Ethnic-Racial Identity and Academic Adjustment among Adolescents: Examining the Role of Friendship Characteristics

by

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Dedication

To mom and Sammie
This one's for you

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Abstract

The demographics of the U.S. are changing. By 2050, projections suggest that non-Hispanic Whites will no longer make up the majority of the population, and students of color should outnumber White students in schools by 2025. It is thus timely and necessary to examine youth's ethnic-racial identity (ERI) development—the meaning individuals ascribe to their ethnic-racial groups and how they maintain this meaning over time—as it relates to their academic adjustment. Research has identified numerous associations between positive ERI beliefs and improved academic outcomes across diverse student populations. However, comparatively little research has explored how youth's social contexts in school—such as their friendship groups and the characteristics thereof—may shape these associations. This represents a significant gap in our understanding of normative ERI development, and an opportunity to identify how social ties encourage positive identity development and educational success within our diversifying student population.

In this work, I hypothesized that more diverse, more emotionally supportive, and less conflictual friend groups among ethnically-racially diverse high school students may encourage a more positive association between their ERI and academic adjustment. Drawing from frameworks such as ecological systems theory and social identity theory, I proposed three aims. First, I examined the extent to which adolescents' ERI beliefs (i.e., centrality and public regard), friend group characteristics (i.e., ethnic-racial diversity and relationship quality), and academic adjustment outcomes (i.e., academic efficacy and school belonging) change over time. Second, I investigated whether observed changes in these constructs are related to one another over time.

Third, I examined the extent to which adolescents' initial ERI values, friend group characteristics, and their respective interactions predict changes in their academic adjustment.

To explore these questions, I drew data from three waves of a longitudinal high school study. The analytic sample included an ethnically-racially diverse sample of 9th through 12th grade students in the Midwestern and Southwestern United States. Students completed quantitative surveys assessing their ERI centrality (the importance individuals place on their ethnicity-race) and public regard (how one perceives others to evaluate their ethnicity-race). They also reported on their academic adjustment perceptions. Finally, students provided high school friend nominations, which were subsequently used to assess aggregate friend group characteristics across individual students. Primary analyses included the completion and interpretation of multiple unconditional, conditional, and parallel latent growth curve models. These captured the initial values of variables at each time point, the slope values of their change over time, and the interrelation of that change across variables.

Results indicated that ERI centrality and public regard positively related to students' academic efficacy and school belonging perceptions. Similarly, friend group emotional support and conflict buffered against declines in academic adjustment change over time. In addition, significant moderation relations were found. Notably, students' ERI and friend group characteristics interacted such that both academic efficacy and school belonging were at their highest among students reporting high public regard and high friend emotional support friend group conflict. The bulk of these findings held consistent across ethnic-racial groups, though notable nuances exist. This work concludes that youth's school friend groups constitute a

relevant context in ERI development among ethnically-racially diverse adolescents. Implications for the future of ERI research as it relates to encouraging strong and supportive friend groups in schools are discussed.

Chapter 1 Introduction

Adolescence is a time of substantial identity development (Erikson, 1968). One normative and psychologically significant dimension of this process is ethnic-racial identity (ERI) development, which refers to the meaning individuals ascribe to their ethnic-racial[1] groups and how they maintain this meaning over time (Phinney, 1990). ERI informs one's self of social identity (itself is a core component of one's self-concept) and concerns one's connection to larger ethnic-racial groups (McLean & Syed, 2014). As youth of color in the United States work to navigate diverse social contexts and the deeper meanings associated with their social group memberships, their beliefs and attitudes about these groups become increasingly salient. As such, ERI has been found to have myriad academic implications for adolescents of color, including their school belonging, efficacy, and engagement (Rivas-Drake et al, 2014a). However, little research has considered how youth's social contexts, and the characteristics of those contexts, may relate to this link (Syed, 2018). In other words, while extent literature has done well to establish a link between youth's beliefs about their ethnicity-race and various aspects of their academic experiences, there is still much to learn about the social contexts in which these

[1] Much work across disciplines has examined the definitions of and distinctions between ethnicity and race (Brubaker, 2009; Chandra, 2006; Hirschman, Alba, & Farley, 2000). This dissertation aligns with a substantial segment of such research in defining ethnicity as a category based on shared ancestry, culture, traditions, and/or national identity, and race as a category based on clusters of phenotypical or socially constructed characteristics. The term ethnic-racial used predominantly throughout this work signifies the interrelated elements of individuals' ethnicity and race, and those elements that would be difficult to separate for individuals in terms of their beliefs or values.

processes take place, and how these contexts may be potentially impacting the strength of this link.

Drawing from the Multidimensional Model of Racial Identity (Sellers, Smith, Shelton, Rowley, & Chavous, 1998), social identity theory (Tajfel, Turner, Austin, & Worchel, 1979), and ecological systems theory (Bronfenbrenner, 1992), the current work considers the role of friend groups as an especially salient social context for adolescents. Youth spend a majority of their waking hours with friends and, during adolescence, are increasingly open to their social and academic influence (Larson & Verma, 1999). Further, past work has demonstrated that friend groups in schools both impact and are impacted by one another's ERI beliefs (Medina, Rivas-Drake, Jagers, & Rowley, 2019; Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017). It stands to reason, then, that adolescent friendships may relate to observed links between youth's ERI development and academic adjustment. Across three concurrent and longitudinal quantitative research questions, this work sought to investigate this position. Specifically, I examined 1) how adolescents' ERI beliefs, friend group characteristics, and academic adjustment outcomes change over time, 2) the extent to which observed changes in these constructs relate to one another longitudinally, and 3) whether the interaction of prior ERI beliefs and friend group characteristics predict change in adolescents' academic adjustment outcomes.

Adolescence as a Time of Change

Adolescence—defined here as an inclusive age range beginning after childhood and ending prior to adulthood, and used interchangeably with the term youth—is a time of substantial development across numerous areas (Adams & Berzonsky, 2008; Benner et al., 2018). Physiologically, compared to children, adolescents have improved cognitive functioning (e.g., superior memory, attention) and, by extension, social skills. These developments often facilitate

opportunities for increased autonomy, as youth are given more leeway from parents and authority figures toward additional responsibility, privacy, and independence. Contextually, adolescence often includes a change in school environment, which may lead to additional opportunities for youth to participate in new and deeper peer relationships. Psychologically, these experiences are accompanied by significant identity development, as youth explore their group memberships and the expectations, values, behaviors, and limitations that they may perceive exist therein. Taken together, such extensive personal and environmental changes frame adolescence as a time of notable development, individually, socially, and academically.

Throughout this time, youth's ethnicity, race, and culture introduce additional, unique challenges. Youth of color, such as Asian, Black, and Latinx adolescents, increasingly make up a larger proportion of the United States population (U.S. Census, 2014), while simultaneously experiencing higher rates of ethnic-racial discrimination, racism, and injustice than their White peers (Córdova & Cervantes, 2010). In terms of educational adjustment, youth of color have historically faced comparatively poorer schooling conditions, and they remain more likely than their White peers to attend under-resourced schools and be taught by less experienced teachers (Orfield, Kucsera, & Siegel-Hawley, 2012). Likely due to these and similar conditions, youth of color, and Black and Latinx youth in particular, are also more likely to experience poorer academic outcomes, such as higher drop-out rates and less school engagement and motivation, than their peers (Lofstrom, 2007; Steele, 1992; U.S. Bureau of the Census, 2001; Vernez & Abrahamse, 1996). Simultaneously, White youth within the United States often experience comparatively more positive and supportive educational experiences, and relatedly may not spend as much time or energy as their peers of color considering the role of ethnicity-race and culture on their relationships and life outcomes (Fuligni, Witkow, & Garcia, 2005; Steele, 1992;

U.S. Bureau of the Census, 2001). Given these circumstances, understanding ethnic-racial identity development, including its contexts and relationships with positive academic adjustment, across an increasingly diverse adolescent population is vital to those concerned with their long-term success and well-being.

ERI Development During Adolescence

A central component of identity development during adolescence is the improved understanding of one's social group memberships (Erikson, 1968). As youth mature, they are better equipped to identify the social categories with which they identify (e.g., gender, ethnicity, race, nationality), as well as the broader social statuses, expectations, and behaviors associated with these affiliations (Tajfel, Turner, Austin, & Worchel, 1979). Self-identifying with one or more of these groups allows youth to recognize in-group and out-group members in their social contexts, such as peers and friends, from whom they may model appropriate behaviors, refine their social relationships, explore their values and beliefs, and in turn refine their self-concept and esteem (Berndt, 1979; Fuligni, Witkow, & Garcia, 2005; Phinney, 1990; Steinberg & Silverberg, 1986; Tajfel, Turner, Austin, & Worchel, 1979).

ERI—the importance and meaning one attributes to their ethnic-racial group membership—is one particularly significant area of self-identification among adolescents (Umaña-Taylor et al., 2014). ERI development is theorized to begin during early adolescence, as youth become increasingly aware of their ethnic-racial group membership, its roles in their developing values and attitudes, and its significance in their interactions with others. Such identity development is considered a long-term process (Erikson, 1968); early ethnic and racial identification leads to more mature and thoughtful ethnic-racial identities (Umaña-Taylor et al., 2014), as one's self-concept is continuously informed by changing social contexts (e.g., families,

friend groups, schools) and acculturation experiences (Phinney, 1990; Phinney, 2003). Naturally, youth's experiences are likely to differ in this regard; research has shown that White youth and youth of color often experience differing degrees of ERI development over time, and among ethnically-racially diverse adolescents, ERI beliefs may remain stable, increase to varying degrees, or decrease to varying degrees over time (Fuligni, Witkow, & Garcia, 2005; Huang & Stormshak, 2011).

ERI changes during this time have significant implications across a variety of outcomes. ERI development has been studied across myriad ethnic-racial groups (French et al., 2006; Umaña-Taylor, 2011; Rivas-Drake et al, 2014a,b), with findings indicating that, while differences emerge across groups and individuals, positive ERI beliefs are broadly beneficial to areas like psychosocial development, positive esteem, and well-being (Bracey, Bámaca, & Umaña-Taylor, 2004; French, Seidman, Allen & Aber, 2006; Umaña-Taylor & Updegraff, 2007). Academically, among ethnically-racially diverse samples, associations have also been found between ERI beliefs and youth's feelings of academic achievement (Adelabu, 2008), adjustment (Rivas-Drake et al., 2014a; Roberts et al., 1999; Umaña-Taylor, 2003; Umaña-Taylor, Vargas-Chanes, Garcia, & Gonzales-Backen, 2008), engagement (Rivas-Drake et al., 2014b), motivation (Chavous et al., 2003), and preparedness (Smith et al., 1999), among others.

Little is known, however, as to what factors may be bolstering such beneficial ERI development throughout adolescence. Considering again the numerous areas of individual and social change occurring from childhood to adolescence, it is plausible and intuitive that some aspects of youth's social contexts may be informing the extent to which they develop positive ERI beliefs. The current work attempts to address this question via two considerations. First, methodologically, we examine changes in ERI development longitudinally (Hughes, Way, &

Rivas-Drake, 2011). Second, theoretically, we highlight one potential aspect of social contexts that adolescents experience which may be particularly influential toward the direction and extent of ERI development: the school friend groups

Friend Groups as Social Contexts

As youth develop their sense of self and relationships, they naturally draw information about values, norms, and attitudes from numerous external sources, such as their families and teachers. One of the most common of these sources is the friend group (Larson & Verma, 1999). Given both individual and social development during adolescence, friendships formed and maintained through this time are often especially emotionally deep and generally more socially complex than those of childhood (Epstein, 1989; Hartup & Stevens, 1997). Research has explored the significance of adolescent friendships on a variety of youth's outcomes. For example, given the intimacy, trust, and shared activities inherent within friendships, they have been found to be significant toward youth's psychological well-being and identity development beliefs (Jones et al., 2014; Reis & Youniss, 2004). Regarding educational outcomes, youth have been found to be similar to their friends across a variety of academic dimensions, including motivation, engagement, and achievement (Altermatt & Pomerantz, 2003; Kindermann, 2007; Ream & Rumberger, 2008; Ryan, 2001).

However, despite the overarching benefits of friend groups on youth's socioemotional and academic well-being, nuances exist. Specifically, school friendships are malleable and unique, and thus research on their ties to adolescents' identity beliefs and academic adjustment must consider which aspects of friend groups are most relevant. In other words, adolescents may be differentially impacted by certain aspects of their friendships depending on the outcome in question. The current work critically examined the characteristics of friend groups that may be

most relevant to understanding adolescents' ERI development, as well as those that may be potentially influential toward the relationship between adolescents' ERI and academic adjustment. To this end, two characteristics were explored: friend group ethnic-racial diversity and relationship quality (i.e., emotional support and conflict).

ERI and Friend Group Characteristics

Friends serve as significant social referents for one another regarding social norms and expectations, which in turn may shape their behaviors and values (Brechwald & Prinstein, 2011; Dishion & Tipsord, 2011). To that end, adolescent friendships tend to exhibit homophily, or a preference for those with whom they share a salient characteristic (e.g., gender, ethnicity, race; McPherson et al., 2001; Shrum, Cheek, & Hunter, 1988). Theory and research indicate that such similarity relates to positive identity beliefs (Gibbons, Gerrard, & Lane, 2003) and may occur as a result of two processes: selection, in which youth identify and befriend others with similar beliefs and characteristics, and socialization, in which youth shape and are shaped by the norms and behaviors of those around them (Aseltine, 1995; Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Kandel, 1978; Keenan, Loeber, Zhang, Stouthamer-Loeber, & Van Kammen, 1995). Selection and socialization have been found to drive ERI homophily within friend groups, as well (e.g., Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017). For example, in a multi-site study of ethnically-racially diverse adolescents, peers were found to influence multiple dimensions of one another's ERI, including the extent to which adolescents' ERI was related to their self-concept and their beliefs about other's evaluations of their ethnic-racial group (Santos, Kornienko, & Rivas-Drake, 2015).

Two characteristics of friend groups that likely relate to their relationship with ERI are ethnic-racial diversity and relationship quality. Friend group ethnic-racial diversity refers to the

proportion of out-group (different ethnic-racial group) to in-group (same ethnic-racial group) friends within an adolescent's friend group. On balance, exposure to and interactions with diverse friends may benefit youth in multiple ways; they provide opportunities for young people to develop novel social ties, practice their social skills, improve their intergroup attitudes, develop their ethnic-racial and social identities, and reduce perceptions of social vulnerability (Graham, 2018; Juvonen, Kogachi, & Graham, 2018; Wells, Fox, & Cordova-Cobo, 2016). These benefits are considered especially pronounced relative to other forms of intergroup contact, as friendship bonds tend to be especially intimate and influential during adolescence (Graham, 2018; Larson & Verma, 1999).

That said, research suggests that the benefits of in-group and out-group friendships, even those within larger friendship networks, may vary (Jugert, Leszczensky, & Pink, 2019). For example, in-group friendships are generally regarded as more stable, emotionally close and intimate, and related to more time spent together on activities than are out-group friendships (Aboud et al., 2003; Jugert et al., 2013; Kao & Joyner, 2004; Schneider, Dixon, & Udvari, 2007). Similarly, such friendships are also more likely to encourage ERI development, as youth may feel more comfortable to explore and critically examine this aspect of their identity among in-group friends (Jugert, Leszczensky, & Pink, 2019). Research bears this out, as contact with same-ethnicity friends has been found to be positively associated with ERI beliefs (i.e., affirmation, belonging, and exploration) among adolescents (Phinney, Romero, Nava, & Huang, 2001). Furthermore, among Asian adolescents, the extent to which youth's ERI was related to their self-concept was higher for those with both same-ethnicity and cross-ethnicity friends than those with primarily cross-ethnicity friends (Kiang, Peterson, & Thompson, 2011). Research has also found that, among Asian, European, and Latinx adolescents, having primarily in-group

friend networks was associated with greater ERI belonging and exploration beliefs (Kiang, Witkow, Baldelomar, & Fuligni, 2010).

Conversely, out-group friendships are a near ideal context for improving intergroup attitudes, as they present youth with intimate opportunities to gain information about other groups and potentially correct held misconceptions and stereotypes (Allport, 1954; Pettigrew & Christ, 2011; Pettigrew & Tropp, 2006). As such, out-group friendships have been associated with more positive racial attitudes over time and reduced stereotyping, prejudice, and a rejection of race-based social exclusion (Bohmert & DeMaris, 2015; Crystal, Killen, & Ruck, 2008; Pettigrew, 2005). Further, this prejudice reducing effect has been found across contexts and populations, including both ethnic-racial minority and majority youth (for review, see Pettigrew & Tropp, 2006). It is possible that out-group friendships may also provide youth with a space in which they may reflect on their ERI among trusted peers, and perhaps receive positive messaging from out-group peers about their own group memberships. Further, due to homophily trends during adolescence, youth may be initially less inclined toward befriending out-group others. As such, individual's out-group friends are more likely to either share youth's ERI beliefs or provide a trusted space in which to explore one's ERI beliefs. Extant research supports this view; among Asian, Black, Latinx, and White adolescents, homophily across ERI beliefs was most similar among out-group friends than in-group friends (Hamm, 2000). Similarly, among ethnically-racially diverse adolescents, friendship diversity positively predicted later ERI exploration, while ERI resolution predicted later friendship diversity (Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017).

Both in-group and out-group, then, are theoretically and empirically linked to adolescent ERI development. In summary, on the one hand, in-group friendships provide individuals with

similar others from which to learn and model behaviors and values they may identify with their ethnic-racial group membership. Further, such friendships tend to constitute relatively safe and relatable spaces in which youth can examine and receive feedback on their social identity beliefs. On the other hand, out-group friendships provide adolescents with opportunities to learn about other ethnic-racial groups, receive positive or supportive external evaluations about one's own group memberships, and reflect upon the importance of such social categories in one's life and self-concept. Unsurprisingly, out-group friendships have thus encouraged positive interactions with other out-group members, facilitating such friendships further. As friend group diversity refers to the proportion of these groups relative to one another within one's friend network, greater diversity suggests that adolescents have greater access to the ERI-related benefits of both types of friendship.

A second friendship characteristic that is also likely linked to ERI development is relationship quality. Relationship quality refers to the positive and negative characteristics of a friendship, such as its degree of emotional openness and conflict (Ackermann et al., 2018; Berndt & Keefe, 1992; Buhrmester & Furman, 2008; Hartup, 1996; Hartup & Stevens, 1999), and is related to numerous developmental outcomes among adolescents (Berndt, 2004; Bukowski, Hoza, & Boivin, 1994). For example, positive relationship quality, often typified via self-reports of emotional closeness or supportiveness, has been associated with adolescents' academic success (e.g., achievement, reduced school problems; Berndt & Hawkins, 1991; Kurdek & Sinclair, 1988), social status (e.g., school popularity, social problem-solving; Berndt, 1989), and psychological well-being (Buhrmester, 1990). Conversely, emotional closeness in friendships has been negatively associated with identity development issues, like low self-esteem

and ego identity development (Papini, Farmer, Clark, Micke, & Barnett, 1990), and delinquent behaviors, like alcohol consumption and depressive symptoms ideations (Windle, 1994).

Friendships may exhibit both positive and negative characteristics (Berndt, 2004; Furman & Buhrmester, 1985). Friendships exhibiting negative relationship quality have been associated with psychosocial maladjustment (Véronneau, Trempe, & Paiva, 2014), while friendships exhibiting positive relationship quality have been associated with improved self-esteem and positive identity development among adolescents, children, and young adults alike (Ackermann et al., 2018; Bagwell et al., 2005; Berndt, Hawkins, & Jiao, 1999; Ladd, Kochenderfer, & Coleman, 1996). Indeed, while the presence of close friendships may be considered normative among adolescents, their quality may vary significantly (Berndt, 2002) and the presence of high-quality friendships is more closely linked to youth's positive psychosocial development (Hartup & Stevens, 1997). Given the wide-ranging social and psychosocial benefits of high-quality friendships, it is likely that, like diverse friendships, they provide youth with a supportive social context conducive to ERI development. In other words, high-quality school friendships may afford youth with emotional closeness, support, and social resources that serve to reduce the potential confusion and difficulties associated with learning more about one's ethnic-racial and cultural background.

Statement of the Problem

Although prior research has considered certain areas of overlap between ERI development and school friendships, substantial areas for expansion exist. For example, little work has critically examined how ERI and friend group characteristics may change together over time, let alone what dimensions of ERI or characteristics of friend groups are most strongly or consistently related. In other words, as both ERI development and friend relationships are tent

poles of adolescent development (Brown & Larson, 2009; Rivas-Drake et al., 2014a; Umaña-Taylor et al., 2014), they are simultaneously complex and highly contextual, leaving ample room for empirical examinations into their areas of overlap and mutual growth. In addition, while both have been found to relate to academic success in youth of color independently, work has not yet examined how the social context of a friend group may relate to the links between ERI and academic adjustment among diverse adolescents. Examining the role of the friend group is a significant step forward in our understanding of normative ERI development in school spaces. For example, do more diverse friend groups in school provide youth with an incentive to critically examine the academic implications of their ethnic-racial group membership? Similarly, do more supportive or less quarrelsome friend groups serve as safe and encouraging spaces for adolescent ERI development? Critically exploring the intersections of these constructs is necessary if we hope to capture an accurate and comprehensive picture of the overlapping factors involved in adolescent identity development.

