

Received Date : 27-May-2015

Revised Date : 30-Jan-2016

Accepted Date : 05-Mar-2016

Article type : Special Section

Peer influence on ethnic-racial identity development:

A multi-site investigation

Carlos E. Santos¹, Olga Kornienko², and Deborah Rivas-Drake³

¹ Counseling and Counseling Psychology, Arizona State University, Tempe, AZ

² Institute for Interdisciplinary Salivary Bioscience Research, Department of Psychology,
Arizona State University, Tempe, AZ

³ School of Education and Department of Psychology, University of Michigan

Correspondence: Correspondence should be addressed to Carlos E. Santos, Arizona State University, College of Letters & Sciences, Counseling & Counseling Psychology, Payne Hall, MC-0811, Tempe, AZ 85287-0811, email: carlos.e.santos@asu.edu, 480-727-4068 (tel.) and 480-965-7293 (fax).

Acknowledgements: The southwest study was supported in part by funds provided by the T. Denny Sanford School of Social Dynamics at Arizona State University as part of the Lives of

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/cdev.12789](https://doi.org/10.1111/cdev.12789)

This article is protected by copyright. All rights reserved

Girls and Boys Research Enterprise (<http://lives.clas.asu.edu/>). The authors would like to thank the graduate and undergraduate students who contributed to this project and the students, teachers, principal, staff, and parents for their participation.

Abstract

The peer context features prominently in theory, and increasingly in empirical research, regarding ethnic-racial identity (ERI) development, but no studies have assessed peer network influence on ERI. We examined peer influence on ERI centrality, private and public regard using longitudinal social network analysis. Data were drawn from two sites: a predominantly Latina/o Southwestern (SW) school ($N = 1034$; $Age = 12.10$) and a diverse Midwestern (MW) school ($N = 513$; $Age = 11.99$). Findings showed that peers influenced youths' public regard over time at both sites. However, peer influence on centrality was evident in the SW site, whereas peer influence on private regard was evident in the MW site. Importantly, peer influence was evident after controlling for selection effects.

Keywords: ethnic identity; racial identity; peers; adolescence; social network analysis

Peer influence on ethnic-racial identity development: A multi-site investigation

Adolescence is a period marked by greater engagement and time spent with peers (e.g., Larson & Richards, 1991). Despite the central role that peers play in shaping adolescent lives and the documented importance of ethnic-racial identity (ERI) to adolescent development, little is known regarding how peers influence ERI development. ERI is a meta-construct that reflects one's ethnic background as well as racialized experiences associated with membership in a particular group in the United States (Umaña-Taylor et al., 2014). The omission of peers' influence on ERI stands in sharp contrast to a large body of research that underscores the role of peer influence in broader socio-emotional processes, such as the role of peer rejection and acceptance in shaping well-being and later delinquent or criminal behavior (for a review, see Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). It is also curious given that diverse theoretical traditions underscore that identity development is a dialectical process through which youth make sense of their ethnic/racial group membership in light of experiences with others (Erikson, 1968; Phinney 1990; Tajfel & Turner, 1986).

A limited number of scholars have considered the role of peers on ERI development and documented that peers inform youths' understanding of ERI via endorsement of racial/ethnic stereotypes (Way, Santos, Niwa & Kim-Gervey, 2008), and offer opportunities to discuss ERI-related experiences (e.g., among best friend dyads; Syed & Juan, 2012). Other research has focused on the role of the peer context (i.e., ethnic/racial composition of schools and friendship groups) in shaping ERI development (e.g., Phinney et al., 2001, Yip et al., 2013). To our knowledge, no study to date has empirically evaluated whether peers *influence* ERI in adolescent networks, after accounting for the role of peer selection. That is, do friends' ERI beliefs become more similar to each other over time (influence), or is it simply the case that adolescents tend to gravitate toward similarly-minded friends (selection)? This question requires the use of methods that, to date, have not been employed in ERI research. The current study addresses this critical knowledge gap using longitudinal social network analysis (SNA), which is novel to this field and is designed to be able to parse out peer influence from peer selection processes.

Developing a more nuanced understanding of peer influence in the stability and change of ERI is important because ERI informs the development of youths' sense of self, and their self-esteem through the values individuals attribute to their racial/ethnic group membership (e.g., Fuligni et al., 2005; Phinney, 1990; Roberts et al., 1999). Our research has roots in early research

on identity development (e.g., Erikson, 1968; Tajfel & Turner, 1986) but draws primarily on the work of Sellers and colleagues (1998) regarding identity content. Drawing on previous work by Cross (1991) and Luhtanen and Crocker (1992), Sellers and colleagues proposed a multidimensional model for conceptualizing racial identity among African Americans (Sellers, Rowley, Chavous, Shelton, & Smith, 1997). However, the model and scale incorporate social identity perspectives (e.g., Luhtanen & Crocker, 1992), and allows for the extension of aspects of the original model that are grounded in more general (rather than group-specific) identity concepts to other groups (e.g., Latina/os, Asian Americans; cf. Rivas-Drake, Hughes, & Way, 2009; Yip, 2005). Our focus on ERI content over ERI process (or other dimensions of ERI) is noteworthy in that it allows us to consider both within-person aspects (e.g., how central and positive one feels about one's ERI) as well as between-person aspects of ERI (e.g., how one thinks others view one's group, or public regard), which may be particularly amenable to the influence of messages received in social situations and settings (e.g. friendships, peer interactions).

Although changes in ERI content may not follow a particular developmental trajectory, how youth construct their ERI content *is* thought to evolve over time as youth are exposed to new ideas about the meaning of their group membership. Thus, changes in ERI content need to be studied longitudinally (Hughes et al., 2011). Following a process-person-context-time (PPCT; Bronfenbrenner, 2005) overarching framing of this investigation, we posit that peer socialization (process) is due to influence on ERI content (person characteristic) as the adolescent becomes more or less similar in ERI content to his or her friends (context), and that such influence can only be observed over a meaningful period of time. Given this framing, it is necessary to employ a method that will allow us to observe how all the PPCT components function and evolve simultaneously. Though novel to the field, longitudinal SNA is well suited to this task, as it disentangles the effects of peer network influence from confounding processes of peer selection on any important characteristic, including ERI (Snijders, van de Bundt, & Steglich, 2010). For example, adolescents tend to select friends based on similarities such as racial/ethnic background (Leszczensky & Pink, 2015); there is also the possibility that youth may select friends who have similar levels of ERI content. Accordingly, in a longitudinal exploration of peer influence on ERI content, it is important to account for this potential factor in peer selection to provide accurate estimates of peer influence, something we are able to do via the use of SNA.

In summary, our main goal is to examine peer influence on ERI content, while controlling for (1) initial choices of friends of the same ethnic/racial background, (2) similar levels of ERI, and (3) structural processes that are universal to peer networks (e.g., the unique characteristics associated with befriending a friend of a friend versus a complete stranger). A secondary, and related goal, is to examine how peer influence and selection processes related to ERI vary across two school contexts: a predominantly Latino/a school and a racially and ethnically diverse school. We chose these two sites because they differ on racial/ethnic composition, building on a growing body of research that suggests ERI development may vary as a function of racial/ethnic composition of schools (e.g., Yip et al., 2013), and because it allows us to examine if peer network influence on ERI content operates similarly or differently in each of these sites with distinct racial/ethnic composition. Finally, to accomplish these goals, we draw upon theory and research grounded in identity (e.g., Erikson, 1968; Sellers et al., 1998) and peer influence (Prinstein & Dodge, 2008) processes in youth. We utilize an advanced SNA approach of stochastic actor-based modeling (SABM; Snijders et al., 2010), which disentangles peer network influence from network selection processes.

Developmental Considerations Regarding Peer Context and ERI Development

Adolescents have a need to belong, affiliate, and achieve social status (Baumeister & Leary 1995). Along with such needs, during adolescence, youth are developing a more complex sense of self and constructing their identities in the context of social relationships. Erikson (1968) emphasized that identity development is a process of constant negotiation and renegotiation within oneself that is grounded in relationships with others. A long history of theory and scholarship underscores the importance of interpersonal relationships to how individuals view themselves (Mead, 1934; Sullivan, 1947) by noting that people think of themselves at least in part based on the way that they believe others think of them. One of the most well-known is Cooley's (1902) concept of a looking-glass self, which highlighted that individuals experience a process of reflected appraisal in that one's self-concept reflects how one thinks others perceive oneself. With regards to the role of peers in shaping self-appraisal, scholars have emphasized that peers play a key role in shaping development in childhood and adolescence (e.g., Abrams et al., 2015). Thus, given the importance of peers to children and adolescents' social world, these relationships are particularly important to consider in shaping adolescents' emerging sense of self. Indeed, there is evidence that peers are remarkably similar

in terms of a broad range of behaviors (e.g., aggressive and risk taking behaviors) and attitudes (e.g., regarding what is accepted or desirable behavior) (see Brechwald & Prinstein, 2011, for reviews); however, less is known regarding the extent to which peers influence each others' levels of self-concept and identity.

