

Inside the Ivy: A Glimpse into the Undergraduate Life at Columbia:

A Visualization of Diversity Details

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We've spent our whole college careers at CU, so we want to shed some light on

what it's like to be an undergraduate in Morningside Heights and what the intergroup relations look like among students.

Introduction

Social-psychological and sociological researchers have been pondering a long standing conceptual dispute, a discrepancy between ideological frameworks for ethno-cultural equality. This debate transcends politics, policy, and academia—should we promote ethnoracial equality by coveting the “We’re not so different after all” proverb, ignoring our differences and claiming that we don’t notice race and ethnicity? Or, do we turn the golden rule—“Treat others how you want to be treated”—on its head? Maybe the way you want to be treated isn’t the way someone with different cultural norms wants to be treated.

Historically, the straightforward nature of the color-blind approach to race—downplaying or ignoring racial differences—has been the cornerstone of striving for equal rights and reducing prejudice. The American justice system has even advertised the US constitution as color-blind in groundbreaking civil rights cases (Brown v. Board of Education, 1954). The argument is that explicit discrimination and prejudice can only emerge conditional upon the acknowledgement of racial distinctions; a precursor to outright racism is decisively exploiting race as a platform for judgement.

However, advances in neuroimaging, experimental methods, and academic exploration of implicit behaviors have alluded to insidious implications of claiming not to notice ethnoracial features during interpersonal interactions; for example, Ito and Urland (2003) showed that race is processed and encoded automatically, without conscious effort. This suggests that it's not necessarily possible to be race-blind, even if that is your deliberate motive. The fact that we do not have a resolute answer on how not to disadvantage minority group members is shuddering, considering that ethnic minorities make up almost 40% of the US population (US Census Bureau, 2016) and are predicted to outnumber Whites by mid-century (Pew Research Center, 2015).

Recent theoretical and empirical work outlines the pitfalls of promoting a color-blind-race-blind code, for it perpetuates an appearance of avoidance through negative nonverbal cues during interactions, leading to cognitive depletion (Apfelbaum, Sommers, & Norton, 2008; Norton, Sommers, Apfelbaum, Pura, & Ariely, 2006). When the majority group (historically Whites in America) downplay ethno-racial differences, valuable cultural nuances of diverse group members are suppressed, or even lost altogether. Since previous research demonstrates that humans are homophilic (prefer others similar to themselves), there is likely also an exclusionary effect of suppressing cultural differences; this, in turn may manifest in avoidance of race-based, minority-based, or other identity oriented conversations. So, the internal model for dealing with race and ethnicity should not impair cultural proliferation or communicative exchanges of ideas. Trending research isolates a multicultural ideology as an alternative, less precarious approach (Gullett & West, 2016; Neville, Awad, Brooks, Flores, & Bluemel, 2013).

Multiculturalism refers a pluralistic ideology wherein assorted ethnoracial and cultural differences are esteemed. The multicultural, dual-identity model essentially contrasts the assimilationist color-blind perspective as an ideological representation for seeking intergroup unity and equality. Instead of downplaying ethnicity/race related differences, multiculturalism aims at welcoming and appreciating these differences as unique and valuable cultural nuances. Celebrating ethnic and cultural differences among communities promotes intergroup harmony (Markus et al., 2000; Plaut, 2002; Wolsko, Park, Judd, & Wittenbrink, 2000), whereas internalizing a colorblind ideology has been shown to backfire and do the opposite (Gullet & West, 2016). Extant research has even connected the dots between Whites' embrace of multiculturalism and increased engagement and efficacy among minorities (Wolsko, Park, & Judd, 2006). The key consideration is that acknowledging differences in identity and culture is the means through which society innovates and cultivates wholesome socialization. Cross-cultural intermingling helps support cognitive processes like creative idea generation, insight learning, and retrieval of unconventional knowledge (Leung, Maddux, Galinsky, & Chiu, 2008).

On the other hand, if a majority group maintains the social reference point—as is the case for White Americans—then the voices of minorities whose mannerisms, preferences, or culture do not align with the majority group, may be suppressed and considered digressions from the White American norm; any divergence from the reference point may be processed as anomalous. On the other hand, by giving minority group members a voice and by promoting the inclusion of their diverse perspectives, they have more agency in a white-dominated society.

Considering all of this, the pivotal question arises: how are relationships actually affected by diversity perspectives over time, not just in the lab? Who are the people that cultivate cultural crosstalk and why? What social or structural mechanisms nest the foundations of strong intergroup relations?

Since scant research can attest to specific factors as precursors to positive interpersonal connections between ethnically and culturally diverse groups of people. This project intends to add to extant literature by linking a more multicultural perspective (as opposed to a colorblind perspective) to the formation of more heterogeneous social networks among individuals. The benefit of confirming the relationship between fostering cultural diversity and an increase in genuine increases in diversity of ties may be crucial to making societies more conscious of the need for assorted viewpoints in maintaining any type of intergroup harmony. Specifically, we not only aim to show that there is a relationship between dual-versus-single diversity ideological systems, but we intend to expose the process by which humans adopt their stance on diversity, and how such a perspective aligns with heterogeneity of social ties across development and across time (Investigation into development-related diversity attitudes will not be directly statistically tackled in this paper, but I intend to pursue it in the future).

Cultural psychology focuses intensely on academic discussions of intergroup contact and intergroup relations. In a way, a cultural psychology class might be considered an intervention. As students spend time exposed to a diversity of peers, and as they absorb the theoretical and empirical nuances of culture and group-level processes, they are being given a type of academic intervention. Learning about the science behind racial, gender, and cultural differences, and learning about minority history and rights, might be enough the fundamentally shift students' diversity ideologies and perceptions of discrimination/prejudice within just a semester. Nonetheless, my dataset may not be the holy grail that I'd love it to be. In reality, there are only about 120 students who participated in both time points of the study. While it is feasible to say that the friendship, support, and academic network data reflect true relationships among the students, it's important to note that the data represents closed network based on a lecture-course. Even though students had to complete a group project that required extensive time amongst one-another, it's difficult to conceptually compare these networks to respondents' genuine social ties in their everyday life. In a similar vein, it's notable that a Columbia class of students interested in learning about human behavior and intergroup relations are probably not representative of the broader nation, or world. Lastly, it's unfair to say that this study qualifies as an intervention-study. Students were exposed to a course that was intended to influence their everyday interactions with diverse others, but there was no data collected for from some sort of control group. Thus, we don't know how, specifically, the course itself may have influenced students' social behaviors and/or social awareness.

In the interest of satiating my curiosity about the question of "what motivates diverse friendships," I processed the network raw nomination data into weighted edgelists and then network objects mapped onto the attributes data. My code is provided in a separate file in the CourseWorks Assignment Page for this project. In the code, I walk you through the processes of cleaning, recoding, and calculating various measures/statistics.

