals varied within their ethnic identity scores. Ethnic identity scores also differed between racial groups. According to the HLM final time function level 1 model, trajectories for ethnic identity scores suggested individuals possessed different levels of ethnic identity scores at Grade 6 with small changes over time. Ethnic identity consistently changed over time at a significant rate regardless of race. As expected, these results align with past findings regarding increases in ethnic identity over time (e.g., Pahl & Way, 2006; Syed & Azmitia, 2009; Umaña-Taylor, Gonzales-Backen, & Guimond, 2009).

According to changes in effect size, overall ethnic identity scores increased slightly for individuals from Grades 6 through 8. Small decreases in individuals' ethnic identity scores were observed from Grade 8 to 9. There are a number of possible explanations for these decreases. One possibility is the role of friendships. Same-race friendships are associated with developed levels of ethnic identity (Phinney, Romero,

Nava, & Huang, 2001). Individuals during Grade 9 may be adjusting to their new high school environment, including new peer groups and school ethnic demographics. Minority students may be attending new high schools in which their racial group is not as well represented as in their previous school. The pool of potential same-race friendships is determined by a school's racial composition (Joyner & Kao, 2000; Quillian & Campbell, 2003) and opportunities for same-race friendships may be reduced or not yet firmly established during Grade 9. Establishing one's place in a new high school may further explain why the current study found that ethnic identity scores increase between Grade 9 and emerging adulthood.

Sex and ethnic identity. In the current study, sex did not influence ethnic identity growth trajectories. This finding is surprising as previous research on Black and Latino populations found that sex moderated ethnic identity growth trajectories, with adolescent females scoring significantly higher on measures of ethnic identity compared to adolescent males (R. O. Martinez & Dukes, 1997; Plummer, 1995; Umaña-Taylor et al., 2009). Entering a new environment, such as high school, may increase individuals' awareness of identity. Previously, studies found that females tend to internalize race related experiences (Gillem & Thompson, 2004; Root, 2004). During high school, females receive criticism surrounding their appearance. As a result, females may internalize and interpret criticism differently from male counterparts (Gillem & Thompson, 2004), especially if these criticisms regarding appearance are race-based. Increased experiences with race-based statements during high school may increase self-awareness, thereby increasing ethnic identity scores. It is possible that within this sample students did not receive high levels of raced based criticism regarding their appearance,

as seen in the low raw mean score for the *Negative Interactions with Peers* factor (see Table 14). Furthermore, only two of the five items in the factor were race based interactions.

Multiracial ethnic identity growth trajectories. Ethnic identity score trajectories for multiracials were similar to score trajectories for monoracial groups. Examination of effect size results (see Table 12) indicated that multiracials' reported small increases in ethnic identity scores from Grade 6 to 7, small decreases from Grade 7 to 8, and slight increases from Grades 8 through emerging adulthood. In this study, no relationship was found between identifying as multiracial and the growth of ethnic identity scores. Ethnic identity scores were not likely to significantly increase or decrease due to identifying as multiracial. A separate analysis (ANOVA) was conducted to examine differences between racial groups and ethnic identity scores during emerging adulthood. Significant differences in ethnic identity scores existed between individuals who identified as White and all other racial groups. Whites had the lowest ethnic identity scores. This aligns with past research, individuals who identify as white may not experience saliency in their ethnic identity (Worrell, 2007; Fuligni, et al., 2005).

Several explanations may be responsible for these results. This may include missing data, attrition, or the detectability of the measures used for ethnic identity for multiracials. The MEIM and MEIM-R asks participants to respond to questions regarding how they feel towards their ethnic group. This phrasing may imply that individuals only identify with one ethnic group. Difficulty answering these questions may arise for individuals who identify with two are more racial groups. It is possible that the measure is not a good indicator of multiracial ethnic identity. Another possible explanation for

these results may be explained by identity flexibility. Identity flexibility is the ability to easily and freely identify with or switch between multiple racial identities at a given moment (Gaither, 2015).

Identity flexibility occurs throughout the lifespan of individuals, and transpires often within multiracials. Morrison (1995) found that family discussions with biracial Black/White children regarding race helped increase these children's flexibility when choosing racial identities. Herman's (2004) longitudinal study found that multiracials were likely to shift racial identities across adolescence to emerging adulthood. Those identifying as monoracial Native American or multiracial Native American/Other had the least stable racial identity (Herman, 2004). Fluid and flexible switching of racial identity may result in a less firmly established sense of ethnic identity due to constant racial identification changes. This may have impacted changes in ethnic identity as measured in the current study. Likewise, approximately 40% of the current study's multiracial population identified as Native American and some other race. These racial combinations may increase the likelihood of identity flexibility, explaining the lack of substantially different ethnic identity scores at each time point.

Influence of Social Context on Ethnic Identity

The second aim of this study was to examine the association between social context and the growth of ethnic identity over time. Only one of the two social context factors was related to ethnic identity scores. There were no significant relations of the *Bothered by Racism/Prejudice* social context factor to ethnic identity intercepts in Grade 6 or change in ethnic identity scores.

Negative peer interactions and ethnic identity. There was a significant relation of ethnic identity scores in Grade 6 (intercept) with reports of negative peer interactions. Overall, changes in effect size changes indicated that individuals (regardless of race) who reported higher levels of negative peer interactions reported deceleration in ethnic identity growth from Grade 8 to 9. Accelerated ethnic identity growth from Grade 9 through emerging adulthood was observed, however, this finding is difficult to interpret due to the change in instrument from Grade 9 to emerging adulthood. Taking into account the change instrument, accelerated ethnic identity growth from Grade 9 through emerging adulthood aligns with previous research that perceived discrimination contributes to ethnic identity growth (Pahl & Way, 2006; Umaña-Taylor & Guimond, 2012). The *Negative Interactions with Peers* factor included being teased or ignored due to race, being picked on for no reason, and being teased for looks or clothing.

