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Abstract

Mental health disparities between sexual minority and other youth have been theorized to result in part from the effects of the stigmatization on social integration. Stochastic actor-based modeling was applied to complete network data from two high schools in the National Longitudinal Study of Adolescent Health (mean age =15 years, *n*=2,533). Same-sex attracted youth were socially marginalized in a smaller predominantly White school but not in a larger, more racially diverse school. For both schools, homophily was a critical network feature, and could represent social support for and social segregation of such youth. These findings emphasize school context in studying the social lives of sexual minority youth and suggest that youth may be better off socially in larger and more diverse schools.

Keywords

sexual minority youth; network analyses; school diversity

Sexual minority youth experience more psychological distress than their heterosexual peers (Institute of Medicine, 2011). According to minority stress theory, this vulnerability is rooted in the stigmatization of sexual minority status in American society. This stigmatization can lead to bullying and other forms of social mistreatment, which sexual minority youth then internalize (Meyer, 2003; Monsour, 2002). Yet, the strength of some stigma can be intense in one context and virtually non-existent in another. How youth in a *generally* stigmatized group will fare psychosocially, therefore, depends on where they are *locally* (Link & Phelan, 2003). For example, the vulnerability of sexual minority youth in the U.S. is likely to vary by their schools, which organize the complex peer networks that

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dominate adolescent social life and are the extra-familial social context in which they spend the most time (Crosnoe, 2011).

In this spirit, this empirical report presents findings from an exploration of the integration of sexual minority youth in their high school peer contexts. The social status of sexual minority youth has been previously examined as a mechanism placing youth at risk for mental health problems (Hatzeubuehler, McLaughlin, & Xuan, 2012; Ueno, 2005), and this study builds on this emerging literature in several key ways. First, we apply stochastic actor-based (SAB) dynamic network modeling to data from the saturated school sample of the National Longitudinal Study of Adolescent Health (Add Health). This approach addresses the need to tease out how sexual minority status affects youth friendships while taking into account the larger peer network in which friendships are embedded (Baerveldt, Rossem, Vermande, & Weerman, 2004). Second, a propensity technique is leveraged as a novel method for assessing sexual minority status within Add Health. This novel approach reflects recent debates over the measurement of sexual minority status in Add Health (Savin-Williams & Joyner, 2013) by exploring the social vulnerability (or lack thereof) revealed by different conceptualizations and operationalizations of sexual minority status.

As background, the successful navigation of social contexts is an important developmental process in adolescence (Collins & Steinberg, 2006; Furman & Buhrmester, 1992). Minority stress theory posits that the stigma surrounding sexual minority identities disrupt the individual's capacity to integrate into and form close ties in their social contexts (Meyer, 2003). Previous research suggests that problems with social integration (Hatzenbuehler et al., 2012; Williams, Connolly, Pepler, & Craig, 2005), and in particular friendship losses, are important stressors in the lives of sexual minority youth (Diamond & Lucas, 2004). The structure of U.S. high school may augment the consequences of such acceptance or rejection, as it is a closed system that limits peer group choices and dominates the day and week (Crosnoe, 2011). Understanding how sexual minority status affects integration into the school social environment provides important insight into the risk and resilience of sexual minority youth.

Social networks reflect the dynamic and reciprocal ties between people within a context and, as such, quantify the complex social ecology of adolescence. As a whole, networks can be characterized by their density and centrality, but, more often, the focus is on the network positions of individuals, such as their number of friends (Moody, 2001). Networks also shed light on processes of homophily, or friendships between youth who have similar characteristics. In general, adolescents who are well integrated into the social networks of their schools are happier and less depressed (Falci & McNeely, 2009; Mouttappa, Valente, Gallaher, Rohrbac, & Unver, 2004; Ueno, 2005), but sexual minority youth report lower-quality relationships with their peers (Bos, Sandfort, & de Bruyn, 2008). Studies that use Add Health to study actual network dynamics, however, have yielded conflicting evidence. Although one study indicated that sexual minority youth were more socially isolated at school, another found no differences in the number of friends by sexual minority status (Hatzenbuehler et al., 2012; Ueno, 2005). A recent study calling into question the reliability of same-sex attraction reports in Add Health (Savin-Williams & Joyner, 2014)—and then a

newer study critiquing this critique (Li, Katz-Wise, & Calzo, 2014)—further complicates drawing strong conclusions from this literature