We collected binary-valued social network data and individual scores for multiculturalism (MC) and colorblindness (CB) at two time points among young adults in a classroom setting. In order to evaluate the ways by which human beings may form diverse friendships, and the way these individuals mentally represent ethno-cultural diversity, we collected additional demographic and attitudinal data concerning participants' self-reported reasons for entering peer-relationships with members of ethno-cultural outgroups. This design may have external validity outside of the academic-classroom environment for indicating the existence of the paradigm in question among a broader community than just an academic setting. In order to measure developmental antecedents to MC and CB, as well as developmental predictors for network homophily, we gathered geolocational public data for participants' hometowns, and we used algorithmic-functions to capture high school-level demographics and school characteristics. These variables were then used to model hometown environmental influences during childhood and their potential effects on diversity ideologies in adulthood and the makeup of adults' social networks. Since data was collected before and after taking an intensive Cultural Psychology course modeled upon a multicultural framework, we anticipated trends in the cultural identity and ideology data to arise somewhat accordingly. Since the course may have functioned as an intervention for individual misconceptions about race and ethnicity, we hypothesized that students' multiculturalism scores would rise over time (H1), but that students' color blindness scores would decrease over time (H2), but irrespective of scores from earlier time points, we should see an effect of diversity ideology upon ego network structure. The next hypothesis expand upon this prediction. While prior research has found that racial prejudice undermines cross-race interactions (Aboud, Mendelson, & Purdy, 2003; Dovidio, Kawakami, & Gaertner, 2002), no work to our knowledge has examined the development or the effects of diversity ideologies on real-world interracial relationships. Given the association between multiculturalism and positive intergroup outcomes, we hypothesized that multiculturalism would predict more positive relational outcomes in a racially diverse environment over time, including the development of more racially diverse social networks (H3).

Over the course of the semester, students worked in assigned groups of 3-5 students on a final class project. Students collaborated face-to-face, inside and outside of class, with the same group of students for the course of the semester. The sample population had an oversample of ethnic minority enrollment, we hypothesized that students in ethnically diverse groups would report increased multiculturalism, decreased colorblindness, increased diversity of social networks (such as decreased ego network homophily or decreased network HHI over time), comparative to smaller effect sizes in the in less diverse groups (H4). The question of where a person's diversity ideology originates is an important, but uninvestigated phenomenon. In an effort to veer from the multicultural-minded field, we aimed to lay scaffolding for further investigation into what factors during childhood and across development may impact a person's attitudes toward outgroup cultures.

Contact theory would suggest that mere exposure to ethnically diverse groups should have a constructive effect on multiculturalism, especially during pivotal developmental phases, particularly adolescence, since these years bridging childhood and adulthood are known to be periods of heightened egocentrism, but also periods of amplified identity-formation. We thought it important to explore factors from childhood that could predict participants' solidification of diversity ideology orientation. We hypothesized that exposure to heightened ethnoracial diversity during students' high school-aged years would predict augmented multicultural acceptance, while quelling promotions of colorblindness (H5).

Don't recognize us from the usual QMSS festivities? That's because we're invaders! Sam's a CC/QMSS BA/MA student, Maneeza's a Psych PhD student who got her BA from Columbia GS, and Yeji's a fab CC transfer from Wesleyan.

Let's head into the roller-coaster-like road of a CU undergrad. Today, we're interested in...

- a. Where do our undergrads come from?
- b. What does ethnoracial diversity mean to young-adult students and how does diversity manifest in social networks?
- c. What developmental socio-ecological factors might influence long-term attitudes toward cultural diversity?
- d. What groups occupy more central positions within a closed network?
- e. How can students become more aware of marginalization of their peers?

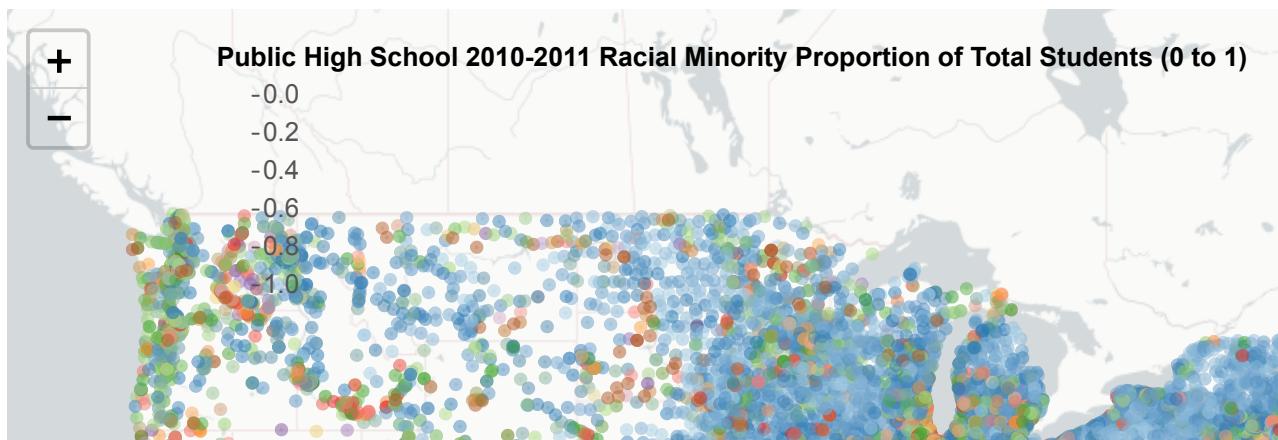
f. Can exposure to outgroup members help foster tolerance and acceptance?

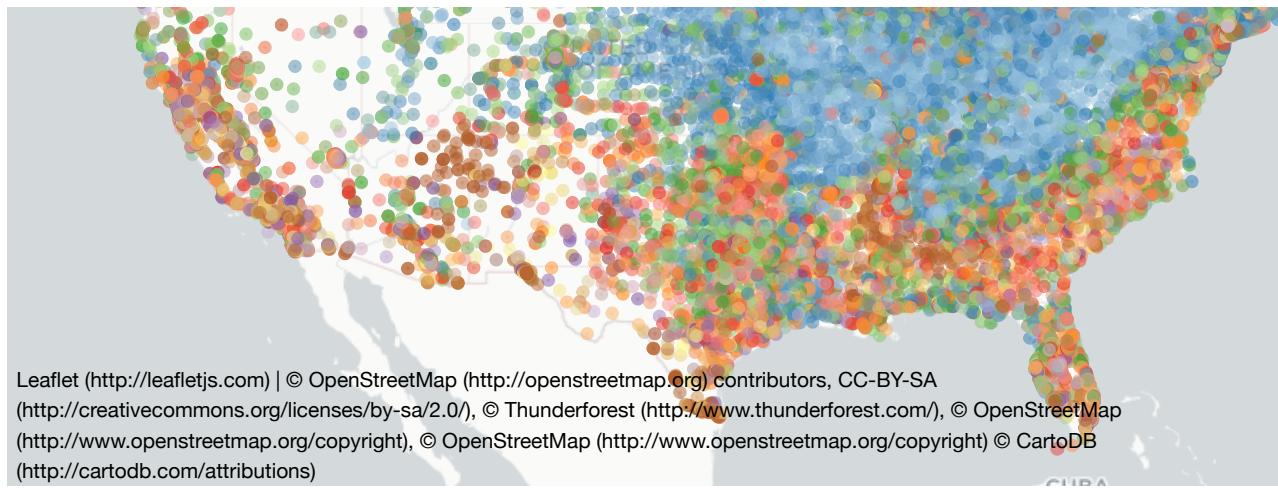
g. Can an introductory psychology course act as an intervention, increasing how much they discuss diversity?

We want to explore where Columbia students come from! But first, let's look at US schools and their diversity trends on the aggregate...

All Columbia students had to start their academic pursuits somewhere. Perhaps they matriculated after nearly two decades in the public school system...