Study Significance

Expounding on the interrelations of ERI, friendship, and academic adjustment among ethnically-racially diverse youth is timely and necessary. Our country's demographics are changing. By 2050, projections suggest that non-Hispanic Whites will no longer make up the majority of the United States population (Passel & Cohn, 2008). Similar research suggests this trend will be represented in public schooling, as well; by 2025, it is anticipated that students of color will outnumber White students in elementary through high school (Maxwell, 2014). As such, how young people come to understand the role of race and ethnicity in their lives, be it in relation to their friend groups or their academic adjustment, becomes relevant at a very early age. For youth of color, the stakes involved with this process can be especially high, as they have

historically been subject to comparatively negative, prejudiced, and poorer educational opportunities and outcomes. This area of study is thus both theoretically and practically significant. Theoretically, if we hope to further understand the nuances and benefits of ERI among diverse youth in the United States, it is useful to unpack friend groups as relevant developmental contexts. Practically, youth's ERI beliefs and friendship relations are immediately and continuously related to their academic success in schools (e.g., Brown & Larson, 2009; Rivas-Drake et al., 2014).

Research Questions

Through the use of latent growth curve model analyses on a sample of ethnically-racially diverse high school students, the current work addresses three primary research questions. First, to what extent to adolescents' ERI beliefs, friend group characteristics (i.e., diversity, emotional support, and conflict), and academic adjustment outcomes (i.e., academic efficacy and school belonging) change over time? I hypothesize that ERI centrality and public regard will increase or remain relatively stable among participants across ethnic-racial groups, as is the case for the majority of youth (Douglass, Mirpuri, & Yip, 2017; Huang & Stormshak, 2011; Knight, Losoya, Cho, Chassin, Williams, & Cota-Robles, 2012; Pahl & Way, 2006; Umaña-Taylor, Gonzales-Backen, & Guimond, 2009), though results will likely indicate significant variation in this regard across participants and time points. I further predict that friend group emotional support will increase and conflict will decrease over time, as youth improve their social relation skills and refine a more supportive and positive friend group (Hartup & Stevens, 1997). In addition, friend diversity is likely to decrease with time, as youth tend to maintain more ethnically-racially homogenous friend groups over the course of adolescence (Tatum, 2017). Finally, I hypothesize that, across the analytic sample, academic efficacy and school belonging will both decrease over

time, as is common for many educational outcomes and beliefs during this time (Archambault, Janosz, Morizot, & Pagani, 2009; Neel & Fuligni, 2013; Pong & Zeiser, 2012).

Second, to what extent are changes in adolescents' ERI beliefs, friend group characteristics, and academic adjustment outcomes related to one another over time? Regarding friend group diversity, among adolescents in an ethnically-racially diverse school setting, I anticipate the importance of ERI in their lives (centrality) will be negatively related to the diversity of their school friend group over time, and vice versa; both low centrality and low friend group diversity are likely to encourage increased attention toward one's in-group identity and relationships over time. Conversely, I predict that adolescents' beliefs about others' positive evaluations of their ethnic-racial group (public regard) will be positively related to their friend group diversity, and vice versa; believing that out-group members think well of your in-group is likely to encourage more diverse friend engagement, and such engagement provides opportunities for positive out-group evaluations.

Regarding friend group relationship quality, I anticipate that emotional support will be positively related to youth's centrality and public regard over time and conflict will be negatively related to both centrality and public regard. Given the import of friend groups toward youth's psychosocial development and well-being (Douglass, Mirpuri, & Yip, 2017), it stands to reason that positive and supportive (or less negative and conflictual) friend groups will provide youth across ethnic-racial groups with a safe and encouraging environment for identity development. Conversely, a more developed self-concept or stronger ERI beliefs will likely be conducive to the development of a more positive school friend group.

In addition, I predict that change in both ERI beliefs and friendship characteristics will be positively related to that of academic adjustment over time. The psychosocial and emotional

benefits of developing one's identity beliefs and social relationships are likely to bolster one's feelings of academic competence and acceptance. Similarly, such positive educational experiences may well provide youth with the support and encouragement conducive to both more critically examine their ERI beliefs and develop more positive and complex social networks.

Third, to what extent do youth's prior ERI beliefs and friend group characteristics predict youth's academic adjustment outcomes over time? Given that the bulk of previous research in this area have found positive associations between ERI and academic adjustment among youth of color (Rivas-Drake, 2014a), and that friends serve as salient social referents for youth's school experiences and outcomes (Kindermann, 2007; Ream & Rumberger, 2008), I predict that students' prior ERI centrality and public regard, friendship diversity and emotional support, and their respective interactions will be positively linked to growth in youth's academic adjustment over time. Similarly, I further predict that friendship conflict will negatively relate to this change.

Brief Overview of Guiding Theoretical Frameworks

This work will draw from three theoretical frameworks: the Multidimensional Model of Racial Identity (MMRI; Sellers, Smith, Shelton, Rowley, & Chavous, 1998), ecological systems theory (Bronfenbrenner, 1979, 1992), and social identity theory (Tajfel, Turner, Austin, & Worchel, 1979). The MMRI presents a multidimensional model of ERI content across four distinct categories—centrality, regard, salience, and ideology. In the current work, we emphasize centrality (the extent to which one's racial group is relevant to their self-concept) and regard (external evaluations of one's racial group), as they are particularly relevant to this work's consideration of both individual identity development and friend group factors. Although the MMRI was originally designed for use with Black youth, the non-group specific categories of

centrality and regard used here have been generalized for use with other ethnic-racial groups (e.g., Rivas-Drake, Hughes, & Way, 2009; Yip, 2005).

Ecological systems theory posits that individuals are exposed to, and differentially shaped by, numerous social and environmental contexts (Bronfenbrenner, 1979, 1992). The strength and frequency of these sources are thought to range from the most immediate and frequent, such as immediate family and friends (i.e., the microsystem), to increasing radial and uncommon, such as largely societal institutions or tertiary acquaintances (i.e., the mesosystem and beyond). The most direct environments represent common and highly salient contexts and relationships, including youth's friend group, which are likely to play more direct roles in shaping youth's daily experiences and developing values and identity. Indeed, Bronfenbrenner (1979) argued that the role of close relationships on youth's behavior is common to the point of being nearly ubiquitous. To this end, the theory would suggest that friend groups, such as those listed by students in the current study, are likely to play a prominent role in youth's identity development and experiences in school.

Social identity theory states that one's self-concept is informed and defined by one's social group memberships, which are differentially salient depending on the current context (Brown, 2000; Hogg & Abrams, 1988; Hogg, Terry, & White, 1995; Stets, & Burke, 2000; Tajfel, Turner, Austin, & Worchel, 1979; Tajfel, 1981). Social identity formation is theorized to involve two processes: self-categorization and enhancement (Hogg & Abrams, 1988; Hogg, Terry, & White, 1995; Stets, & Burke, 2000). Self-categorization refers to identifying the self as a member of a recognized social category, such as an ethnic-racial group. Enhancement refers to identifying others as members of either the same group or an outgroup, and often doing so along dimensions that encourage a positive view of one's in-group. During both of these processes,

youth are likely to look to significant others as sources of comparison and for information regarding appropriate in-group and out-group behavior. Given this framework, one's beliefs about his or her ethnic-racial group membership are likely to be informed by the characteristics, behaviors, and attitudes of his or her friend group. Further, this social referencing may occur more commonly in new, stressful, or highly detailed contexts, like schools and classrooms (Brown, 2000). Considered together, these theories highlight the ways in which social group identities and close friendships may interrelate, as well as how they may inform how adolescents feel about and engage with school.

Organization of the Dissertation

This dissertation will consist of five chapters. Chapter 2 discusses the state of the extant literature surrounding the research questions and constructs of interest. This includes a review of the research examining 1) ERI development among diverse adolescents, 2) ERI's relation to youth's academic adjustment, 3) ERI development within the context of friendship, and 4) friend group characteristics as potential moderating factors on the relation between ERI and academic adjustment. This is followed by a review of the current work's research questions and their accompanying hypotheses. Chapter 3 provides an overview of the study's methods. This includes a description of its data set, participants, procedures, and measures, followed by a data analysis plan designed to address each research question. Chapter 4 details the results of these analyses, including preliminary and primary findings for each research question and hypothesis. Chapter 5 concludes this work, including a discussion of findings, their implications for the state of the field, considerations for future work in this area, study limitations, and a concluding word on the study's significance.

Chapter 2 Literature Review

The current work examines the interrelations of ethnic-racial identity (ERI), academic adjustment, and friend group characteristics among ethnically-racially diverse adolescents. Specifically, it explores the extent to which youth's ERI and friend group characteristics may change together over time, a relation that is relatively empirically untested. It also assesses the extent to which ERI, friend group characteristics, and their interaction may predict changes in youth's academic adjustment. This chapter details relevant theories and research underlying each of these constructs, as well as how gaps in our understanding of how they may interconnect inform the current work's research questions.

The Multidimensionality of ERI

Identity formation is a normative process in adolescence (Erikson, 1968; Phinney, 1990). One prominent aspect of this process is ERI development, or the meaning individuals ascribe to their ethnic-racial groups and how they maintain this meaning over time (Phinney, 1990; Yasui, Dorham, & Dishion, 2004). Indeed, given the cultural significance of race and ethnicity in the United States (Williams, Tolan, Durkee, Francois, & Anderson, 2012), one's ethnic-racial group membership is often one of the earliest identity dimensions to become salient for some youth (Cooper, Gonzalez, & Wilson, 2014). For many youth, particularly those of color, ERI development begins during early childhood (Brown, Alabi, Huynh, & Masten, 2011), expands during adolescence (Rivas-Drake et al., 2014a), and coheres through emerging adulthood (Syed & Azmitia, 2009). That said, research suggests even White youth, particularly those within ethnically-racially diverse settings, may experience their own nuanced ERI development

informed by their social contexts and multiculturalism beliefs (McDermott & Samson, 2005; Rowe, Bennett, & Atkinson, 1994). Throughout adolescence, ERI is considered a dynamic feature of the self, evolving as individuals reconsider their group memberships or face ethnicity-race related experiences, such as discrimination (Cross, 1971; Sellers et al., 1998; Shelton & Sellers, 2000; Syed & Juang, 2014).

The breadth and complexity of ERI development has led it to be conceptualized in numerous ways, with more recent approaches identifying it as a multidimensional process (Umaña-Taylor et al., 2014). In studies of ethnically-racially diverse adolescents, these dimensions have been increasingly assessed through the Multidimensional Model of Racial Identity, or MMRI (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). The MMRI argues that racial identity can be primarily understood by simultaneously considering both the meaning and significance attributed to one's racial group membership. The MMRI assessments, while originally proposed to only capture identity development among Black youth, have subsequently been used across a variety of ethnic-racial groups (Rivas-Drake, Hughes, & Way, 2009; Yip, 2005). It should be noted, however, that the use of this measure across such populations does not suggest that the process of ERI development, the meanings attached to each ERI dimension, and the social contexts thereof are therefore identical across ethnic-racial groups. Rather, the measure, as used here, offers insights into how different populations may respond to meaningful questions about their own beliefs and values surrounding their cultural beliefs relative to other groups.

The present work critically examines two dimensions of the MMRI: centrality and public regard. *Centrality* refers to the importance individuals place on their ethnicity-race across contexts, and would thus help inform the extent to which strong ethnic-racial ties may relate to

academic success among populations that have traditionally experienced education-related barriers and stereotypes. Similarly, *public regard* refers to how one perceives others' evaluations of their ethnic-racial group, and is thus apropos to a discussion of relations with diverse friend groups. Lastly, whereas other ERI dimensions have been heavily explored in relation to beneficial developmental outcomes (Fulgini, Witkow, & Garcia, 2005; Rivas-Drake, 2011a; Rivas-Drake et al., 2014a; Rivas-Drake, Hughes, & Way, 2009; Sellers, Copeland-Linder, Martin, & Lewis, 2006; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004), there is a comparative dearth of work on centrality and public regard in relation to both youth's academic adjustment and friendships (Rivas-Drake et al., 2014a).

A growing body of literature has sought to link these ERI dimensions to academic success among ethnic-racial minority youth (for review, see Rivas-Drake et al., 2014a). Among these, positive associations with feelings of academic attachment, engagement, and connectedness have been primarily considered (Chavous et al., 2008; Miller-Cotto & Byrnes, 2016; Neblett et al., 2012; Sellers, Chavous, & Cooke, 1998; Smith & Silva, 2011). For example, among Latinx adolescents (ages 11-19), feeling as though their peers liked and respected their ethnic-racial group (i.e., public regard) was positively associated with their school engagement (Rivas-Drake, 2011b). In addition, among Asian, Latinx, and White 9th grade youth, feeling as though their ethnic-racial group was an important part of their identity (i.e., centrality) was positively associated with beliefs of academic utility, success, and interest, as well as feelings of being attached to and respected at their school (Fuligni, Witkow, & Garcia, 2005). The current work aims to expand upon these studies by, in part, introducing additional consideration to youth's school context. Specifically, I posits that youth's school friend groups—and the characteristics of those friend groups—may help to inform ERI development, and its relation to

students' academic success, over time.

The Role of Friends

As adolescents explore and develop their ERI, they may look to others for input, feedback, and comparison. According to the ecological systems theory (Bronfenbrenner, 1992), the most influential inputs for youth come from microsystem sources, or those with which they are in immediate, regular contact. Two such prominent sources for adolescents are often their school peers and friends; here, *peers* refer to adolescents who engage in a shared school context, and *friends* refer to adolescents who share a relationship and feel close to one another (Price & Ladd, 1986; Thrupp, Lauder, & Robinson, 2002; Douglass, Mirpuri, & Yip, 2017). Regarding ERI development and academic adjustment, friends are a particularly noteworthy and influential microsystem. This is due to the intimacy and trust inherent in friendship, which tends to exceed that of peer relationships, in part because of the comparatively greater agency involved in friend group formation (McLean & Jennings, 2012). In addition, adolescents spend more time with and be more similar to their friends than peers (Akers, Jones, & Coyl, 1998).

Friends serve as significant and common social referents for one another during adolescence (Brown & Larson, 2009; Traylor, Williams, Kenney, & Hopson, 2016; Turner, 1991). This process has been observed across a variety of domains, including those of emotional support, behavior and temperament, academic outcomes, positive esteem, and self-concept beliefs (Altermatt & Pomerantz, 2003; Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Jones, Vaterlaus, Jackson, & Morrill, 2014; Kuttler, La Greca, & Prinstein, 1999; Reis & Youniss, 2004; Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017; Santos et al., 2017). Taken together, research suggests that friend groups create spaces for youth to observe attitudinal and behavioral norms, adopt them into their personal identity as a means of better integrating and

ingratiating themselves among liked others, and practice these norms among trusted others (Brechwald & Prinstein, 2011; Dishion & Tipsord, 2011). Perhaps unsurprisingly, the role of friend groups is especially prominent in schools, which themselves serve as an influential social contexts for youth and provide them with a space in which they are in regular contact with friends (Anderman & Maehr, 1994; Brechwald & Prinstein, 2011; Bronfenbrenner, 1992; Eccles et al., 1993; Lynch, Lerner, & Leventhal, 2013).

Some research has explored possible links between school friendships and either youth's academic adjustment or ERI beliefs. Students have been found to look to their friends for guidance and reinforcement regarding their interest and engagement in school (Kindermann & Gest, 2009; Prinstein & Dodge 2008). Further, adolescents tend to be similar to their friends in terms of their academic attitudes, engagement, and achievement (Akers, Jones, & Coyl, 1998; Altermatt & Pomerantz, 2003; Kindermann, 2007; Ryan, 2000). Similarly, ethnic-racial minority youth have been found to adjust their ERI beliefs in response to their peers (Brown & Larson, 2009). For example, among diverse middle school students, their exploration of and certainty toward their ethnic-racial group membership become more like that of their school friends, even after controlling for friend selection effects (Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017). Such work reinforces the significance of friends generally in shaping youth's identity development and school experiences. That said, to consider the mechanisms by which friendship may be impacting adolescence development, a significant question remains unaddressed: what characteristics of friend groups are driving these relations?

Friend Group Characteristics. Research has broadly demonstrated the importance of adolescent friendships, but not all friendships are the same, or equally influential (Hartup, 1999). Factors such as one's social status (Cohen & Prinstein, 2006), temperament (Adams, Bukowski,

& Bagwell, 2005), delinquent behavior (Dishion & Owen, 2002), emotional support (Vitaro, Tremblay, Kerr, Pagani, & Bukowski, 1997), and demographic similarity (Brechwald & Prinstein, 2011) have been found to impact the extent to which friends are influenced by or become more similar to one another over time. Though sparse, some research has considered how such friend group characteristics may shape either youth's identity development or academic experiences. For example, friends' ERI beliefs have been found to become more similar over time (Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017), and exposure to ethnic-racial diversity among friends has been linked to students' social support and discrimination experiences in school (Kawabata & Crick 2011; Yip et al., 2010). Further, for youth who feel little clarity in their ERI beliefs (i.e., ERI resolution), research suggests the resolution of their school friend group may buffer against potential declines in school belonging (Medina, Rivas-Drake, Jagers, & Rowley, 2019). The current study expands upon this work, considering two friend group characteristics that may strengthen the association between youth's ERI beliefs and academic adjustment: ethnic-racial diversity and relationship quality.

Friend Group Ethnic-Racial Diversity. Friend group ethnic-racial diversity refers to the proportion of out-group (different ethnic-racial group) to in-group (same ethnic-racial group) friends an adolescent reports within their school friend network. Research has examined the importance of both types of friendships on adolescents' normative development, including their unique benefits, risks, and complementary nature. In-group friendships, for instance, are more common, individually preferred, and considered useful in allowing youth to learn about the expectations and values associated with their group membership (Hallinan 1982; Hallinan & Teixeira, 1987; Tatum, 2017). These friendships are also often more comfortable for adolescents, who are likely to be more familiar with their own ethnic-racial group's behavioral norms

(Graham, Munniksma, & Juvonen, 2014). Such friendships have also been positively associated with numerous ERI dimensions (e.g., affirmation, belonging, private regard; Graham et al., 2014; Kiang & Fuligni, 2009), likely by providing youth with opportunities to engage with positive exemplars of their ethnic-racial group. However, in-group friendships also run the risk of limiting youth's experiences with, knowledge of, and comfort surrounding other populations, and may present the real or perceived need to strictly follow group-specific norms and values (Graham, Taylor, & Ho, 2009).

Researchers have similarly explored out-group friendships. These relationships offer youth the opportunity to develop social skills across a variety of peers, leading to improved intergroup relations, well-being, personal sense of security, and reduced perceived emotional vulnerability for students of color and White students, alike (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Graham, Munniksma, & Juvonen, 2014; Graham et al., 2014; Munniksma & Juvonen, 2012). Further, out-group friendships expose youth to the positive attributes and values of others, and have thus been associated with reduced discrimination, a rejection of race-based stereotyping, and increased out-group liking and knowledge (Aberson, Shoemaker, & Tomolillo, 2004; Antonio, 2001; Crystal, Killen, & Ruck, 2008; Perry, 2013; Pettigrew & Tropp, 2006; Titzmann, Michel, & Silbereisen, 2010; Titzmann, Brenick, & Silbereisen, 2015). Regarding White students specifically, for whom out-group friendships are often less common (Pettigrew & Tropp, 2006), interracial friendships are linked to more positive racial attitudes over time (Northcutt Bohmert & DeMaris, 2015). That said, out-group friendships are generally less comfortable for youth, and are often linked to initially heightened anxiety and avoidance behaviors that reduce over time (Graham, Taylor, & Ho, 2009).

Taken together, these lines of research suggest that both in- and out-group friendships

may create opportunities for youth to critically examine the relationship between their ERI and school experiences; the former through its potentially more comfortable and supportive social context, and the latter through its forefronting of ethnic-racial differences and development of positive intergroup attitudes. Friendship diversity, then, offers an opportunity to explore in-group and out-group friendships in tandem, and how their strengths may simultaneously impact youth's identity development and academic adjustment. Social identity theory supports such an examination. The theory argues that one's self-concept includes both their personal and social identities (Tajfel, Turner, Austin, & Worchel, 1979; Tajfel, 1981; Verkuyten, 2016). These identities develop, in part, through receiving feedback about group memberships from significant others, such as school friends (Ruble et al., 2004; Rubin & Hewstone, 1998; Tajfel & Turner, 1986; Umaña-Taylor, 2011). In this way, a society identity framework suggests that as the diversity of one's friend group changes, so too may the feedback they receive from these friends about their own identity and experiences within a shared school context.