Despite the dearth of research examining peer influence on social identities, there may be several mechanisms through which peers influence each other's ERI development. For example, peer influence may occur via modeling of peer behaviors and attitudes, or normative peer pressure (i.e., a desire to 'fit in' in one's peer network). According to a review conducted by Brechwald and Prinstein (2011), one mechanism through which peers are expected to exert influence is by engaging in behaviors and holding attitudes that contribute to a favorable self-identity, further elucidating the links between peer influence and identity. From this perspective, adolescents first learn the norms of their valued peer group and they later establish behaviors and ways of participating in these relationships that affirm these norms. These behaviors, in turn, are typically favorably evaluated by peers, as they are consistent with peer norms. Thus, by aligning with the norms of admired peers, adolescents themselves develop a heightened sense of self and identity. Research suggests that peer conformity (i.e., aligning and affirming peer norms) may foster a positive self-concept (Gibbons, Gerrard, & Lane, 2003). On one hand, this research suggests that aligning one's levels of ERI content to that of one's peer group may be desirable because it would lead to consistency in peer norms related to ERI content which might lead to a more positive self-concept. On the other hand, as Brechwald and Prinstein (2011) suggest, different behaviors, attitudes and self-concepts may be influenced differently by peer norms, and in some cases, anti-conformity to peer norms may reaffirm individuality and freedom from peer norms and expectations.

Empirical Evidence Linking the Peer Context to ERI

To our knowledge, there are no quantitative studies assessing the role of peer network influence on shifts in ERI content (see Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, in press, for a study of friendships and ERI exploration and resolution). Existing quantitative research has focused on peer context characteristics, more generally, such as racial and ethnic composition of schools or friendship groups. Considering the effects of racial and ethnic composition of friendships on ERI development, in a racially and ethnically diverse sample, Phinney and colleagues (2001) found that frequency of contact with friends of the same ethnicity

was positively associated with higher levels of ERI affirmation, belonging, and exploration, even after controlling for the effects of parental cultural practices and language proficiency.

Importantly, this study documented that spending more time in the company of co-ethnic peers had a stronger effect on ERI compared to speaking an ethnic language, which underscores the key socializing role of peers in ERI development. Likewise, Kiang, Peterson, and Thompson (2009) reported that adolescents with same- and mixed-ethnicity friends reported greater levels of ethnic centrality than those with friends who were mostly of a different ethnicity. In a longitudinal study of racially and ethnically diverse youth, Kiang and colleagues (2010) found that having a greater proportion of friends who are of the same race/ethnicity was associated with higher levels of ethnic and racial belonging and exploration. In terms of friendship selection according to levels of ERI, Hamm (2000) found that African American youth (but not Asian and European American) were more likely to have best friends who were similar to them in terms of their sense of belonging and feelings about own ethnic/racial group. This small body of quantitative research suggests that the racial and ethnic make up of peers in school or in friendships may play a role in shaping ERI processes. These studies, however, examine ERI from the perspective of a focal adolescent and do not consider how levels of peers' ERI within a school or friendship network may influence the focal adolescent's levels of ERI, something we undertake in the present study.

Turning to the effects of racial and ethnic composition of schools on ERI development, Yip and colleagues (2013) used a multi-level integration of school-level racial/ethnic composition, daily diary, and biannual survey data to examine such effects. Yip et al. (2013) found that Asian Americans who reported feeling that their racial identity was important to their sense of self, also reported feeling more positive about their racial identity on days when they spent more time amongst other Asian American peers. Conversely, Asian American students who reported feeling that their racial identity was not important to their sense of self appeared to feel less positive about their racial identity on days when they were around other Asian American peers. But the aforementioned results were qualified such that spending time with same-ethnic peers was only related to feelings about racial identity among youth in schools that were predominantly White or that had no single racial/ethnic majority.

In a distinct but relevant line of inquiry, a growing body of qualitative studies examine the role of friends in shaping ERI processes. There are a number of ethnographic studies that

document homophily (i.e., preference for similar others) on race and ethnicity among peers (e.g., Tatum, 2003). Pollock (2004), Carter (2005), and Lee's (1996) ethnographies documented the use of humor, language, style, and dress among friends to convey expectations of ethnic/racial identity expression among adolescents. Using participant observation methods and semi-structured interviews, Way and colleagues (2008) found that experiences with peers in two schools that had no clear dominant racial/ethnic group majority played a critical role in shaping how youth felt about their ERI. Youths' narratives about their ERI revealed that youth engaged in a process of resistance and accommodation to stereotypes about race/ethnicity projected onto them by their peers and the larger culture. Using a narrative method, Syed (2012) reported that youth were more likely to share stories of racial and ethnic discrimination with peers compared to parents. Taken together, evidence from qualitative studies suggests that youth navigate racial and ethnic expectations and stereotypes in the context of friendships; these processes may further spur modeling and/or normative influence processes by peers on ERI development.

Although previous work has collectively advanced our understanding of the role of peers, in a general sense, in ERI development, these studies were unable to disentangle peer influence on ERI from the confounding processes of peer network selection that is driven by a potential preference for affiliating with peers of the same ethnic/racial background and similar ERI beliefs. Rather, the aforementioned studies examined how static attributes of proximal contexts (e.g., ethnic/racial composition of a peer group or school) may influence levels of ERI. An exception is a recent study (using the same MW sample as in the current study) documenting peer network influence on ERI exploration and resolution in a sample of ethnically diverse youth (Rivas-Drake et al, in press). Thus, we build on this body of research by exploring the dialectical nature of how youths' ERI may influence the ERI content (i.e., centrality, public and private regard) of their friends using SNA, a cutting edge method uniquely equipped for the study of peer influence.

Peer Network Influence on ERI Development: Contributions of Social Network Analysis

The peer group has been viewed as a prominent source of social influence in childhood and adolescence (see recent reviews by Brechwald & Prinstein, 2011 and Dishion & Tipsord, 2011). ERI scholars have posited that the construction of ERI content may be context-dependent (Phinney, 2000) and evolve over time (Hughes et al., 2011). Given that peers are a key context for adolescent development (Larson & Verma, 1999), it is likely that they influence ERI content. Peer relationships are complex social systems, and they are reciprocally linked to developmental

outcomes (Parker et al., 2006). This interdependence between peer networks and development poses methodological challenges in that a trajectory of a developmental outcome is contingent on initial choices of friends who subsequently influence development. These initial choices of friends in networks are often driven by preference for affiliating with others of the same ethnic/racial background and gender, for instance (McPherson et al., 2001). Another important contributor to the initial network selection are network structural processes: these processes describe how the nature of connections among individuals in networks depends on the nature of their ties with other members of a group (Rivera et al., 2010). One such structural process is *reciprocity*—which refers to the phenomenon that ‘if you treat me as a friend, I will treat you the same way’—this network structural process is often observed in human social networks. Another key process is *transitivity*, which refers to the propensity of individuals to form friendships with friends of friends.

Examining peer influence without controlling for initial peer network selection may result in biased findings regarding peer influence (Steglich, Snijders, & Pearson, 2010). Consider an example of how several processes are implicated in the way that ERI content and ethnic/racial background contribute to network selection. Because individuals prefer to affiliate with others who are of the same ethnic/racial background (i.e., racial/ethnic homophily, or the tendency to select friends of same race/ethnicity; McPherson et al., 2001), it is likely that these friends also exhibit similar levels of ERI (i.e., levels of ERI covary with selection of peers according to race/ethnicity). These initial similarities (on race/ethnicity and ERI) are further amplified via *transitivity*, as when a friend of a friend becomes a friend. Thus, at least two distinct social processes occur in this scenario: transitivity and ethnic/racial homophily. If we were to examine peer influence on ERI without controlling for ethnic/racial and ERI homophily and transitivity, we would overestimate peer influence on ERI (for reviews see, Snijders, 2011; Steglich, Snijders, & Pearson, 2010; Veenstra & Steglich, 2012).

A key benefit of employing SABM to study peer network influence over other methods, such as actor-partner interdependence modeling techniques (APIM; Kenny, Kashy, Cook, 2006), is that SABM methods allow us to consider the effects of *multiple* friends of the focal individual and not just one best friend, as in APIM techniques which are limited to a dyad as the unit of analysis (i.e., individuals can only be present in the data one time—either as an actor, or a partner). SABM conceptualizes friendship network as composed of dyadic friendship ties, thus

individuals are not restricted to be a member of only one peer group (as is required in socio-cognitive mapping, Kindermann, 2007) and these friendship ties change over time. Thus, all friends whom the focal individual nominates are considered to be in their friendship network, and peer influence is estimated by considering how the focal individual changes his/her behavior over time as a function of that behavior's levels in his/her friendship network. In short, a longitudinal SNA approach (i.e., SABM) allows us to obtain unbiased estimates of peer influence from multiple peers, which is not feasible in traditional statistical methods.

Applied to the present study, the key advantage of SABM is that the examination of peer influence effects on ERI content is conducted while controlling for homophily (i.e., preference for similarity) on ERI content and ethnic/racial composition in friendship networks as well as network structural effects. The benefits of SABM have been largely documented (Veenstra et al., 2013), and despite being relatively new in developmental research, there is a growing body of studies that are translating the benefits of SABM to developmental science (e.g., Martin et al., 2013). This approach has been used to unravel complex and reciprocal links between peer networks and various developmental outcomes, including aggressive behavior (Sijtsema, Ojanen, Veenstra, Lindenberg, Hawley, & Little, 2010), complex interplay between bullying, victimization, and defending (Huitsing, Snijders, Van Duijn, Veenstra, 2014), academic achievement and truancy (Rambaran, Hopmeyer, Schwartz, Steglich, Badaly, & Veenstra, 2016), feelings of xenophobia and tolerance towards immigrants (van Zalk, Kerr, van Zalk & Stattin, 2012) and depressive symptoms (Schaefer, Kornienko, & Fox, 2011; Van Zalk et al., 2010).