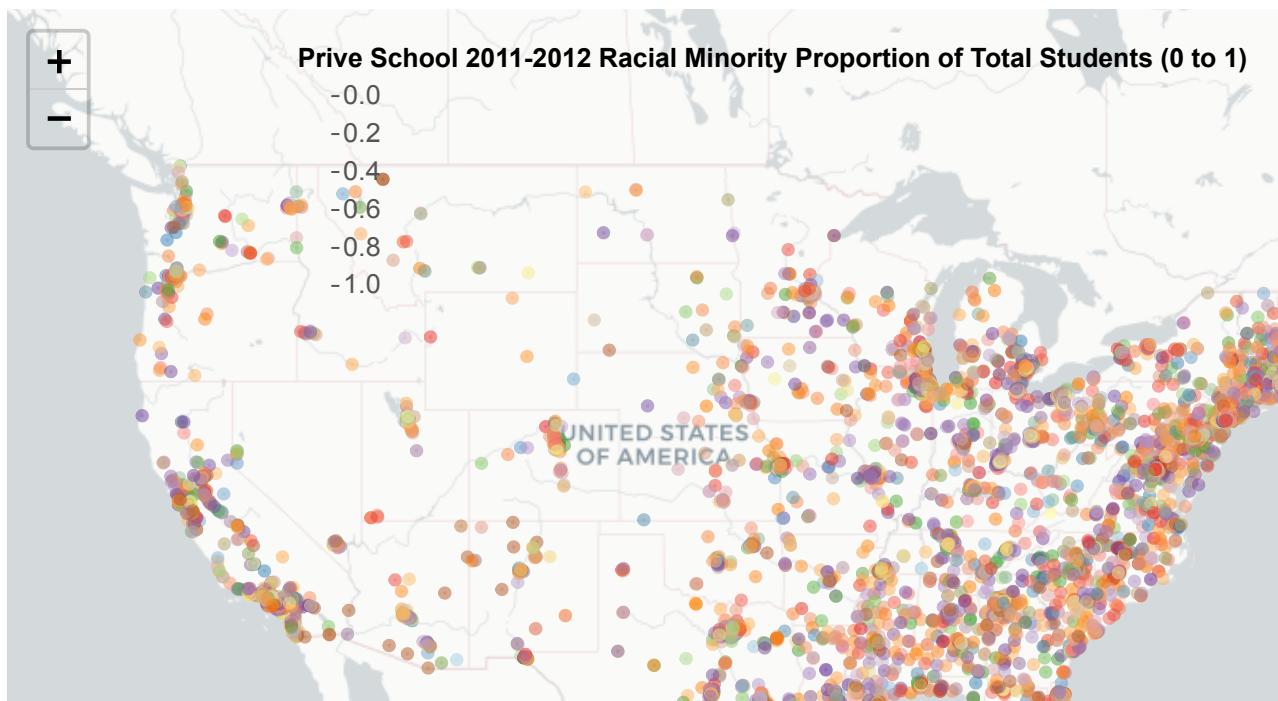
Racial diversity is concentrated in small pockets here and there, pre-dominantly on the coasts and in major cities. Our pop-up info gives us some additional background information about our plotted schools.





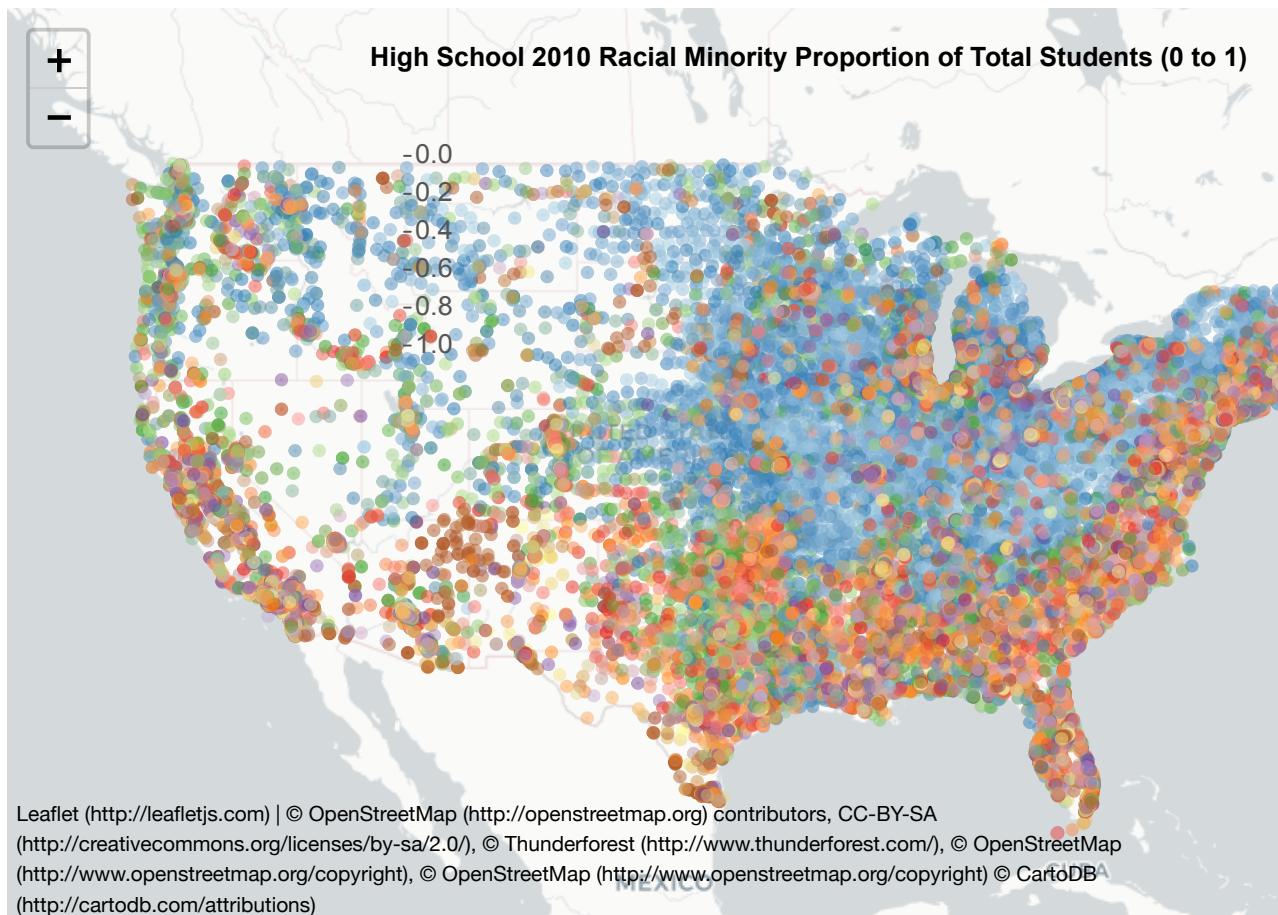
Or, perhaps they stuck it out through the private school life.

NCES's Private School Survey (PSS) released demographic reports for 2011-2012 (nearly the same period as our public school reports). It's evident there exist many fewer private than public schools in the United States, though the racial diversity of public schools is no match for the more elite and usually costly private schools.





This map includes markers for ALL of the high schools in the US— public and private!