Friend Group Relationship Quality. Friend group relationship quality refers to the positive affective characteristics (e.g., emotional support, closeness) and negative affective characteristics (e.g., aggression, conflict) that underlie friend relations (Ackermann et al., 2018; Buhrmester & Furman, 2008; Hartup, 1996). Unsurprisingly, such qualities vary significantly both within and across friend groups, and research has linked them broadly to a variety of youth outcomes (for overview, see Véronneau, Trempe, & Paiva, 2014). For example, adolescents often view supportive friendships as their greatest sources of companionship, intimacy, and autonomy, above and beyond relationships with family members, teachers, or peers (Buhrmester & Furman, 2008; Furman & Buhrmester, 1985). In addition, friendships characterized by common prosocial qualities or low conflict have been linked to emotional openness and positive

academic adjustment (Berndt, 1992, 2002). Conversely, friendships characterized by aggression or bullying have been linked to increased feelings of loneliness, depression, and low self-worth, as well as decreased GPA and school attendance (Juvonen, Nishina, & Graham, 2000; Nansel et al., 2004; Solberg & Olweus, 2003). In these ways, friend group relationship quality significantly bolsters or hinders youth's socioemotional and academic environments, which likely has implications for how youth link their identity beliefs and academic adjustment. Specifically, emotionally supportive or non-conflictual friendships are hypothesized to provide students with a socially and academically supportive space in school, thus likely encouraging a positive association between their ERI development and their feelings of academic success.

ERI, Friend Group Characteristics, and Academic Adjustment Over Time

One implicit element of the prior examinations of ERI development, friend group characteristics, and academic adjustment is that of change over time. Adolescence is inherently a time of change, as children transition into a stage generally characterized by increased autonomy, social interactions, cognitive development, and emotional maturation (Adams & Berzonsky, 2008). ERI, which draws from each of these areas to some extent, is theorized to evolve throughout adolescence and beyond (Syed & Juang, 2014; Umaña-Taylor et al., 2014). Similarly, as youth simultaneously negotiate and renegotiate their identities and school friendships, the characteristics of those friendships will undoubtedly also shift with time (Brown & Larson, 2009). Therefore, as both ERI development and school friendships relate to youth's academic adjustment (e.g., Rivas-Drake et al., 2014a; Ryan, 2001), those outcomes are likely to change across adolescence. The current work, which aims to consider each of these constructs in conjunction, will thus consider longitudinal associations across three research questions.

Research Questions and Hypotheses

Research Question 1 (RQ1): To what extent do adolescents' ERI beliefs (i.e., centrality and public regard), friend group characteristics (i.e., diversity, emotional support, and conflict), and academic adjustment outcomes (i.e., academic efficacy and school belonging) change over time? The broad body of research considered so far highlight the socioemotional significant of youth's identity development, friend group relations, and academic experiences and success. The current work expands on this work by identifying those dimensions of each process that are likely to be related among ethnically-racially diverse adolescents. The first step of this process is to investigate the extent to which these unique dimensions demonstrate change over time. In terms of ERI development, I hypothesized growth in both centrality and public regard, as has been previously observed in many other ERI dimensions, including these two dimensions, across the majority of adolescents and ethnic-racial groups (e.g., Huang & Stormshak, 2011). In terms of friend group characteristics, I predicted declines in friend group diversity over time across groups; Both majority- and minority-group youth tend to develop more in-group friendships over the course of adolescence, as they come to seek out more information about their own ethnic-racial group memberships (Aboud et al., 2003; Epstein, 1989). I also predicted increases in emotional support and decreases in conflict, as youth learn to better navigate their friendships, either seek out more positive relationships or improve on those they have maintained, and end more negative friendships (Aboud et al., 2003; Larson & Verma, 1999). I hypothesized that friend group emotional support would increase and friend group conflict would decrease over time, as youth learn to better navigate their friendships, either seek out more positive relationships or improve on those they have maintained, and end more negative friendships (Aboud et al., 2003; Larson & Verma, 1999). In terms of academic adjustment outcomes, I predicted significant declines in both academic efficacy and school

belonging, as has commonly been observed in related educational outcomes across similar adolescent samples (Archambault, Janosz, Morizot, & Pagani, 2009; Neel & Fuligni, 2013; Pong & Zeiser, 2012).

Research Question 2 (RQ2): To what extent do observed changes in adolescents' ERI beliefs, friend group characteristics, and academic adjustment outcomes relate to one another over time? Theory and research suggest numerous associations between either ERI development or positive friend relationships and various aspects of adolescents' academic experiences. The current work extends our understanding of these processes by examining how they may change over time in tandem, and across an ethnically-racially diverse high school sample. I predicted that change in both adolescents' ERI beliefs and friend group characteristics would be related to one another, as well as to change in their academic adjustment outcomes. Specifically, in accordance with previous research on ERI development across diverse adolescents, I hypothesized that increases in ERI centrality would be positively related to increases in public regard over time across groups, and both would be positively related to students' academic adjustment outcomes. (McDermott & Samson, 2005; Rivas-Drake et al., 2014a, 2014b). As youth develop their sense of self-concept, particularly concerning a social identity like ERI, they are very likely to look to and be socialized by their highly salient social contexts, like friend groups. Similarly, as youth participate in their distinct friend groups, these experiences are likely to inform their identity beliefs and development. Lastly, as each of these processes occur within schools, I predict reciprocal relations among both ERI development and friend group characteristics and youth's academic competencies and experiences.

Research Question 3 (RQ3): To what extent do adolescents' ERI beliefs, friend group characteristics, and their respective interactions relate to changes in their academic

adjustment outcomes over time? Studies examining the links between both adolescents' ERI beliefs and positive friendships with academic adjustment have produced generally positive results. The current work expands on these investigations by 1) considering the role of these constructs on academic adjustment both concurrently and longitudinally and 2) examining interactions among distinct and theoretically linked ERI dimensions and friend group characteristics. I hypothesized that both ERI centrality and public regard would be positively related to change adolescent academic outcomes, both in terms of concurrent adjustment and change in adjustment over time, as the majority of previous empirical research has found such links between numerous ERI dimensions and students' academic success (Rivas-Drake et al., 2014a; Roberts et al., 1999; Umaña-Taylor, 2003; Umaña-Taylor, Vargas-Chanes, Garcia, & Gonzales-Backen, 2008). I similarly hypothesized, in line with extant literature (Brechwald & Prinstein, 2011; Ladd, Kochenderfer, & Coleman, 1996), positive friend group relationship quality (i.e., emotional support) would be positively related to academic adjustment over time, while negative relationship quality (i.e., conflict) would be negatively related to academic adjustment over time. In addition, I hypothesized that these friendship characteristics would moderate the link between ERI beliefs and academic adjustment, as positive and supportive friend groups have been associated with both academic benefits (Berndt & Hawkins, 1991; Kurdek & Sinclair, 1988) and psychosocial benefits (Berndt, 1989; Buhrmester, 1990) for adolescents in schools. Finally, I predicted that the link between ERI dimensions and academic adjustment outcomes would be moderated by friend diversity, as an ethnic-racially diverse friend group is theorized to provide youth with a richer and more helpful social pool from which to draw academic support (Graham, 2018).

Chapter 3 Methodology

The current work draws from the larger Teen Identity Development and Education Study (TIDES). The study aimed to explore socioemotional development, academic adjustment, and friend networks among two high school populations in the Midwestern and Southwestern United States. Specifically, TIDES proposed three aims. The first was to help understand the relation between adolescents' ERI development and peer network formation. In other words, to what extent does one's ERI beliefs shape his or her peer group and vice versa? The second was to explore how this interrelationship may influence youth's academic and psychosocial development. The third was to clarify how characteristics of youth's peer networks may mediate the relationship between youth's ERI beliefs and their academic and psychosocial outcomes.

Taken together, these goals framed a project meant to elucidate the role of peer networks as a context of adolescent development, as well as identify which factors of adolescent adjustment are most impacted by such contexts. TIDES was a two-year, three-time point study; Time 1 (T1) began in the spring of 2017, followed by time 2 (T2) during fall 2017 and time 3 (T3) during spring 2018. The current study uses data from the both the Midwestern and Southwestern sites at T1 through T3.

Participants

At T1, the initial Midwestern sample included 1,055 adolescents (< 0.01% opted out). Of this sample, 47.4% were identified as female and 52.6% as male. Of this group, 23.2% were in 9th grade, 35.6% in 10th grade, 24.4% in 11th grade, 16.5% in 12th grade (0.3% missing). Participants ranged between 13 and 19 years old (approximately 0.2% were 13 years old at

survey administration, 13.9% were 14, 28.4% were 15, 28.3% were 16, 20.5% were 17, 8.4% were 18, and 0.3% were 19). The overall sample was also ethnically-racially diverse: 1.4% were AMENA (Arabic, Middle Eastern, North African), 0.8% American Indian/Native American, 26.7% Asian/Pacific Islander, 18.8% Black/African American, 5.4% Latinx/Hispanic, 43.9% White, 2.6% multiracial, and 0.3% other (0.2% missing). Finally, the vast majority—82.7%—of students were born in the United States. Of those who were not, they listed 39 countries of origin, with those over 1% occurrence being China (2.4%) and South Korea (1.9%). Regarding this subsample, 59.1% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 1,002 Asian, Black, Latinx, and White adolescents, with other groups necessarily omitted due to sample size limitations. Across these groups, 28.1% of students were Asian, 19.8% were Black, 5.7% were Latinx, and 46.2% were White. Approximating the whole sample, 47.0% of students identified as female and 53.0% as male. Also, 23.4% were in 9th grade, 35.9% in 10th grade, 23.7% in 11th grade, and 16.8% in 12th grade (0.3% missing). Participants ranged between 13 and 19 years old (approximately 0.2% were 13 years old at survey administration, 14.0% were 14, 28.4% were 15, 28.1% were 16, 20.3% were 17, 8.7% were 18, and 0.3% were 19). Finally, 82.8% of students were born in the United States, and of those who were not, 60.0% immigrated to the United States at or before the age of 10.

At Time 2, the initial Midwestern sample included 1,337 adolescents (< 0.01% opted out). Of this sample, 44.7% identified as female, 51.2% as male, 0.7% preferred not to answer, and 1.9% provided a different label (1.3% missing). Of this sample, 29.9% were in 9th grade, 25.4% in 10th grade, 25.8% in 11th grade, 17.9% in 12th grade (1.0% missing). Participants ranged between 13 and 18 years old (approximately 3.3% were 13 years old at survey

administration, 26.2% were 14, 24.6% were 15, 25.1% were 16, 18.7% were 17, and 2.6% were 18). The overall sample was also ethnically-racially diverse: 2.5% were AMENA (Arabic, Middle Eastern, North African), 0.4% American Indian/Native American, 24.8% Asian/Pacific Islander, 21.7% Black/African American, 7.3% Latinx/Hispanic, 39.1% White/European American, 2.4% multiracial, and 0.9% other (0.9% missing). Finally, 82.6% of students were born in the United States, and of those who were not, 58.7% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 1,237 Asian, Black, Latinx, and White adolescents. Across these groups, 26.4% of students were Asian, 23.1% were Black, 7.8% were Latinx, and 41.7% were White. Of these students, 44.0% of students identified as female, 51.9% as male, 0.8% preferred not to answer, and 1.9% provided a different label (1.4% missing). Also, 29.8% were in 9th grade, 25.0% in 10th grade, 26.2% in 11th grade, 17.9% in 12th grade (1.0% missing). Participants ranged between 13 and 18 years old (approximately 3.0% were 13 years old at survey administration, 26.3% were 14, 24.2% were 15, 26.2% were 16, 18.1% were 17, and 2.2% were 18). Finally, 82.9% of students were born in the United States, and of those who were not, 57.9% immigrated to the United States at or before the age of 10.

At T3, the initial Midwestern sample included 1,200 adolescents (< 0.01% opted out). Of this sample, 44.9% were identified as female, 50.2% as male, 1.0% preferred not to answer, and 1.1% provided a different label (2.8% missing). Of this group, 29.2% were in 9th grade, 25.3% in 10th grade, 27.8% in 11th grade, 16.7% in 12th grade (1.0% missing). Participants ranged between 13 and 19 years old (approximately 0.1% were 13 years old at survey administration, 15.4% were 14, 28.6% were 15, 25.7% were 16, 20.2% were 17, 9.7% were 18, and 0.3% were 19). The overall sample was also ethnically-racially diverse: 1.9% were AMENA (Arabic, Middle

Eastern, North African), 0.7% American Indian/Native American, 23.6% Asian/Pacific Islander, 20.5% Black/African American, 6.9% Latinx/Hispanic, 40.6% White, 2.5% multiracial, and 0.6% other (2.8% missing). Finally, 83.0% of students were born in the United States, and of those who were not, 66.4% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 1,254 Asian, Black, Latinx, and White adolescents. Across these groups, 25.0% of students were Asian, 21.7% were Black, 7.3% were Latinx, and43.0% were White. Approximating the whole sample, 44.8% of students identified as female, 50.5% as male, 1.0% preferred not to answer, and 0.9% provided a different label (1.4% missing).. Also, 29.0% were in 9th grade, 25.4% in 10th grade, 28.4% in 11th grade, 16.3% in 12th grade (1.0% missing). Participants ranged between 14 and 19 years old (approximately 15.2% were 14, 28.6% were 15, 25.8% were 16, 20.4% were 17, 9.7% were 18, and 0.3% were 19). Finally, 83.0% of students were born in the United States, and of those who were not, 65.8% immigrated to the United States at or before the age of 10.

At T1, the initial Southwestern sample included 2,136 adolescents (0.53% opted out). Of this sample, 52.4% were identified as female and 46.7% as male. Of this group, 28.8% were in 9th grade, 25.7% in 10th grade, 23.2% in 11th grade, 21.5% in 12th grade (0.8% missing). Participants ranged between 14 and 20 years old (14.7% were 14, 23.3% were 15, 26.2% were 16, 22.4% were 17, 13.2% were 18, 0.1% were 19, and 0.1% were 20). The overall sample was also ethnically-racially diverse: 0.5% were AMENA (Arabic, Middle Eastern, North African), 3.7% American Indian/Native American, 4.0% Asian/Pacific Islander, 26.6% Black/African American, 25.6% Latinx/Hispanic, 36.6% White, 2.1% multiracial, and 0.3% other (0.8% missing). Finally, the vast majority—94.1%—of students were born in the United States. Of those who were not, they listed 38 countries of origin, with none over 1% occurrence. Regarding

this subsample, 75.7% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 1,977 Asian, Black, Latinx, and White adolescents, with other groups necessarily omitted due to sample size limitations. Across these groups, 4.3% were Asian, 28.5% of students were Black, 27.4% of students were Latinx, and 38.9% were White. Approximating the whole sample, 52.8% of students identified as female and 46.4% as male. Also, 28.1% were in 9th grade, 26.1% in 10th grade, 23.6% in 11th grade, 21.4% in 12th grade (0.8% missing). Participants ranged between 14 and 20 years old (approximately 14.2% were 14, 23.4% were 15, 26.4% were 16, 22.6% were 17, 13.4% were 18, 0.1% were 19, and 0.1% were 20). Finally, 93.9% of students were born in the United States, and of those who were not, 75.7% immigrated to the United States at or before the age of 10.

At Time 2, the initial Southwestern sample included 2,268 adolescents (1.82% opted out). Of this sample, 52.1% identified as female, 44.6% as male, 1.2% preferred not to answer, and 0.7% provided a different label (1.4% missing). Of this sample, 29.0% were in 9th grade, 25.8% in 10th grade, 23.1% in 11th grade, 20.6% in 12th grade (1.5% missing). Participants ranged between 13 and 19 years old (approximately 1.3% were 13 years old at survey administration, 19.0% were 14, 26.3% were 15, 25.7% were 16, 23.6% were 17, 4.0% were 18, and 0.1% were 19). The overall sample was also ethnically-racially diverse: 0.5% were AMENA (Arabic, Middle Eastern, North African), 4.4% American Indian/Native American, 3.9% Asian/Pacific Islander, 27.3% Black/African American, 27.9% Latinx/Hispanic, 31.8% White/European American, 2.6% multiracial, and 0.5% other (1.1% missing). Finally, 94.1% of students were born in the United States, and of those who were not, 72.1% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 2,058 Asian, Black, Latinx, and

White adolescents. Across these groups, 4.3% of students were Asian, 29.7% were Black, 30.4% were Latinx, and 34.5% were White. Of these students, 52.0% of students identified as female, 44.8% as male, 1.1% preferred not to answer, and 0.7% provided a different label (1.4% missing). Also, 28.8% were in 9th grade, 25.2% in 10th grade, 23.5% in 11th grade, 21.0% in 12th grade (1.4% missing). Participants ranged between 14 and 19 years old (approximately 1.3% were 13 years old at survey administration, 18.9% were 14, 26% were 15, 25.7% were 16, 23.7% were 17, 4.2% were 18, and 0.1% were 19). Finally, 94.0% of students were born in the United States, and of those who were not, 71.9% immigrated to the United States at or before the age of 10.

At T3, the initial Southwestern sample included 1,856 adolescents (7.25% opted out). Of this sample, 51.2% were identified as female, 43.9% as male, 1.4% preferred not to answer, and 0.8% provided a different label (2.8% missing). Of this group, 29.5% were in 9th grade, 24.6% in 10th grade, 23.5% in 11th grade, 21.7% in 12th grade (0.6% missing). Participants ranged between 14 and 19 years old (approximately 13.5% were 14, 23.8% were 15, 21.5% were 16, 27.0% were 17, 14.0% were 18, and 0.2% were 19). The overall sample was also ethnically-racially diverse: 0.3% were AMENA (Arabic, Middle Eastern, North African), 4.8% American Indian/Native American, 4.5% Asian/Pacific Islander, 25.2% Black/African American, 27.2% Latinx/Hispanic, 32.3% White, 3.0% multiracial, and 0.7% other (2.0% missing). Finally, 94.2% of students were born in the United States, and of those who were not, 75.9% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 1,740 Asian, Black, Latinx, and White adolescents. Across these groups, 4.9% of students were Asian, 27.6% were Black, 29.8% were Latinx, and 35.5% were White. Approximating the whole sample, 51.4% of students

identified as female, 43.6% as male, 1.3% preferred not to answer, and 0.8% provided a different label (2.9% missing). Also, 29.2% were in 9th grade, 24.0% in 10th grade, 24.0% in 11th grade, 22.2% in 12th grade (0.6% missing). Participants ranged between 14 and 19 years old (approximately 13.2% were 14, 23.9% were 15, 20.6% were 16, 27.6% were 17, 14.5% were 18, and 0.2% were 19). Finally, 94.3% of students were born in the United States, and of those who were not, 70.8% immigrated to the United States at or before the age of 10.

The pooled Midwestern and Southwestern T1 sample included 3,191 adolescents (0.43% opted out). Of this sample, 50.7% were identified as female and 48.7% as male. Of this group, 27.0% were in 9th grade, 29.0% in 10th grade, 23.6% in 11th grade, 19.9% in 12th grade (0.6% missing). Participants ranged between 13 and 20 years old (approximately 0.1% of students were 13 years old, 14.1% were 14, 25.7% were 15, 27.2% were 16, 21.6% were 17, 11.1% were 18, 0.2% were 19, and <0.1% were 20). The overall sample was also ethnically-racially diverse: 0.8% were AMENA (Arabic, Middle Eastern, North African), 2.8% American Indian/Native American, 11.5% Asian/Pacific Islander, 24.0% Black/African American, 18.9% Latinx/Hispanic, 38.8% White, 2.3% multiracial, and 0.3% other (0.6% missing). Finally, the vast majority—90.3%—of students were born in the United States. Of those who were not, 64.5% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 2,995 Asian, Black, Latinx, and White adolescents. Across these groups, 12.3% were Asian, 25.6% of students were Black, 20.2% of students were Latinx, and 41.3% were White. Approximating the whole sample, 50.9% of students identified as female and 48.6% as male. Also, 26.5% were in 9th grade, 29.4% in 10th grade, 23.6% in 11th grade, 19.8% in 12th grade (0.6% missing). Participants ranged between 13 and 20 years old (approximately 0.1% were 13 years old, 14.1% were 14, 25.7% were 15, 27.2%

were 16, 21.6% were 17, 11.1% were 18, 0.2% were 19, and <0.1% were 20). Finally, 90.2% of students were born in the United States, and of those who were not, 65.1% immigrated to the United States at or before the age of 10.

The pooled T2 sample included 3,623 adolescents (1.27% opted out). Of this sample, 49.3% identified as female, 47.1% as male, 1.0% preferred not to answer, and 1.2% provided a different label (1.4% missing). Of this sample, 29.3% were in 9th grade, 25.7% in 10th grade, 24.1% in 11th grade, 19.6% in 12th grade (1.3% missing). Participants ranged between 13 and 19 years old (approximately 2.3% were 13 years old at survey administration, 23.1% were 14, 25.3% were 15, 25.9% were 16, 20.4% were 17, 3.0% were 18, and <0.1% were 19). The overall sample was also ethnically-racially diverse: 1.2% were AMENA (Arabic, Middle Eastern, North African), 2.9% American Indian/Native American, 11.7% Asian/Pacific Islander, 25.2% Black/African American, 20.2% Latinx/Hispanic, 34.5% White/European American, 2.5% multiracial, and 0.7% other (1.1% missing). Finally, 89.9% of students were born in the United States, and of those who were not, 62.0% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 3,342 Asian, Black, Latinx, and White adolescents. Across these groups, 12.6% of students were Asian, 27.2% were Black, 21.8% were Latinx, and 37.2% were White. Of these students, 49.0% of students identified as female, 47.5% as male, 1.0% preferred not to answer, and 1.1% provided a different label (1.4% missing). Also, 29.2% were in 9th grade, 25.2% in 10th grade, 24.5% in 11th grade, 19.9% in 12th grade (1.3% missing). Participants ranged between 13 and 19 years old (approximately 2.2% were 13 years old at survey administration, 23.1% were 14, 25.1% were 15, 26% were 16, 20.6% were 17, 3.1% were 18, and <0.1% were 19). Finally, 89.8% of students were born in the United

States, and of those who were not, 61.4% immigrated to the United States at or before the age of 10.