Counting friends, however, is not the most accurate barometer of whether adolescents are isolated or integrated at school. First, the presence of a friendship is typically measured by whether a person (the ego) nominates someone else (the alter) as a friend (ego→alter), that person is nominated by someone else as a friend (alter→ego), or some combination of the two (ego↔alter). If three youth have the same number of friends, then they would seem to be equally integrated or marginalized. If that number reflects nominations of friends for one, being nominated as a friend for another, and both for the third, then the first youth would be more marginalized than the others (Crosnoe, Frank, & Mueller, 2008). Second, a count of friends is static, but peer relations are fluid. Consequently, a better way to capture the social integration or marginalization of sexual minority youth is to track what happens to their friendships over time (Cheadle, Stevens, Williams, & Goosby, 2013; Giordano, 2003). Third, networks have inherent dependencies that affect the odds of a friendship forming, raising the potential for misleading conclusions about what that friendship says about social integration (Baerveldt et al., 2004; Lazega & Van Duijin, 1997; Steglich, Snijders, & Pearson, 2010).

Another advantage of network analysis is its ability to assess homophily. Understanding the extent to which sexual minority youth have both sexual minority and heterosexual friends is important as both friendships offer benefits and because high homophily means that a youth can have friends (a sign of integration) but be segregated within the larger school (a sign of marginalization) (Baiocco, Santamaria, Baumgartner, & Laghi, 2014; Ueno, Gayman, Wright, & Quantz, 2009). Thus, homophily offers further insight into the positions of sexual minority youth within their school networks.

The first goal of this exploratory study, therefore, is to document disparities between sexual minority youth and others in their number of friends and to gauge how much this number reflects sociability/withdrawal (what a person perceives about his/her social ties), likeability/stigma (how that person is perceived by others), and homophily (the clustering of similar youth within a network). These terms describe the individual's behaviors, and are not meant to reflect individual trait-based characteristics. In doing so, we will also take into account the network dependencies that, if left uncontrolled, could create the appearance of disparities even when they do not exist while employing a statistical procedure to identify same-sex attracted youth with more consistent sexual minority statuses.

Of course, schools vary in the climates that they offer sexual minority youth (Galligher, Rostosky, & Hughes, 2004; Kosciw, Greytak, & Diaz, 2009). This study posits that factors such as size and race/ethnic composition may inform understanding of such diversity in the social positions of sexual minority youth (Poteat, Aragon, Espelage, & Koenig, 2009). First, although previous research suggests that smaller schools may have more positive social climates in general (Crosnoe, Johnson, & Elder, 2004; McNeely, Nonnemaker, & Blum, 2002), some research has revealed that sexual minority students may do better in larger schools (Goodenow, Szalacha, & Westheimer, 2006). School size has not been linked to attitudes about victimization of sexual minority youth, but it may affect how they function

within schools (Crosnoe, 2011; Poteat, Espelage, & Koenig, 2009; Kosciw et al., 2009). Second, school diversity is also worth considering. Although differences among Whites, African Americans, Latino/as, and other racial/ethnic groups in their stigmatization or acceptance of sexual minorities has long been discussed in the public and by researchers, evidence for such differences is still equivocal (Poteat & Anderson, 2012; Ueno, 2010a). For this reason, and because it is such a powerful factor in friendships and social networks more generally, race/ethnicity needs to be more explicitly considered in studies of sexual minority youth, and not just on the individual level (Diamond & Lucas, 2004; Joyner & Kao, 2000; Ueno, 2010a).