Now we can dive in and investigate where Columbia students went to high school! These

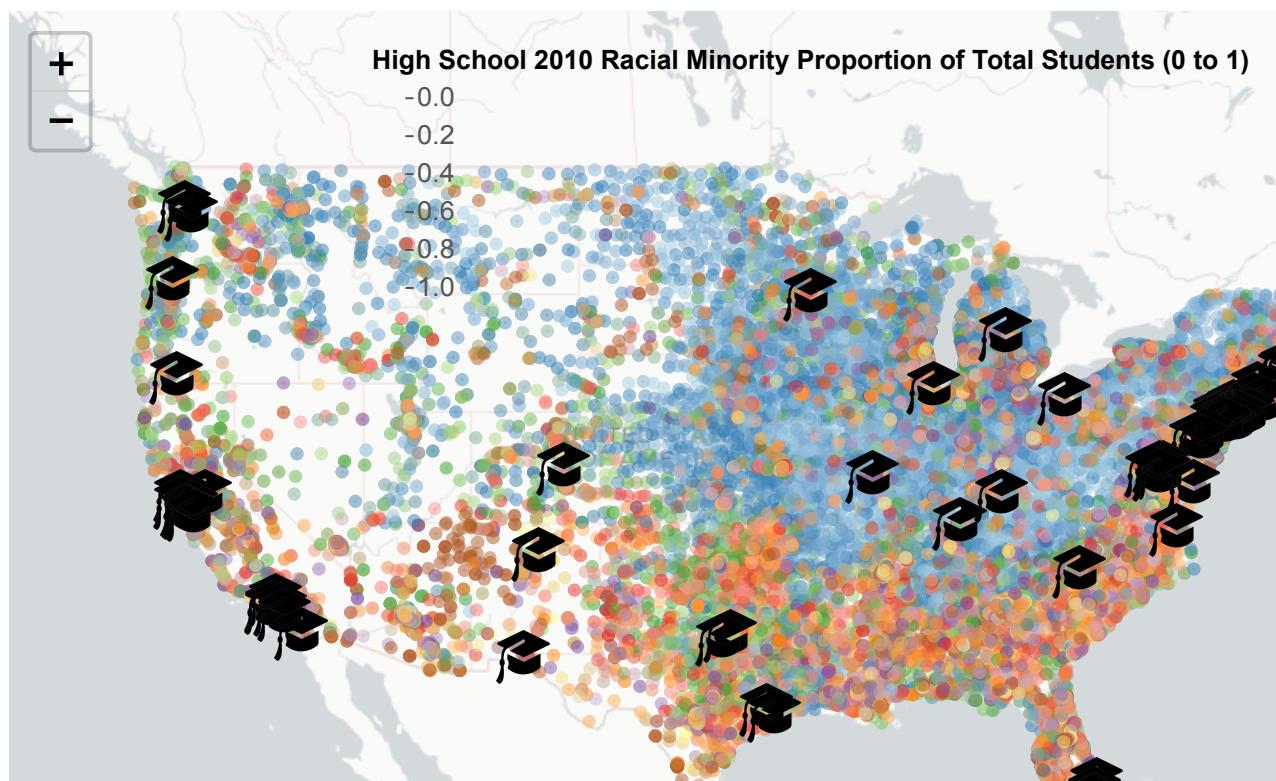
are their adolescent environments

So, where did Columbia students attend secondary school? Private schools? Public schools? The coasts?

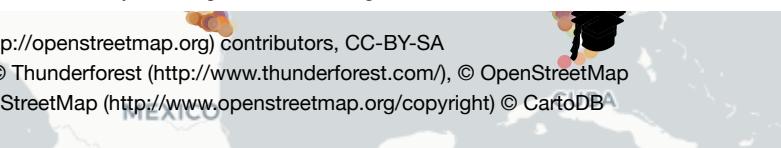
It seems as though Columbia matriculators come primarily from the diverse hubs of the country. But what do these hometown socio-ecological factors mean for perceptions of racial variation in day-to-day life? Answers to come!

Interact with our map of our participants' (Columbia students') origins

Let us take a look at our study participants' high schools overlayed on the school-diversity map.



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Today, we want to take a look at the past, present, and predominant perceptions of CU students' diversity attitudes at social networks.

What does the data say on the literal level? Interact and take a look!

Show **10** entries

Search:

	High School Name	County, State	High School Locale	High School Diversity	High School Type	CU Students' Race
1	ALEXANDER W DREYFOOS JUNIOR SCHOOL OF THE ARTS	Palm Beach County FL	Small city	0.605546889	Public	AsianPI
2	ASHLAND HIGH SCHOOL	Jackson County OR	Midsidesuburb	0.352214077	Public	White
3	BARD HIGH SCHOOL EARLY COLLEGE	New York County NY	Large city	0.699449541	Public	Multi
4	BERKELEY CARROLL SCHOOL	Kings County NY	Large city	0.598478115	Private	White
5	BILLERICA MEMORIAL HIGH SCHOOL	Middlesex County MA	Small city	0.630634261	Private	Multi
6	BISHOP McNAMARA HIGH SCHOOL	Prince Georges County MD	Large suburb	0.44448142	Private	Black
7	BOWLING GREEN HIGH SCHOOL	Warren County KY	Small city	0.575933312	Public	Black
8	BRECK SCHOOL	Hennepin County MN	Large suburb	0.519816973	Private	Multi
9	BRONX HIGH SCHOOL OF SCIENCE	Bronx County NY	Large city	0.548501864	Public	White

	High School Name	County, State	High School Locale	High School Diversity	High School Type	CU Students' Race
10	BRONX HIGH SCHOOL OF SCIENCE	Bronx County NY	Large city	0.548501864	Public	AsianPI

Showing 1 to 10 of 147 entries

Previous

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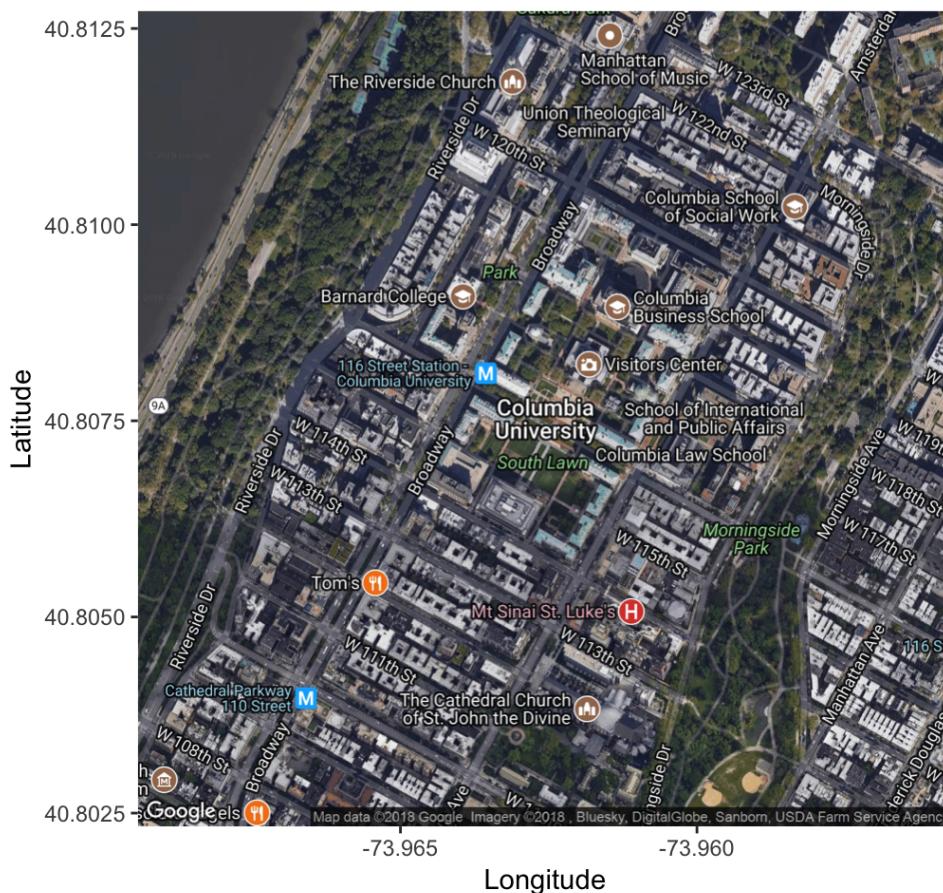
...