The pooled T3 sample included 3,127 adolescents (4.58% opted out). Of this sample, 48.8% were identified as female, 46.3% as male, 1.1% preferred not to answer, and 0.9% provided a different label (2.8% missing). Of this group, 29.4% were in 9th grade, 24.9% in 10th grade, 25.2% in 11th grade, 19.8% in 12th grade (0.8% missing). Participants ranged between 13 and 19 years old (approximately <0.1% were 13 years old, 14.7% were 14, 26.6% were 15, 23.9% were 16, 23.0% were 17, 11.4% were 18, and 0.2% were 19). The overall sample was also ethnically-racially diverse: 0.9% were AMENA (Arabic, Middle Eastern, North African), 3.2% American Indian/Native American, 11.8% Asian/Pacific Islander, 23.4% Black/African American, 19.4% Latinx/Hispanic, 35.5% White, 2.8% multiracial, and 0.7% other (2.3% missing). Finally, 89.9% of students were born in the United States, and of those who were not, 69.0% immigrated to the United States at or before the age of 10.

From this sample, we drew from an analytic sample of 2,872 Asian, Black, Latinx, and White adolescents. Across these groups, 12.8% of students were Asian, 25.3% were Black, 21.0% were Latinx, and 38.4% were White. Approximating the whole sample, 48.8% of students identified as female, 46.3% as male, 1.1% preferred not to answer, and 0.8% provided a different label (2.9% missing). Also, 29.1% were in 9th grade, 24.5% in 10th grade, 25.7% in 11th grade, 19.9% in 12th grade (0.6% missing). Participants ranged between 14 and 19 years old (approximately 14.4% were 14, 26.6% were 15, 23.7% were 16, 23.3% were 17, 11.7% were 18, and 0.3% were 19). Finally, 89.9% of students were born in the United States, and of those who were not, 67.0% immigrated to the United States at or before the age of 10.

Recruitment

Approximately one month prior to survey administration, students were provided forms asking for their assent (or consent, if 18 years old or older) to the release of select school records (e.g., disciplinary records, grade information). Parents were asked to consent for their child's participation, as well as the release of their child's school information. All communications with parents (i.e., active and passive consent forms) were provided in English and Spanish, and students were given approximately one week to return the forms. All forms reminded students and parents that school record data would be linked to students' surveys, but that all information would be deidentified and kept in a secure location, and that their participation is completely voluntary and students could opt out of participating at any time.

At T1, students and teachers were informed that classrooms which returned at least 90% of the school record releases would receive a pizza party sometime later that semester, and the participating teacher would receive a $20 gift card. At T2, this percentage was lowered to 80% and no gift cards were offered. At each time point (spring of 2017, fall 2017, and spring 2018), all students (9^{th}, 10^{th}, 11^{th}, and 12^{th} graders) whose parents did not opt them out of participating in the survey were asked to voluntarily complete a roughly 40-minute survey. At T1, students indicated informed assent by writing their name and checking a related box on the survey cover sheet. For the second and third time points, students indicate informed assent by writing their name on the survey cover sheet.

Procedure

Surveys and directions for distribution were given to 5^{th} period teachers, and students self-administered the surveys. Teachers were instructed to read the cover sheet of the survey, which reminded students that their participation was completely voluntary and that their responses would be confidential. Upon survey completion, students replaced their completed

surveys in envelopes, which they sealed and returned to their teacher to be collected and sealed in a box. Surveys were then de-identified and students' names were replaced with ID codes by a third-party consultant. Study materials were stored in a locked office at the University of Michigan and study data were stored on a password protected computer in a research team lab. The study procedures received full board approval by the University of Michigan Institutional Review Board.

Measures

Demographic Information. Student gender, grade level, and ethnic-racial group were included as covariates during initial analyses, as collapsing ERI analyses across these categories may obscure relevant associations (Chavous, Rivas-Drake, Smalls, Griffin, & Cogburn, 2008; Duncan & Duncan, 2004; Umaña-Taylor et al., 2014). At T1, student genders were provided by the school, while students provided gender information at T2 and T3. Students reported their grade level at T1 and T2. Grade level was not required at T3, as it occurred within the same academic year as the previous survey administration. Regarding ethnic-racial groups, students were asked to report all panethnic demographic labels that applied among six provided: Asian, Black/African American, Latinx or Hispanic, Native American, White, and a write-in option. Adolescents were also asked to select a single pan-ethnic label to which they felt most connected (i.e., a forced-choice panethnicity). From this information, a final ethnic-racial group variable was created that took into account all of each student's responses and included additional panethnic demographic labels, including multiracial.

Ethnic-Racial Identity. ERI was assessed with a modified Multidimensional Inventory of Black Identity-Teen (MIBI-T; Scottham, Sellers, & Nguyên, 2008). References to being Black were replaced with "my ethnicity" or "my ethnic group" to better address the more diverse

ethnic-racial group distribution of the study's sample populations. As described previously, the MIBI-T was drawn from Sellers and colleagues' (1998) conceptualization of racial regard in the Multidimensional Model of Racial Identity (MMRI). The MMRI draws from multiple identity frameworks to articulate important components of racial identity among Black individuals, but several more general elements of the model have subsequently been extended to the study of identity across multiple ethnic-racial groups, including Latinx populations (cf. Rivas-Drake, Syed, et al., 2014; Umaña-Taylor et al., 2014). For example, the centrality subscale refers to the importance of one's ethnic-racial group to their self-concept, while the regard subscale refers to one's positive feelings about their ethnic-racial group, and the items associated with them are not group-specific. Alternatively, the ideology subscale of the MIBI-T refers directly to one's feelings about Black people's role in the United States and is thus not used in this work.

Centrality was assessed with 3 items concerning the importance of ethnicity to students' sense of self (e.g., "I have a strong sense of belonging to people from my ethnic group"; T1 α = .67, T2 α = .71, T3 α = .70). Public regard was assessed with 3 items concerning youth's views of how others feel about their ethnic group (e.g., "People think that people of my ethnicity are as good as people from other ethnicities"; T1 α = .73, T2 α = .75, T3 α = .76). Both dimensions were scored on a 5-point Likert scale, from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Higher values indicate more positive private and public regard, respectively (see Appendix A).

Friend Group Characteristics

Friend Nominations. Students' friend groups were identified using a 10-student friend nomination procedure (Ryan, 2001), which is similar to common means of garnering friendship lists from adolescents to measure friend group factors (Fortuin, Geel, & Vedder, 2016; Shin & Ryan, 2014). Students were given ten blank lines and asked to list as many or as few peers whom

they considered their "closest friends" and with whom they "hang around with and talk to the most (see Appendix B)."

Friend Group Diversity. Students' friend group diversity was calculated using Simpson's diversity index (Simpson, 1949). Originally designed and used to calculate biodiversity, Simpson's index considers the relative density of distinct groups within a given population. It has subsequently been used to determine the distribution of populations across contexts (Hunter & Gaston, 1988; Juvonen, Nishina, & Graham, 2006) and should be well suited to measure the ethnic-racial composition of student-provided friend groups (Syed, 2018).

In this case, the index calculates the proportion of each ethnic-racial group present in a student's friend group, accounting for friend group size (Wilson & Rodkin, 2013). The result estimates the probability that any two friends within a single friend group would be from different ethnic-racial groups (Graham, Munniksma, & Juvonen, 2014). In other words, above and beyond simply assessing the amount of one's in- and out-group friendships, this index calculates the likelihood that any two students within a friend group will be of an out-group to one another (Bellmore, Nishina, You, & Ma, 2012; Graham, Bellmore, Nishina, & Juvonen, 2009; Nishina, Bellmore, Witkow, & Nylund-Gibson, 2010). As such, it can be used to not only compare the relative diversities of multiple populations, but also provide a sense of the opportunities for in- and out-group contact within individual friend groups. In this way, diversity can be measured in terms of both its number and proportional size relative to other groups, rather than just as a raw sum of out-group friends. The calculation to obtain this value is as follows:

$$DC = 1 - \sum_{i=1}^{g} p_i^2$$

Here, *i* represents an ethnic-racial group (e.g., Black students). It's proportion (i.e., p_i) is

squared (i.e., p_i^2) and summed across all ethnic-racial groups being included (i.e., g). Values of these calculations range from 0 to 1, with higher numbers indicating higher diversity and a value above 0.5 considered to reflect an ethnically-racially diverse network (Juvonen, Nishina, & Graham, 2006).

Relationship Quality: Support and Conflict. Students were asked to answer relationship quality questions for each nominated friend (Buhrmester & Furman, 2008). Relationship quality consisted of two constructs: perceived emotional support from their friend and perceived conflict with their friend. Emotional support was assessed with 3 items concerning the frequency with which students relied on their friend when experiencing emotional distress (e.g., "How often do you turn to this person for support with personal problems?"; T1 α = .97, T2 α = .97, T3 α = .91)[2]. Conflict was assessed with 3 items concerning the frequency with which they experienced emotional altercations with their friend (e.g., "How much do you and this person get upset with or mad at each other?"; T1 α = .95, T2 α = .97, T3 α = .92). Responses for both constructs were measured on a 5-point Likert scale, from 1 (*Never or hardly at all*) to 5 (*Always or extremely much*) (see Appendix B).

Academic Adjustment

Academic Efficacy. The Patrick, Hicks, and Ryan's (1997) scale was used to assess students' academic efficacy. Students were asked to report on their perceived ability to successfully accomplish difficult academic work across five items (e.g., "I'm sure I can master the skills being taught"; T1 α = .92, T2 α = .93, T3 α = .93). Responses were measured on a 5-point Likert scale, from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Items were coded such that

[2] Although peer aggregate research often omits reliability information, recent empirical work suggests Cronbach's alpha can be used to indicate agreement across friend nominations for the measure in question (Cillessen & Marks, 2017).

higher values on this scale indicate higher school belonging (see Appendix C).

School Belonging. The McNeely, Nonnemaker, and Blum's (2002) scale was used to assess students' school belonging. Students were asked to report on their feelings of attachment to their school and the people therein across five items (e.g., "I feel close to the people at this school"; T1 α = .83, T2 α = .84, T3 α = .85). Responses were measured on a 5-point Likert scale, from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Items were coded such that higher values on this scale indicate higher school belonging (see Appendix D).

Data Analysis Plan

This dissertation examined the interrelations of students' ERI beliefs, friendship characteristics, and academic adjustment. To do so, I put forward three research questions, each involving its own set of analyses. Preliminary analyses, including calculating variable means, standard deviations, value ranges, skewness values, and kurtosis values, as well as tests of participant attrition, were conducted using SPSS Version 25. Primary analyses, which included latent growth curve model (LGCM) analyses, were conducted using Mplus Version 8 (Muthén & Muthén, 1998-2017). LGCM was well suited for the current analyses, as it captures the interrelation of variables over time (Duncan & Duncan, 2004), the trajectories of change across constructs of interest (via factor means), and individual differences in such trajectories across participants (via factor variances; Bollen & Curran, 2007; Duncan & Duncan, 2004).

Primary analyses were a three step process. First, I conducted unconditional (i.e., including no covariates) LGCMs of each ERI dimension (centrality and public regard), friend group characteristic (diversity, emotional support, and conflict), and academic adjustment variable (academic efficacy and school belong). These models estimated the intercept values and slope factor for each variable across the study's three time points (Muthén & Muthén, 1998-

2017). Significant differences in the intercepts indicated differing levels of these constructs across individuals at the initial time point, while significant differences in the slopes indicated different trajectories of change in these constructs across time. Second, for each variable indicating a significant unconditional LGCM slope factor, I conducted parallel process LGCM analyses. These tests compared the extent to which observed significant change in one variable was related to change in another variable across the three time points. Third, for each variable indicating a significant unconditional LGCM slope factor, I conducted conditional (i.e., including T1 predictors and covariates) LGCM analyses. Whereas the parallel process LGCM analyses considered only constructs' slope factors and not intercept values, these tests indicated the extent to which the initial time point levels of other predictors and covariates predicted change in another variable across the three time points.

Across all analyses, model fit was assessed using multiple goodness-of-fit indicators. These include a comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR), and a root mean square error of approximation (RMSEA). General standards across these indices include a comparative fit index (CFI) and Tucker-Lewis index (TLI) above 0.95, a root mean square error of approximation (RMSEA) of less than .06, and a standardized root mean square residual (SRMR) of less than .06 (Hu & Bentler, 1999; McDonald & Ho, 2002).

Finally, the analyses described can accommodate the incorporation of both time-dependent and time-independent exogenous predictor variables (Duncan & Duncan, 2004; Willett & Sayer, 1994). As such, I considered the potential role of three covariates: participants' grade level, gender, and total number of friend nominations. In the case that a significant or meaningful relationship is found, a covariate was retained in the model. Otherwise, it was

removed for the sake of maintaining a more parsimonious, well-fitting model (Duncan & Duncan, 2004).Also, so as not to assume undo similarity across potentially disparate groups, each step of modeling constrained models across students' ethnic-racial groups in accordance with the measurement properties established in current research (Sladek et al., under review).

Chapter 4 Results

Preliminary Analyses

Means and standard deviations for primary study variables are provided in Table 1. For both the entire analytic sample and across ethnic-racial groups, nearly all study variable means fell at roughly the scale mid-level or slightly higher, with no standard deviations exceeding 0.970. That said, these results include two notable exceptions. First, friend conflict demonstrated significantly lower mean values relative to its scaling than all other variables, including friend emotional support. Second, among Black students, the public regard mean was moderately lower than that of the full analytic sample or other ethnic-racial groups. Skewness and kurtosis for these variables fall largely within the low or acceptable ranges (Table 2), though friend conflict produced slightly higher values across each time point (e.g., T1-T3 friend conflict skewness = 1.293-1.363; kurtosis = 1.809-2.093). Missing data and non-normality was addressed using maximum likelihood with robust estimations, which is a recommended approach given the planned analyses (Duncan & Duncan, 2004; Muthén & Muthén, 1998-2017).

Bivariate correlations across all primary study variables are provided in Table 3. Regarding ethnic-racial identity variables, the correlations indicate that centrality and public regard are positively associated with one another across all time points. In addition, centrality is positively associated with emotional support at each time point, and negatively associated with friend diversity at T1. Public regard, on the other hand, is negatively associated with friend conflict at T1 and T2. Centrality and public regard are also positively associated with both academic efficacy and school belonging at all three time points. Regarding academic adjustment

outcomes, the correlations indicate that they are positively associated with one another across all time points. Regarding friend variables, friend emotional support and conflict are positively associated at each time points. The correlations also indicate that friend diversity is negatively associated with emotional support at T1 and T3, as well as conflict at each time points. In addition, participants within our analytic sample nominated, on average, approximately 4-5 friends (Table 4). This held true across both the entire sample and individual ethnic-racial groups.

Regarding study variables of interest, at T1, results of MANOVAs indicated significant differences across all ethnic-racial groups for centrality (F [3, 2885] = 115.81, $p < 0.001$), public regard (F [3, 2887] = 143.88, $p < 0.001$), academic efficacy (F [3, 2570] = 11.60, $p < 0.001$), school belonging (F [3, 2589] = 4.61, $p = 0.003$), friend emotional support (F [3, 2593] = 6.45, $p < 0.001$), and friend conflict (F [3, 2593] = 30.63, $p < 0.001$), but not friend diversity (F [3, 2419] = 1.58, $p = 0.193$). Similarly, at T2, results of MANOVAs indicated significant differences across each ethnic-racial group for centrality (F [3, 2287] = 46.97, $p < 0.001$), public regard (F [3, 3143] = 112.95, $p < 0.001$), academic efficacy (F [3, 2655] = 4.93, $p = 0.002$), school belonging (F [3, 2665] = 4.81, $p = 0.002$), friend emotional support (F [3, 2692] = 13.07 , $p < 0.001$), friend conflict (F [3, 2682] = 28.09, $p < 0.001$), and friend diversity (F [3, 2565] = 5.581, $p < 0.001$). Finally, at T3, results of MANOVAs indicated significant differences across each ethnic-racial group among centrality (F [3, 2608] = 116.53, $p < 0.001$), public regard (F [3, 2607] = 134.02, $p < 0.001$), academic efficacy (F [3, 2317] = 6.94, $p < 0.001$), school belonging (F [3, 2340] = 8.69, $p < 0.001$), friend emotional support (F [3, 2208] = 13.43, $p < 0.001$), and friend conflict (F [3, 2204] = 21.50, $p < 0.001$), but not friend diversity (F [3, 2087] = 1.70, $p = 0.166$).

MANOVA results across the study's four individual ethnic-racial groups—Asian, Black, Latinx, and White students—are reported across time in Tables 5-7. While numerous nuances can be seen across groups, trends exist across time points. Among Asian and Black students, significant differences can be seen primarily in their reports of ERI public regard, friend group conflict, and academic efficacy outcomes. Among Asian and Latinx students, similar differences can be seen primarily across public regard, friend group support and conflict, and school belonging outcomes. Among Asian and White students, significant differences can be seen primarily in their reports of ERI centrality and public regard. Among Black and Latinx students, significant differences are primarily seen in their reports of friend group conflict. Among Black and White students, significant differences can be seen primarily in their reports of ERI centrality and public regard, friend diversity and conflict, and both academic adjustment outcomes. Lastly, among Latinx and White students, significant differences can also be seen in their reports of ERI centrality and public regard, friend support and conflict, and both academic adjustment outcomes.

Primary Analyses

Unconditional Latent Growth Curve Model Analyses. The results of unconditional latent growth curve models are shown in Table 8. Specifically, in Mplus Version 8 (Muthén & Muthén, 1998-2017), intercept values and slope factors were assessed at T1 through T3 for each ERI dimension, friend group characteristic, and academic adjustment outcome. Model fit was assessed using recommended CFI, TLI, SRMR, and RMSEA values (Hu & Bentler, 1999; McDonald & Ho, 2002).

First, unconditional latent growth curve models were estimated for ERI centrality and public regard. For centrality, the model fit was good (CFI = 1.000, TLI = 1.000, RMSEA = 0.008

[0.000, 0.051], SRMR = 0.005). For the combined analytic sample, the estimated intercept value was significant (β = 3.458, *SE* = 0.018, $p < .001$), but the slope factor was not (β = -0.015, *SE* = 0.010, $p = .139$). Concerning individual ethnic-racial groups, the model fit was also good (CFI = 0.998, TLI = 0.993, RMSEA = 0.033 [0.000, 0.071], SRMR = 0.012). Among Asian students, the estimated intercept value was significant (β = 3.622, *SE* = 0.051, $p < .001$), but the slope factor was not (β = -0.036, *SE* = 0.026, $p = 0.175$). Among Black students, the estimated intercept value was significant (β = 3.750, *SE* = 0.034, $p < .001$), but the slope factor was not (β = -0.018, *SE* = 0.022, $p = .399$). Among Latinx students, the estimated intercept value was significant (β = 3.626, *SE* = 0.035, $p < .001$), but the slope factor was not (β = -0.007, *SE* = 0.020, $p = .734$). Among White students, both the estimated intercept value (β = 3.111, *SE* = .026, $p < .001$), but the slope factor was not (β = -0.019, *SE* = 0.015, $p = .216$).

For public regard, the model fit was good (CFI = 1.000, TLI = 1.002, RMSEA = 0.000 [0.000, 0.039], SRMR = 0.003). For the combined analytic sample, both the estimated intercept (β = 3.188, *SE* = 0.019, $p < .001$) and the slope factor were significant (β = 0.026, *SE* = 0.012, $p = .024$). Concerning individual ethnic-racial groups, the model fit was also good (CFI = 0.991, TLI = 0.972, RMSEA = 0.052 [0.019, 0.087], SRMR = 0.021). Among Asian students, the estimated intercept value was significant (β = 3.621, *SE* = 0.051, $p < .001$), but the slope factor was not (β = 0.015, *SE* = 0.030, $p = .617$). Among Black students, both the estimated intercept value (β = 2.859, *SE* = 0.037, $p < .001$) and the slope factor were significant (β = 0.047, *SE* = 0.023, $p = .045$). Among Latinx students, both the estimated intercept value (β = 2.955, *SE* = 0.036, $p < .001$) and the slope factor were significant (β = 0.050, *SE* = 0.023, $p = .031$). Among White students, the estimated intercept value was significant (β = 3.436, *SE* = 0.028, $p < .001$), but the slope factor was not (β = 0.013, *SE* = 0.018, $p = .470$).