The second aim of this study, therefore, is to compare the social positions of sexual minority youth in their school-based peer networks across schools that differ in meaningful ways, including size and racial/ethnic diversity. The goal is to figure out where sexual minority youth may be at risk or resilient, not just whether they are.

Method

Data

After the random sampling of 132 middle and high schools across the U.S., Add Health gave all students in each school the In-School Survey to create a sampling frame for the core In-Home Interview (Harris et al., 2009). Students were randomly sampled from the schools to create the nationally representative Wave I sample (n = 20,745 7-12th graders) in the 1994-95 school year. Subsequent In-Home Interviews occurred the following year (Wave II) and then approximately 6 and 11 years later (Waves III-IV). Because of our focus on adolescence, we used data from the In-School Survey and the Wave I-II In-Home Interviews, which we refer to as observation points 1-3. As described below, Wave III-IV data were used to construct the measure of same-sex attraction.

Importantly, Add Health designated 16 schools as “saturated”, meaning that all students in the school participated in the In-Home Interviews, not just a random sample, which allowed for complete mapping of social networks in the schools over time. Of the saturated schools, 2 were large (n > 800), and 14 were small (n < 300). This study focused on the two largest schools, both of which were located in the Midwest. The smaller schools were either special education or middle schools, or, due to a sampling error at observation 2, their students were restricted to nominating only one female and one male friend rather than up to 5 of each (about 5% in the two focal and over 50% in other schools; an indicator was included in all models for this subset of students).

The resulting sample size was 2,533 adolescents in the two high schools in the Midwest. The first, commonly referred to as Jefferson, had 1,704 students (6% White, 23% African American, 39% Latino/a, 32% Asian American). The second, Sunshine, had 829 students (93% White). Missing peer nominations and attrition were handled with the composition change method for longitudinal network models (Huisman & Snijders, 2003), so that all youth were included in the analysis and allowed to enter the study later or leave early (e.g., graduates, movers, dropouts). Missing attribute data were imputed within the model

following standard procedures (Huisman, 2009; Huisman & Steglich, 2008). Table 1 presents descriptive statistics for the sample.

Measurement

Friendship network matrix—The outcome was change in friendships over time, captured by the system and structure of relationships among adolescents at each observation point. The networks were constructed from up to five male and five female friend nominations from the school roster at each observation, separately, so that changes in friendships across three observations could be identified. Response rates were acceptable for social network analysis (Huisman & Steglich, 2008). Approximately 65-97% of teens provided information on at least one friend within the network at each observation, and 86% provided at least one nomination at two or more observations.

Same-sex attraction—Following research and theory on the developmental course of same-sex identity (Russell & Sigler-Andews, 2001), we identified sexual minority youth through their reports of the sex of the person/people to which they were attracted. Because of variability in youth reports over time, some researchers have questioned the use of the earliest same-sex attraction measures in Add Health (Savin-Williams & Joyner, 2013). Other researchers, however, have suggested that findings from this sample are consistent with other measures of sexual minority status, such as the Growing Up Today Study (Li et al., 2014). In order to provide fresh insight into this issue, we adopted a partially-latent measurement strategy that built off of Savin-Williams and Joyner's (2013) analysis of temporal inconsistencies. First we estimated probabilities of same-sex attraction separately for boys and girls in Waves I-IV using variables that they showed distinguished Wave I and IV same-sex attraction (e.g., “very honest”, “unexcused absence from school” at Wave I, etc. see Table 3 in their article). Given that some previous research has noted the importance of consistency in same-sex attraction for understanding individual outcomes (e.g., Needham, 2012; Ueno, 2010b), we argue that employing an approach that profited from the multiple waves of data collection would be most informative for the current research goals. Each propensity model included same-sex attraction and controls for non-heterosexual romantic partners at each wave. Next, after analyzing these estimated probabilities over time, we averaged the Wave III-IV scores to use a partially-latent same-sex attraction measure. The distribution of the propensities is shown in Figure 1, along with a boxplot showing the distribution of propensities for youth who did not report same-sex attraction at Waves III-IV and those who did.