Individuals who reported more negative interactions with their peers had greater positive change in their slopes, with ethnic identity scores increasing faster. Negative experiences with peers, especially race-based negative interactions, may provide a strong incentive for exploring what individuals' racial group membership means and the potential consequences of group membership (e.g., Dubow, Pargament, Boxer, & Tarakeshwar, 2000). Individuals who receive negative messages about their ethnic group may attempt to appease this information by emphasizing the positive aspects of their group in order to reduce feelings of dissonance. As such, negative experiences with peers may increase ethnic identity development, and amplify positive feelings towards individuals' racial group as described in social identity theory (Tajfel & Turner, 1986). The current study, however, does not examine and compare racial groups interactions.

Furthermore, it cannot be assumed that race-based statements are what fueled ethnic identity growth, especially since only two of the five items in the *Negative Interactions with Peers* factor were race based. Aligning with Erikson's (1968) developmental theory, perceived difficulties with peers may initiate a crisis that would prompt adolescents to explore their various identities, including ethnic identity. It is plausible that negative peer interactions regardless of context increase self-reflection and examination, thereby increasing ethnic identity saliency.

Bothered by racism/prejudice and ethnic identity. The factor, *Bothered by Racism/Prejudice* was not associated with change in ethnic identity scores from Grade 9 to emerging adulthood. In the current study, individuals in Grade 9 may be more bothered by other social concerns (e.g., social hierarchy, peer and romantic relationships) instead of experienced racism. Furthermore, individuals within the current study may not be experiencing a critical amount of racism/prejudice to elicit ethnic identity growth, as evidence by the low raw mean score for *Negative Peer Interactions* factor. The *Negative Peer Interactions* factor only explicitly addressed race in two of the five variables within the factors. Race based negative interactions with peers may not have been fully captured in this study.

Influence of School Context on Ethnic Identity

The third aim was to examine associations between school context and ethnic identity. It was hypothesized that positive perceptions of school context would contribute to greater growth of individuals' ethnic identity. The current study partially supported this hypothesis. Differing degrees of responses to *Perceptions of Teachers*, *School Safety*, and *Opportunity for School Involvement* factors not affect changes in ethnic identity

scores over time. Results from HLM analysis indicated that school context did not impact ethnic identity scores over time. This is surprising as studies have found higher ethnic identity among White female, as well as Hispanic and Black male, students who endorsed positive school attitude (Booth et al., 2014). One explanation for the current study's finding is that overall school context remained fairly positive. Individuals may not have negative perceptions of the schools they were attending, and therefore school context factors did not have a significant impact to elicit ethnic identity development.

Results from the HLM school context model indicated that higher levels of perceived opportunity for school involvement was significantly related to higher levels of ethnic identity at Grade 6. Furthermore, it is interesting to note that in the current study the strongest relationship between perceived opportunity for school involvement and ethnic identity occurred at Grade 9 (see Table 8). Individuals who reported higher levels of perceived opportunities for school involvement were more likely to report higher levels of ethnic identity at Grade 9 compared to individuals with lower levels of perceived opportunity for school involvement. The possibility remains that perceptions of opportunities for school involvement contribute to these changes. In particular, opportunities for school involvement may provide socialization and increased chances for exploring the meaning of individuals' ethnic group membership during high school.

Limitations and Future Directions

The current study contributes to the multiracial and ethnic identity literature. Nevertheless, limitations must be acknowledged. First, the items and scale used to measure ethnic identity changed from the earlier time points to the last time point. The 7-item MEIM used during grade 6 through 9 was reduced to 6 items in the revised MEIM-

R. The MEIM-R was used to measure ethnic identity for participants during emerging adulthood. The original MEIM was based on a 4-point Likert scale while the MEIM-R was based on a 5-point Likert scale. Previous studies found reliability for MEIM-R to be higher ($\alpha = .88$) than the original MEIM ($\alpha = .84$; Herrington, Smith, Feinauer, & Griner, 2016). The change in instrument confounds the measurement of ethnic identity. It is difficult to separate if the changes in ethnic identity scores observed in Grade 9 to emerging adulthood are due to changes in the instrument or if ethnic identity actually increased. Acceleration of ethnic identity scores observed from Grade 9 to emerging adulthood may be due to changes in scale. Effect sizes were used for comparisons across years due to the different instruments used (Bloom et al., 2008).

Second, due to a gap in funding, data were not collected from participants during Grades 10 through 12. Growth trajectories for ethnic identity, and the impact of social and school context during this time period for participants are unknown. Data gathered during this time period would have been an important contribution to the conflicting ethnic identity growth trajectory literature. According to Pahl and Way (2006), ethnic identity exploration decreases slightly after Grade 10 and generally levels out afterwards. Other studies have found that ethnic identity increases over time (French et al., 2006). The current study is unable to determine whether ethnic identity growth continued to be linear during Grades 10 through 12 or if acceleration/deceleration occurred. The current study only provides a partial picture of ethnic identity growth. Future studies should examine ethnic identity growth longitudinally to determine ethnic identity trajectories of individuals from middle school through high school, and beyond.

Third, missing data and attrition may bias results and need to be taken into account while interpreting results. Little's MCAR test was significant indicating that missing data was not missing at random. Additionally, attrition from Grade 6 through emerging adulthood was approximately 25%. Examination of attrition indicated that those who stayed in the study had higher ethnic identity scores compared to those who dropped out. The most robust procedures, FMIL, were used in an attempt to ameliorate these difficulties.

Finally, the current research did not account for school ethnic demographics. Racial composition of schools provides an important factor for school climate. Racial composition influences students' achievement and adjustments, both positively and negatively (Goldsmith, 2004). Depending on a youth's constellation of same-race or different-race friendships, ethnic identity has been known to vary (Kiang et al., 2006). In the current study, decreases in ethnic identity scores may be attributed to individuals navigating peer and social relationships within the same ethnic demographic context. Saliency of ethnic identity may not have increased during this time. As a result, individuals may not be focusing on their ethnic identity. It is recommended that future studies examining longitudinal ethnic identity growth control for and examine shifts in ethnic demographic changes in schools.