Next, unconditional latent growth curve models were estimated for friend group diversity, emotional support, and conflict. For friend group diversity, the model fit was moderate to poor (CFI = 0.945, TLI = 0.835, RMSEA = 0.069 [0.039, 0.104], SRMR = 0.026). For the combined analytic sample, both the estimated intercept value (β = 0.446, *SE* = 0.007, $p < .001$) and the slope factor (β = 0.014, *SE* = 0.005, $p = .004$) were significant, though given the model fit, these findings should be considered less reliable. Concerning individual ethnic-racial groups, the model fit was poor (CFI = 0.909, TLI = 0.726, RMSEA = 0.091 [0.059, 0.126], SRMR = 0.037). Among Asian students, the estimated intercept value was significant (β = 0.441, *SE* = 0.019, $p < .001$), but the slope factor was not (β = 0.011, *SE* = 0.014, $p = 0.426$). Among Black students, the estimated intercept value (β = 0.434, *SE* = 0.015, $p < .001$), but the slope factor was not (β = 0.013, *SE* = 0.011, $p = .256$). Among Latinx students, the estimated intercept value was significant (β = 0.458, *SE* = 0.013, $p < .001$), but the slope factor was not (β = 0.004, *SE* = 0.010, $p = .651$). Among White students, both the estimated intercept value (β = 0.450, *SE* = 0.010, $p < .001$) and the slope factor were significant (β = 0.021, *SE* = 0.007, $p = .005$).

For friend group emotional support, the model fit was good (CFI = 1.000, TLI = 1.000, RMSEA = 0.000 [0.000, 0.051], SRMR = 0.006). For the combined analytic sample, both the estimated intercept value (β = 3.220, *SE* = 0.020, $p < .001$) and the slope factor (β = 0.064, *SE* = 0.013, $p < .001$) were significant. Concerning individual ethnic-racial groups, the model fit was also good (CFI = 0.990, TLI = 0.971, RMSEA = 0.060 [0.028, 0.097], SRMR = 0.020). Among Asian students, the estimated intercept value was significant (β = 3.127, *SE* = 0.062, $p < .001$), but the slope factor was not (β = -0.024, *SE* = 0.058, $p = 0.674$). Among Black students, the estimated intercept value was significant (β = 3.309, *SE* = 0.043, $p < .001$), but the slope factor was not (β = 0.036, *SE* = 0.028, $p = .203$). Among Latinx students, both the estimated intercept

value (β = 3.301, *SE* = 0.041, $p < .001$) and the slope factor were significant (β = 0.108, *SE* = 0.025, $p < .001$). Among White students, both the estimated intercept value (β = 3.149, *SE* = 0.032, $p < .001$) and the slope factor were significant (β = 0.056, *SE* = 0.020, $p = .005$).

For friend group conflict, the model fit was good (CFI = 0.998, TLI = 0.994, RMSEA = 0.019 [0.000, 0.059], SRMR = 0.009). For the combined analytic sample, both the estimated intercept value (β = 1.790, *SE* = 0.015, $p < .001$) and the slope factor were significant (β = 0.055, *SE* = 0.011, $p < .001$). Concerning individual ethnic-racial groups, the model fit was also good (CFI = 1.000, TLI = 1.000, RMSEA = 0.004 [0.000, 0.059], SRMR = 0.013). Among Asian students, both the estimated intercept (β = 1.657, *SE* = 0.043, $p < .001$) and the slope factor were significant (β = 0.065, *SE* = 0.028, $p = 0.021$). Among Black students, both the estimated intercept value (β = 1.984, *SE* = 0.034, $p < .001$) and the slope factor were significant (β = 0.075, *SE* = 0.027, $p = 0.005$). Among Latinx students, both the estimated intercept value (β = 1.762, *SE* = 0.032, $p < .001$) and the slope factor were significant (β = 0.051, *SE* = 0.024, $p = .037$). Among White students, both the estimated intercept value (β = 1.717, *SE* = 0.022, $p < .001$) and the slope factor were significant (β = 0.034, *SE* = 0.016, $p = .037$).

Finally, unconditional latent growth curve models were estimated for academic efficacy and school belonging. For academic efficacy, the model fit was good (CFI = 1.000, TLI = 1.001, RMSEA = 0.000 [0.000, 0.049], SRMR = 0.006). For the combined analytic sample, both the estimated intercept value (β = 3.685, *SE* = 0.019, $p < .001$) and the slope factor were significant (β = -0.025, *SE* = 0.012, $p = .042$). Concerning individual ethnic-racial groups, the model fit was also good (CFI = 1.000, TLI = 1.010, RMSEA = 0.000 [0.000, 0.029], SRMR = 0.007). Among Asian students, the estimated intercept value was significant (β = 3.869, *SE* = 0.054, $p < .001$), but the slope factor was not (β = -0.052, *SE* = 0.030, $p = 0.086$). Among Black students, the

estimated intercept value was significant (β = 3.609, *SE* = 0.039, $p < .001$), but the slope factor was not (β = -0.014, *SE* = 0.026, $p = 0.602$). Among Latinx students, the estimated intercept value was significant (β = 3.584, *SE* = 0.039, $p < .001$), but the slope factor was not (β = -0.013, *SE* = 0.025, $p = 0.600$). Among White students, the estimated intercept value was significant (β = 3.743, *SE* = 0.030, $p < .001$), but the slope factor was not (β = -0.028, *SE* = 0.019, $p = .142$)

For school belonging, the model fit was moderate (CFI = 0.981, TLI = 0.944, RMSEA = 0.082 [0.053, 0.116], SRMR = 0.030). For the combined analytic sample, both the estimated intercept value (β = 3.639, *SE* = 0.017, $p < .001$) and the slope factor (β = -0.117, *SE* = 0.011, $p < .001$) were significant. Concerning individual ethnic-racial groups, the model fit was also moderate (CFI = 0.980, TLI = 0.939, RMSEA = 0.085 [0.054, 0.120], SRMR = 0.036). Among Asian students, both the estimated intercept value (β = 3.717, *SE* = 0.047, $p < .001$) and the slope factor were significant (β = -0.088, *SE* = 0.026, $p < .001$). Among Black students, both the estimated intercept value (β = 3.597, *SE* = 0.037, $p < .001$) and the slope factor were significant (β = -0.140, *SE* = 0.024, $p < .001$). Among Latinx students, both the estimated intercept value (β = 3.613, *SE* = 0.036, $p < .001$) and the slope factor were significant (β = -0.120, *SE* = 0.023, $p < .001$). Among White students, both the estimated intercept value (β = 3.666, *SE* = 0.027, $p < .001$) and the slope factor were significant (β = -0.110, *SE* = 0.017, $p < .001$).

Parallel Process Latent Growth Curve Model Analyses. The results of parallel process latent growth curve models are shown in Tables 9 through 17. For each well-fitting unconditional LGCM with a significant slope factor (i.e., ERI public regard, friend group emotional support, friend group conflict, academic efficacy, and school belonging), additional parallel process models were estimated. These models indicated the extent to which the observed change in one construct (i.e., slope factor) was related to the observed change in another

construct. Models were conducted using the combined analytic sample, as well as across each ethnic-racial group, and model fit was again assessed using recommended CFI, TLI, SRMR, and RMSEA values (Hu & Bentler, 1999; McDonald & Ho, 2002).

Results of the parallel process models for public regard and friend group emotional support are provided in Table 9. For the combined analytic sample, the model fit was good (CFI = 0.999, TLI = 0.997, RMSEA = 0.011 [0.000, 0.027], SRMR = 0.013). The slope factor of public regard was not significantly associated with that of emotional support (β = 0.004, *SE* = 0.026, *p* = .563). Considering individual ethnic-racial groups, the model fit was good (CFI = 0.989, TLI = 0.977, RMSEA = 0.031 [0.015, 0.046], SRMR = 0.025). The slope factor of public regard was not significantly associated with that of emotional support among Asian students (β = 0.004, *SE* = 0.025, *p* = .786), Latinx students (β = 0.002, *SE* = 0.086, *p* = .875), or White students (β = 0.017, *SE* = 0.054, *p* = .110), but was significantly associated with emotional support among Black students (β = -0.013, *SE* = 0.041, *p* = .036).

Results of the parallel process models for public regard and friend group conflict are provided in Table 10. For the combined analytic sample, the model fit was good (CFI = 0.998, TLI = 0.997, RMSEA = 0.011 [0.000, 0.027], SRMR = 0.012). The slope factor of public regard was not significantly associated with that of friend group conflict (β = 0.002, *SE* = 0.025, *p* = .734). Considering individual ethnic-racial groups, the model fit was good (CFI = 0.994, TLI = 0.986, RMSEA = 0.020 [0.000, 0.037], SRMR = 0.024). The slope factor of public regard was not significantly associated with that of friend group conflict among Asian students (β = -0.004, *SE* = 0.027, *p* = .716), Black students (β = -0.006, *SE* = 0.041, *p* = .663), or White students (β = -0.009, *SE* = 0.053, *p* = .338), but was positively associated with conflict among Latinx students (β = 0.031, *SE* = 0.088, *p* = .024),

Results of the parallel process models for public regard and academic efficacy are provided in Table 11. For the combined analytic sample, the model fit was good (CFI = 0.997, TLI = 0.993, RMSEA = 0.018 [0.000, 0.032], SRMR = 0.018). The slope factor of public regard was significantly associated with that of academic efficacy (β = 0.026, *SE* = 0.021, $p < 0.001$). Considering individual ethnic-racial groups, the model fit was good (CFI = 0.984, TLI = 0.965, RMSEA = 0.038 [0.024, 0.052], SRMR = 0.035). The slope factor of public regard was not significantly associated with that of academic efficacy among Asian students (β = 0.026, *SE* = 0.017, $p = .059$), Black students (β = 0.013, *SE* = 0.048, $p = .361$), or Latinx students (β = 0.017, *SE* = 0.086, $p = .175$), but was positively associated with academic efficacy among White students (β = 0.036, *SE* = 0.053, $p < .001$),

Results of the parallel process models for public regard and school belonging are provided in Table 12. For the combined analytic sample, the model fit was good (CFI = 0.990, TLI = 0.979, RMSEA = 0.033 [0.021, 0.046], SRMR = 0.026). The slope factor of public regard was significantly associated with that of school belonging (β = 0.031, *SE* = 0.023, $p < 0.001$). Considering individual ethnic-racial groups, the model fit was good (CFI = 0.986, TLI = 0.970, RMSEA = 0.038 [0.023, 0.052], SRMR = 0.035). The slope factor of public regard was not significantly associated with that of school belonging among Asian students (β = 0.008, *SE* = 0.027, $p = .494$), but was positively associated with school belonging among Black students (β = 0.028, *SE* = 0.043, $p = .037$), Latinx students (β = 0.043, *SE* = 0.088, $p < .001$), and White students (β = 0.034, *SE* = 0.050, $p < .001$),

Results of the parallel process models for friend group emotional support and academic efficacy are provided in Table 13. For the combined analytic sample, the model fit was good (CFI = 0.996, TLI = 0.992, RMSEA = 0.019 [0.002, 0.033], SRMR = 0.013). The slope factor of

emotional support was not significantly associated with that of academic efficacy (β = 0.006, *SE* = 0.070, *p* = .399). Considering individual ethnic-racial groups, the model fit was also good (CFI = 0.992, TLI = 0.982, RMSEA = 0.028 [0.008, 0.043], SRMR = 0.024). The slope factor of emotional support was not significantly associated with that academic efficacy among Asian students (β = 0.020, *SE* = 0.019, *p* = .156), Black students (β = -0.008, *SE* = 0.032, *p* = .636), Latinx students (β = 0.008, *SE* = 0.046, *p* = .540), or White students (β = 0.004, *SE* = 0.134, *p* = .696).

Results of the parallel process models for friend group emotional support and school belonging are provided in Table 14. For the combined analytic sample, the model fit was good (CFI = 0.978, TLI = 0.953, RMSEA = 0.048 [0.036, 0.060], SRMR = 0.027). The slope factor of emotional support was not significantly associated with that of school belonging (β = 0.005, *SE* = 0.071, *p* = .410). Considering individual ethnic-racial groups, the model fit was fair (CFI = 0.972, TLI = 0.941, RMSEA = 0.053 [0.040, 0.066], SRMR = 0.034). The slope factor of emotional support was not significantly associated with that of school belonging among Asian students (β = 0.001, *SE* = 0.026, *p* = .916), Black students (β = 0.004, *SE* = 0.034, *p* = .080), Latinx students (β = 0.003, *SE* = 0.042, *p* = .816), or White students (β = 0.012, *SE* = 0.138, *p* = .232).

Results of the parallel process models for friend group conflict and academic efficacy are provided in Table 15. For the combined analytic sample, the model fit was good (CFI = 1.000, TLI = 1.001, RMSEA = 0.000 [0.000, 0.022], SRMR = 0.010). The slope factor of friend group conflict was significantly associated with that of academic efficacy (β = -0.016, *SE* = 0.006, *p* = .013). Considering individual ethnic-racial groups, the model fit was good (CFI = 1.000, TLI = 1.011, RMSEA = 0.000 [0.000, 0.018], SRMR = 0.020). The slope factor of friend group conflict

was not significantly associated with that of academic efficacy among Asian students (β = -0.006, *SE* = 0.011, *p* = .602), Black students (β = -0.011, *SE* = 0.016, *p* = .509), or Latinx students (β = -0.025, *SE* = 0.014, *p* = .072), but was significantly associated with academic efficacy among White students (β = -0.021, *SE* = 0.009, *p* = .024).

Results of the parallel process models for friend group conflict and school belonging are provided in Table 16. For the combined analytic sample, the model fit was good (CFI = 0.991, TLI = 0.981, RMSEA = 0.026 [0.000, 0.042], SRMR = 0.026). The slope factor of friend group conflict was trending toward but not significantly associated with that of school belonging (β = -0.016, *SE* = 0.011, *p* = .058). Considering individual ethnic-racial groups, the model fit was good (CFI = 0.989, TLI = 0.976, RMSEA = 0.030 [0.018, 0.043], SRMR = 0.017). The slope factor of friend group conflict was not significantly associated with that of school belong among Asian students (β = -0.016, *SE* = 0.011, *p* = .138), Black students (β = -0.019, *SE* = 0.015, *p* = .205), Latinx students (β = -0.006, *SE* = 0.013, *p* = .657), or White students (β = -0.011, *SE* = 0.008, *p* = .196).

Conditional Latent Growth Curve Model Analyses. The results of conditional latent growth curve models are shown in Tables 17 through 18. These models indicated the extent to which the initial values (i.e., intercept values) of ERI beliefs, friend group characteristics, and the intersections thereof relate to the intercept values and slope factors of students' academic adjustment outcomes. All models contained student gender and friend group total as covariates, and all non-covariates were mean-centered, as is the recommended procedure (Muthén & Muthén, 1998-2017). Student grade level was initially included as a covariate, but due to a lack of significant associations across analyses, was removed to maintain more parsimonious and well-fitting models. Model fit was again assessed using recommended CFI, TLI, SRMR, and

RMSEA values (Hu & Bentler, 1999; McDonald & Ho, 2002).

Regarding academic efficacy, two models were produced to accommodate interactions between each ERI dimension and its interactions with each friend group characteristic (Table 17). The first conditional LGCM included as predictors T1 ERI centrality, friend group diversity, emotional support, conflict, and interactions of centrality with each friend group characteristic. The model produced a good fit (CFI = 0.991, TLI = 0.973, RMSEA = 0.017 [0.000, 0.029], SRMR = 0.014). For the pooled analytic sample, the academic efficacy intercept value was significantly associated with T1 conflict (β = -0.365, *SE* = 0.133, p = .006), as well as student gender (β = 0.250, *SE* = 0.046, p = .001) and friend total (β = 0.033 *SE* = 0.008, p = .001). The academic efficacy slope factor was not significantly associated with any constructs of interest.

The second academic efficacy conditional LGCM included as predictors T1 ERI public regard, friend group support, conflict, and diversity, as well as interactions between public regard and emotional support, conflict, and diversity. The model produced a good fit (CFI = 0.987, TLI = 0.961, RMSEA = 0.021 [0.009, 0.032], SRMR = 0.016). For the pooled analytic sample, the academic efficacy intercept value was significantly associated with T1 public regard (β = 0.242, *SE* = 0.118, p = .040), emotional support (β = 0.316, *SE* = 0.088, p < .001), and conflict (β = -0.269, *SE* = 0.110, p = .015), as well as the interaction of public regard and emotional support (β = -0.057, *SE* = 0.026, p = .027). The academic efficacy intercept was also significantly associated with T1 student gender (β = 0.219, *SE* = 0.046, p < .001) and friend total (β = 0.029, *SE* = 0.008, p < .001). The academic efficacy slope factor was not significantly associated with any constructs of interest.

Regarding school belonging, two models were produced (Table 18). The first conditional LGCM included as predictors T1 ERI centrality, friend group diversity, emotional support,

conflict, and interactions of centrality with each friend group characteristic. The model produced a good fit (CFI = 0.973, TLI = 0.920, RMSEA = 0.033 [0.022, 0.043], SRMR = 0.014). For the pooled analytic sample, the academic efficacy intercept value was significantly associated with T1 emotional support (β = 0.238, *SE* = 0.094, *p* = .012), as well as student gender (β = 0.188, *SE* = 0.041, *p* = .001) and friend total (β = 0.037 *SE* = 0.008, *p* = .001). The academic efficacy slope factor was significantly associated with friend total (β = -0.013 *SE* = 0.005, *p* = .012).

The second academic efficacy conditional LGCM included as predictors T1 ERI public regard, friend group emotional support, conflict, and diversity, as well as interactions between public regard and emotional support, conflict, and diversity. The model produced a good fit (CFI =0.977, TLI = 0.930, RMSEA = 0.032 [0.022, 0.043], SRMR = 0.015). For the pooled sample, the school belonging intercept value was significantly associated with T1 public regard (β = 0.382, *SE* = 0.103, *p* < .001) and emotional support (β = 0.232, *SE* = 0.076, *p* = .002), as well as both student gender (β = 0.139, *SE* = 0.040, *p* = .001) and friend total (β = 0.030 *SE* = 0.007, *p* = .001). The academic efficacy slope factor was significantly associated with T1 public regard (β = -.160, *SE* = 0.076, *p* = 0.037), emotional support (β = -.143, *SE* = 0.076, *p* = 0.012), and the interaction of public regard and emotional support (β = 0.036, *SE* = 0.017, *p* = .028), as well as friend total (β = -0.010, *SE* = 0.005, *p* = .042).

Results Summary

The following chapter will explicate the trends and surprising findings described in the preceding preliminary and primary analyses, which are summarized here. Preliminary analyses indicated wide-reaching positive and negative correlations across and between participants' ERI beliefs, friend group characteristics, and academic adjustment outcomes. These findings support the current study's central assertion that these constructs interrelate in broad ways for diverse

ethnic-racial groups, and that such interrelations may inform observed changes in a given construct over time. For example, while it is intuitive that we would observe correlations across the two ERI constructs, three friend group characteristics, or two academic outcomes measured here, the widespread interrelations observed here remind us that these constructs operate in related ways among diverse adolescents in schools.

In addition, MANOVA results indicated significant differences in these constructs across the sample's four ethnic-racial groups. Specifically, public regard appeared to operate distinctly across Asian, Black, Latinx and White students. Further, White students reported distinct ERI centrality beliefs from the other groups, while Black students reported distinct friend group conflict, academic efficacy, and school belonging outcomes from the other two groups. These and additional nuances found between the groups justify the examination of both whole sample and group-specific models in the following latent growth curve model analyses.

Primary analyses indicated a unique and unexpected pattern of results. Unconditional LGCM analyses indicated significant differences across students in initial values of each ERI dimension, friend group characteristic, and academic adjustment outcome for both the entire analytic sample and within each ethnic-racial group. Further, most constructs—ERI public regard, friend group emotional support, conflict, diversity, academic efficacy, and school belonging—demonstrated significant change over time. Specifically, Black and Latinx students reported significant increases in public regard, Latinx and White students reported increases in emotional support, all student groups reported increases in conflict, and all student groups reported decrease in school belonging. In addition, academic efficacy reports significantly decreased across the entire analytic sample, but such significant decreases were not identified within specific ethnic-racial groups. Friend diversity also indicated significant change over time,

though its poor model fit precluded further interpretation of its findings. Subsequent parallel process LGCM analyses indicated numerous links in change trajectories across these constructs, both across the entire analytic sample and within ethnic-racial groups. Again, this array of findings supports the current work's stance that youth's identity beliefs, friend group characteristics, and academic outcomes inform one another, both longitudinally and differentially.

Conditional LGCM analyses identified numerous additional concurrent and longitudinal associations. For example, centrality and public regard values were positively related across the analytic sample, though change in public regard was only positively predicted by centrality among Latinx and White students. Similarly, friend group emotional support and conflict were surprisingly positively related across the entire analytic sample, while change over time in both were related differentially to friend group diversity among Latinx and Black youth. These and numerous other connections suggest that interrelations among the constructs of interest here are not ubiquitous across ethnic-racial group or time. Instead, these links may operate only among specific populations or at unique times, which analyses such as these may aid in identifying.