Because of missing data on the covariate list in the prediction equation over time, we first estimated 100 imputation data sets for boys and girls separately using the chained-equation approach in Stata. The same-sex attraction probabilities were calculated for each imputation and then averaged. A control for the standard deviation of these estimates was included in all models to reflect more estimation uncertainty for some youth than others. Imputations were only used for the construction of this same-sex attraction measure. Because of the need to utilize this strategy and because same-sex attraction was not measured in-school, we could not assess same-sex attraction as a time-changing covariate. Thus, the measure of same-sex attraction is really a measure of the probability that a given youth was same-sex

attracted based on her or his responses to other sexuality items across waves as well as the Wave I items that seemed to isolate suspicious same-sex attraction reports at that point. Given that the complexity of this statistical procedure for measuring same-sex attraction is difficult to describe in the space allotted in a brief report, a lengthier description is available from the authors.

Control variables—Indicators for gender and grade were created to reflect sex- and age-stratification in adolescent friendships (Urberg, Degirmencioglu, Tolson, & Halliday-Scher, 1995). Given our focus on school racial/ethnic composition, we also measured individual race/ethnicity (White, African American, Latino/a, Asian American, other). Because socioeconomic segregation drives school racial/ethnic composition (Mouw & Entwisle, 2006), parent education was categorized as: did not graduate from high school, graduated from high school, some higher education, graduated from college, and obtained advanced schooling. For similar reasons, we measured family structure (single parent vs. two-parent). As a proxy for adolescents' entry into cross-sex networks, puberty was calculated with three items for girls (breast development, curviness, menstrual period) and boys (underarm hair, facial hair, lowered voice). Following Schaefer, Kornienko and Fox (2011), responses were transformed to range continuously from 0 to 1 their sum was calculated to make the male and female items comparable.

Plan of Analyses

The methodological approach for this study was based on Snijders and colleagues' (Snijders, Steglich, & Schweinberger, 2007; Snijders, van de Bunt, & Steglich, 2010; Steglich et al., 2010) SAB model of reciprocal social influence and selection. Parameters were calculated using a method of moments estimator that summarized changes in network statistics between observations. Agent-based simulations updated parameters, estimated uncertainties, and provided an interpretational framework. The data-constrained simulation model decomposed network changes into a series of transitions in one friendship tie at a time for a randomly selected adolescent. These change opportunities were governed by rate parameters that captured the number of simulation steps needed to reproduce changes in the observed data. Complicated network differences between observations were, therefore, modeled as a sequence of accumulating small changes (“micro-steps”).

In this framework, friendship selection was modeled by changes in friendships over time, which specified the effects of network structure and an adolescent's attributes on change probabilities in friendship status (Steglich et al., 2010). Selection was operationalized with four parameters to discriminate between the different ways that same-sex attraction affected friendships. In social network analysis more generally the term “ego” is used to describe the individual, and the term “alter” is used to describe the other people in the individual's environment (Fowler, Christakis, & Roux, 2008). The alter effect captured the extent to which same-sex attracted teens were chosen as friends (likeability/stigma) and the ego effect reflected whether same-sex attraction was related to nominating friends (sociability/social withdrawal). The ego-alter interaction (or the interaction of likeability and sociability)—the primary homophilous selection effect—was a dyadic effect expressing an increasing logit of friendships among youth with higher same-sex attraction probabilities. Most covariates

followed the specification of these effects, except for race/ethnicity and gender. These measures utilized an indicator for whether dyads were the same race/ethnicity or gender.