Other recommendations for future studies include examination of multiracial race combinations to further nuance the multiracial research. Likewise, questions regarding if multiracials identify with a primary race should be asked to determine primary race influences on ethnic identity. The possibility exists that multiracials in the current study may identify with one race over another. Multiracials who identify with a primary race

may report ethnic identity scores similar to their primary race. This may explain the significant lack of difference in ethnic identity scores and growth trajectories between racial groups observed in the current study.

Furthermore, as suggested by Phinney and Ong (2007), examination of ethnic attitudes and values regarding family obligations may be helpful in examining additional factors influencing ethnic identity. Similarly, when examining ethnic identity, consideration of nativity and acculturation status may be important, as this may affect saliency of ethnic identity and potential generalizability of findings. Despite the aforementioned limitations, findings from the current study advance the ethnic identity development and multiracial literature.

Summary and Conclusions

The current study examined ethnic identity growth trajectories among individuals within multiracial and monoracial groups. The findings from the study contribute to the ethnic identity and multiracial literature in several ways. This study added to the limited longitudinal ethnic identity literature, highlighting the small linear change over time for ethnic identity growth for most individuals from Grade 6 through emerging adulthood. Additionally, the study added to the multiracial ethnic identity literature. In particular, multiracials' ethnic identity growth did not differ from their monoracial counterparts. For all individuals, social context contributed to ethnic identity scores changes. Negative peer interactions during Grade 9 influenced the deceleration and subsequent acceleration of ethnic identity growth for individuals in emerging adulthood. These findings highlight the importance of peer relations for individuals' developing ethnic identity. Individuals' opportunities for school involvement were positively associated with higher ethnic

identity scores. Findings from this study may inform the development of prevention programs for students in middle and high school. Prevention programs may wish to include exploration of ethnic identity, given the positive association between ethnic identity and overall-well being (Outten et al., 2009; Ponterotto & Park-Taylor, 2007). To promote ethnic identity, prevention programs may consider including more opportunities for students to become involved in school activities. An understanding of ethnic identity development may help families, teachers, and communities create supports for individuals while they transition from middle to high school, and enter emerging adulthood.

APPENDIX

FIGURES AND TABLES

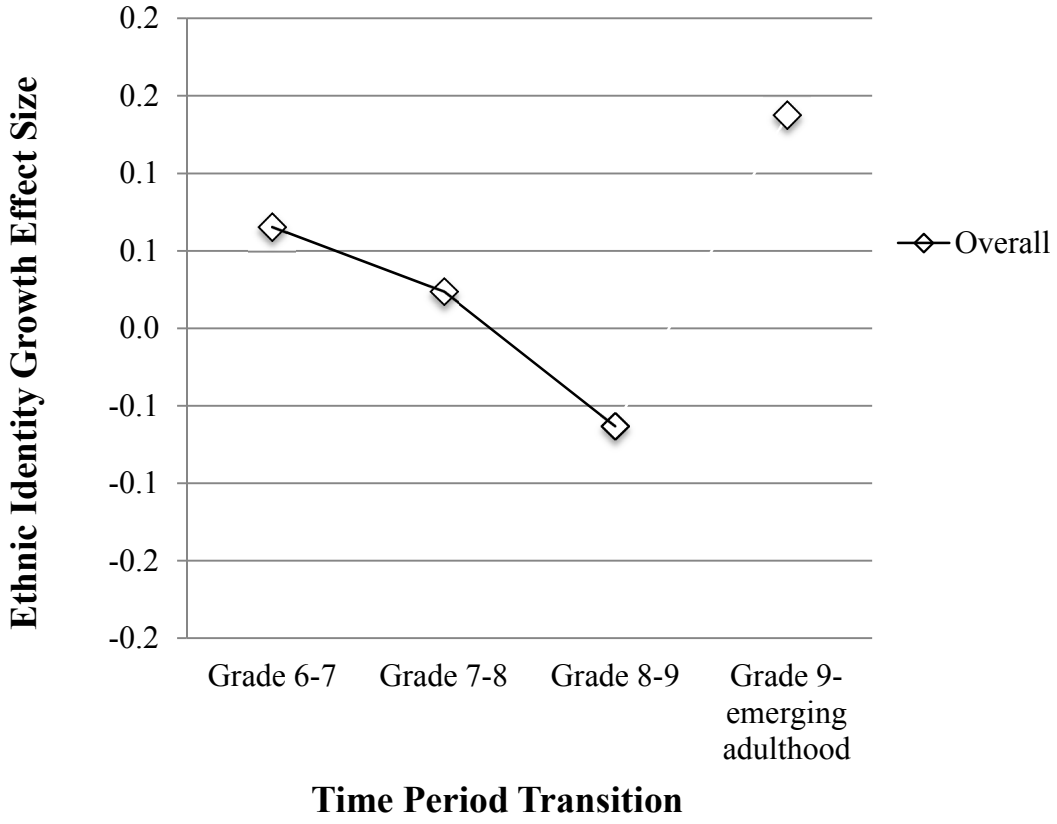

Figure 1. Illustration of changes in the overall ethnic identity score effect size changes between time points in the final model. Original ethnic identity score at Grade 6 through 9 based on a Likert scale of 1-4; emerging adulthood ethnic identity score based on a Likert Scale of 1-5. The line from Grade 9 to emerging adulthood is deleted due to the change in instrument to measure ethnic identity from Grade 9 to emerging adulthood.