Conditional LGCM analyses also indicated that students' academic adjustment outcomes were related to and predicted by numerous ERI beliefs and friend group characteristics. For example, initial academic efficacy values were positively related to T1 public regard and friend group emotional support, and negatively associated with friend group conflict. Academic efficacy was also positively associated with the intersection of T1 public regard and emotional support, suggesting a unique interplay of these identity and social dimensions on students' feelings of academic competency. Similarly, initial school belonging values were positively related to T1 public regard and emotional support. In addition, the observed change in school

belonging was negatively associated with public regard and emotional friend support, and positively related to the intersection of the two constructs.

Chapter 5 Discussion

The adolescent population of the United States is increasingly ethnically-racially diverse (National Center for Education Statistics, 2015). As these young people navigate their ERI beliefs and complex social relationships, particularly within schools, it is necessary for educators and researchers alike to examine how these factors might interrelate. A growing body of research has approached this task by linking either ERI development or adolescents' social groups with their potential academic success, finding numerous and primarily positive associations. However, in not considering how personal identity beliefs and social group characteristics might both contribute simultaneously to youth's school experiences, these studies necessarily provide an incomplete picture of modern adolescent development.

The current work sought to address this significant gap. I considered how a key element of youth's social context in school—their close school friend groups, and the characteristics of those friend groups—may be associated with their ERI development and academic adjustment outcomes over time. Specifically, I investigated interrelations in observed change across three time points among two ERI dimensions (centrality and public regard), three friend group characteristics (ethnic-racial diversity, emotional support, and conflict), and two academic adjustment outcomes (academic efficacy and school belonging). These relations were examined through the use of a variety of latent growth curve model analyses, with the analytic sample including Asian, Black, Latinx, and White high school students in the Midwestern and Southwestern United States. The following discussion will review the primary study findings,

their relation to the proposed research questions and hypotheses, and the implications of these results on our understanding of ERI development within social contexts.

Preliminary Analyses

Preliminary analyses provided layered insights into each key variable across ethnic-racial groups. Regarding ethnic-racial identity dimensions, MANOVA analyses indicated that centrality perceptions were significantly lower among White students than among Asian, Black, and Latinx students. These findings support research finding that White youth tend to critically examine their ethnic-racial group memberships less than their peers of color, and to do so at a later age (McDermott & Samson, 2005). For these adolescents, their ethnicity-race is often liable to be rendered largely "invisible" by Western culture's uplifting of their population as aspirational and the social norm (Chavez & Guido-DiBrito, 1999), thus disinclining them to link this aspect of their identity to their larger self-concept. Conversely, higher levels of centrality among youth of color is common, as their exposure to racialized experiences and ethnic-racial socialization often encourages youth of color to consider their ethnic-racial group as a central component of their identity and social relations (Kiang, Witkow, Baldelomar, & Fuligni, 2010; Yip, Seaton, & Sellers, 2006). That said, students reported moderate to high centrality on average across time points, which may have been bolstered by the schools' notable ethnic-racial diversity, which has been linked to greater recognition of their own ERI (e.g., Pauker, Carpinella, Meyers, Young, & Sanchez, 2018).

By contrast, public regard perceptions were found here to largely differ across ethnic-racial groups. These findings coincide with broad ERI research, which has found that ethnic-racial minority and majority groups tend to develop and express their beliefs about their group memberships differentially (Rivas-Drake, 2014a). This is driven, in part, by their varied

socialization exposure and awareness or internalization of differing group-specific values and stereotypes (Aboud, Mendelson, & Purdy, 2003; Allport, 2000; Benner et al., 2018). For example, Asian youth, who reported the most positive public regard perceptions in the study across time points, often face their own ethnic-racial stereotypes regarding achievement and upward social mobility. On the other hand, Black youth, who reported the least positive public regard perceptions in the study across time points, are often exposed to and targeted by group-based prejudice and racism, which in turn is likely to negatively impact their perceptions of others' evaluations of their group (Sellers et al., 1998). That said, lower public regard beliefs have been found to be protective to Black individual's psychosocial well-being, in that they may underlie less vulnerability to discriminatory social stratifications, racial discrimination, or stereotype threat (Ho & Sidanius, 2010; Rivas-Drake, Hughes, & Way, 2009; Thomas, Caldwell, Faison, & Jackson, 2009). As such, these findings may indicate a notable degree of social awareness among Black adolescents.

Regarding friend group characteristics, each presented noteworthy preliminary findings. MANOVA results indicated that friend group emotional support responses did vary across ethnic-racial groups over time, though mean values were high for each one. These findings are typical for youth during this time. Adolescence often involves regular friendship formation, dissolution, and regrouping, with youth seeking out and better learning to form emotionally intimate bonds (Akers, Jones, & Coyl, 1998; Bagwell et al., 2005; Berndt, 2004). As such, it may be intuitive that this process would exist across the current study's ethnic-racial groups, particularly in schools (in which friendships are essential social capital) and such ethnically-racially diverse settings (in which the lack of an overwhelming majority group makes each more viable in terms of friendship selection).

Similarly, friend group conflict was low for the entire sample and across ethnic-racial groups. It stands to reason that negative relationship quality would be comparatively low with friends that students chose to nominate, relative to the friends students did not nominate or their general school peers. That said, Black students did report significantly more conflict than did their peers, which coincides with work indicating that Black students are more likely than Asian and White youth to develop friendships with peers holding differing beliefs and values, which in turn is likely to engender disagreements (Hamm, 2000, Schofield, Hausmann, Ye, & Woods, 2010). It is important to note, however, that conflict does not necessarily undermine emotionally supportive relationships, as both factors may be present within supportive and positive friend groups (Furman & Buhrmester, 1985) and the current work's primary analyses indicate that conflict and emotional support are positively linked for students across time points.

In addition, mean values indicated low to moderate friend group diversity across ethnic-racial groups and time points. These values, which ranged from 0.38 to 0.50 across groups, were relatively low, as a Simpson's index result of 0.50 and above is typically considered a diverse environment (Juvonen, Nishina, & Graham, 2006). Mean values and MANOVA findings indicate that White students reported the most diverse friend groups, significantly more so than other students differentially across time points. Research suggests that ethnic-racial groups do tend to differentially select in-group and out-group friends during adolescence, and that friend groups tend to become less diverse over time (Aboud et al., 2003; Epstein, 1989; Hallinan & Teixeira, 1987). Further, this body of literature has found that students of color tend to develop more ethnically-racially diverse friend groups than do White students. The current work would initially suggest otherwise, but additional factors may offer relevant context. For example, the ethnic-racial diversity of the participating schools may encourage a particular amount of friend

group diversity, as out-group friends are more readily available in diverse schools (Graham, 2018).

Alternatively, friend group diversity may be changing across groups or time points in ways that the Simpson's index does not currently capture. The index indicates the likelihood that any two individuals within a friend group will be of different ethnic-racial groups, but it does not specify which groups constitute a particular group. As such, it is possible for the ethnic-racial make-up of a group to change, but the proportion of in-group to out-group friends to remain the same, thus producing a different group with the same Simpson's diversity value. In this way, the index is useful for capturing the extent of ethnic-racial difference within a group, but may be currently inadequate for questions concerning the extent to which any particular type of diversity may remain stable or change over time. In the current work, then, friend group diversity is best conceptualized as a proportion of in-group to out-group friendships across ethnic-racial groups, and not necessarily proof that students are choosing the same ethnic-racial groups to make up their friend networks over time.

Regarding academic adjustment outcomes, MANOVA results indicated that both academic efficacy and school belonging perceptions were significantly lower for Black and Latinx students than Asian and White students at nearly every time point. Extent literature has identified that these youth often face unique challenges related to their feelings of school-based belonging and competence, often as they relate to their relations with potentially unsupportive or prejudiced school climates or teachers (Booker, 2006; Clark, 1991; Tyler & Boelter, 2008). That said, across each ethnic-racial group, students reported relatively high values on each of these adjustment outcomes. These values suggest that not only were students, on balance, perceiving

themselves to be both academically competent and supported, they were likely also subject to and participating in a positive school climate that supports such perceptions.

The final points regarding the preliminary analyses concern bivariate correlations. Students' friend diversity was differentially related to students' centrality beliefs, emotional support, conflict, and even their sense of school belonging at various time points. This suggests potential links between adolescents' beliefs about their ethnic-racial group memberships, social relationships, and academic experiences with their school friendship choices. This finding lends credence to research questions 1 and 2 concerning potential relations between these constructs, but also inspires additional questions concerning which students may be experiencing such links, and how might they change over time in relation to other potential factors that were not accounted for here (e.g., students' cross-group attitudes or social competency). In addition, centrality and public regard were broadly positively associated with both academic efficacy and school belonging. This pattern was present across student ethnic-racial groups, which supports previous research linking ERI dimensions to ethnically-racially diverse students' academic success (Rivas-Drake et al., 2014a), and provides justification for my further examination of this link in the current work. Unsurprisingly, the study's academic adjustment variables were primarily positively correlated with one another, indicating links between students' affective- and achievement-based school experiences.

RQ1: ERI, Friendship Characteristics, and Academic Adjustment Over Time

The current study's first research question aimed to examine the extent to which adolescents' ERI beliefs, friend group, and academic adjustment outcomes changed over time. In so doing, it should provide a groundwork for investigating how observed growth or drops may eventually interrelate and inform normative adolescent psychosocial development. Drawing from

relevant literature and empirical research, I hypothesized that 1) ERI beliefs are likely to increase or remain stable, 2) positive friend group relationship quality is likely to increase, and 3) academic adjustment outcomes are likely to decline across ethnic-racial groups over time. To assess these hypotheses, I used unconditional latent growth curve model analyses to identify which of these constructs exhibited significant change trajectories across students over three time points.

In support of my first hypothesis, although significant differences existed across students' ERI centrality and public regard at each time point, these beliefs remained relatively stable. An exception noted here is that White students demonstrated a significant decrease in centrality over time. Extent literature supports these findings; while some ERI dimensions have been found to differentially change over time, the majority of youth exhibit stability (Douglass, Mirpuri, & Yip, 2017; Huang & Stormshak, 2011; Knight, Losoya, Cho, Chassin, Williams, & Cota-Robles, 2012; Pahl & Way, 2006; Umaña-Taylor, Gonzales-Backen, & Guimond, 2009). Among White youth, the decreasing ERI centrality observed here corresponds with work demonstrating their comparative lack of emphasis on ethnicity-race relative to other social identities (e.g., social class) during adolescence (McDermott & Samson, 2005). Similarly, the ERI beliefs that they do develop often relate to feelings of privilege, a racial history of oppression, and current social inequities and frustrations (McDermott & Samson, 2005; Rowe, Bennett, & Atkinson, 1994). As such, a lack of observed centrality may relate to a disinterest with or discomfort in centralizing a racial identity with the potential for such negative connotations. Across the current work's ethnic-racial minority groups, however, students reported high centrality and public regard values across time. This levels correspond with MMRI's emphasis on the relative import of ERI beliefs and development during adolescence (Sellers et al., 1998), and appears especially

relevant here; the participating school's high ethnic-racial diversity likely provides students with ample access to positive racialized experiences and opportunities to maintain high levels of ERI beliefs.

Unconditional LGCM analyses for the friend group characteristics supported the proposed hypotheses. First, friend group diversity increased over time. However, as described previously, the fit for this model did not meet the recommended metric cut-offs, and thus the given results should not be extensively interpreted. That said, out-group friendships are common during adolescence, but less common than in-group friendships and tend become less common over time (Schneider, Dixon, & Udvari, 2007). The schools' ethnic-racial diversity likely addresses some of this increase, as out-group friendships are more likely and usual within diverse settings (Graham, 2018). In addition, within such an ethnically-racially diverse school, students may feel less inclined to dissolve out-group friendships, as maintaining broader peer connections is likely to be socially valued.

Second, friend group conflict also increased over time. During adolescence, conflict is an expected but often minor component of school friendships (Laursen, 1996), which is reflected here in students' low conflict mean values. The observed longitudinal change in conflict further typifies its consistent nature, and speaks to the natural difficulties involved with forming close, lasting, and non-conflictual relationships during adolescence (Brown & Larson, 2009). Furthermore, during this developmental period, most conflicts tend to be minor and followed by reconnection and friendliness (Adams & Laursen, 2001; Laursen, 1993), which perhaps also helps to explain the positive bivariate correlations found between conflict and emotional support.

Third, friend group emotional support significantly increased over time. This is a promising indicator that as adolescents' social awareness and cognitive abilities increase over

time (Adams & Berzonsky, 2008; Benner et al., 2018), so too might their ability to cultivate positive and supportive friendships. These changes pair well with the natural tendency for friends to become increasingly close, emotionally intimate, and communicative with time, and for youth to choose friends that are similar with them along numerous dimensions (Altermatt & Pomerantz, 2003; Jones et al., 2014; Kindermann, 2007; Ream & Rumberger, 2008; Reis & Youniss, 2004). Group-specific analyses indicated that this growth in emotional support is specifically significant among Black, Latinx, and White youth. Previous work bears this out, as Asian high school students have been found to more commonly hold low intimacy, disengaged friendships than other ethnic-racial groups, perhaps due to parental socialization that discourages youth from forming close peer networks (Way, Cowal, Gingold, Pahl, & Bissessar, 2001).

Finally, both academic adjustment outcomes declined over time. Such academic declines are common during adolescence, as studies have shown that numerous educational outcomes, such as achievement (Pong & Zeiser, 2012), belonging (Neel & Fuligni, 2013), and engagement (Archambault, Janosz, Morizot, & Pagani, 2009) are reduced among ethnically-racially diverse students over time. The ubiquity of these declines across this and other studies underlies the continued challenge of keeping students engaged in school over time, as well as the importance of parallel analyses such as those below which may help identify factors that may interrelate with these declines.

RQ2: Parallel Change Over Time

The current study's second research question investigated the extent to which observed change in adolescents' ERI beliefs, friend group characteristics, and academic adjustment outcomes are related to one another. Such interrelations may identify heretofore unknown factors that may encourage positive development across personal, social, and academic contexts for

diverse student populations. I hypothesized positive longitudinal associations across these constructs, such that growth in one area is likely to translate into similar growth across the others. To test this hypothesis, I used parallel process LGCM analyses to assess links between those constructs exhibiting significant change trajectories across students over three time points: ERI public regard, friend group emotional support, conflict, academic efficacy, and school belonging.

Results indicated no significant association between change in ERI public regard and change in either friend group emotional support or conflict the majority of the sample. These findings was surprising, as extant literature would suggest that the amount of social support one receives in a context such as school would work to engender or inhibit ERI development, and that possessing a more developed sense of one's self-concept should improve one's social relationships (Fuligni, Witkow, & Garcia, 2005; Phinney, 1990; Phinney, 2003). Furthermore, for those cases in which a link was found, their directions appear counterintuitive. Specifically, Black youth reported a negative association between their public regard beliefs and their friend group emotional support, while Latinx youth reported a positive association between their public regard beliefs and their friend group conflict. In these case, additional factors may impact these relations in currently unaccounted for ways. For example, perhaps changes in public regard are tied to improved friend group relationship quality when those friends also share one's ERI beliefs, as differences here may provoke disagreement and impede otherwise normative increases in observed emotional support. Alternatively, perhaps changes in public regard and friend group relationship quality are closely linked primarily among in-group friends, with whom youth tend to feel more comfortable exploring their identity beliefs (Jugert, Leszczensky, & Pink, 2019). While these nuances were not examined here, the potential social and academic benefits of

clarifying the link between youth's positive ERI development and friendship quality warrant future investigation.

In addition, LGCM analyses indicated significant associations between observed changes in students' public regard beliefs and observed changes in both academic adjustment outcomes. Specifically, positive links were found for the entire analytic sample, which appears to have been driven primarily by Black, Latinx, and White students. These findings support the proposed second hypothesis, which suggested significant interrelations between students' ERI beliefs and both academic efficacy and school belonging over time. The ethnic-racial breakdown observed here, however, offers additional considerations. Students of color often face academic prejudices or discrimination that impede their academic competency beliefs (Steele & Aronson, 1995). As such, higher public regard beliefs—or the belief that others positively evaluate one's ethnic-racial group membership—likely goes a long way toward bolstering these academic adjustment outcomes. Asian students, however, often face different and potentially more positive ethnic-racial stereotypes than their Black and Latinx peers, which potentially accounts for the group differences observed here. Less is understood, though, about how White youth conceptualize their ethnic-racial group membership. It is possible that as White students find greater meaning in their ERI, they are simultaneously more inclined to draw on positive academic expectations commonly attributed to their ethnic-racial group.

The links between friend group relationship quality and students' academic adjustment outcomes also varied. Specifically, parallel process LGCM analyses identified no significant associations between change in emotional support and change in either academic efficacy or school belonging. However, change in friend group conflict was negatively associated with change in academic efficacy. These findings indicate that, as predicted, developments in

students' understanding of their social relationships are associated with improved academic experiences over time. However, it appears that these pathways do not extend to emotional support in this context. It may be that conflict within a social network is more notable, disruptive, or apparent within a social network than are feelings of support or encouragement, at least insofar as they relate to students' perceptions of how well they can perform academically in that context. Given the heightened social and academic relevance of peers and friends during adolescence, it stands to reason that conflict within one's friend group may be linked to such broader deleterious outcomes. Furthermore, this associations appears to have been primarily driven by White students. This population often experiences unique social development in ethnically-racially diverse spaces, such that their friend group connections are particularly relevant toward their well-being and success (e.g., McDermott & Samson, 2005; Rowe, Bennett, & Atkinson, 1994). As such, within diverse contexts like the study schools here, it is possible that disagreements with their friends are even more acutely linked to their feelings of academic competency.

RQ3: Predicting Change in Academic Adjustment Outcomes Over Time

The current study's third research question concerns the extent to which adolescents' prior ERI beliefs, friend group characteristics, and the interaction thereof may relate to their academic adjustment outcomes concurrently and longitudinally. These findings would expand upon current ERI development research by introducing relevant social context factors that may encourage or inhibit its association with students' success in schools. I hypothesized that 1) ERI centrality and public regard would be positively associated with academic adjustment, 2) friend group diversity and positive relationship quality would be positively associated with academic adjustment, and 3) friend group diversity and relationship quality would moderate the association

between ERI beliefs and academic adjustment change over time across students. To assess these hypotheses, I used conditional LGCM analyses to examine the relation between T1 ERI beliefs and friend group characteristics on both T1 academic adjustment outcomes and academic adjustment slope factors from T1 to T3.

Academic Efficacy. Regarding academic efficacy, results fell primarily in line with the proposed hypotheses. At T1, across the analytic sample, academic efficacy was positively associated with public regard and emotional support, and negatively associated with conflict. These findings are consistent with previous empirical research finding similarly positive links between an assortment of ERI dimensions and social support factors with academic success (Adelabu, 2008; Chavous et al., 2003; Rivas-Drake et al., 2014a; Smith et al., 1999; Umaña-Taylor, 2003). Furthermore, results indicated a unique relation between academic efficacy and the interaction of public regard and emotional support (Figure 1). At each time point, students who reported both high public regard and high levels of friend group emotional support reported both the highest levels of academic efficacy and its shallowest declines. Declines in academic efficacy were similar across the remaining groups, but the second highest levels were reported by those with high public regard but low levels of support. The remaining two groups – those reporting either low regard and high support or low levels of both regard and support – reported significantly lower levels of academic efficacy at each time. These findings highlight the importance of positive external support and evaluations on one's continued sense of academic competency. Specifically, levels of public regard appear especially tied to youth's academic beliefs across ethnic-racial groups, indicating some ubiquity in terms of the sense of self-assuredness that comes with perceiving one to be a member of a well-liked or respected community. In addition, by T3, the role of friend groups becomes more prominent, as those

students reporting higher levels of emotional support from their social groups begin to report significantly greater levels of academic efficacy than do their peers with less support. This pattern coincides with research finding that adolescents may draw on the socioemotional resources of their friends to supplement their own development (Medina, Rivas-Drake, Rowley, & Jagers, 2019).

Conversely, findings did not indicate any factors that predicted change in academic efficacy over time. In light of this outcome, future investigations may consider what other characteristics, or combinations thereof, may maintain higher academic efficacy beliefs over longer timespans. For example, the prior parallel process growth models indicated that changes in both students' public regard beliefs and friend group conflict levels were related to changes in their academic efficacy reports. Specifically, increases in their public regard beliefs were linked to increases in their efficacy over time, suggesting that studies may do well to interrogate how and why this relation may be developing for some students and not others, and what covariates (e.g., students' friend group diversity or academic success) may be encouraging it longitudinally. In addition, parallel process models revealed that as students' conflict levels dropped, their efficacy reports rose, underlying the importance of investigating how best to lessen students' interpersonal strife or improve their social competencies.