Of note is that the patterns of connections among adolescents may have reflected network processes (i.e., the aforementioned network dependencies) above and beyond individual attributes (Rivera, Soderstrom, & Uzzi, 2010). Accordingly, we controlled for general network processes, such as reciprocity (whether both adolescents selected each other as friends), transitive network closure (whether the ego viewed the friend of a friend as a friend), 3-cycles (whether the friends of friends viewed the ego as a friend), and degree processes (the square roots in-degree likeability). Notably, there is a general tendency towards reciprocation, closure, and a hierarchical ordering with relatively few three-cycles in adolescent networks (Veenstra & Steglich, 2012). Because reciprocal friendships are typically stronger and more intimate (see Montoya & Insko, 2008), we also assessed interactions between reciprocity and the same-sex attraction ego (i.e., the sociability of same-sex attracted friends), alter (i.e., the likeability of same-sex attracted friends), and ego x alter interaction parameters (i.e., the interaction of sociability and likeability, our measure of homophily).

Results

To begin with a description of the sample by same-sex attraction, over 10% of youth reported some same-sex attraction (11% in Jefferson, 12% in Sunshine). The average estimated probabilities of same-sex attraction were closer to 7% because the probability metric was graded between 0 and 1. This rate is comparable to previous work on rates of sexual minority youth (Austin et al., 2004; Igartua, Thombs, Burgos, & Montoro, 2009). The combined same-sex attraction distribution for the sample is shown in Figure 1. The average standard deviations of these estimates across imputations were less than .04 in both schools.

Youth typically had about four friends (degree), but this number declined to between 2-3 friends by observation 3. Not shown in Table 1, the same-sex attraction probability predicted the number of friends nominated (out-degree; b = -.53, t = -2.29) at observation 3. This probability was also associated with fewer received nominations (in-degree; b = -.80, t = -2.65) at observation 2. In general, the trend was for fewer friendships among youth with higher same-sex attraction probabilities. These sociometric statistics, however, could be misleading, as they did not take into account the role of homophily (i.e., friendship between same-sex attracted youth) (see the sim.=similarity column in Table 2) or network dependencies (i.e., features of the larger networks in which two youth were embedded that could have affected their odds of becoming friends). Moreover, they did not speak to whether friendships changed over time. Thus, we turned to SAB modeling.

Table 2 presents selected logit coefficients for this SAB model series, with coefficients for the remaining parameters in Table S1 (please see online supporting information). Model 1 included the focal same-sex attraction coefficients for the individual (i.e., ego), their peers (i.e., alter), and the interaction between the individual and their peers. In addition, the model controlled for reciprocity and basic covariates. These estimates suggest that adolescents with higher probabilities of being same-sex attracted were less likeable (i.e., alters were less

likely to name them as friends) in Sunshine. Same-sex attracted youth in both schools were more likely to form friendships with one another (ego × alter interaction). There was no evidence of social withdrawal (i.e., reporting fewer friends) among youth with higher probabilities of being same-sex attracted in either school (ego effect). The results were similar in Model 2, which included the structural parameters (transitive triplets, 3-cycles, in-degree likeability), and Model 3, which included the remaining controls.

Table 3 includes Model 4, which incorporated interactions with reciprocity as well as two additional specifications. Although there were no significant interactions in Model 4, the results suggest lower reciprocity among same-sex attracted youth in Sunshine (ego, alter), unless the friendship was homophilous (ego × alter). The homophily trend was similar in Jefferson, the racial/ethnic minority school, although the ego and alter interactions were positive rather than negative. The failure of these terms to achieve significance was due to structural parameters ("less structural" columns) rather than the background controls. Overall, Table 3 results suggest that, in both schools, homophilous friendships (ego × alter) between same-sex attracted youth were more likely to be reciprocal. Because the interaction coefficients were large in effect size but non-significant when network structure control variables were included, however, this pattern needs to be treated as suggestive and examined further.