15

Next

Maneeza will now take it away!

Little old Columbia sits right above Manhattan's Upper West Side and it's home to some of the most studious students in the nation. After all, it's rated by some prolific media sources as the US's most academically stressful university.



The cultural psychology course

Participants in this study included 126 Columbia undergraduates

Students in this class learned about research on culture, diversity and intergroup relations

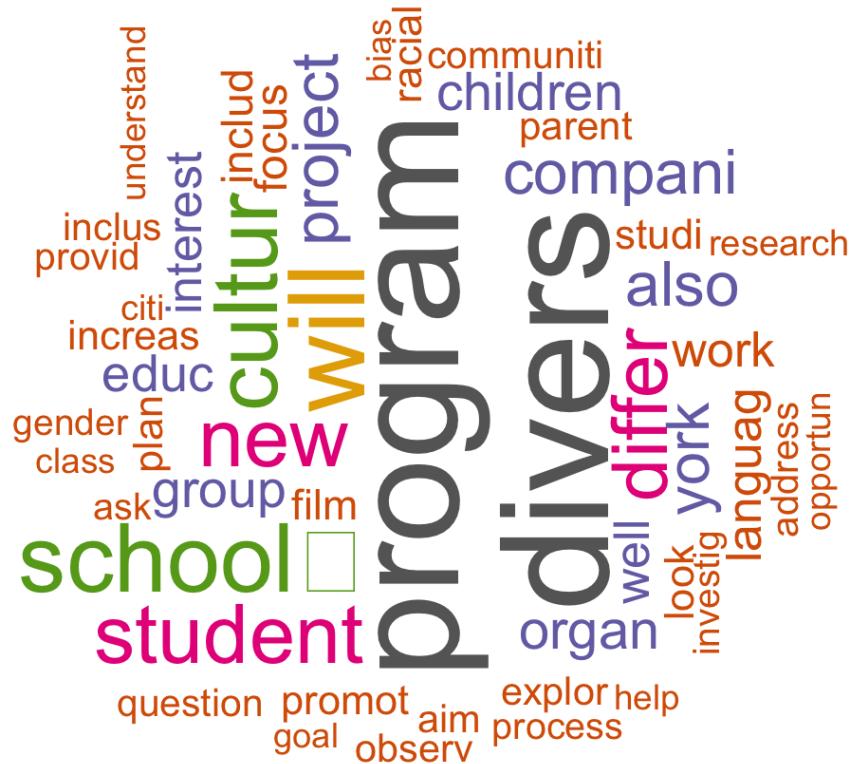
Students were also assigned a group project for the course, which included an ethnographic assessment of a NYC based company or organization.

surveys were collected at the start and end of the semester, examining:

colorblind and multicultural attitudes at the start and end of the semester

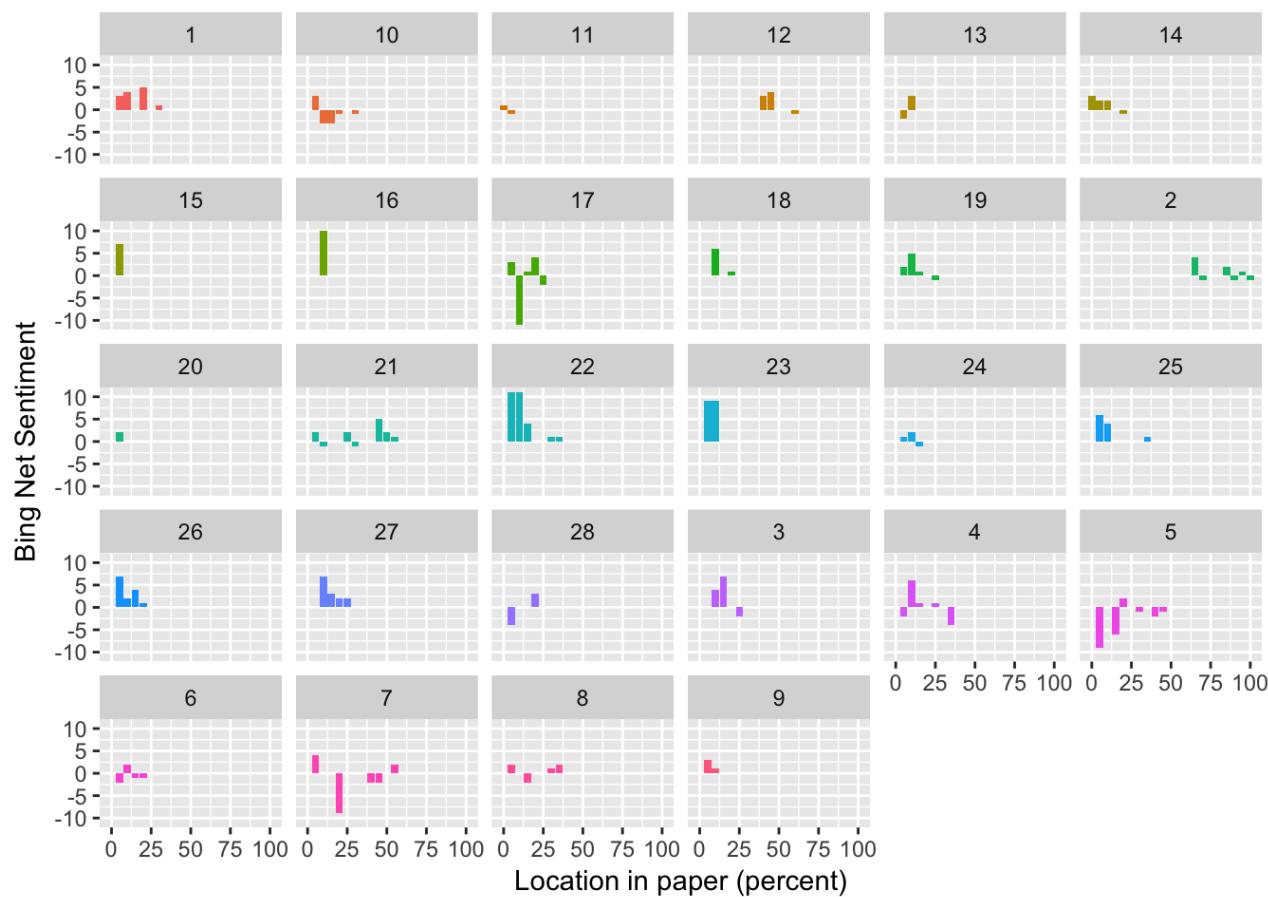
networks at the start and end of the semester

What did students discuss in their group project proposals for the class?