The Current Study

Our primary goal was to examine the extent to which peers influence each others' ERI centrality, private regard, and public regard over time. ERI scholars have long argued that the construction of identity is context-dependent (Phinney, 2000; Sellers et al., 1998; Umaña-Taylor, 2004). Given that peers are a key social context for childhood and adolescent development (Larson & Verma, 1999) and that one's peer group is considered a prominent source of social influence in childhood as well as adolescence (for reviews, see Brechwald & Prinstein, 2011; Dishion & Tipsord, 2011), peers are likely to influence adolescents' beliefs about the significance and meaning of ERI (i.e., centrality, regard). Yet, peer relationships are complex and evolving social systems (Steglich, Snijders, & Pearson, 2010) and the potential interdependence between peer network influence and evolving ERI content poses

methodological challenges. Specifically, to understand the extent to which ERI was influenced by an individual's peer network, we needed to control for how this network came to be and describe the network selection processes. The present study examined peer network influence using longitudinal SNA methods, in particular, stochastic actor-based modeling (SABM; Snijders et al., 2010), which is an optimal tool for studying the co-evolution of networks and behaviors. Employing stochastic actor-based modeling (SABM: Snijders et al., 2010) provided key advantages for this study of peer influence on ERI dimensions because it estimated peer influence on changes in ERI, while controlling for a host of confounding processes, including (a) initial selection into friendships based on similar levels of ERI, ethnic-racial background, gender, and (b) network structural processes (e.g., reciprocity).

Further, we examined these processes in two distinct school settings for several reasons. It may be that selection and socialization processes related to ERI content vary across schools. A multi-site approach permitted us to include a conceptual replication component within the larger investigation, following García Coll's (2015) call for such replications in the field. This helped provide an initial sense of the robustness of our findings. More broadly, a multi-site approach helps researchers in the field consider the potential boundaries of the extent to which peer influence is seen in different places and types of contexts; that is, should we think of peer influence on ERI as a generalized process? Thus, the present investigation helped provide foundational information regarding the generalizability and replicability of results in two distinct school sites.

Method

Participants

We utilized data from a middle school in the U.S. Southwest (SW) and another in the Midwest (MW). The SW school ($N = 1034$) was racially and ethnically diverse but the largest group was Latina/o (53.2%). The MW school ($N = 513$) was also racially and ethnically diverse but there was no single majority group. Full sample descriptive information for each site is provided in Table 1.

Procedure

Southwest site. Data at this site were collected as a part of a larger study investigating identity and socio-emotional development. The school agreed to act *in loco parentis* of the study and therefore a passive consent procedure in which parents were given the option to opt their

child out of participation was employed. The study was introduced via an informational letter sent home to parents with the option to opt out of the study. Surveys were administered in early fall (wave 1) and late spring semester (wave 2) of one academic year (October 2011-April/May 2012). As a way to thank participants for completing the survey, we gave each participant a small gift (i.e., a water bottle or pen). It took students approximately 90 minutes to complete the survey at each wave. Surveys were administered by two-to-four research assistants per classroom. Once surveys were completed, they were de-identified and participants were assigned an ID. The study was approved by the Arizona State University IRB. In the SW site, in wave 1, 94.67% of students at the school completed our survey. In terms of attrition, of the students who participated in wave 1, 87.46% of students were retained in wave 2.

Midwest site. Data were collected as part of the MW school's efforts to understand academic, social, and emotional development among its students. Student surveys were administered by teachers during homeroom; students were assured of the confidentiality of their responses (i.e., with the statement that "your individual answers will be private and will never be shared with anyone at this school" on the survey cover sheet). Subsequently, surveys were de-identified: all names were removed and replaced with ID codes by an external consultant who is not affiliated with the [university] research team. After this de-identification process, the surveys were given to the [university] team for analysis. As in the SW site, surveys were administered in fall (wave 1) and spring semester (wave 2) of an academic year (October 2014-March 2015). The project was determined to be 'Exempt' by the University of Michigan IRB. In the MW site, in wave 1, 91.77% participated in the study and completed our survey. In terms of attrition, of students who participated in wave 1, we retained 88% in wave 2.

Measures

Ethnic-racial identity. ERI was measured using adapted subscales of the *Multidimensional Inventory of Black Identity-Teen* (MIBI-T; Scottham, Sellers, & Nguyễn, 2008) across both sites. These subscales have been shown reliable and valid in prior studies of ethnically and racially diverse youth, including youth of similar age in schools that have a dominant Latina/o population, as in our SW site, as well as in schools that are more racially and ethnically diverse, as in our MW site (see Hughes et al., 2011). While ERI studies typically focus on racial and ethnic minorities, scholars have brought attention to the importance of examining ERI dimensions among White youth in settings where they are not the numerical

majority, as this condition may make race and ethnicity more salient to such youth relative to majority White settings, something we undertake in the present study (e.g., Rivas-Drake et al., 2009; see also Hughes, Witherspoon, Rivas-Drake, & West-Bey, 2009). The modifications we made to the MIBI-T were minor in that we replaced references to African Americans in the original measure by stating no particular ethnic or racial group and leaving it open to the participant's own group; a similarly modified MIBI-T has been used with White youth in previous research (e.g., Rivas-Drake et al., 2009). *Centrality* consists of 3 items that assess the extent to which participants feel that their ethnic-racial identity is an important part of their self-definition (e.g., "If I were to describe myself to someone, one of the first things that I would I tell them is my ethnicity"). *Private regard* consists of 3 items that assess how positively students felt about their group (e.g., "I feel good about people from my ethnic group"), whereas *public regard* consists of 3 items that assess how positively students felt others viewed their group (e.g., "People of other ethnicities think that people from my ethnic group have made important contributions"). For all ERI items, response options ranged from (1) *strongly disagree* to (5) *strongly agree*, and higher values indicate more centrality, higher private regard, and more positive public regard, respectively. We created composite measures by taking an average of items comprising each scale. These scales were found to be internally consistent at both sites: centrality (SW W1 $\alpha = .85$, W2 $\alpha = .86$; NW W1 $\alpha = .72$, W2 $\alpha = .76$), private regard (SW W1 $\alpha = .86$, W2 $\alpha = .89$; NW W1 $\alpha = .87$, W2 $\alpha = .88$), public regard (SW W1 $\alpha = .75$, W2 $\alpha = .81$; NW W1 $\alpha = .75$, W2 $\alpha = .69$). Adequate internal consistency (Cronbach's $\alpha > .70$) was observed across racial/ethnic groups with few exceptions. Notably, while there were some exceptions, there was evidence of internal consistency in each ERI measure in at least one wave for each of the main groups being studied (i.e., African American, Whites, Native American, Latina/o, and Asian American/Pacific Islander). The readers are referred to Supplementary Materials and Table S1 for full measure information organized by site, wave and racial/ethnic groups.

Peer networks. At each site, within-grade friendship nomination data were used to construct peer (friendship) networks. At the SW site, participants received a roster listing all students from their grade and were asked to nominate up to 10 friends. At the MW site, students were asked to list their friends, or who they "hang out with and talk to" in their grade, which is a common name generation approach among youth in this age group (Ryan, 2001); nominations were unlimited. These nomination data were used to construct network matrices for each grade

students for Wave 1 and Wave 2 such that these matrices contained unilateral (i.e., A nominated B) friendship nominations that were coded in a binary fashion such that 1 denoted that a friendship tie existed between A and B, and 0 indicated no tie existed between A and B.

Analytical Strategy

Our analytical strategy entails the use of stochastic actor-based modeling (SABM) approach to examine peer network influence on the ERI content, while controlling for selecting friends of the same ethnic-racial background and similar levels of ERI as well as network structural processes. It is important to note that because SABM requires discrete ordinal behavioral outcome variables, we recoded each of the continuous ERI composites into ordinal variables. Each was recoded to six levels, using increments of .75 of the continuous z-score (i.e., $z < -1.5$, $-1.5 \leq z < -0.75$, $-0.75 \leq z < 0$, $0 \leq z < 0.75$, $0.75 \leq z < 1.5$, $z \geq 1.5$). We provide a brief model overview, definition of effects, and modeling approach below.

SABM overview. The SABM consists of two submodels that are simultaneously estimated (Snijders et al., 2010). The *network submodel* tests the likelihood of friendship ties between adolescents based on various network selection processes. The *behavior submodel* captures effects related to changes in ERI over time. The model estimates change between observed networks using a continuous-time Markov process that allows for a sequence of a large number of unobserved micro-steps to be taken between observation points (one network tie or a behavior can be changed in one micro-step). An evaluation function describes the ‘rules’ that guide actors’ decisions, which are the model parameters for the hypothesized selection and influence effects. A rate function determines how many opportunities for change occurs between waves. Model parameters are estimated with the method of moments procedure, which uses a series of simulations to adjust the model parameters to improve model fit. Model parameters are tested for significance based on a t-ratio (estimate divided by the standard error).

Network influence effects on ERI dimensions. For the ERI dynamics submodel, which allows us to model the role of friends for peer influence on ERI content, we tested two effects that represent feedback on the three dimensions of ERI. The *linear shape* effect expresses the basic tendency towards higher or lower values of ERI, whereas the *quadratic shape* effect allows for the self-reinforcement of ERI that can result in a bimodal distribution of ERI (underdispersion if quadratic effect if negative or overdispersion if positive). We then estimated peer influence on each of the three ERI dimensions using the *total similarity effect*, which

predicts changes in ERI based upon how similar an adolescent's ERI is to *the total levels* of ERI across all of her friends. A positive effect indicates that changes in ERI bring an adolescent closer to her friends' level of ERI. This effect is weighted by the total number of friends, and thus considers the overall level of a particular ERI dimension in individual's friendship network.