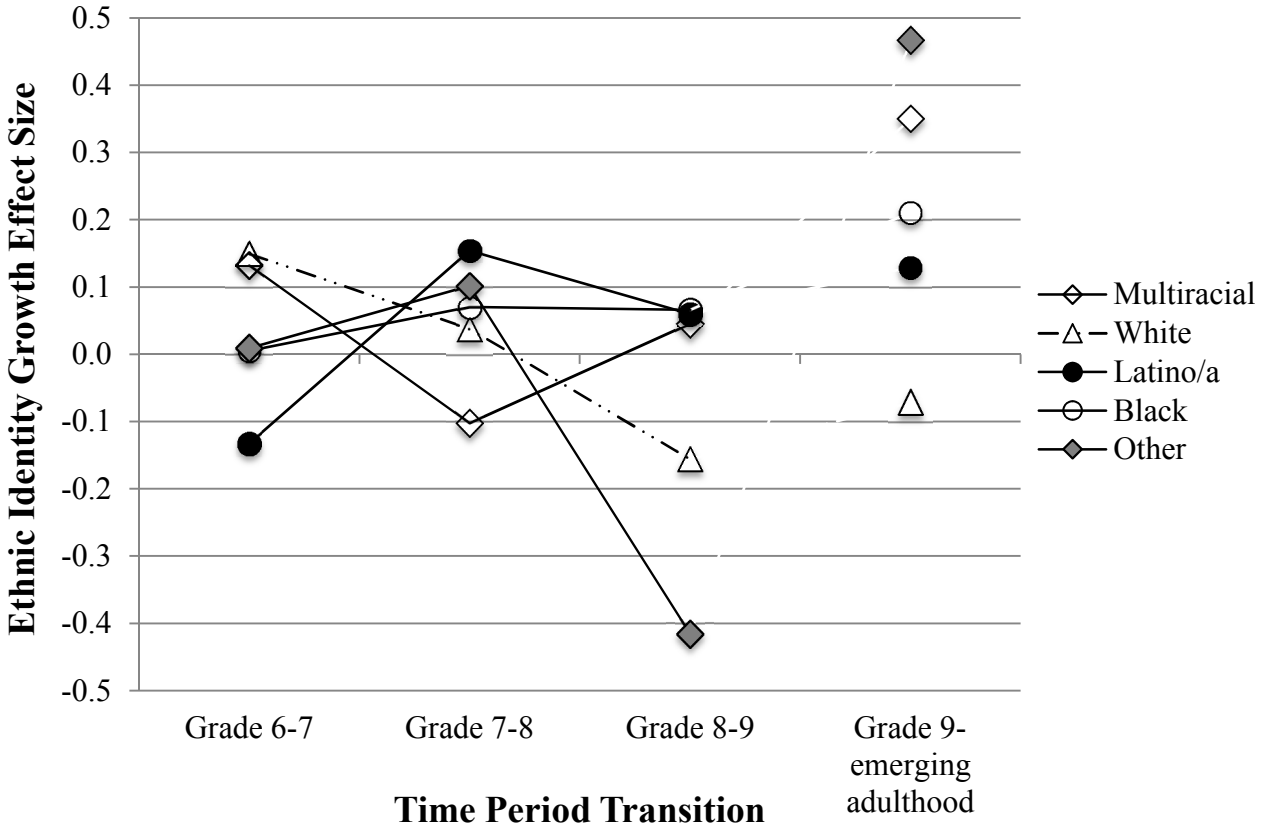

Figure 2. Illustration of changes in the ethnic identity score effect size changes between time points for racial groups in the final model. The *Other* racial group includes Asian, Pacific Islander, Native American and Other. The line from Grade 9 to emerging adulthood is deleted due to the change in instrument to measure ethnic identity from Grade 9 to emerging adulthood.

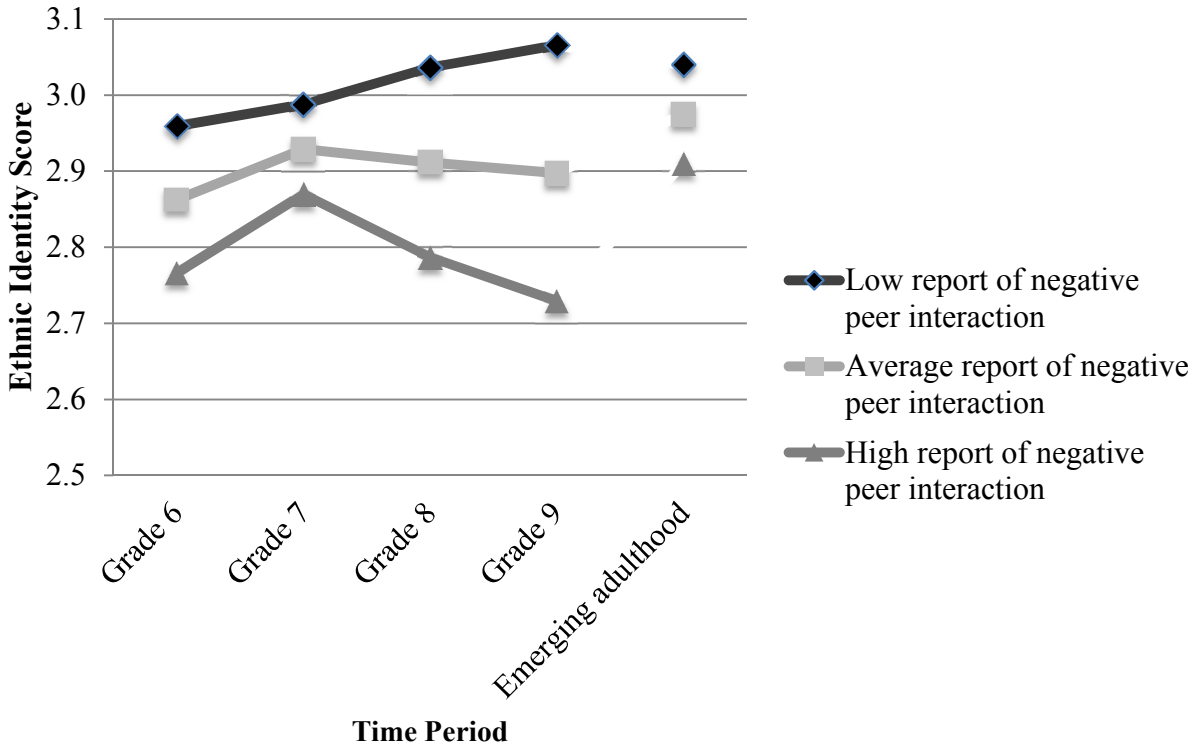

Figure 3. Illustration of predicted changes in the ethnic identity score at each time point based on reported negative peer interaction at Grade 9. The line from Grade 9 to emerging adulthood is deleted due to the change in instrument to measure ethnic identity from Grade 9 to emerging adulthood.