Text analysis of students' writing: project idea proposals

Sentiment analysis by proposal

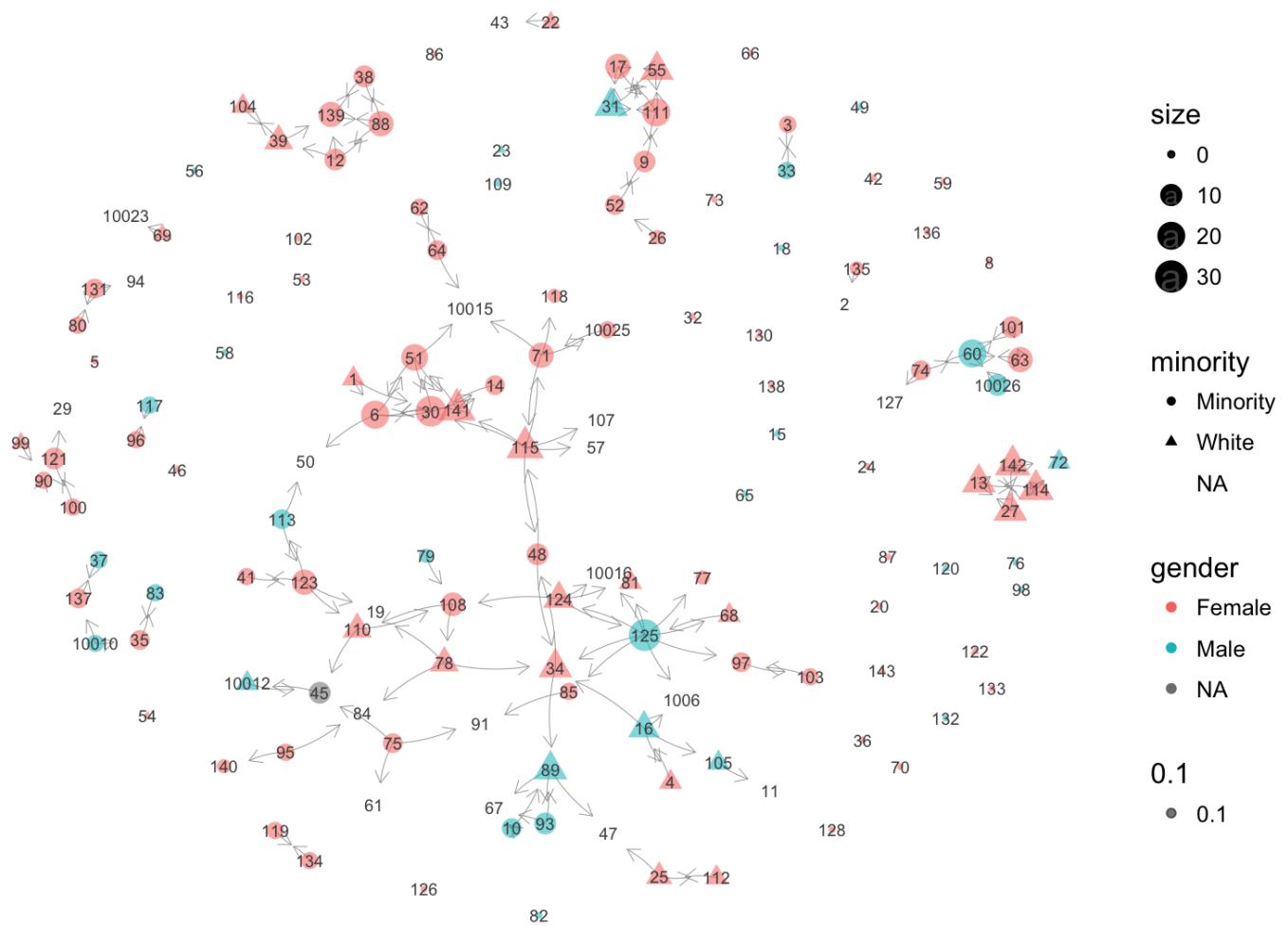


Do people actually interact with each other and form new ties throughout the course of the semester?

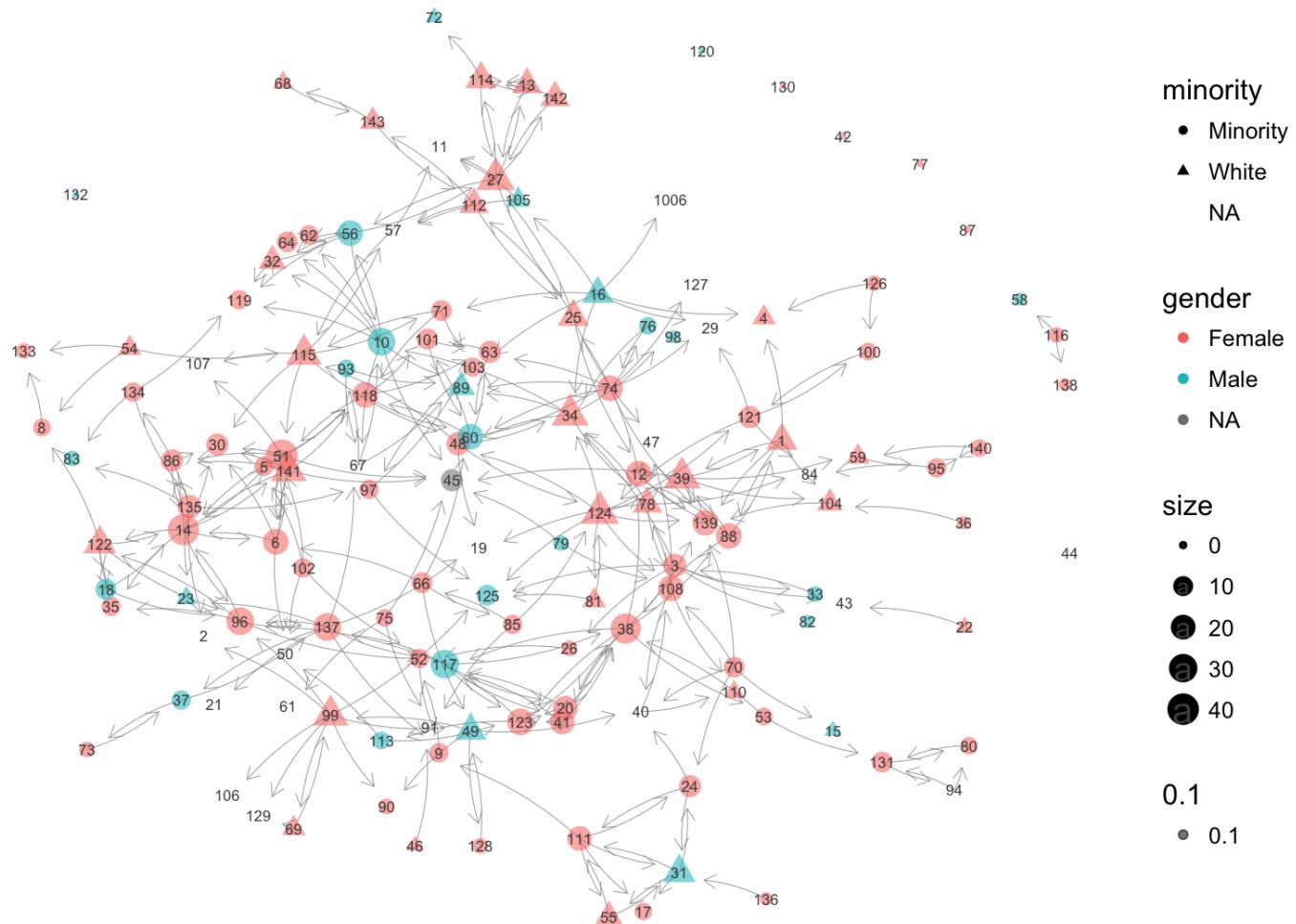
Friend Network

We first created students' friend network. Basically, participants were asked to give the names of people who they consider to be their friends, and rate how close they feel to each person that they listed.