Network selection dynamics. For the network submodel, which estimates contributions of confounding processes of network selection to obtain unbiased estimates of peer influence on ERI dimensions, we considered three types of effects on network selection for each ERI dimension. The *ERI ego* effect estimates the effect of a given ERI dimension on an adolescent's tendency to nominate others as friends (i.e., gregariousness). A positive effect would indicate that adolescents with greater levels of ERI nominated more friends over time. The *ERI alter* effect describes how an ERI dimension is associated with adolescents' likelihood of receiving nominations from peers (i.e., popularity or prestige within the friendship network). A positive effect would indicate that adolescents with greater levels of ERI dimensions were more likely to be nominated as friends by their peers. The *ERI similarity* effect estimates the tendency of adolescents to nominate friends who have similar levels of respective ERI self-construct (measured by their absolute difference). A positive effect of ERI similarity would mean that friendships were more likely among adolescents with similar levels of ERI. Additionally, we estimated the effect of similarity on gender, ethnic/racial background, being U.S.-born, and free-reduced lunch status (available for SW site only) on the likelihood of network selection. We included parameters for several structural processes: *reciprocity* captured whether adolescents were more likely to nominate peers who had nominated them; *transitive triplets* estimated whether ties were more likely among adolescents as the number of mutual friends increased; *indegree popularity* estimated whether students who received more nominations were more likely to receive additional nominations over time; and *outdegree popularity* estimated whether students who sent out more nominations were more likely to receive more nominations. We used a square-root transformation of these popularity effects to give greater weight to differences in popularity at low versus high levels. We also included effects for *outdegree* (number of friendships in the network) and *network rate*, which represented network change opportunities.

Modeling approach. Friendship network selection processes were examined using *RSiena* 4.0 (version 1.1-274; Ripley et al., 2015), which is implemented in *R* (version 3.1; R-Project; <http://www.r-project.org>). To gain sufficient power to detect social network influence on

ERI dimensions, we used a multi-group option (Ripley et al., 2015). This approach was used to assemble one multi-group object across 6th, 7th, and 8th grades for the SW site and another multi-group object across the three grades for the MW site. Whereas the multi-group option has the advantage of boosting the power to detect peer influence effects, it assumes that all parameter estimates are the same across three grades. We followed a recommended procedure of forward-model selection approach (Lospinoso et al., 2010) and examined grade-related heterogeneity by including dummies into our models (i.e., dummy 1 compared effect for 7th grade to that of 6th grade, dummy 2 compared effect for 8th grade to that for 7th grade). We conducted the joint score-type tests for grade-related heterogeneity of the final models to show that parameter estimates were homogeneous, and discuss the grade differences in parameters in the supplementary analyses.

Results

Preliminary Analyses. We explored differences in responses to ERI measures across race/ethnicity. In the SW site, results from a one-way ANOVA revealed significant differences in terms of ERI centrality at wave 1 [$F(4, 939) = 4.93, p < .01$] and wave 2 [$F(4, 885) = 4.91, p < .01$]. Tukey post hoc analyses revealed that in both waves, Latina/os reported higher levels of ERI centrality compared to Whites, and in wave 2, African Americans reported higher levels of ERI centrality than Whites. There was also a significant difference in terms of ERI public regard in wave 2 [$F(4, 884) = 2.59, p < .05$] with Latina/os reporting higher levels compared to Whites. Finally, results revealed significant differences in terms of ERI private regard at wave 1 [$F(4, 938) = 10.47, p < .01$] and wave 2 [$F(4, 884) = 10.11, p < .01$]. Tukey post hoc analyses revealed that in both waves Whites reported lower levels of private regard compared to all other racial/ethnic groups.

In the MW site, results from a one-way ANOVA exploring mean level differences in the ERI measures across racial/ethnic groups revealed significant differences in terms of ERI centrality at wave 1 [$F(6, 424) = 2.93, p = .008$] and wave 2 [$F(6, 377) = 3.72, p = .001$], ERI private regard at wave 1 [$F(6, 429) = 2.46, p < .05$], and ERI public regard at wave 2 [$F(6, 377) = 2.97, p = .008$]. Tukey post hoc analysis revealed that in wave 1, White youth reported significantly lower levels of ERI centrality than youth in the “other” category, and had marginally lower levels of private regard than youth in the “other” category ($p = .05$). At wave 2, White youth reported significantly lower levels of ERI centrality compared to African American

youth. Asian American youth reported having significantly higher levels of public regard than African American youth and marginally higher public regard than Latina/o youth ($p = .06$). No other significant differences were detected in the MW site.

We also explored whether there are differences in response to the ERI measures between waves 1 and 2. In the SW site, results from a paired samples t-test revealed that there were significant differences in ERI centrality at wave 1 ($M = 3.61, SD = .84$) and wave 2 ($M = 3.40, SD = .87$); $t(805) = 6.50, p = .000$; private regard at wave 1 ($M = 4.26, SD = .76$) and wave 2 ($M = 4.11, SD = .82$); $t(803) = 4.72, p = .002$; and public regard at wave 1 ($M = 3.44, SD = .85$) and wave 2 ($M = 3.34, SD = .88$); $t(803) = 3.12, p = .000$. Thus, there was a decline in levels of all three ERI measures from wave 1 to wave 2 in the SW site. In the MW site, however, paired samples t-tests revealed no significant differences between W1 and W2 ERI centrality ($M = 3.64, SD = .81$ and $M = 3.61, SD = .90$, respectively); $t(340) = .72, p = .47$; W1 and W2 private regard ($M = 4.19, SD = .74$ and $M = 4.18, SD = .80$, respectively); $t(342) = .20, p = .85$; or W1 and W2 public regard ($M = 3.62, SD = .74$ and $M = 3.55, SD = .81$, respectively); $t(340) = 1.57, p = .12$. The readers are referred to Supplementary Materials and Table S1 for mean and standard deviation information per wave for the overall sample and for each racial/ethnic group within sites. Finally, we conducted correlations among the ERI scales. In the SW site, correlations among ERI measures ranged from .17 to .54. In the MW site, correlations among ERI measures ranged from .27 to .70. The readers are referred to Supplementary Materials and Table S2 for the full correlation table among ERI measures in each site.

Considering network characteristics for the SW and MW sites, our descriptive results on the number of students per cohort, number of ties and proportion of missing ties are presented in Supplementary Materials and Table S3.

Peer Influence on ERI. Our primary goal was to assess peer network influence on ERI content at each site (Table 2, Network Influence Effects on ERI). The respective *total similarity effects* estimated how changes in the focal youth's levels of ERI were associated with his or her friends' ERI levels. We observed significant and positive peer network influence on ERI centrality (est. = .360, $p < .001$) and ERI public regard (est. = .474, $p < .001$) in the SW site and ERI public regard (est. = .449, $p < .05$) and private regard (est. = .349, $p < .01$) in the MW site across the three grade cohorts. These findings suggest that over time, adolescents' levels of each of these ERI content dimensions became similar to those reported by their friends. Thus, in

response to our primary question, our study reveals evidence that peers influence adolescents' ERI content over time.

These results were obtained while estimating two control variables for each of the ERI dimensions – linear and quadratic shape parameters, which capture the basic distributional features of each ERI dimension. Our results show that for students from the SW site, there was a significant tendency towards higher values of ERI private regard (significant and positive linear effect), but there was no evidence for significant over- or underdispersion in the distribution of ERI private regard (i.e., NS quadratic effect). For the remaining ERI content dimensions assessed in the present study, we did not see a significant tendency towards higher values of ERI content (i.e., NS linear shape effects), and we did not document significant self-reinforcement of ERI content. Finally, we found no significant differences in the magnitude of peer influence as a function of ethnic/racial group membership. Readers are referred to Supplementary Materials and Table S4 for this follow-up examination of ethnic/racial group differences in the magnitude of peer influence on ERI content.

Controls for Network Selection Processes. To arrive at the above findings and obtain unbiased estimates, we statistically controlled (by estimating them in the same model) for network selection on ERI components (i.e., how ERI affects initial selection of friends). In doing so, we were also able to assess how the three ERI dimensions affected network selection (Table 2, Network Selection Dynamics, ERI Effects on Network Selection). Our results showed that only in the SW site, adolescents befriended others with similar levels of ERI centrality, suggesting that preference for similarity in ERI centrality (or ERI centrality homophily) increased the likelihood of friendship tie formation (est. = .261, $p < .01$). Because the outcome for network selection submodel of the SABM is the likelihood of a binary social tie, we can calculate odds ratio (OR) of network tie selection by exponentiating the coefficient (i.e., $\exp(.261) = 1.298$). Thus, ERI centrality homophily increased the odds of becoming a friend by nearly 30%. None of the ERI content dimensions were significantly predictive of peer network selection in the MW site.