Table 1

Distribution of Participants Across Racial Groups from Grade 6 through Grade 9 and Emerging Adulthood

Racial Group	*n*
Multiracial (2 or more races)	
Grade 6	126
Grade 7	112
Grade 8	119
Grade 9	105
Emerging adulthood	89
Monoracial White	
Grade 6	214
Grade 7	190
Grade 8	183
Grade 9	182
Emerging adulthood	141
Monoracial Latino/a	
Grade 6	94
Grade 7	80
Grade 8	70
Grade 9	72
Emerging adulthood	59
Monoracial Black	
Grade 6	89
Grade 7	76
Grade 8	69
Grade 9	67
Emerging adulthood	68
Monoracial Other	
Grade 6	70
Grade 7	62
Grade 8	65
Grade 9	61
Emerging adulthood	36

Note. $N = 593$ at Grade 6.

Table 2

Summary of Three Exploratory Factor Analysis Results for Social Context at Grade 9

Factor and Item	Factor loading	Mean	SD
Factor 1: Bothered by racism/prejudice (4 items)		1.16	0.38
TC bothered by unfair treatment by peers because of race or skin color	0.91		
TC bothered by treatment by being called racist names	0.84		
TC bothered by treatment by being angry by racist statements made to TC	0.76		
TC bothered by treatment by unfair treatments by teachers because of race or skin color	0.74		
Eigenvalue = 3.84; Variance explained = 42.62%; Cronbach's factor alpha = .89			
Factor 2: Teased by others (3 items)		1.15	0.63
In last month TC is teased by kids at school for no reason	0.90		
In last month TC is teased by kids at school about looks or clothing	0.75		
Going to and from school TC is picked on for no reason	0.64		
Eigenvalue = 2.02; Variance explained 22.40%; Cronbach's factor alpha = .77			

Table 2 Continued

Factor and Item	Factor loading	Mean	SD
Factor 3:Experiences of racism (2 items)		1.27	0.57
In last month TC ignored by other kids because of race or skin color	-0.91		
In last month TC teased by kids at school because of race or skin color	-0.66		
Eigenvalue = 1.07; Variance explained = 11.88%; Cronbach's factor alpha = .85			
Cumulative percent of explained variance = 76.89%			
Cronbach's alpha for all items: .81			

Note. Based on 50% random sample of data; $N = 268$. Final solution = 3 factors with 9 total items (range 1-5 and 0-1). Pattern Matrix derived with Principal Axis Factoring extraction, Oblimin (oblique) rotation with Kaiser Normalization. The rotation converged in 5 iterations. TC = target child.

Table 3

Summary of Three Exploratory Factor Analysis Results for School Context at Grade 9

Factor and Item	Factor loading	Mean	SD
Factor 1: Perceptions of Teachers (7 items)		3.84	0.84
TC describes teachers as Cruel – Kind	0.86		
TC describes teachers as Mean - Nice	0.84		
TC describes teachers as Bad – Good	0.80		
TC describes teachers as Cold - Warm	0.79		
TC describes teachers as Dishonest - Honest	0.79		
TC describes teachers as Unfair - Fair	0.78		
TC describes teachers as Unfriendly - Friendly	0.76		
Eigenvalue = 7.97; Variance explained = 46.85%; Cronbach's factor alpha = .93			
Factor 2: Perceived Safety at School (7 items)		4.03	0.80
TC feels safe in school hallways	-0.91		
TC feels safe in school restroom	-0.91		
TC feels safe in school locker room	-0.90		
TC feels safe in school gym	-0.88		
TC feels safe in school cafeteria	-0.85		
TC feels safe outside the school	-0.82		
TC feels safe in the classroom	-0.73		
Eigenvalue = 3.23; Variance explained 19.02%; Cronbach's factor alpha = .96			

Table 3 Continued

Factor and Item	Factor loading	Mean	SD
Factor 3:Oppertunitites for School Involvement (3 items)		4.13	0.82
TC has chance to be a part of class discussion or activities	0.84		
Chances exist for students in TCs school to be involved in sports and school activities	0.63		
Chances exist for students in TCs school to talk with teachers 1 on 1	0.58		
Eigenvalue = 1.93; Variance explained = 7.75%; Cronbach's factor alpha = .71			
Cumulative percent of explained variance = 73.62%			
Cronbach's alpha for all items: .93			

Note. Based on random of 50% of data $N = 268$. Final solution = 3 factors with 17 total items (range 0-5). Pattern Matrix derived with Principal Axis Factoring extraction, Oblimin (oblique) rotation with Kaiser Normalization. The rotation converged in 16 iterations. TC = target child.

Table 4

Confirmatory Factor Analysis Results for Social and School Context

	Factor item	Pattern	S.E.	C.R.	SMC	Standardized coefficient
Social context						
Factor 1: Bothered by racism/prejudice						
	TC bothered by unfair treatment by peers because of race or skin color	1.10	.05	20.49	.79	.89
	TC bothered by treatment by being called racist names	1.16	.07	17.72	.60	.77
	TC bothered by treatment by being angry by racist statements made to TC	1.09	.06	19.44	.70	.84
	TC bothered by treatment by unfair treatments by teachers because of race or skin color	1.00	-	-	.59	.77
Factor 2: Negative experiences with peers						
	In last month TC is teased by kids at school for no reason	3.81	.31	12.43	.90	.90
	In last month TC is teased by kids at school about looks or clothing	3.43	.27	12.51	.83	.83
	Going to and from school TC is picked on for no reason	1.00	-	-	.56	.56

	Factor item	Pattern	S.E.	C.R.	SMC	Standardized coefficient
Factor 3:Experiences of racism						
	In last month TC ignored by other kids because of race or skin color	1.00	-	-	.89	.75
	In last month TC teased by kids at school because of race or skin color	1.41	.11	12.74	.75	.89
School context						
Factor 1: Perceptions of Teachers						
	TC describes teachers as Cruel – Kind	1.00	-	-	.73	.86
	TC describes teachers as Mean - Nice	.91	.04	23.15	.68	.82
	TC describes teachers as Bad – Good	.96	.04	23.54	.69	.83
	TC describes teachers as Cold - Warm	.93	.04	24.03	.70	.84
	TC describes teachers as Dishonest - Honest	.97	.05	20.28	.58	.76
	TC describes teachers as Unfair - Fair	.82	.04	19.47	.55	.74
	TC describes teachers as Unfriendly - Friendly	.98	.04	24.32	.72	.84