School Belonging. Regarding school belonging, findings somewhat replicated those of academic efficacy. As hypothesized, at T1, school belonging was positively associated with public regard and emotional support across the analytic sample. As with academic efficacy, these associations mirror the bulk of literature linking school outcomes to adolescents' identity beliefs and supportive social networks (Adelabu, 2008; Chavous et al., 2003; Rivas-Drake et al., 2014a; Smith et al., 1999; Umaña-Taylor, 2003). However, counterintuitively, both of these factors—

public regard beliefs and friend group emotional support—negatively predicted school belonging reports over time. Additional work is required to further unpack these findings, but speculations can be made. For example, both of these constructs relate to interactions with and the evaluations of others. It may be that as these areas of a students' life increases, presumably with their friend group of others whose perspectives are meaningful to them, they become less concerned with or attached to their larger school context. Perhaps closer social relationships, particularly with peers who are less academically inclined, is linked in currently unknown ways to seemingly normative declines in academic adjustment during this time. To properly evaluate these perspectives, though, additional research is needed which explicitly inquires about whom students are referring to when responding to school belonging items, as well as additional friend group characteristics (e.g., their academic beliefs and engagement) not captured here.

In addition, a significant public regard-by-emotional support interaction emerged (Figure 2). Over time, school belonging was highest for students reporting high public regard and high emotional support. These students were followed by those reporting either high regard and low support or vice versa, with both groups reporting relatively high but statistically similar levels of school belonging. Each group, however, reported significantly higher levels of school belonging over time than their peers reporting both low public regard beliefs and low emotional support from peers. These findings indicate that the presence of positive identity beliefs (particularly one that concerns feeling one's social memberships are valued by others) and relationships aid in improving students' attachment to their joint social context, and that having one or the other available is still beneficial in lieu of possessing both.

Ancillary Considerations. Though not directly hypothesized, conditional LGCM analyses also produced a number of noteworthy ancillary findings. For example, for the most

part, ERI dimensions operated in expected ways relative to one another; across the pooled sample, initial centrality and public regard values were positively related to one another. These links support the widely reported interconnected nature of ERI dimensions (Scottham, Sellers, & Nguyên, 2008; Umaña-Taylor, 2014), and serve chiefly to ensure these constructs operated as anticipated here. Conversely, friend group relationship quality dimensions produced a surprising association; across the pooled sample, initial conflict values were positively related to emotional support values. Theory suggests that friendships would exhibit greater warmth and intimacy over time, which was also observed here, but conflict may also occur within otherwise supportive friendships (Buhrmester & Furman, 2008; Furman & Buhrmester, 1985). It also stands to reason that as young people grow closely and more emotionally vulnerable with their social network, they may encounter additional opportunities for disagreements, misunderstandings, and general relationship discord.

Regarding model covariates, student gender was consistently related to academic efficacy and school belonging, with boys reporting a significantly greater sense of academic efficacy and school belonging. These findings are consistent with previous research, which argues that girls may be less inclined to promote their own academic achievement and engagement during adolescence (Oyserman, Harrison, & Bybee, 2001). In addition, friend group total, or the size of students' friend group, was regularly positively associated with both academic efficacy and school belonging. This finding supports and extends previous empirical work finding that larger friend networks that still manage to be supportive rather than distant promote positive adolescent socioemotional outcomes (Ennett et al., 2006; Falci & McNeely, 2009). Furthermore, given the potential academic support and resources certain friendships may provide in schools, students who have the opportunity to draw from larger social networks may have greater access to these

benefits than do those students reporting having fewer friends. That said, friend group total also negatively predicted school belonging beliefs over time, further suggesting that students may be referring to individuals other than their friends when completing these items (e.g., classmates, teachers) and that more detailed future analyses in this regard may be warranted. Alternatively, as students' friend networks grow, they may find themselves relying less on the social support of their school body more generally, and in turn feel less connected to it over time. Once again, this interpretation is speculative, and more qualitative follow-up analyses may better capture students' feelings about the intersection of their friend network size and their sense of attachment to their school.

ERI and Academic Adjustment within Friend Groups

On balance, the current work nuances our understanding of the interrelation of ERI development, friendship characteristics, and academic adjustment during adolescence. First, it provides further evidence that students' ERI beliefs benefit their academic outcomes, specifically in terms of both their perceptions of competency and their affective experiences with their classes, peers, and teachers. This is of particular importance for youth of color, whose educational journeys are often marred by negative experiences, such as ethnic-racial discrimination, bullying, and inequitable treatment. That said, as the majority of the links between ERI and academic outcomes observed here persisted across ethnic-racial groups, these findings also expand our understanding of areas of similarity in these pathways for diverse student populations.

Of course, students' school experiences are not solely a product of their identity development. This work demonstrates the importance of a supportive, non-conflictual friend group toward improving one's academic adjustment. Furthermore, friend groups exhibiting

positive relationship qualities appear to not only provide youth with a conducive environment in which to succeed in schools, but also buffer against academic declines among students who may not personally possess positive ERI beliefs. Thus, best servicing the academic interests of diverse student populations should involve increased consideration of the intersection of ERI development and the strengths and resources available within the social context in which it occurs.

With this research, I aimed to address a significant and lasting gap in the field of ERI research: social context. ERI development, as could likely be expected with many aspects of one's personal identity, does not occur in a social vacuum. Rather, our beliefs and perceptions regarding our social group membership is informed and shaped by our interactions with those we trust, admire, identify with, and associate with. Naturally, friend groups would qualify as one such group, and the more we know about the role of this social context in ERI development, the more accurately educators, researchers, parents, and community leaders can guide young people toward a positive and productive self-image. Such a mission has never been more important. Our county is diversifying, yet schools remain segregated; Academic success is paramount for an increasing array of complex careers, but students of color remain under-represented and under-supported in our educational system; Adolescent friendships have the potential to bolster students' achievement and well-being, but technological ubiquity and the growth of social media have exposed youth, particularly those of color, to a growing array of negative messages. Gratefully, as this work's results indicate, the intersections of youth's identity beliefs, social relationships, and academic success are both rich and encouraging.

Future Directions and Limitation

The current work addresses a prominent and daunting gap within ERI research: the consideration of how youth's social relationships, and the characteristics of those relationships, may shape ERI development and its relations to academic success. There are many additional ERI dimensions, however, available for evaluation, such as those highlighting the processes through which youth come to understand the meaning and significance of their ethnic-racial group memberships (Phinney, 1992; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004). Recent conceptualizations of ERI have considered an integrated approach to these and more content-oriented aspects of ERI (Umaña-Taylor et al., 2014), such as centrality and public regard, suggesting potentially interesting interrelations among other ERI dimensions and the models tested here. Similarly, regarding academic adjustment, there is ample room for future research. The current work considered academic efficacy and school belonging perceptions, but one may also consider more quantitative aspects of academic achievement, such as GPA, which are likely to have associations with both youth's ERI beliefs and their friend group attitudes (Chang & Le, 2010; Ryan, 2001; Schwartz et al., 2007).

Further, our findings highlight the role of friend group ethnic-racial diversity, emotional support, and conflict, but previous studies have explored an array of other friend characteristics that potentially shape adolescent behaviors and beliefs. These include friend or friend group aggressiveness, popularity, prosocial behavior, stability, and time spent together (Barry, Wentzel, 2006; Brendgen, Bowen, Rondeau, & Vitaro, 1999; Peters, Cillessen, Riksen-Walraven, & Haselager, 2010; Regnerus, 2002; Vitaro, Tremblay, Kerr, Pagani, & Bukowski, 1997). It is yet unknown how such attributes may shape the relation between ERI and academic success, but such models can likely be tested via models similar to those tested here. Future research may further expand on this area by taking into account the potentially differential role of individual

friends. After all, while friend groups are a significant social context for adolescents, some research suggests certain friends (e.g., best friends, similar friends) within these groups may play a more significant role on students' lives and school experiences than others (Brown & Larson, 2009; Ryan, 2001). Capturing aspects of individual friendships, such as reciprocal friend nominations, the length of the friendship or its presence across multiple data collection points, or best friendships may indicate that the relations found in the current work are primarily the product of dyads or subgroups within larger friend groups.

No study is without its limitations, and the findings of the current work should be considered with its own limitations in mind. For example, though this study features both concurrent and longitudinal analyses, the times of data collection occurred approximately six months apart. For processes such as ERI development or friend formation and dissolution, which may change relatively rapidly during adolescence, more frequent data collection points (e.g., daily or weekly student reports) may capture presently missing nuances. A similar limitation is a reliance on a subset of ethnic-racial groups in the present analyses. The current sample sizes only allowed for the inclusion of Asian, Black, Latinx, and White students' data in this dissertation. This was a fitting sample, as these groups make up a significant proportion of the United States population, and theory and empirical research suggested the associations studied here are differentially relevant for these groups. However, future work should make every effort to expand examinations like this one with the broadest and most diverse sample possible.

In addition, the populations examined here cannot be assumed to be identical across other potentially relevant areas, such as their social worlds and ethnic-racial socialization experiences. Such factors would likely impact and differentiate their ERI development in ways not fully captured here. For example, these groups may have distinct interpretations of ERI items and

measures that were not fully captured here, thus leaving open the possibility that observed differences are impacted by measurement invariance. Thus it is important to curb our assumptions about similarities and differences across these groups' ERI beliefs and associations far beyond those presented here, and instead use the current findings as one step in a process of further clarifying these groups' unique social and academic worlds. Similarly, given the current work's longitudinal analytic sample, it would have been ideal to be able to consider what factors may have impacted student attrition. Not all students able to participate in every wave of data collection chose to do so, and we can only currently speculate as to the reasons why. Future work may consider additional individual academic or socioemotional characteristics (e.g., academic engagement, emotional well-being, and socioeconomic status) as potentially relevant factors.

Conclusion

Adolescence is a time of significant social identity development, particularly within academic contexts. For youth within this developmental period, theory and research continue to explore associations between ERI and academic success. On balance, the field has primarily highlighted the strengths of a strong and positive ERI on youth's school experiences and outcomes. However, work is needed to identify what factors may be shaping these associations among ethnically-racially diverse adolescents. The current work critically examined the role of youth's friend groups, and the characteristics thereof, on this relation. Our findings suggest that, in an ethnically-racially diverse high school sample, friend group emotional support and conflict are both related to positive academic adjustment and uniquely moderate the relation between ERI and academic adjustment.

With these findings in mind, future work has ample directions in which to take this research. Most immediately, there are numerous additional friend group characteristics that could

be explored in relation to their link to youth's ERI development and academic adjustment. These include factors such as best friendships, the length of the friendships, the context in which the friendship primarily occurs (e.g., in classrooms, in school clubs, outside of school), and the extent to which friends discuss academics or ERI-related topics. More broadly, there are other social networks, such as parents, siblings, teachers, and peers, that may serve as intriguing contexts for examination in this way.

Simultaneously, the findings of this work have revealed a number of compelling questions. For example, to what extent are these conclusions region-specific? It is reasonable to assume that cultural, community, and population differences may inform how young people in an area develop their identity beliefs, let alone their school experiences and friendships. Also, how might these results differ with younger populations (whose ERI beliefs and friendships may only just be maturing) or older ones (whose ERI beliefs and friendships may be more resolved and committed)? Although such examinations were outside the scope of this work, they would place the current results within a more detailed context. Future researchers are encouraged to join me in continuing to work toward expanding our understanding of these critical developmental processes.

Tables

Table 1

Means and Standard Deviations for Key Variables

	Variable	Analytic Sample	Asian Sample	Black Sample	Latinx Sample	White Sample
Time 1	Centrality	3.455 (0.875)	3.620 (0.846)	3.768 (0.852)	3.648 (0.832)	3.122 (0.802)
	Public Regard	3.242 (0.910)	3.669 (0.816)	2.871 (0.911)	2.915 (0.830)	3.501 (0.828)
	Friend Diversity	0.465 (0.281)	0.460 (0.281)	0.454 (0.298)	0.489 (0.275)	0.462 (0.275)
	Friend Emotional support	3.232 (0.911)	3.124 (0.926)	3.324 (0.949)	3.307 (0.918)	3.174 (0.873)
	Friend Conflict	1.782 (0.694)	1.645 (0.702)	1.994 (0.783)	1.780 (0.694)	1.699 (0.602)
	Academic Efficacy	3.706 (0.888)	3.885 (0.829)	3.625 (0.891)	3.572 (0.885)	3.758 (0.892)
	School Self-Belonging	3.612 (0.787)	3.699 (0.723)	3.553 (0.825)	3.547 (0.769)	3.650 (0.789)
Time 2	Centrality	3.445 (0.890)	3.612 (0.893)	3.756 (0.821)	3.625 (0.838)	3.056 (0.826)
	Public Regard	3.265 (0.877)	3.668 (0.786)	2.958 90.879)	3.050 (0.812)	3.480 (0.830)
	Friend Diversity	0.439 (0.287)	0.399 (0.284)	0.426 (0.292)	0.433 (0.293)	0.465 (0.277)
	Friend Emotional support	3.255 (0.955)	3.136 (0.938)	3.357 (0.968)	3.389 (0.932)	3.146 (0.946)
	Friend Conflict	1.814 (0.758)	1.649 (0.675)	2.018 (0.848)	1.809 (0.734)	1.727 (0.694)
	Academic Efficacy	3.668 (0.900)	3.790 (0.810)	3.610 (0.902)	3.596 (0.880)	3.702 (0.935)
	School Self-Belonging	3.601 (0.790)	3.716 (0.723)	3.559 (0.791)	3.533 (0.765)	3.627 (0.821)
Time 3	Centrality	3.436 (0.862)	3.600 (0.851)	3.743 (0.829)	3.616 (0.846)	3.086 (0.767)
	Public Regard	3.282 (0.872)	3.705 (0.751)	2.886 (0.857)	3.027 (0.792)	3.532 (0.810)
	Friend Diversity	0.480 (0.295)	0.489 (0.290)	0.457 (0.310)	0.482 (0.300)	0.489 (0.286)
	Friend Emotional support	3.346 (0.939)	3.143 (0.937)	3.379 (0.959)	3.546 (0.944)	3.281 (0.903)
	Friend Conflict	1.865 (0.821)	1.742 (0.756)	2.084 (0.900)	1.888 (0.847)	1.755 (0.733)
	Academic Efficacy	3.662 (0.887)	3.779 (0.778)	3.604 (0.931)	3.545 (0.854)	3.717 (0.906)
	School Self-Belonging	3.424 (0.796)	3.540 (0.758)	3.332 (0.773)	3.353 (0.799)	3.480 (0.813)

Table 2

Skewness and Kurtosis Values and Standard Deviations for Key Variables

	Variable	Range	Skewness	SD	Kurtosis	SD
Time 1	Centrality	4	-0.210	0.046	-0.252	0.091
	Public Regard	4	-0.150	0.046	-0.227	0.091
	Friend Diversity	.95	-0.547	0.050	-0.918	0.099
	Friend Emotional support	4	-0.332	0.048	-0.251	0.096
	Friend Conflict	4	1.293	0.048	2.093	0.096
	Academic Efficacy	4	-0.415	0.048	-0.174	0.096
	School Self-Belonging	4	-0.364	0.048	0.242	0.096
Time 2	Centrality	4	-0.187	0.043	-0.316	0.087
	Public Regard	4	-0.128	0.043	-0.052	0.087
	Friend Diversity	.94	-0.463	0.048	-1.126	0.096
	Friend Emotional support	4	-0.273	0.047	-0.427	0.093
	Friend Conflict	4	1.259	0.047	1.809	0.094
	Academic Efficacy	4	-0.350	0.047	-0.221	0.094
	School Self-Belonging	4	-0.276	0.047	0.225	0.094
Time 3	Centrality	4	-0.065	0.047	-0.282	0.095
	Public Regard	4	-0.079	0.047	-0.074	0.095
	Friend Diversity	.97	-0.573	0.053	-0.976	0.105
	Friend Emotional support	4	-0.336	0.051	-0.197	0.103
	Friend Conflict	4	1.363	0.051	2.083	0.103
	Academic Efficacy	4	-0.267	0.050	-0.323	0.100
	School Self-Belonging	4	-0.238	0.050	0.402	0.100

Table 3

Bivariate Correlations of Key Variables

		1	2	3	4	5	6
Time 1	1. Centrality	1					
	2. Public Regard	.178**	1				
	3. Friend Diversity	0.016	0.000	1			
	4. Friend Emotional support	.142**	0.008	-.072**	1		
	5. Friend Conflict	0.026	-.079**	-.108**	.134**	1	
	6. Academic Efficacy	.151**	.229**	0.034	.064**	-.098**	1
	7. School Self-Belonging	.153**	.300**	.065**	.090**	-.133**	.405**
Time 2	1. Centrality	1					
	2. Public Regard	.238**	1				
	3. Friend Diversity	-.067**	-0.012	1			
	4. Friend Emotional support	.173**	0.032	-0.023	1		
	5. Friend Conflict	0.013	-.054**	-.057**	.150**	1	
	6. Academic Efficacy	.157**	.180**	-0.009	.054**	-.076**	1
	7. School Self-Belonging	.199**	.234**	0.040	.121**	-.104**	.448**
Time 3	1. Centrality	1					
	2. Public Regard	.202**	1				
	3. Friend Diversity	0.012	0.013	1			
	4. Friend Emotional support	.137**	0.006	-.093**	1		
	5. Friend Conflict	0.037	-0.034	-.139**	.118**	1	
	6. Academic Efficacy	.175**	.263**	0.019	0.017	-.099**	1
	7. School Self-Belonging	.176**	.301**	.066**	.047*	-.074**	.418**

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4

Friend Nomination Means and Standard Deviations

	Analytic Sample	Asian Sample	Black Sample	Latinx Sample	White Sample
Time 1	4.959 (2.902)	5.088 (2.910)	4.674 (2.848)	4.707 (2.806)	5.211 (2.954)
Time 2	4.576 (2.889)	4.880 (3.041)	4.473 (2.960)	4.010 (2.579)	4.894 (2.906)
Time 3	4.306 (2.725)	4.585 (2.905)	4.089 (2.684)	3.854 (2.467)	4.600 (2.783)

Table 5

Multivariate Analysis of Variance of ERI Dimensions across Ethnic-Racial Groups

			Time 1		Time 2		Time 3	
Variable	Variable	Groups	F [df]	p	F [df]	p	F [df]	p
Centrality	Friend Diversity	Asian/Black	5.847 [1, 784]	0.016*	2.256 [1, 836]	0.133	4.435 [1, 597]	0.004**
		Asian/Latinx	0.519 [1, 733]	0.472	0.304 [1, 827]	0.582	4.793 [1, 612]	0.003**
		Asian/White	93.211 [1, 1244]	0.001***	122.627 [1, 1202]	0.001***	27.090 [1, 923]	0.001***
		Black/Latinx	3.664 [1, 930]	0.056	5.950 [1, 1040]	0.015*	3.401 [1, 863]	0.066
		Black/White	221.280 [1, 1441]	0.001***	243.607 [1, 1415]	0.001***	209.657 [1, 1237]	0.001***
		Latinx/White	147.863 [1, 1390]	0.001***	160.832 [1, 1406]	0.001***	145.411 [1, 1235]	0.001***
Public Regard	Friend Support	Asian/Black	162.332 [1, 784]	0.001***	164.022 [1, 836]	0.001***	49.620 [1, 597]	0.001***
		Asian/Latinx	150.114 [1, 733]	0.001***	0.304 [1, 827]	0.582	40.327 [1, 612]	0.001***
		Asian/White	7.778 [1, 1244]	0.005**	11.560 [1, 1202]	0.001***	3.463 [1, 923]	0.016*
		Black/Latinx	1.407 [1, 930]	0.236	4.121 [1, 1040]	0.043*	3.603 [1, 863]	0.058
		Black/White	207.699 [1, 1441]	0.001***	159.857 [1, 1415]	0.001***	174.720 [1, 1237]	0.001***
		Latinx/White	168.601 [1, 1390]	0.001***	111.930 [1, 1406]	0.001***	127.367 [1, 1235]	0.001***

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 6

Multivariate Analysis of Variance of Friend Characteristics across Ethnic-Racial Groups