When studying ERI development within peer networks, additional key peer network selection processes needed to account for, are static demographic attributes (e.g., gender, race/ethnicity), which are typically sources of segregation in friendship networks (Table 2, Network Selection Dynamics, Confounding Network Selection). Thus, our models included such

controls and revealed several significant homophily effects, as is typically found (Goodreau et al., 2009), on several categories of ethnic/racial background. Specifically, we found that friendship ties were more likely to form over time if both students were African American (est. = .113, $p < .001$; OR = 1.12, or 12% increase in odds of a friendship) and Latino/a (est. = .169, $p < .001$; OR = 1.18, or 18% increase in odds of a friendship) in the SW site, and if both students were White (est. = .157, $p < .001$; OR = 1.17, or 17% increase in odds of a friendship), African American (est. = .219, $p < .001$; OR = 1.24, or 24% increase in odds of a friendship), other racial/ethnic category and Native American (est. = .271, $p < .001$; OR = 1.31, or 31% increase in odds of a tie), as well as multi-racial (est. = .173, $p < .001$; OR = 1.19, or 19% increase in odds of a tie) in the MW site. In addition, in both sites, we also documented that friendship ties were more likely to form among students of the same gender, which is also typical in studies of peer networks (Mehta & Strough, 2009). Specifically, the odds of same-gender friendship tie increased by 64% in SW site (est. = .494, $p < .001$; OR = 1.64) and 60% in the MW site (est. = .468, $p < .001$; OR = 1.60). Finally, we also controlled for whether friends were selected based on similarity in being US-born and receiving free-reduced lunch (a proxy for SES), and these factors were not significantly associated with peer network selection.

In addition to statistically controlling for network selection processes, we also included network structural effects in our models (Table 2, Network Selection Dynamics, Network Structural Processes). We found that at both sites, adolescents' networks were formed through several common network structural processes. Specifically, we found that adolescents were likely to nominate friends who had nominated them (reciprocity effects: est. = 1.978, $p < .001$ in SW site, est. = 2.324, $p < .001$ in MW site). Youth were more likely to have friendships with friends of their friends (transitive triplets effects: est. = 0.380, $p < .001$ in SW site, and est. = 0.583, $p < .001$ in MW site). Youth were less likely to have mutual or reciprocated friendships with friends of their friends (transitive reciprocated triplets effects: est. = -0.203, $p < .001$ in SW site, and est. = -0.425, $p < .001$ in MW site). Also, adolescents who received a high number of friendship nominations were more attractive for others to send friendship ties to (indegree popularity effects: est. = 0.245, $p < .001$ in SW site, and est. = 0.325, $p < .001$ in MW site). This effect suggests that high friendship network popularity reinforces itself over time as popular youth become more popular (Snijders et al., 2010). We also found that adolescents who sent out a high number of friendship ties were less attractive for other students to send ties to (outdegree

popularity effects: est. = -0.447, $p < .001$ in SW site, and est. = -0.689, $p < .001$ in MW site). This means that nominating a high number of friends was inversely related to friendship network popularity because popular students are more selective in whom and how many friends they nominate. Taken together, these effects suggest that friendships at both sites and across grade cohorts were structured according to fundamental and expected network processes.

Supplementary Analyses to Examine Homogeneity of Effects Across Grades. To examine whether network influence and selection effects occurred equally across the different grades at each site, we included dummy effects to compare them (Lospinoso et al., 2011). Results suggested that network selection varied among the students in the SW site such that (1) 7th graders were less likely to select friends on the basis of similarity on being African American compared to 6th graders (est. = -0.15, $p < .05$), and (2) 7th graders were more likely to select same-gender friends compared to 6th graders (est. = 0.14, $p < .05$). In the MW site, several significant grade-related differences also emerged: (1) 7th graders were more likely to form transitive friendships (i.e., a friend of a friend becomes a friend) than younger students (est. = 0.10, $p < .05$); (2) 7th and 8th graders were less likely to select same-gender friends relative to 6th graders (est. = -0.43, $p < .001$; est. = -0.57, $p < .001$, respectively); and (3) compared to 6th graders, 8th graders were significantly less likely to form friendships when both students were Asian American-Pacific Islander (est. = -0.34, $p < .001$), and more likely to become friends when both were of “Other” backgrounds (est. = 0.41, $p < .05$). Importantly, no significant grade-related heterogeneity was observed in peer network influence and peer network selection estimates regarding ERI content. Joint score-type tests for grade heterogeneity revealed that, adjusted for the noted dummies, the joint significance tests for time heterogeneity at each site were not significant, suggesting that the parameter estimates were homogeneous across grades (SW sample: $\chi^2(34) = 36.15$, $p = 0.37$; MW sample: $\chi^2(32) = 37.80$, $p = 0.22$). This means that, having controlled for the noted grade differences, the remainder of the documented peer network influence and selection effects were similar across grades.

Additional Analyses to Illustrate Peer Network Influence on ERI. As a follow up to our analyses, we further explored peer influence dynamics for ERI centrality and public regard in SW sample and ERI public and private regards in MW sample (as we documented significant peer influence on these dimensions of ERI). We present this detailed information for 8th grade students across both sites for illustrative purposes. To do so, we relied on ego-alter peer

influence tables which present the model-predicted contribution of the focal adolescent's ERI content and his or her friends' ERI content to the objective function for peer influence on this particular ERI dimension (see Ripley et al., 2015 for more details). Using parameter estimates and formulas for effects, the ego-alter influence table provides an illustration of how attractive different values of the ERI content are for participants (egos), depending on the levels of ERI content reported by their friends (i.e., alters). Because we use the total similarity effect used here to model for peer influence, which operationalizes influence as a sum total of all friends' GI levels, these illustrations represent peer influence levels of exactly one friend (Ripley et al., 2015), and peer influence from multiple friends with particular levels of ERI could be calculated through addition of the respective attractiveness levels of this ego's multiple friends' ERI levels. We represent the levels of attractiveness in the 3-dimensional plots shown in Supplementary Materials, Figure S1. In these plots, ego's ERI content levels are on the x -axis, alter's ERI content levels are represented on the y -axis, and z -axis represents the attractiveness level of relative attractiveness of the different potential values of ERI, thus depicting the *magnitude and direction of peer influence*. The color palette (blue, green, yellow, red) of the z -axis plane represents the range of attractiveness values from highest to lowest for an ego, given the ERI content levels of his/her friend. In other words, red and yellow colors of the z -plane represent a 'pull' of the ego's ERI level toward his/her friend's ERI level, whereas blue and green colors of the z -plane represent a 'push' away of the ego's ERI level from that of his or her friend's level.

These follow-up illustrations of peer influence revealed that among 8th graders from SW site (Supplementary Materials, Figure S1.A), those adolescents with higher levels of ERI centrality preferred to change their levels of ERI centrality *towards* higher levels of their friend (red color of z -plane represents highly attractive values) and *away* from lower levels of centrality of their friend (blue color of z -plane represents highly unattractive values). Turning to peer influence on public regard in SW site (Supplementary Materials, Figure S1.B), we see that youth with both highest and lowest levels preferred to change their levels of public regard to be similar to their friends (red color); similarly, adolescents with highest and lowest levels of public regard were 'pushed away' from changing their levels in the direction of their friends with lower and higher levels of public regard (blue color). Interestingly, in MW site (Supplementary Materials, Figure S1.C), the direction of peer influence on public regard was the same as in SW site. However, while the magnitude of peer influence remained similar across all levels of ERI public

regard in the MW site, in the SW site, the pull towards similar peers was only evident for extreme values of public regard. Finally, considering private regard in MW site (Supplementary Materials, Figure S1.D), adolescents with higher levels preferred to adopt similarly higher values of private regard from their friends. In summary, our results documented that the direction and magnitude of peer influence varied as a function of ERI content and geographical sites that varied in ethnic/racial composition.

Discussion

Using state-of-the-art longitudinal social network analysis methods (i.e., SABM), this study examined peer network influence on ERI content in middle school. In addition to the unique feature of being a multi-site peer network study of ERI development, to our knowledge, this study is the first study to document quantitatively, peer network influence on ERI content while accounting for various confounding factors inherent in how adolescents form friendships that can bias estimates of peer influence, if not properly controlled for. By applying SABM to the study of ERI development, we were able to reveal evidence of peer influence on ERI public regard across grade cohorts in both sites; evidence of peer influence on ERI centrality in the SW site across grade cohorts; and evidence of peer influence on private regard in the MW site across grade cohorts as well. Thus, in response to our primary research question: yes, peers in school matter and influence adolescents' ERI content over time.

These findings reveal that adolescents' levels of these respective ERI components in each site became similar to the levels reported by their friends, and these patterns were evident across the three middle school grade cohorts. For example, youth in the SW site who initially reported being low on ERI centrality, who were friends with adolescents with high ERI centrality, moved toward their friends' levels of ERI centrality over time. These findings suggest a pattern of ERI co-regulation among peers that has not been previously reported in the literature. Our integration of developmental, contextual, and social network perspectives offers a fruitful approach to explicate how ERI content may shift in early adolescence as a function of peer network influence. Importantly, the documented patterns of peer influence were ascertained while controlling for peer selection based on racial/ethnic characteristics and levels of ERI content. Examinations of peer influence on a changing behavior or attribute, such as ERI, risk producing biased estimates if peer selection processes are not properly accounted for (Steglich, Snijders, & Pearson, 2010; Veenstra & Steglich, 2012).

Although the multi-site dimension of the present investigation was exploratory (i.e., we are not able to directly compare the magnitude and direction of peer influence across the two sites because influence is estimated within site-level peer networks), it is important to consider both how this influence may happen as well as why peer influence on ERI public regard did not vary across school sites, whereas it did for centrality and private regard. With regards to the similar findings concerning peer influence on public regard, public regard assesses how positively students feel that others view their racial/ethnic group, and to an extent it reflects a between-group dimension of ERI content. Given that the nature of public regard concerns one's perceptions of others' views, this dimension may be particularly malleable to direct peer actions and statements (i.e., social information, modeling) to which youth are exposed, and to indirect forces such as adolescents' motivation to 'fit in' with their peers by showing similar levels of public regard (e.g., via normative pressure). Whether influence is due to modeling or normative processes, or another type of social mechanism (cf. Brechwald & Prinstein, 2011), is an intriguing and important question for future investigation.