	Factor item	Pattern	S.E.	C.R.	SMC	Standardized coefficient
Factor 2: Perceived Safety at School						
	TC feels safe in school hallways	1.17	.05	22.08	.79	.89
	TC feels safe in school restroom	1.29	.06	21.60	.76	.87
	TC feels safe in school locker room	1.32	.06	21.12	.74	.86
	TC feels safe in school gym	1.19	.06	21.13	.74	.86
	TC feels safe in school cafeteria	1.21	.06	21.71	.77	.88
	TC feels safe outside the school	1.27	.07	19.54	.65	.80
	TC feels safe in the classroom	1.00	-	-	.60	.77
Factor 3:Oppertunitites for School Involvement						
	TC has chance to be a part of class discussion or activities	1.08	.09	12.07	.69	.83
	Chances exist for students in TCs school to be involved in sports and school activities	.78	.07	10.88	.37	.61
	Chances exist for students in TCs school to talk with teachers 1 on 1	1.00	-	-	.44	.66

Note: All C.R. are significant at $p < .05$.

Table 5

Summary of Final Exploratory Factor Analysis Results for Social Context at Grade 9

Factor and Item	Factor loading	Mean	SD
Factor 1: Bothered by racism/prejudice (4 items)		1.17	.42
TC bothered by unfair treatment by peers because of race or skin color	0.90		
TC bothered by treatment by being called racist names	0.73		
TC bothered by treatment by being angry by racist statements made to TC	0.84		
TC bothered by treatment by unfair treatments by teachers because of race or skin color	0.78		
Eigenvalue = 4.02; Variance explained = 42.63%; Cronbach's factor alpha = .89			
Factor 2: Negative Experiences with Peers (5 items)		1.51	.58
In last month TC is teased by kids at school for no reason	.74		
In last month TC is teased by kids at school about looks or clothing	.80		
Going to and from school TC is picked on for no reason	.60		
In last month TC ignored by other kids because of race or skin color	.63		
In last month TC teased by kids at school because of race or skin color	.64		
Eigenvalue = 1.97; Variance explained 21.88%; Cronbach's factor alpha = .81			
Cumulative percent of explained variance = 66.51%			
Cronbach's alpha for all items: .83			

Note. Based on 100% sample of data with missing items excluded; $N = 593$. Final solution = 2 factors with 9 total items (range 1-5 and 0-1). Pattern Matrix derived with Principal Axis Factoring extraction, Oblimin (oblique) rotation with Kaiser Normalization. The rotation converged in 5 iterations. TC = target child.

Table 6

Summary of Final Exploratory Factor Analysis Results for School Context at Grade 9

Factor and Item	Factor loading	Mean	SD
Factor 1: Perceptions of Teachers (7 items)		3.80	.74
TC describes teachers as Cruel – Kind	.88		
TC describes teachers as Mean - Nice	.85		
TC describes teachers as Bad – Good	.82		
TC describes teachers as Cold - Warm	.85		
TC describes teachers as Dishonest - Honest	.71		
TC describes teachers as Unfair - Fair	.74		
TC describes teachers as Unfriendly - Friendly	.83		
Eigenvalue = 7.35; Variance explained = 43.21%; Cronbach's factor alpha = .93			
Factor 2: Perceived Safety at School (7 items)		4.40	.71
TC feels safe in school hallways	-.90		
TC feels safe in school restroom	-.89		
TC feels safe in school locker room	-.87		
TC feels safe in school gym	-.85		
TC feels safe in school cafeteria	-.87		
TC feels safe outside the school	-.83		
TC feels safe in the classroom	-.72		
Eigenvalue = 3.57; Variance explained 21.02%; Cronbach's factor alpha = .95			

Table 6 Continued

Factor and Item	Factor loading	Mean	SD
Factor 3:Oppertunitites for School Involvement (3 items)		4.12	.73
TC has chance to be a part of class discussion or activities	.87		
Chances exist for students in TCs school to be involved in sports and school activities	.64		
Chances exist for students in TCs school to talk with teachers 1 on 1	.50		
Eigenvalue = 1.42; Variance explained = 8.38%; Cronbach's factor alpha = .73			
Cumulative percent of explained variance = 72.61%			
Cronbach's alpha for all items: .91			

Note. Based on 100% of data $N = 593$. Final solution = 3 factors with 17 total items (range 1-5). Pattern Matrix derived with Principal Axis Factoring extraction, Oblimin (oblique) rotation with Kaiser Normalization. The rotation converged in 6 iterations. TC = target child.

Table 7

Descriptive Statistics of Study Variable Multigroup Ethnic Identity Measure (MEIM) by Racial Group

Racial Group	Variable	*n*	*Mean*	*SD*	*Skewness*	*Kurtosis*
Multiracial	MEIM Grade 6	110	2.81	0.89	-0.45	-0.74
	MEIM Grade 7	109	2.92	0.78	-0.52	-0.49
	MEIM Grade 8	117	2.84	0.82	-0.50	-0.56
	MEIM Grade 9	101	2.87	0.81	-0.41	-0.48
	MEIM-R emerging adulthood	86	3.19	1.02	0.06	0.26
Monoracial White	MEIM Grade 6	189	2.50	0.83	-.01	-0.79
	MEIM Grade 7	180	2.62	0.75	-.24	-0.52
	MEIM Grade 8	182	2.65	0.76	-0.19	-0.46
	MEIM Grade 9	181	2.52	0.87	-0.12	-0.86
	MEIM-R emerging adulthood	136	2.46	0.86	0.41	0.15
Monoracial Latino/a	MEIM Grade 6	73	3.28	0.75	-1.27	1.25
	MEIM Grade 7	79	3.18	0.79	-0.93	0.24
	MEIM Grade 8	68	3.29	0.72	-1.31	1.54
	MEIM Grade 9	71	3.34	0.75	-1.24	0.57
	MEIM-R emerging adulthood	59	3.44	0.84	-0.01	-0.40