Although the sample we utilize was large in total, samples including more same-sex attracted youth and a broader range of school settings are needed to determine if differences in reciprocity between same-sex attracted youth and their peers reflect differential social integration or other structural network processes. Because coefficients were large in Model 4 but only significant when structural controls were not included, these results are equivocal. Notably, we also assessed interactions between transitive triplets and 3-cyles with the same-sex attraction ego parameter. The coefficients estimated for these terms were all small in magnitude and statistically non-significant, indicating that network closure was no different for youth with high or low probabilities of being same-sex attracted.

The bottom line, therefore, was that same-sex attracted youth had fewer friends overall in the mostly White setting (Sunshine) but were more likely to befriend one another in both schools (i.e., homophily).

Discussion

To summarize, SAB modeling revealed that, in general, same-sex attracted youth were less well-liked and less sociable than other youth in one school but not the other. In line with minority stress frameworks (Meyer, 2003), same-sex attracted youth experienced disrupted integration within their social networks, but this evidence was limited to one social setting. Moreover, in both schools, same-sex attracted youth tended to cluster together in friendship groups characterized by reciprocal ties. These findings highlight four themes for future developmental research to engage with and use: (1) the utility of SAB modeling in assessing the social integration/isolation of sexual minority youth, (2) the value of exploring differences in the social experiences of sexual minorities across school contexts, (3) the importance of understanding homophily in the social networks of sexual minority youth, and

(4) the need to explore divergent methods of assessing sexual minority status within the Add Health dataset to provide a more nuanced understanding of risk and resilience among this population.

First, SAB modeling is a useful tool for studying the social lives of sexual minority youth. This modeling built on prior research in this area by situating all relationships within the larger network structures that shape them. Our descriptive results mirrored past research that sexual minority youth do not differ from others, overall, in their social positions at school (Ueno, 2005). SAB analysis, however, highlighted some important differences. Namely, while sexual minority youth did not report having fewer friends, they were nominated fewer times by peers. Previous research has suggested that reciprocal friendships offer more protection to the individual than nonreciprocal friendships (Vaquera & Kao, 2007). Lack of reciprocity may be a subtle way in which sexual minority youth are marginalized by their social networks, but only in some settings. This complexity needs to be unpacked in the future. Same-sex attracted youth may be socially at risk in only some, but not all, situations.

Second, school context warrants more attention. The social risks of being same-sex attracted were primarily found in the smaller, predominantly White school. In the larger predominantly racial/ethnic minority school, the stigmatization of sexual minority status did not seem to influence adolescent social networks. Which of these school factors (or other school characteristics that might have gone along with them) explains these findings is hard to determine. Perhaps smaller schools mean that sexual minority students stand out from the crowd, raising the risk of marginalization. Perhaps homogenous schools also mean that "difference" is easier to detect (Crosnoe, 2011; Goodenow et al., 2006; Poteat, Espelage & Koenig, 2009). More work is needed to isolate what matters and why, and a purpose of this brief report is to set up issues for further exploration.

Third, homophily was common in both schools, such that youth with same-sex attraction were more likely to report friendships with other same-sex attracted youth. This network homophily is important, as sexual minority and heterosexual friends each offer distinct protective advantages (Ueno, 2005; Ueno et al., 2009). For example, sexual minority friends may be better able to support youth on sexual-minority specific issues, but, in light of their own victimization, may have fewer social resources to offer than their heterosexual peers. Unpacking how homophily works and why it matters is a potentially fruitful avenue of future developmental research.

Fourth, Add Health has long been a widely used resource for studying sexual minority youth (Himmelstein & Brückner, 2011; Katz-Wise et al., 2014; Russell & Joyner, 2001), although the validity of this approach has been recently criticized (Savin-Williams & Joyner, 2013). The propensity approach used here offers researchers a novel way of constructing sexual minority status that can inform future research with this complicated, fluid, and multi-faceted construct. Worth noting is that this method presented a less negative image of sexual minority youth than in past research and in our models with a more simple measure of same-sex attraction, which revealed more evidence of social marginalization in both schools. Triangulating among methods—while being cognizant of the advantages each approach brings along with their theoretical relevance—should be the norm in the future.