Start of the semester



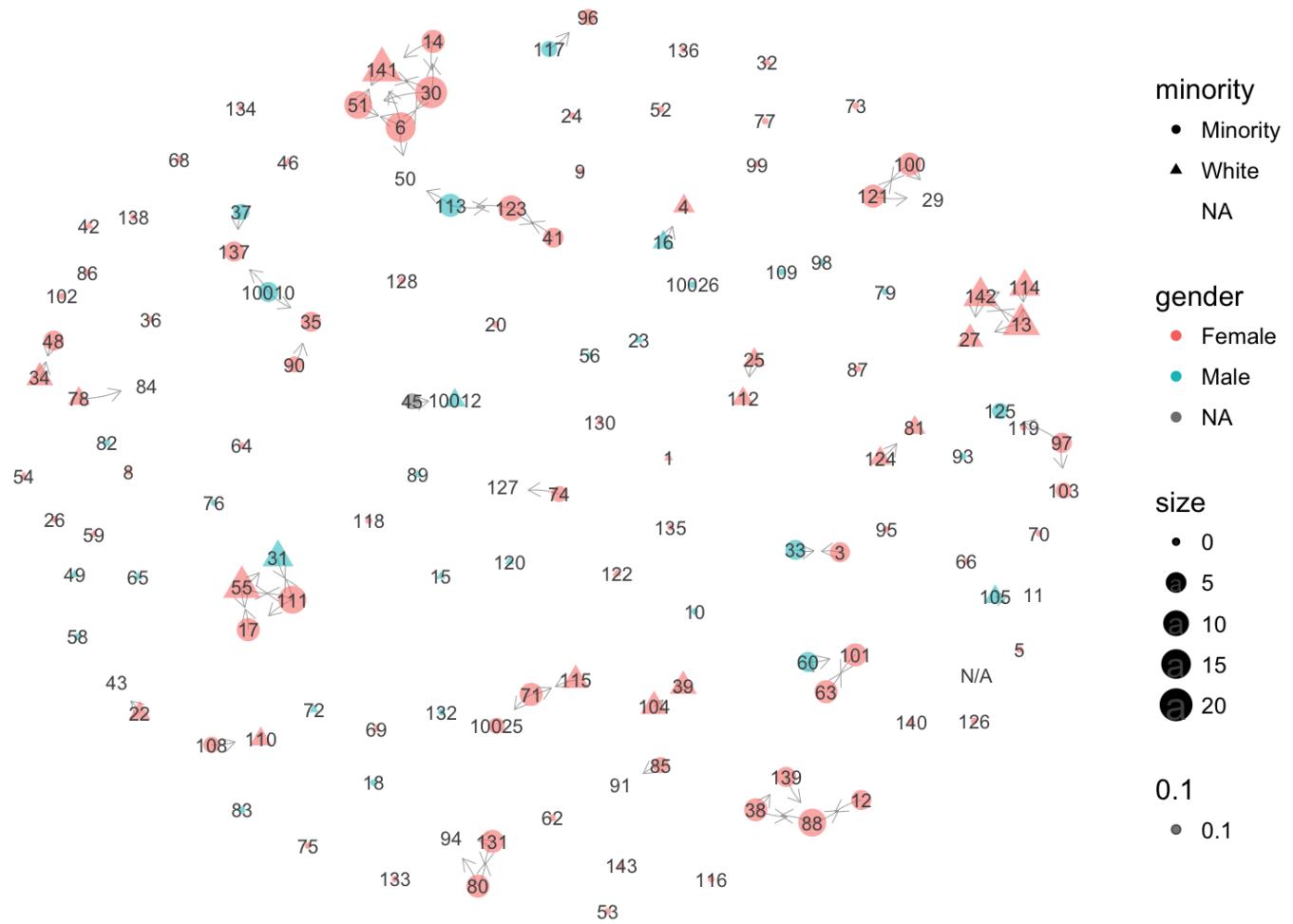
End of the semester



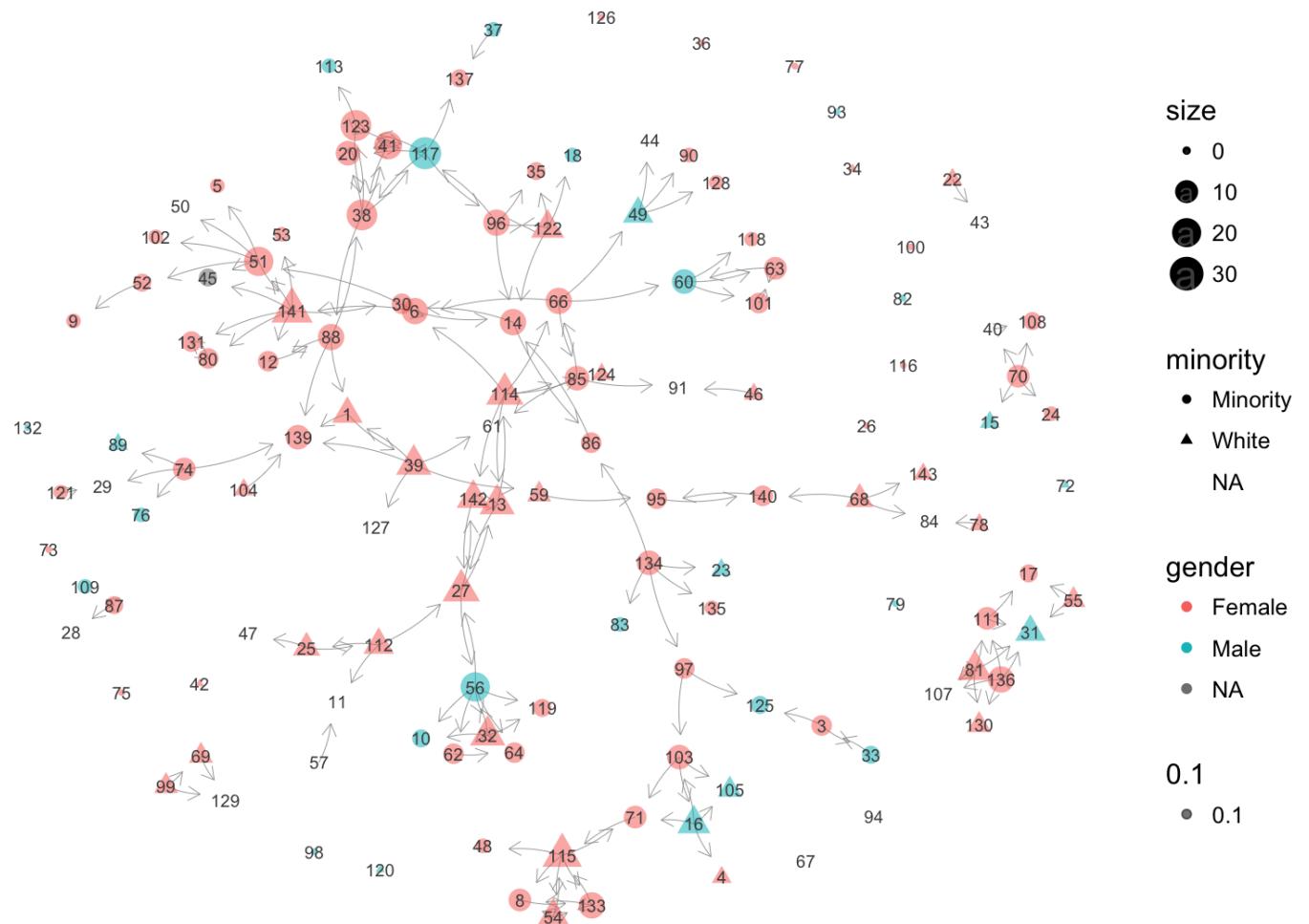
Study Network

While friendship is one major type of social relationships, it may ironically not reflect the actual ties; after all, everyone has different standards about who counts as friends. A more concrete network would be the study network (in which participants are asked to give the names of people who they study or do