Table 7 Continued

Racial Group	Variable	*n*	*Mean*	*SD*	*Skewness*	*Kurtosis*
Monoracial Black	MEIM Grade 6	73	3.23	0.71	-1.25	0.96
	MEIM Grade 7	76	3.23	0.83	-0.07	0.25
	MEIM Grade 8	69	3.29	0.78	-1.37	1.49
	MEIM Grade 9	67	3.01	0.88	-0.29	-1.47
	MEIM-R emerging adulthood	66	3.52	0.97	-0.38	-0.15
Other	MEIM Grade 6	59	3.18	0.71	-0.45	-0.74
	MEIM Grade 7	62	3.19	0.72	-0.81	0.02
	MEIM Grade 8	64	3.27	0.81	-1.15	0.69
	MEIM Grade 9	61	2.92	0.87	-0.35	-0.90
	MEIM-R emerging adulthood	38	3.39	1.19	-0.26	-1.12

Note. All distributions approximate a normal curve.

Table 8

Correlation of Study Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. MEIM Grade 6	–									
2. MEIM Grade 7	.53**	–								
3. MEIM Grade 8	.99**	.53**	–							
4. MEIM Grade 9	.60*	.48**	.59**	–						
5. MEIM-R emerging adulthood	.38**	.38**	.37**	.41**	–					
6. Perception of teachers at Grade 9	.06	.05	.07	.14**	.01	–				
7. School safety at Grade 9	.01	.00	-.01	-.09	.02	-.35**	–			
8. Opportunity for school involvement at Grade 9	.11*	.10*	.13**	.09*	-.01	.50**	-.39**	–		
9. Bothered by racism/prejudice at Grade 9	.01	.09*	.00	.01	.07	-.20**	.17**	-.17**	–	
10. Negative experiences with peers at Grade 9	-.08	-.04	-.09*	-.18**	.01	-.28**	.33**	-.25**	.40**	–

Note. $N = 593$, $^{**}p \leq .01$ $^{*}p \leq .05$.

Table 9

Correlation of Ethnic Identity Scores and Identifying as Multiracial

Variable	1	2	3	4	5	6	7	8	9	10
1. MEIM Grade 6	–									
2. MEIM Grade 7	.53**	–								
3. MEIM Grade 8	.99**	.53**	–							
4. MEIM Grade 9	.60*	.48**	.59**	–						
5. MEIM-R emerging adulthood	.38**	.38**	.37**	.41**	–					
6. Multiracial Grade 6	-.04	.02	-.03	.02	.08	–				
7. Multiracial Grade 7	-.08	-.01	-.08	-.02	.04	.55**	–			
8. Multiracial Grade 8	-.07	-.02	-.07	-.04	.09	.53**	.68**	–		
9. Multiracial Grade 9	-.07	-.06	-.08	.00	-.02	.53**	.70**	.69**	–	
10. Multiracial emerging adulthood	.04	.02	.04	.01	.08	.64**	.68**	.70**	.74**	–

Note. $N = 593$, $^{**}p \leq .01$.

Table 10

Correlation of Social and School Factors and Identifying as Multiracial

Variable	1	2	3	4	5	6	7	8	9	10
1. Perception of teachers at Grade 9	–									
2. School safety at Grade 9	-.35**	–								
3. Opportunity for school involvement at Grade 9	.50**	-.39**	–							
4. Bothered by racism/prejudice at Grade 9	-.20**	.17**	-.17**	–						
5. Negative experiences with peers at Grade 9	-.28**	.33**	-.25**	.40**	–					
6. Multiracial Grade 6	-.03	-.06	-.01	.06	-.02	–				
7. Multiracial Grade 7	-.02	.02	-.01	.04	.01	.55**	–			
8. Multiracial Grade 8	-.02	-.03	-.04	-.09*	.04	.53**	.68**	–		
9. Multiracial Grade 9	.00	-.06	.01	.06	.00	.53**	.70**	.69**	–	
10. Multiracial emerging adulthood	-.02	-.08	-.02	.08	-.02	.64**	.68**	.70**	.74**	–

Note. $N = 593$, $^{**}p \leq .01$.

Table 11

Multilevel Analysis Results for Trajectories of Ethnic Identity Scores

	Null Model β (*SE*)				Time Level Model β (*SE*)			
Fixed Effect								
Intercept	2.91 (0.03)***				2.86 (0.04)***			
Effects of Time								
Linear					0.14 (0.07)*			
Quad					-0.09 (0.05)			
Cubic					0.01 (0.01)			
	SD	Variance	χ^2	*df*	*SD*	Variance	χ^2	*df*
Random Effect								
Intercept	0.66	0.43***	3304.85	561	0.78	0.61***	1774.84	465
Linear slope					1.02	1.03***	816.79	465
Quad slop					0.77	0.58***	954.63	465
Cubic slope					0.14	0.02***	1021.19	465
Level-1, *e*	0.61	0.37			0.44	0.19		

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

Table 12

Effect Size Changes in Ethnic Identity Scores Overall and Racial Groups Between Time Periods

Ethnic Identity Score	Effect Size Grade 6 to 7	Effect Size Grade 7 to 8	Effect Size Grade 8 to 9	Effect Size Grade 9 to Emerging Adulthood
Overall	0.07	0.02	-0.06	0.13
Racial Group				
Multiracial	0.13	-0.10	0.04	0.35
White	0.15	0.04	-0.16	-0.07
Latino/a	-0.13	0.15	0.06	0.13
Black	0.01	0.07	0.07	0.21
Other	0.01	0.10	-0.33	0.47

Note. Changes ethnic identity score effect size at each time point overall and for racial groups. The *Other* racial group includes Asian, Pacific Islander, Native American and Other. Ethnic identity score at Grade 6 through 9 based on a Likert scale of 1-4; Emerging adulthood ethnic identity score based on a Likert Scale of 1-5.