Of course, this study also has limitations. For example, the participants were drawn from only two schools, and school size and school racial/ethnic composition were confounded. A larger and more heterogeneous school sample is needed. At the same time, our methodological approach made the exploration of moderation by age and gender—two clearly important factors—difficult. Attention to such moderation is a must in the future. These limitations highlight the preliminary nature of this study. It needs to be extended, especially now as concerns about the health and well-being of sexual minority youth have increased, acceptance of sexual minorities in schools spreads, and researchers develop new tools to dig into these issues (Fetner & Kush, 2008; Hatzeubuehler et al., 2012; Russell et al., 2008; Ueno, 2005). A theoretically grounded foundation of empirical evidence is what is needed to effectively inform policy and practice aimed at supporting the social adjustment and safety of sexual minority youth.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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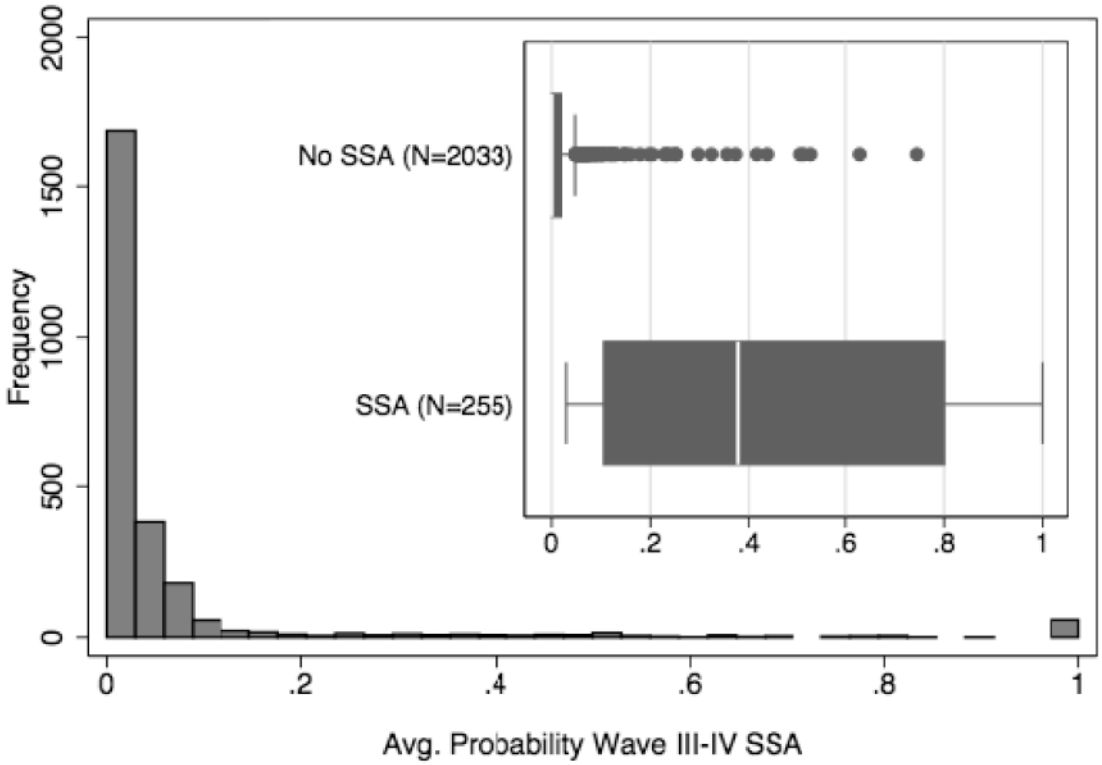

Figure 1. Total distribution for the Wave III-IV average probability of same-sex attraction (SSA) in both high schools