The issue of potential normative pressure is also relevant for why youth in the SW site became similar to their friends in their levels of ERI centrality while those in the MW site became similar to their friends in their levels of ERI private regard. However, 'fitting in' with one's friends may not, in and of itself, explain why these two arguably within-group dimensions of ERI content varied across sites. The variation in peer network influence on ERI centrality could be due to characteristics of the local and larger context in which youth are embedded within each of these sites. The SW site was diverse but predominately Latina/o, and it is located in a state ranked among the most hostile U.S. states for immigrants across the nation (Pham & Van, 2014). Given the various issues facing racial and ethnic minority communities in this state, it is not entirely surprising that Latina/os in the SW site reported higher levels of ERI centrality compared to Whites, as did African Americans. However, given that the magnitude of peer influence did not vary across racial/ethnic groups, it is plausible that all youth in this context may be more likely to 'fit in' by adopting a perspective that one's group membership is a central aspect of social existence while living in a local and larger state context that makes race and ethnicity an important source of controversy in its social and political life. These experiences within this site may affirm salience of race/ethnicity across numerous situations on a daily basis, and consequently ERI centrality, a dimension that could be more malleable to peer influence

within this context if it is an aspect of one's self that is continually highlighted in daily life.

Interestingly, there was a decline in all three measures of ERI content from wave 1 to wave 2 in the SW site, but not in the NW site, further alluding to contextual aspects of the SW site that may make race/ethnicity salient on one hand, and more susceptible to change over time.

In the context of the MW site there was evidence of influence in private regard, or how positively youth felt about their ERI, such that youth matched their levels of private regard (low, medium or high) to the level of their friends over time. Interestingly, there were no differences among racial/ethnic groups in the MW site in terms of levels of private regard whereas there was in the SW site. It is plausible that in a more racially and ethnically integrated school context with no numerically dominant group, youth of all groups could be more susceptible to peer influence and messages from peers concerning positive or negative attitudes towards one's peer group as opposed to how important, or central, it is to their sense of self.

To illustrate the magnitude and direction of peer influence effect given a particular level of ERI content of the focal adolescent and that of his or her friends, we used visualizations (Supplementary Materials, Figure S1), which demonstrated distinct patterns of peer influence for different ERI aspects in the two sites. Specifically, in SW site, peer influence on ERI centrality was strongest for adolescents with the highest levels of this construct who were friends with other youth of similarly high levels of ERI centrality (Supplementary Materials, Figure S1.A). We found that peer influence on ERI public regard was the strongest for SW youths at both ends (high and low levels) of public regard (Supplementary Materials, Figure S1.B). In the MW site, peer influence on ERI public regard was similar across all levels (high and low) of friends' ERI public regard (Supplementary Materials, Figure S1.C). Finally, MW youth with higher levels of private regard preferred to adopt similarly higher values of private regard from their friends (Supplementary Materials, Figure S1.D). These analyses provide a detailed look at the nature and direction of the changes in ERI content over time, and reflect an important avenue for future and further investigation.

It is noteworthy that the magnitude of peer influence appeared invariant across racial/ethnic groups in both sites (Supplementary Materials, Table S4). Our examination of the moderating role of individual's race/ethnicity on peer network influence on ERI dimensions did not reveal any significant differences. Thus, our study shows evidence that racially and ethnically diverse peers have the potential to influence each other's levels of ERI content,

including Whites in two contexts where they were not the numerical majority, and two school settings that varied in their racial/ethnic composition.

We were able to ascertain peer network influence on ERI dynamics while accounting for network selection on ERI dynamics and socio-demographic homophily, which helps to contextualize these findings. Interestingly, we only documented that ERI centrality was significantly and positively associated with how youth selected their friends in the SW site. ERI public regard and private regard were not significant factors evident in peer selection in either sites. Although we did not find many significant contributions of ERI content to friendship selection, consistent with past research, we documented significant racial/ethnic segregation in youth's friendships (Goodreau et al., 2009). It is likely that ethnic/racial segregation in adolescent friendships contributes to creating a social context in which race/ethnicity becomes salient, which can later influence meaning making and ERI identity formation processes. Considering the observed patterns of racial/ethnic segregation in peer selection in the SW site, Latina/os make up the largest group, and it was not surprising that similarity on being Latina/o increased the likelihood of friendship ties, and that in the context of the MW site in which there is not a clear dominant ethnic or racial group, friendships were formed based on racial or ethnic similarity for multiple groups. Interestingly, in the SW site, similarity on being a member of a non-Latina/o group (with the exception of African Americans) did not increase the chance of forming friendship ties. In a setting where there is a clear dominant group (over 50%, unlike the MW site), non-Latina/o and non-African American youth in the SW site may have greater opportunities for exposure to other groups, and to develop awareness of other group's norms that allows them to form intra-ethnic/racial ties. Notably, however, in the same site, African Americans differed from other non-Latina/o groups in that being similar in terms of race increased the likelihood of network tie selection among African Americans. Although outside the scope of the present study, it may be that African Americans experience a uniquely elevated amount of discrimination (cf. Seaton et al., 2008) across numerous types of contexts, and thus African American youth may be more likely to select one another as friends because in this social context, they can turn to each other for support. Another noteworthy contribution to friendship network selection was a significant homophily observed in terms of gender indicating that youth preferred to befriend others of the same gender. This pattern is in line with widespread

gender segregation effects observed in adolescence in which youth show preference for same-gender peers (e.g., Mehta & Strough, 2009).

Limitations and Future Directions

Despite the noted strengths of the present investigation, it also has several limitations. For one, the data on friendship networks was constrained to each grade, and this decision was influenced by prior research demonstrating that grade level is the relevant sampling frame for middle school students (Cairns et al., 1998); however, we could have missed older or younger peers (i.e., in other grades) who could also be sources of influence on ERI content. Future studies may want to examine whether the peer network influence processes documented during early adolescence in the present study hold among older adolescents. In addition, research on other dimensions of ERI (e.g., exploration) may offer additional insights into peer socialization processes. Although having multiple sites is a strength of this study, ours is but a first step towards better understanding the potential universality in the role of peers in shaping ERI development. Having two sites in which to model these processes helped shed new light on peer socialization of public regard, for example, which was evident in both sites. Future studies may want to examine schools that are more closely aligned in terms of their racial/ethnic composition and perhaps geographic region; this will help clarify whether influence on centrality and private regard is indeed more universal than it appears in the present study. Finally, we are unable to discern the nature of the influence process (e.g., modeling, normative pressure) underlying the present results. Yet, this study provides compelling evidence and lays important groundwork for future studies of specific ERI socialization mechanisms by peers.

Conclusion

Our investigation reveals that the integration of developmental, contextual, and social network perspectives is a productive approach to explicate how ERI content may shift in early adolescence as a function of peer influence. A longitudinal SABM analysis examined how peers influence each others' ERI content over time while simultaneously accounting for network selection. As we have shown, this methodology has the potential to revolutionize our understanding of the peer context of ERI development. Moving forward, more longitudinal, multi-site investigations such as this one will need to continue illuminating how contexts matter in the formation of adolescents' ERI, and thus will help advance new methods and theories pertinent to the field.

References

- Abrams, D., Van de Vyver, J., Pelletier, J. and Cameron, L. (2015), Children's prosocial behavioural intentions towards outgroup members. *British Journal of Developmental Psychology*, 33: 277–294. doi: 10.1111/bjdp.12085
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529. doi:10.1037/0033-2909.117.3.497.
- Brechwald, W. A., & Prinstein, M. J. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence*, 21, 166–179. doi: 10.1111/j.1532-7795.2010.00721.x.
- Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications.
- Cairns, R., Xie, H., & Leung, M. C. (1998). The popularity of friendship and the neglect of social networks: Toward a new balance. *New Directions for Child and Adolescent Development*, 81, 25–53. doi: 10.1002/cd.23219988104
- Carter, P. L. (2005). *Keepin' it real: School success beyond Black and White*. New York, NY: Oxford.
- Cooley, C. H. (1902). *Human nature and the social order*. New York: Scribner.
- Cross Jr., W. E. (1991). *Shades of black: Diversity in African-American identity*. Philadelphia, PA: Temple University Press.
- De La Haye, K., Robins, G., Mohr, P., & Wilson, C. (2011). Homophily and contagion as explanations for weight similarities among adolescent friends. *Journal of Adolescent Health*, 49, 421–427. doi: 10.1016/j.jadohealth.2011.02.008
- Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology*, 62, 189–214. doi: <http://dx.doi.org/10.1146/annurev.psych.093008.100412>
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.
- Fuligni, A.J., Witkow, M., & Garcia, C. (2005). Ethnic identity and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology*, 41, 799–811. doi: 10.1037/0012-1649.41.5.799