Table 13

Multilevel Analysis Results for Trajectories of Ethnic Identity Scores for Racial Groups

Fixed Effect	Coefficient	Standard Error
Intercept, π_0		
Intercept, β_{00}	2.83***	0.08
White, β_{01}	-0.35***	0.10
Latino, β_{02}	0.40***	0.12
Black, β_{03}	0.39**	0.12
Other, β_{04}	0.38**	0.12
Linear slope, π_1		
Intercept, β_{10}	0.21	0.13
White, β_{11}	0.02	0.17
Latino, β_{12}	-0.30	0.19
Black, β_{13}	-0.18	0.23
Other, β_{14}	-0.12	0.19
Quad slope, π_2		
Intercept, β_{20}	-0.14	0.10
White, β_{21}	0.02	0.12
Latino, β_{22}	0.20	0.14
Black, β_{23}	0.10	0.17
Other β_{24}	0.04	0.1

Table 13 Continued

Fixed Effect	Coefficient	Standard Error		
Cubic slope, π_3				
Intercept, β_{30}	0.03	0.02		
White, β_{31}	-0.01	0.02		
Latino, β_{32}	-0.03	0.03		
Black, β_{33}	-0.01	0.03		
Other, β_{34}	-0.01	0.03		
Random Effect	*SD*	Variance	$\chi 2$	*df*
Intercept, r_0	0.71	0.51***	1528.07	461
Linear slope, r_1	1.01	1.02***	815.29	461
Quad slope, r_2	0.76	0.58***	955.80	461
Cubic slope, r_3	0.14	0.02***	1023.46	461
level-1, e	0.44	0.19***	1528.07	461

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

Table 14

ANOVA for Emerging Adulthood Ethnic Identity Score and Individual Racial Groups

	Sum of Squares	df	Mean Square	F	p-value
Between Groups	74.48	4	18.62	19.98	.000
Within Groups	368.09	395	.93		
Total	442.56	399			

Table 15

Tukey HSD Comparison for MEIM-R Scores by Racial Group

(I) Racial Group	(J) Racial Group	Mean Diff (I-J)	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Multiracial	White	0.72*	0.13	0.39	1.07
	Latino	-0.26	0.16	-0.70	0.18
	Black	-0.35	0.16	-0.79	0.09
	Other	-0.06	0.17	-0.53	0.41
White	Multiracial	-.071*	0.13	-1.07	-0.36
	Latino	-0.98*	0.15	-1.39	-0.57
	Black	-1.06*	0.15	-1.47	-0.66
	Other	-0.78*	0.16	-1.22	-0.33
Latino	Multiracial	0.26	0.16	-0.18	0.70
	White	0.98*	0.15	0.57	1.39
	Black	-0.09	0.18	-0.57	0.40
	Other	0.20	0.19	-0.31	0.71
Black	Multiracial	0.35	0.16	-0.09	0.79
	White	1.06*	0.15	0.66	1.47
	Latino	0.09	0.18	-0.40	0.57
	Other	0.29	0.18	-0.23	0.80

Table 15 Continued

(I) Racial Group	(J) Racial Group	Mean Diff (I-J)	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Other	Multiracial	.06	0.17	-0.41	0.53
	White	0.78*	0.16	0.33	1.22
	Latino	-0.20	0.19	-0.72	0.31
	Black	-0.29	0.19	-0.80	0.23

Note. * $p \leq .05$.

Table 16

Multilevel Analysis Results for Social Context

	Social context β (*SE*)
Fixed effect	
Intercept π_0	
Intercept β_{00}	2.86 (0.04)***
Bothered by racism/prejudice β_{01}	0.04 (0.04)
Negative peer interactions β_{02}	-0.10 (0.04) *
Linear slope π_1	
Intercept β_{10}	0.14 (0.06)*
Bothered by racism/prejudice β_{11}	0.08 (0.08)
Negative peer interactions β_{12}	0.13 (0.06)*
Quad slope π_2	
Intercept β_{20}	-0.09 (0.05)
Bothered by racism/prejudice β_{21}	-0.06 (0.06)
Negative peer interactions β_{22}	-0.11 (0.05)*
Cubic slope, π_3	
Intercept β_{30}	0.01 (0.01)
Bothered by racism/prejudice β_{31}	0.01 (0.01)
Negative peer interactions β_{32}	0.02 (0.01)*

Table 16 Continued

Random effect	*SD*	Variance	χ^2	*df*
Intercept r_0	0.78	0.61	1763.86***	463
Linear slope r_1	0.99	0.99	805.40***	463
Quad slope r_2	0.75	0.56	933.59***	463
Cubic slope r_3	0.13	0.02	994.51***	463
level-1 *e*	0.44	0.19		463

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

Table 17

Multilevel Analysis Results for School Context

	School context model β (*SE*)
Fixed effect	
Intercept β_{00}	2.86 (0.04)***
Perception of teachers β_{01}	0.03 (0.05)
School safety β_{02}	0.04 (0.04)
Opportunity for school involvement β_{03}	0.11 (0.05)*
Linear slope, π_1	
Intercept β_{10}	0.13 (0.06)*
Perception of teachers β_{11}	-0.09 (0.07)
School safety, β_{12}	0.06 (0.07)
Opportunity for school involvement β_{13}	0.08 (0.08)
Quad slope π_2	
Intercept β_{10}, β_{20}	-0.08 (0.05)
Perception of teachers β_{21}	0.07 (0.05)
School safety, β_{22}	-0.06 (0.05)
Opportunity for school involvement β_{23}	-0.06 (0.06)
Cubic slope π_3	
Intercept β_{30}	0.01 (0.01)
Perception of teachers β_{31}	-0.08 (0.01)
School safety β_{32}	0.01 (0.01)
Opportunity for school involvement β_{3Opp3}	0.01 (0.01)

Table 17 Continued

	SD	Variance	χ^2	*df*
Random effect				
Intercept	0.78	0.60	1754.94***	462
Linear slope	1.01	1.02	818.13***	462
Quad slop	0.76	0.58	953.61***	462
Cubic slope	0.14	0.02	1018.39***	462
Level-1 *e*	0.44	0.19		

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

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