		Time 1		Time 2		Time 3	
Variable	Groups	F [df]	p	F [df]	p	F [df]	p
Friend Diversity	Asian/Black	0.012 [1, 784]	0.913	4.630 [1, 836]	0.032*	1.108 [1, 597]	0.345
	Asian/Latinx	1.317 [1, 733]	0.252	0.304 [1, 827]	0.582	1.810 [1, 612]	0.144
	Asian/White	0.007 [1, 1244]	0.931	15.526 [1, 1202]	0.001***	0.516 [1, 923]	0.671
	Black/Latinx	1.316 [1, 930]	0.252	0.094 [1, 1040]	0.759	0.499 [1, 863]	0.480
	Black/White	0.063 [1, 1441]	0.802	3.143 [1, 1415]	0.076	2.066 [1, 1237]	0.151
	Latinx/White	2.625 [1, 1390]	0.105	4.504 [1, 1406]	0.034*	0.370 [1, 1235]	0.543
Friend Support	Asian/Black	7.293 [1, 784]	0.007**	7.057 [1, 836]	0.008**	2.090 [1, 597]	0.100
	Asian/Latinx	6.390 [1, 733]	0.012*	0.304 [1, 827]	0.582	7.133 [1, 612]	0.001***
	Asian/White	1.118 [1, 1244]	0.291	0.256 [1, 1202]	0.613	1.279 [1, 923]	0.280
	Black/Latinx	0.034 [1, 930]	0.853	0.403 [1, 1040]	0.526	10.267 [1, 863]	0.001***
	Black/White	6.259 [1, 1441]	0.012*	16.568 [1, 1415]	0.001***	1.135 [1, 1237]	0.287
	Latinx/White	4.923 [1, 1390]	0.027*	23.222 [1, 1406]	0.001***	23.581 [1, 1235]	0.001***
Friend Conflict	Asian/Black	57.260 [1, 784]	0.001***	37.591 [1, 836]	0.001***	7.128 [1, 597]	0.001***
	Asian/Latinx	12.070 [1, 733]	0.001***	0.304 [1, 827]	0.582	2.223 [1, 612]	0.084
	Asian/White	6.342 [1, 1244]	0.012*	2.996 [1, 1202]	0.084	0.113 [1, 923]	0.953
	Black/Latinx	24.328 [1, 930]	0.001***	14.950 [1, 1040]	0.001***	5.651 [1, 863]	0.018*
	Black/White	70.635 [1, 1441]	0.001***	41.117 [1, 1415]	0.001***	32.047 [1, 1237]	0.001***
	Latinx/White	3.931 [1, 1390]	0.048*	3.375 [1, 1406]	0.066	7.285 [1, 1235]	0.007**

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7

Multivariate Analysis of Variance of ERI Dimensions across Ethnic-Racial Groups

		Time 1		Time 2		Time 3	
Variable	Groups	F [df]	p	F [df]	p	F [df]	p
Academic Efficacy	Asian/Black	14.824 [1, 784]	0.001***	2.256 [1, 836]	0.133	4.435 [1, 597]	0.004**
	Asian/Latinx	24.486 [1, 733]	0.001***	0.304 [1, 827]	0.582	4.793 [1, 612]	0.003**
	Asian/White	5.127 [1, 1244]	0.024*	122.627 [1, 1202]	0.001***	27.090 [1, 923]	0.001***
	Black/Latinx	1.309 [1, 930]	0.253	5.950 [1, 1040]	0.015*	3.401 [1, 863]	0.066
	Black/White	6.022 [1, 1441]	0.014*	243.607 [1, 1415]	0.001***	209.657 [1, 1237]	0.001***
	Latinx/White	14.018 [1, 1390]	0.001***	160.832 [1, 1406]	0.001***	145.411 [1, 1235]	0.001***
School Self-Belonging	Asian/Black	4.822 [1, 784]	0.028*	164.022 [1, 836]	0.001***	49.620 [1, 597]	0.001***
	Asian/Latinx	7.317 [1, 733]	0.007**	0.304 [1, 827]	0.582	40.327 [1, 612]	0.001***
	Asian/White	0.207 [1, 1244]	0.649	11.560 [1, 1202]	0.001***	3.463 [1, 923]	0.016*
	Black/Latinx	0.201 [1, 930]	0.654	4.121 [1, 1040]	0.043*	3.603 [1, 863]	0.058
	Black/White	5.762 [1, 1441]	0.017*	159.857 [1, 1415]	0.001***	174.720 [1, 1237]	0.001***
	Latinx/White	8.538 [1, 1390]	0.004**	111.930 [1, 1406]	0.001***	127.367 [1, 1235]	0.001***

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 8

Unconditional Latent Growth Curve Model Analysis for Key Variables

		CFI	TLI	SRMR	RMSEA (CI 90%)	Intercept Value (Variance)	Slope Factor (Variance)
Analytic Sample	Centrality	1.000	1.000	0.005	0.008 (0.000, 0.051)	3.458*** (0.488***)	-0.015 (0.010)
	Public Regard	1.000	1.002	0.003	0.000 (0.000, 0.039)	3.188*** (0.436***)	0.026* (0.027)
	Friend Diversity	0.945	0.835	0.026	0.069 (0.039, 0.104)	0.446*** (0.041***)	0.014** (0.007*)
	Friend Emotional Support	1.000	1.000	0.006	0.000 (0.000, 0.051)	3.220*** (0.614***)	0.064*** (0.070**)
	Friend Conflict	0.998	0.994	0.009	0.019 (0.000, 0.059)	1.790*** (0.160***)	0.055*** (0.009)
	Academic Efficacy	1.000	1.001	0.006	0.000 (0.000, 0.049)	3.685*** (0.433***)	-0.025* (0.014)
	School Belonging	0.981	0.944	0.030	0.082 (0.053, 0.116)	3.639*** (0.437***)	-0.117*** (0.066***)

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 9

Parallel Process LGCM of Public Regard and Emotional Support

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Public Regard x Emotional Support	0.999	0.997	0.013	0.011 (0.000, 0.027)	0.004 (0.026)	0.563
Asian Sample		0.989	0.977	0.025	0.031 (0.015, 0.046)	0.004 (0.025)	0.786
Black Sample						-0.013 (0.041)	0.036*
Latinx Sample						0.002 (0.086)	0.875
White Sample						0.017 (0.054)	0.110

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 10

Parallel Process LGCM of Public Regard and Friend Group Conflict

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Public Regard x Conflict	0.998	0.997	0.012	0.011 (0.000, 0.027)	0.002 (0.025)	0.734
Asian Sample		0.994	0.986	0.024	0.020 (0.000, 0.037)	-0.004 (0.027)	0.716
Black Sample						-0.006 (0.041)	0.663
Latinx Sample						0.031 (0.088)	0.024*
White Sample						-0.009 (0.053)	0.338

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 11

Parallel Process LGCM of Public Regard and Academic Efficacy

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Public Regard x Academic Efficacy	0.997	0.993	0.018	0.018 (0.000, 0.032)	0.026 (0.021)	0.001***
Asian Sample		0.984	0.965	0.035	0.038 (0.024, 0.052)	0.026 (0.017)	0.059
Black Sample						0.013 (0.048)	0.361
Latinx Sample						0.017 (0.086)	0.175
White Sample						0.036 (0.053)	0.001***

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 12

Parallel Process LGCM of Public Regard and School Belonging

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Public Regard x School Belonging	0.990	0.979	0.026	0.033 (0.021, 0.046)	0.031 (0.023)	0.001***
Asian Sample		0.986	0.970	0.035	0.038 (0.024, 0.052)	0.008 (0.027)	0.494
Black Sample						0.028 (0.043)	0.037*
Latinx Sample						0.043 (0.088)	0.001***
White Sample						0.034 (0.050)	0.001***

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 13

Parallel Process LGCM of Friend Group Emotional Support and Academic Efficacy

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Emotional Support x Academic Efficacy	0.996	0.992	0.013	0.019 (0.002, 0.033)	0.006 (0.070)	0.399
Asian Sample		0.992	0.982	0.024	0.028 (0.008, 0.043)	0.020 (0.019)	0.156
Black Sample						-0.008 (0.032)	0.636
Latinx Sample						0.008 (0.046)	0.540
White Sample						0.004 (0.134)	0.696

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 14

Parallel Process LGCM of Friend Group Emotional Support and School Belonging

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Emotional Support x School Belonging	0.978	0.953	0.027	0.048 (0.036, 0.060)	0.005 (0.071)	0.410
Asian Sample		0.972	0.941	0.034	0.053 (0.040, 0.066)	0.001 (0.026)	0.916
Black Sample						0.004 (0.034)	0.810
Latinx Sample						0.003 (0.042)	0.816
White Sample						0.012 (0.138)	0.232

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 15

Parallel Process LGCM of Friend Group Conflict and Academic Efficacy

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Conflict x Academic Efficacy	1.000	1.001	0.010	0.000 (0.000, 0.022)	-0.016 (0.006)	0.013*
Asian Sample		1.000	1.011	0.020	0.000 (0.000, 0.018)	-0.006 (0.011)	0.602
Black Sample						-0.011 (0.016)	0.509
Latinx Sample						-0.025 (0.014)	0.072
White Sample						-0.021 (0.009)	0.024*

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 16

Parallel Process LGCM of Friend Group Conflict and School Belonging

		CFI	TLI	SRMR	RMSEA (CI 90%)	Slope Factor (SE)	p
Entire Sample	Conflict x School Belonging	0.991	0.981	0.026	0.026 (0.000, 0.042)	-0.011 (0.006)	0.058
Asian Sample		0.989	0.976	0.017	0.030 (0.018, 0.043)	-0.016 (0.011)	0.138
Black Sample						-0.019 (0.015)	0.205
Latinx Sample						-0.006 (0.013)	0.657
White Sample						-0.011 (0.008)	0.196

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 17

Conditional Latent Growth Curve Model Analysis of Academic Efficacy

	ERI Dimension & T1 Predictors	CFI	TLI	SRMR	RMSEA (CI 90%)
		0.991	0.973	0.014	0.017 (0.000, 0.029)
		β	SE	p	
Intercept Values	Centrality	0.054	0.123	0.660	
	Friend Support	0.185	0.106	0.081	
	Centrality x Support	-0.018	0.029	0.544	
	Friend Conflict	-0.365	0.133	0.006**	
	Centrality x Conflict	0.054	0.036	0.133	
	Friend Diversity	-0.165	0.338	0.624	
	Centrality x Diversity	0.036	0.095	0.705	
	Gender	0.250	0.046	0.001***	
	Friend Total	0.033	0.008	0.001***	
		β	SE	P	
Slope Factors	Centrality	-0.002	0.083	0.984	
	Friend Support	-0.065	0.071	0.355	
	Centrality x Support	0.018	0.019	0.345	
	Friend Conflict	0.143	0.092	0.119	
	Centrality x Conflict	-0.037	0.025	0.135	
	Friend Diversity	0.204	0.235	0.386	
	Centrality x Diversity	-0.056	0.066	0.391	
	Gender	-0.011	0.031	0.729	
	Friend Total	-0.008	0.006	0.146	
	ERI Dimension & T1 Predictors	CFI	TLI	SRMR	RMSEA (CI 90%)
		0.987	0.961	0.016	0.021 (0.009, 0.032)
		β	SE	p	
Intercept Values	Public Regard	0.242	0.118	0.040*	
	Friend Support	0.316	0.088	0.001***	
	Regard x Support	-0.057	0.026	0.027*	
	Friend Conflict	-0.269	0.110	0.015*	
	Regard x Conflict	0.036	0.033	0.277	
	Friend Diversity	-0.160	0.301	0.596	
	Regard x Diversity	0.047	0.089	0.600	
	Gender	0.219	0.046	0.001***	
	Friend Total	0.029	0.008	0.001***	
		β	SE	P	
Slope Factors	Public Regard	-0.017	0.081	0.829	
	Friend Support	-0.096	0.060	0.110	
	Regard x Support	0.028	0.018	0.114	
	Friend Conflict	0.090	0.076	0.235	
	Regard x Conflict	-0.025	0.023	0.261	
	Friend Diversity	0.367	0.209	0.080	
	Regard x Diversity	-0.112	0.062	0.070	
	Gender	-0.005	0.031	0.875	
	Friend Total	-0.008	0.006	0.162	

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 18

Conditional Latent Growth Curve Model Analysis of School Belonging

	ERI Dimension & T1 Predictors	CFI	TLI	SRMR	RMSEA (CI 90%)
		0.973	0.920	0.014	0.033 (0.022, 0.043)
		β	SE	p	
Intercept Values	Centrality	0.208	0.111	0.061	
	Friend Support	0.238	0.094	0.012*	
	Centrality x Support	-0.027	0.026	0.292	
	Friend Conflict	-0.151	0.117	0.198	
	Centrality x Conflict	-0.013	0.032	0.681	
	Friend Diversity	0.141	0.303	0.642	
	Centrality x Diversity	-0.023	0.085	0.791	
	Gender	0.188	0.041	0.001***	
	Friend Total	0.037	0.008	0.001***	
		β	SE	p	
Slope Factors	Centrality	0.007	0.079	0.924	
	Friend Support	-0.014	0.066	0.838	
	Centrality x Support	-0.004	0.018	0.833	
	Friend Conflict	-0.001	0.086	0.987	
	Centrality x Conflict	-0.001	0.024	0.951	
	Friend Diversity	-0.007	0.220	0.976	
	Centrality x Diversity	0.001	0.061	0.993	
	Gender	0.029	0.029	0.304	
	Friend Total	-0.013	0.005	0.012*	
	ERI Dimension & T1 Predictors	CFI	TLI	SRMR	RMSEA (CI 90%)
		0.977	0.930	0.015	0.032 (0.022, 0.043)
		β	SE	p	
Intercept Values	Public Regard	0.382	0.103	0.001***	
	Friend Support	0.232	0.076	0.002**	
	Public Regard x Support	-0.030	0.023	0.189	
	Friend Conflict	-0.148	0.095	0.121	
	Public Regard x Conflict	-0.007	0.029	0.820	
	Friend Diversity	0.490	0.264	0.064	
	Public Regard x Diversity	-0.121	0.079	0.124	
	Gender	0.139	0.040	0.001***	
	Friend Total	0.030	0.007	0.001***	
		β	SE	P	
Slope Factors	Public Regard	-0.160	0.076	0.037*	
	Friend Support	-0.143	0.076	0.012*	
	Public Regard x Support	0.036	0.017	0.028*	
	Friend Conflict	0.016	0.071	0.819	
	Public Regard x Conflict	-0.007	0.021	0.736	
	Friend Diversity	-0.110	0.195	0.573	
	Public Regard x Diversity	0.028	0.057	0.624	
	Gender	0.042	0.029	0.142	
	Friend Total	-0.010	0.005	0.042*	

*$p < .05$. **$p < .01$. ***$p < .001$.

Figures

Figure 1. Conditional latent growth curve model of ERI public regard and friend group emotional support on academic efficacy perceptions over time. Standard error lines included.

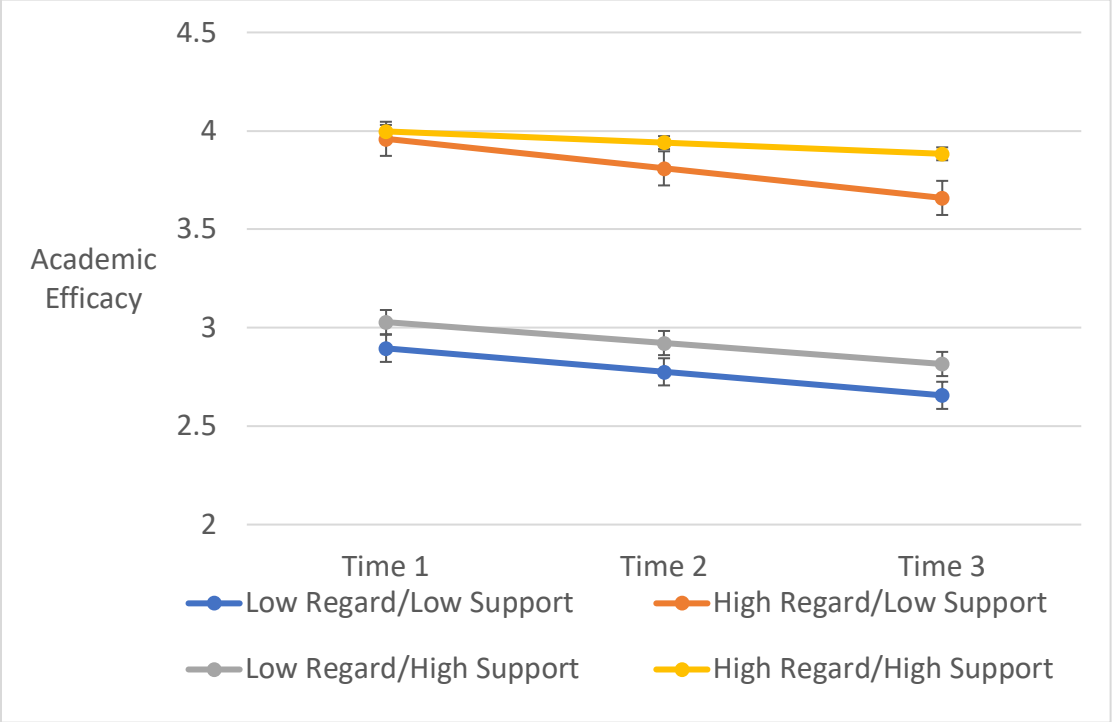
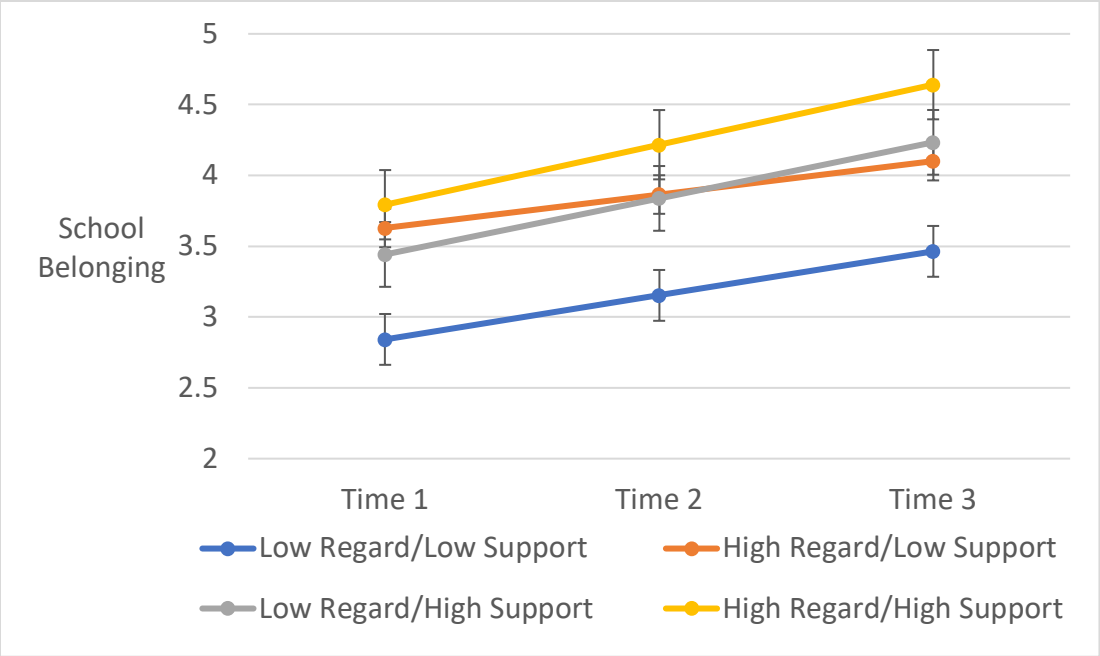


Figure 2. Conditional latent growth curve model of ERI public regard and friend group emotional support on school belonging perceptions over time. Standard error lines included.



Appendices

Appendix A

Multidimensional Inventory of Black Identity-teen (Scottham, Sellers, & Nguyên, 2008)

Instructions: Please think about how you felt in the past 30 days when answering these next questions, and continue to think about the ethnic group that you feel most a part of.

Responses:
1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

Items – Centrality subscale:
1. I feel close to other people of my ethnic group.
2. I have a strong sense of belonging to people from my ethnic group.
3. If I were to describe myself to someone, one of the first things that I would tell them is my ethnicity.

Items – Public regard subscale:
1. Most people think that people of my ethnic group are as smart as people of other ethnic groups.
2. People of other ethnicities think that people of my ethnicity have made important contributions.
3. People think that people of my ethnicity are as good as people from other ethnicities.

Appendix B

Friend Nomination and Quality Measures (Buhrmester & Furman, 2008; Ryan, 2001)

Instructions: Name your 10 closest friends in your school (your closest friends can be of any gender and from any grade). Who are the friends you hang around with and talk to the most in your school? You can list as many or as few names as you need but remember, only name your closest friends. After you complete the survey, these names will be blacked out so that you and your friends remain anonymous.

Responses:
1 = Never or hardly at all
2 = Seldom or not too much
3 = Sometimes or somewhat
4 =Often or very much
5 = Always or extremely much

Items – Emotional subscale:
1. How often do you turn to this person for support with personal problems?
2. How often do you depend on this person for help, advice, or sympathy?
3. When you are feeling down or upset, how often do you depend on this person to cheer things up?

Items – Conflict subscale:
4. How much do you and this person get upset with or mad at each other?
5. How much do you and this person disagree and quarrel?
6. How much do you and this person argue with each other?

Appendix C

Academic Efficacy (Midgley et al., 2000)

Instructions: For these next questions, please continue to think about your beliefs in the past 30 days.

Responses:
1 = Not at all True
2 =
3 = Somewhat True
4 =
5 = Very True

Items:
1. I'm certain I can master the skills taught in class this year.
2. I'm certain I can figure out how to do the most difficult class work.
3. I can do almost all the work in class if I don't give up.
4. Even if the work is hard, I can learn it.
5. I can do even the hardest work in this class if I try.

Appendix D

School Belonging (McNeely, Nonnemaker, & Blum, 2002)

Instructions: Please choose the response that best fits you. Think about the past 30 days.

Responses:
1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

Items:
1. I feel safe in my school.
2. I am happy to be at this school.
3. I feel close to people at this school.
4. The teachers at this school treat students fairly.
5. I feel like I am part of this school.

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