- Coll, C. G. (2015), Editorial: Continuity and Change in *Child Development*. *Child Development*, 86: 7–9. doi: 10.1111/cdev.12353
- Goodreau, S. M., Kitts, J. A., & Morris, M (2009). Birds of a feather, or friend of a friend? Using exponential random graph models to investigate adolescent social networks. *Demography*, 46, 103-125. doi: 10.1353/dem.0.0045.
- Gibbons, F. X., Gerrard, M., & Lane, D. J. (2003). A social reaction model of adolescent health risk. In J. M. Suls & K. Wallson (Eds.), *Social psychological foundations of health and illness* (pp. 107-136). Oxford, UK: Blackwell.
- Hamm, J. V. (2000). Do birds of a feather flock together? The variable bases for African American, Asian American, and European American adolescents' selection of similar friends. *Developmental Psychology*, 36, 209-219. doi: 10.1037/0012-1649.36.2.209
- Hughes, D., Way, N., & Rivas-Drake, D. (2011). Stability and change in private and public ethnic regard among African American, Puerto Rican, Dominican, and Chinese American early adolescents. *Journal of Research on Adolescence*, 21, 861-870. doi: 10.1111/j.1532-7795.2011.00744.x
- Hughes, D., Witherspoon, D., Rivas-Drake, D., & West-Bey, N. (2009). Received ethnic/racial socialization messages and youths' academic and behavioral outcomes: Examining the mediating role of ethnic identity and self-esteem. *Cultural Diversity and Ethnic Minority Psychology*, 15(2), 112-124.
- Huitsing, G., Snijders, T. A., B., Van Duijn, M. A. J., Veenstra, R. (2014). Victims, bullies, and their defenders: A longitudinal study of the coevolution of positive and negative networks. *Development and Psychopathology*. doi:10.1017/S0954579414000297
- Kenny, D. A, Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: Guilford Press.
- Kiang, L., Peterson, J. L., & Thompson, T. L. (2009). Ethnic peer preferences among Asian American adolescents in emerging immigrant communities. *Journal of Research on Adolescence*, 21, 754-761. doi: 10.1111/j.1532-7795.2011.00750.x
- Kiang, L., Witkow, M. R., Baldelomar, O. A., & Fuligni, A. J. (2010). Change in ethnic identity across the high school years among adolescents with Latin American, Asian, and European backgrounds. *Journal of Youth and Adolescence*, 39, 683–693. doi: 10.1007/s10964-009-9429-5

- Kindermann, T. A. (2007). Effects of naturally existing peer groups on changes in academic engagement in a cohort of sixth graders. *Child Development, 78*, 1186 – 1203.
- Larson, R. W., & Richards, M. H. (1991). Daily companionship in late childhood and early adolescence: Changing developmental contexts. *Child Development, 62*, 284-300. doi: 10.1111/j.1467-8624.1991.tb01531.x
- Larson, R.W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin, 125*, 701-736.
- Leszczensky, L., & Pink, S. (2015). Ethnic segregation of friendship networks in school: Testing a rational-choice argument of differences in ethnic homophily between classroom- and grade-level networks. *Social Networks, 42*, 18-26.
<http://dx.doi.org/10.1016/j.socnet.2015.02.002>
- Lee, S. J. (1996). *Unraveling the “model minority” stereotype: Listening to Asian American youth*. New York, NY: Teachers College Press.
- Lospinoso, J. A., Schweinberger, M., Snijders, T.A.B., Ripley, R M. (2011). Assessing and accounting for time heterogeneity in stochastic actor oriented models. *Advances in Data and Analysis Classification, 5*, 147–176.
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one’s social identity. *Personality and Social Psychology Bulletin, 18*, 302-318.
- Martin, C.L., Kornienko, O., Schaefer, D.R., Hanish, L.D., Fabes, R.A., & Goble, P. (2013). The role of sex of peers and gender-typed activities in young children’s peer affiliative networks: A longitudinal analysis of selection and influence. *Child Development, 84*, 921-937. doi: 10.1111/cdev.12032.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001) Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27*, 415–444. doi: 10.1146/annurev.soc.27.1.415.
- Mead, G.H. (1934). *Mind, self & society from the standpoint of a social behaviorist*. Chicago: University of Chicago Press.
- Mehta, C. M., & Strough, J. (2009). Sex segregation in friendships and normative contexts across the life span. *Developmental Review, 29*, 201-220. doi: 10.1016/j.dr.2009.06.001
- Parker, J. G., Rubin, K. H., Erath, S. A., Wojslawowicz, J. C., & Buskirk, A. A. (2006). Peer relationships, child development, and adjustment: A developmental psychopathology

- perspective (2nd ed). In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 1: Theory and methods* (pp. 419–493). New York, NY: Wiley.
- Pham, H., & Van, P. H. (2012). Measuring the climate for immigrants: A state-by-state analysis. In C. Hessick & G. J. Chin (Eds.), *Strange Neighbors: The role of the states in immigration policy* (pp. 21-39). New York, NY: New York University Press.
- Phinney, J. S. (1990). Ethnic identity in adolescents and adults: A review of research. *Psychological Bulletin*, *108*, 499-514. doi: <http://dx.doi.org/10.1037/0033-2909.108.3.499>
- Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, *7*, 156-176.
- Phinney, J.S. (2000). Identity formation across cultures: The interaction of personal, societal, and historical change. *Human Development*, *43*, 27-31. doi: 10.1159/000022653.
- Phinney, J. S., Romero, I., Nava, M., & Huang, D. (2001). The role of language, parents, and peers in ethnic identity among adolescents in immigrant families. *Journal of Youth and Adolescence*, *30*, 135-153. doi: 10.1023/A:1010389607319
- Pollock, M. (2004). *Colormute: Race Talk Dilemmas in an American School*. Princeton, NJ: Princeton.
- Prinstein, M.J., & Dodge, K.A. (Eds.). (2008). *Understanding Peer Influence in Children and Adolescents*. New York: Guilford Press.
- Rambaran, J. A., Hopmeyer, A., Schwartz, D., Steglich, C., Badaly, D., & Veenstra, R. (in press). Academic functioning and peer influences: A short-term longitudinal study of network-behavior dynamics in middle adolescence. *Child Development*.
- Ripley, R. M., Snijders, T. A. B., & Preciado, P. (2015). *Manual for RSiena*. Oxford, UK: University of Oxford, Department of Statistics; Nuffield College. Retrieved from http://www.stats.ox.ac.uk/siena/RSiena_Manual.pdf
- Rivas-Drake, D., Hughes, D., & Way, N. (2009). A preliminary analysis of associations among ethnic-racial socialization, ethnic discrimination, and ethnic identity among urban sixth graders. *Journal of Research on Adolescence*, *19*, 558–584. doi: 10.1111/j.1532-7795.2009.00607.x
- Rivas-Drake, Umaña-Taylor, Schaefer, & Medina (in press). Ethnic-racial identity and friendships in early adolescence. *Child Development*.

- Rivera, M. T., Soderstrom, S. B., & Uzzi, B. (2010). Dynamics of dyads in social networks: Assortative, relational, and proximity mechanisms. *Annual Review of Sociology, 36*, 91–115. doi: 10.1146/annurev.soc.34.040507.134743.
- Roberts, R. E., Phinney, J. S., Mase, L. C., Chen, Y. R., Roberts, C. R., & Romero, A. (1999). The structure of ethnic identity of young adolescents from diverse ethnocultural groups. *Journal of Early Adolescence, 19*, 301–322. doi:10.1177/0272431699019003001
- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*, 1135-1150. doi: 10.1111/1467-8624.00338
- Schaefer, D. R., Haas, S. A., & Bishop, N. J. (2012). A dynamic model of US adolescents' smoking and friendship networks. *American Journal of Public Health, 102*, e12-e18. doi: 10.2105/AJPH.2012.300705
- Schaefer, D. R., Kornienko, O., & Fox, A. M. (2011). Misery does not love company: Network selection mechanisms and depression homophily. *American Sociological Review, 76*, 764–785. doi: 10.1177/0003122411420813.
- Scottham, K. M., Sellers, R. M., & Nguyễn, H. X. (2008). A measure of racial identity in African American adolescents: The development of the Multidimensional Inventory of Black Identity—Teen. *Cultural Diversity and Ethnic Minority Psychology, 14*, 297-306. doi: 10.1037/1099-9809.14.4.297
- Seaton, E., Caldwell, C. H., Sellers, R. M., & Jackson, J. S. (2008). The prevalence of perceived discrimination among African American and Caribbean Black youth. *Developmental Psychology, 44*(5), 1288-1297. doi: 10.1037/a0012747
- Sellers, R. M., Rowley, S. A., Chavous, T. M., Shelton, J. N., & Smith, M. (1997). Multidimensional Inventory of Black Identity: Preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology, 73*, 805-815.
- Sellers, R. M., Smith, M. A., Shelton, J. N., Rowley, S. A. J., & Chavous, T. M. (1998). Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality & Social Psychology Review, 2*, 18-39. doi: 10.1207/s15327957pspr0201_2
- Sijtsema, J. J., Ojanen, T., Veenstra, R., Lindenberg, S., Hawley, P. H., & Little, T. D. (2010). Forms and functions of aggression in adolescent friendship selection and influence: A