Table 1

Descriptive Statistics for Study Variables, by School

	Predominantly Racial/Ethnic Minority School: Jefferson (*n* = 1704)			Predominantly White School: Sunshine (*n* = 829)		
	Mean	**SD**	**Sim.**	**Mean**	**SD**	**Sim.**
Focal Variables and Covariates						
Same-sex attraction prob.	0.067	(0.197)	0.881	0.065	(0.171)	0.892
SD of same-sex attraction prob.	0.024	(0.044)	0.891	0.039	(0.058)	0.851
W3 and/or W4 same-sex attraction	0.115		0.855	0.110		0.828
Parent education	2.441	(1.198)	0.667	2.658	(0.977)	0.741
Grade-level	10.942	(0.799)	0.711	10.333	(1.109)	0.691
Non-White				0.062		0.884
Latino/a	0.393		0.523			
African American	0.233		0.643			
Asian American	0.316		0.568			
White/other	0.059		0.889			
Female	0.481		0.500	0.473		0.786
Single parent family	0.253		0.621	0.233		0.643
Pubertal development	0.504	(0.203)	0.771	0.596	(0.192)	0.786
Obs. 3 restricted nomination sample	0.044		0.916	0.057		0.893
Offlist nominations, Obs. 2	1.475	(2.468)	0.774	0.732	(1.595)	0.805
Offlist nominations, Obs. 3	2.471	(2.081)		1.779	(1.920)	
Network Statisticss						
Degree, wave 1	3.909			6.104		
Degree, wave 2	2.254			4.153		
Degree, wave 3	1.841			3.554		
Jaccard distance 1→2	0.211			0.271		
Jaccard distance 2 → 3	0.217			0.253		

Sim. = covariate similarity (0 = maximally dissimilar, 1 = maximally similar).

Table 2

Selected Logit Coefficients From SAB Models

	Model 1		Model 2		Model 3	
Sunshine High School						
Reciprocity	2.88 [0.04]	***	2.64 [0.05]	***	2.55 [0.05]	***
SSA:alter	-0.33 [0.07]	***	-0.23 [0.07]	***	-0.21 [0.07]	**
SSA: ego	-0.07 [0.07]		-0.03 [0.07]		-0.03 [0.07]	
SSA: ego × alter	0.77 [0.28]	**	0.58 [0.29]	*	0.58 [0.26]	*
Jefferson High School						
Reciprocity	3.30 [0.05]	***	3.09 [0.05]	***	2.75 [0.05]	***
SSA:alter	-0.06 [0.07]		-0.03 [0.07]		0.03 [0.07]	
SSA: ego	0.01 [0.08]		0.03 [0.09]		0.09 [0.09]	
SSA: ego × alter	1.19 [0.25]	***	1.03 [0.27]	***	1.05 [0.24]	***

Note: Standard errors in brackets

SSA = same-sex attraction

SAB = stochastic actor-based

(n = 2,533)

* $p < 0.05$,

** $p < .01$,

*** $p < .001$

Table 3

Selected SAB Model Results, Interactions With Reciprocity, Coefficients in Logits

	Sunshine					Jefferson				
	Full Model 4	Less Structural		Less Covariates		Full Model 4	Less Structural		Less Covariates	
SSA: alter × reciprocity	-0.21 [0.16]	-0.47 [0.16]	**	-0.17 [0.17]		0.24 [0.19]	0.11 [0.20]		0.22 [0.20]	
SSA: ego × recriprocity	-0.23 [0.16]	-0.36 [0.16]	*	-0.27 [0.17]		0.21 [0.19]	0.34 [0.20]	†	0.18 [0.20]	
SSA:ego × alter × reciprocity	1.42 [0.89]	1.89 [0.95]	*	1.44 [0.86]	†	1.33 [0.89]	1.69 [0.86]	*	1.37 [0.91]	

Note: Standard errors in brackets

SSA = same-sex attraction

SAB = stochastic actor-based

(n = 2,533)

† p < 0.10,

* p < 0.05,

** p < .01,

*** p < .001