- longitudinal social network analysis. *Social Development*, 19, 515-534. doi: 10.1111/j.1467-9507.2009.00566.x
- Snijders, T. A. (2011). Statistical models for social networks. *Annual Review of Sociology*, 37, 131-153. doi: 10.1146/annurev.soc.012809.102709
- Snijders, T. A. B., Van de Bunt, G. G., & Steglich, C. E. G. (2010). Introduction to stochastic actor-based models for network dynamics. *Social Networks*, 32, 44-60. doi: 10.1016/j.socnet.2009.02.004
- Somerville, L. H. (2013). The teenage brain: Sensitivity to social evaluation. *Current Directions in Psychological Science*, 22, 121-127. doi: 10.1177/0963721413476512
- Steglich, C., Snijders, T.A.B., & Pearson, M. (2010). Dynamic networks and behavior: Separating selection from influence. *Sociological Methodology*, 40, 329-393. doi: 10.1111/j.1467-9531.2010.01225.x
- Sullivan, H. S. (1947). *Conceptions of modern psychiatry*. Washington: William A. White Psychiatric Foundation.
- Syed, M. (2012). College students' storytelling of ethnicity-related events in the academic domain. *Journal of Adolescent Research*, 27, 203-230. doi: 10.1177/0743558411432633
- Syed, M., & Juan, M. J. (2012). Birds of an ethnic feather? Ethnic identity homophily among college-age friends. *Journal of Adolescence*, 35(6), 1505-1514. doi: 10.1016/j.adolescence.2011.10.012
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel & L. W. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7-24). Chicago: Nelson-Hall.
- Tatum, B. D. (2003). *Why are all the black kids sitting together in the cafeteria? And other conversations about race*. New York: Basic Books.
- Umaña-Taylor, A. J. (2004). Ethnic identity and self-esteem: Examining the role of social context. *Journal of Adolescence*, 27, 139-146. doi: 10.1016/j.adolescence.2003.11.006
- Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross, W. E., Rivas-Drake, D., Schwartz, S. J., Syed, M., Yip, T., Seaton, E. and Ethnic and Racial Identity in the 21st Century Study Group (2014), Ethnic and Racial Identity During Adolescence and Into Young Adulthood: An Integrated Conceptualization. *Child Development*, 85: 21-39. doi: 10.1111/cdev.12196

- van Zalk, M. H. W., Kerr, M., Branje, S. J. T., Stattin, H., & Meeus, W. H. J. (2010). It takes three: Selection, Influence, and De-selection processes of depression in adolescent friendship networks. *Developmental Psychology, 46*, 927-938. doi: 10.1037/a0019661
- van Zalk, M. H., W., Kerr, M., van Zalk, N., & Stattin, H. (2012). Xenophobia and tolerance toward immigrants in adolescence: Cross-influence processes within friendships. *Journal of Abnormal Child Psychology*. doi 10.1007/s10802-012-9694-8
- Veenstra, R., Dijkstra, J. K., Steglich, C., & Van Zalk, M. H. W. (2013). Network–Behavior Dynamics. *Journal of Research on Adolescence, 23*, 399-412. doi: 10.1111/jora.12070
- Veenstra, R., & Steglich, C. (2012). Actor-based model for network and behavior dynamics. In B. Laursen, T. D. Little, & N. A. Card (Eds.), *Handbook of developmental research methods* (pp. 598–618). New York, NY: Guilford Press.
- Wasserman, S., Faust, K., 1994. *Social Network Analysis: Methods and Applications*. Cambridge University Press, Cambridge.
- Way, N., Santos, C., Niwa, E. Y., & Kim-Gervey, C. (2008). To be or not to be: An exploration of ethnic identity development in context. *New Directions for Child and Adolescent Development, 120*, 61–79. doi: 10.1002/cd.216
- Yip, T. (2005). Sources of situational variation in ethnic identity and psychological well-being: A Palm Pilot study of Chinese American students. *Personality and Social Psychology Bulletin, 31*, 1603-1616.
- Yip, T., Douglass, S., & Shelton, J. N. (2013). Daily intragroup contact in diverse settings: Implications for Asian adolescents' ethnic identity. *Child Development, 84*, 1425–1441. doi: 10.1111/cdev.12038.

Table 1.

Sample Description

	Southwest Site	Midwest Site
Sample size	1034	513
Mean age (SD)	12.10 (.99)	11.99 (.93)
n by grade	364 (6 th), 330 (7 th), 340 (8 th)	165 (6 th), 182 (7 th), 166 (8 th)
Ethnic/racial Background	13.8% White; 18.6% African American; 53.2% Latina/o; 8.6% Native American; 7.9% Other	30% White; 28% African American; 14% Latina/o; 1% Native American; 6% Other; 8% Multiracial; 8% Asian American or Pacific Islander
Sex	49% girls	47% girls
Participation within grade	89% of 6 th 92% of 7 th 94% of 8 th	92% of 6 th 94% of 7 th 90% of 8 th
Free and reduced lunch status	84%	n/a

Table 2.

SABM Results of Peer Network Influence on ERI Development

<i>Network Influence Effects on ERI</i>	Estimate	SE	<i>p</i>	Estimate	SE	<i>p</i>
	SW site			MW site		
<i>Effects Predicting ERI Centrality</i>						
Rate (6 th grade) #	4.938	0.674		5.160	1.185	
Rate (7 th grade)	3.550	0.447		3.300	0.548	
Rate (8 th grade)	2.984	0.355		3.381	0.721	
Linear shape	0.040	0.026		0.018	0.038	
Quadratic shape	-0.002	0.037		-0.058	0.042	
<i>Peer Network Influence ERI Centrality</i>						
Total similarity	0.360	0.110	***	0.304	0.177	
<i>Effects Predicting ERI Public Regard</i>						
Rate (6 th grade)	5.111	0.855		2.895	0.535	
Rate (7 th grade)	4.471	0.594		4.083	0.771	
Rate (8 th grade)	3.340	0.392		3.555	0.838	
Linear shape	0.001	0.026		-0.011	0.042	
Quadratic shape	0.053	0.037		-0.026	0.045	
<i>Peer Network Influence ERI Public Regard</i>						
Total similarity	0.474	0.116	***	0.449	0.199	*
<i>Effects Predicting ERI Private Regard</i>						
Rate (6 th grade)	4.123	0.606		5.856	1.520	
Rate (7 th grade)	4.334	0.630		2.305	0.383	
Rate (8 th grade)	4.379	0.646		2.308	0.476	
Linear shape	0.147	0.031	***	0.071	0.046	
Quadratic shape	-0.003	0.043		-0.020	0.045	
<i>Peer Network Influence ERI Private Regard</i>						
Total similarity	0.025	0.087		0.349	0.173	*

Notes. SW = Southwest. MW = Midwest. Am = American. Centrality = ERI centrality, Priv. Reg. = ERI private regard; Pub. Reg. = ERI public regard.

Network influence on ERI: *total similarity effect*, which predicts changes in ERI based upon how similar an adolescent's ERI is to *the total levels* of ERI across all of his/her friends. # Rates describe opportunities for change in ERI content.

See *Model Effects* section for definition of the remaining effects.

* $p < .05$; *** $p < .001$ (all two-tailed).

Author Manuscript

Table 3

SABM Results of Peer Network Selection on ERI, Confounding Attributes, and Structural Processes

<i>Network Selection Dynamics</i>	Estimate	SE	<i>p</i>	Estimate	SE	<i>p</i>
	SW site			MW site		
<i>ERI Effects on Network Selection</i>						
Centrality alter	-0.026	0.013		-0.001	0.033	
Centrality ego	-0.012	0.015		-0.015	0.033	
Centrality similarity	0.261	0.130	*	0.279	0.267	
Pub. Reg. alter	-0.003	0.013		0.002	0.027	
Pub. Reg. ego	0.015	0.015		0.023	0.028	
Pub. Reg. similarity	0.149	0.141		-0.313	0.250	
Priv. Reg. alter	0.029	0.018		0.043	0.034	
Priv. Reg. ego	0.010	0.018		-0.025	0.036	
Priv. Reg. similarity	-0.085	0.131		0.104	0.212	
<i>Confounding Network Selection</i>						
White similarity	0.017	0.032		0.157	0.044	***
African Am similarity	0.113	0.029	***	0.219	0.043	***
Latina/o similarity	0.169	0.026	***	0.106	0.054	
Other similarity	-0.013	0.045		--	--	--
Native Am similarity	0.066	0.035		--	--	--
Other/Native Am similarity	--	--	--	0.271	0.077	***
Asian Pacific Islander similarity	--	--	--	-0.077	0.061	
Multiracial similarity	--	--	--	0.173	0.060	***
Male similarity	0.494	0.025	***	0.468	0.044	***
U.S.-born similarity	0.031	0.031		0.094	0.065	
Free-Reduced Lunch similarity	-0.056	0.030		--	--	--
<i>Network Structural Processes</i>						
Constant network rate (6 th grade) [#]	30.846	1.421		15.416	1.075	
Constant network rate (7 th grade)	21.463	0.993		12.858	0.811	
Constant network rate (8 th grade)	21.638	0.771		12.015	0.732	
Outdegree (density)	-2.065	0.078	***	-2.310	0.104	***
Reciprocity	1.978	0.044	***	2.324	0.074	***

Transitive triplets	0.380	0.016	***	0.583	0.025	***
Transitive reciprocated triplets	-0.203	0.026	***	-0.425	0.037	***
Indegree - popularity (sqrt)	0.245	0.016	***	0.345	0.036	***
Outdegree - popularity (sqrt)	-0.447	0.034	***	-0.689	0.055	***

Notes: SW = Southwest. MW = Midwest. Am = American. Centrality = ERI centrality, Priv. Reg. = ERI private regard; Pub. Reg. = ERI public regard.

Network selection effects related to ERI (and other individual attributes): *ERI alter* = effect of ERI on number of incoming ties; *ERI ego* = effect of ERI on number of outgoing ties; *ERI similarity* = tendency of adolescents to nominate friends who have similar levels of ERI. # Rates describe opportunities for change in network ties. * $p < .05$; *** $p < .001$ (all two-tailed).