work for class together), because study partnership requires people to actually spend time together.

Start of the semester

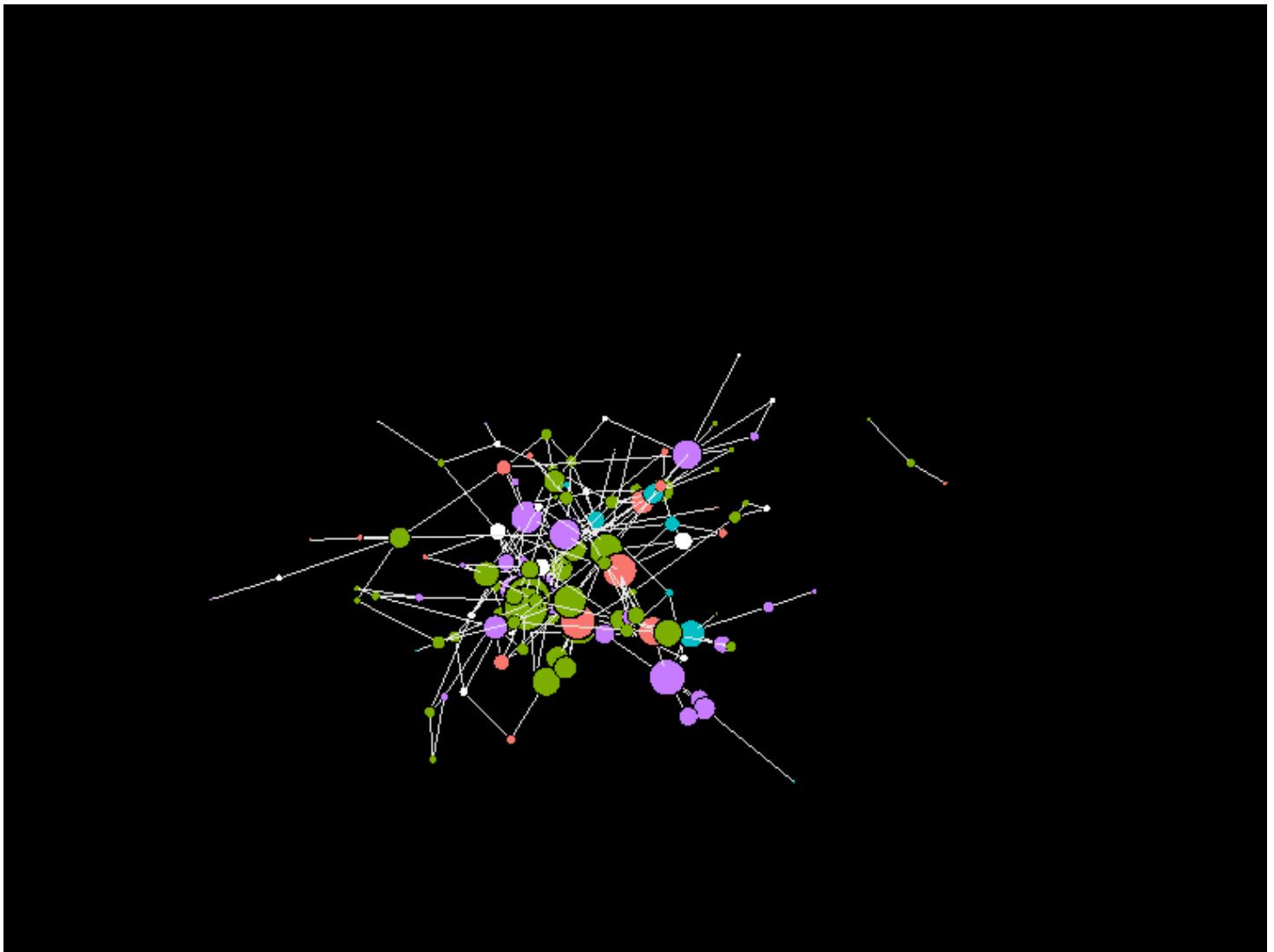


End of the semester

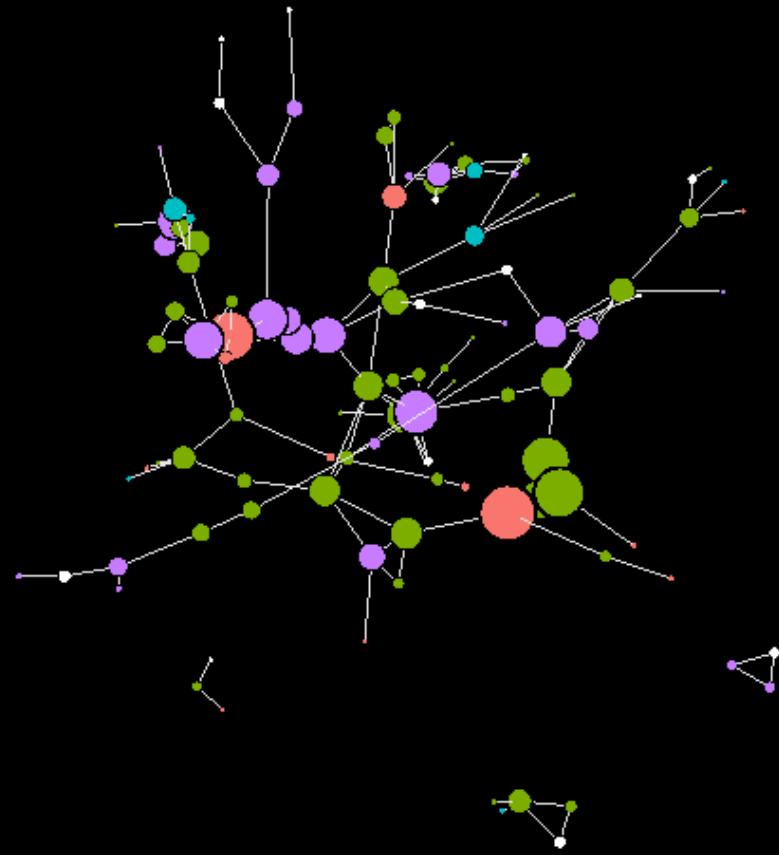


What groups occupy more central positions within a closed network?

Friend network at the end of the semester



Study network at the end of the semester



What groups occupy more central positions within a closed network?

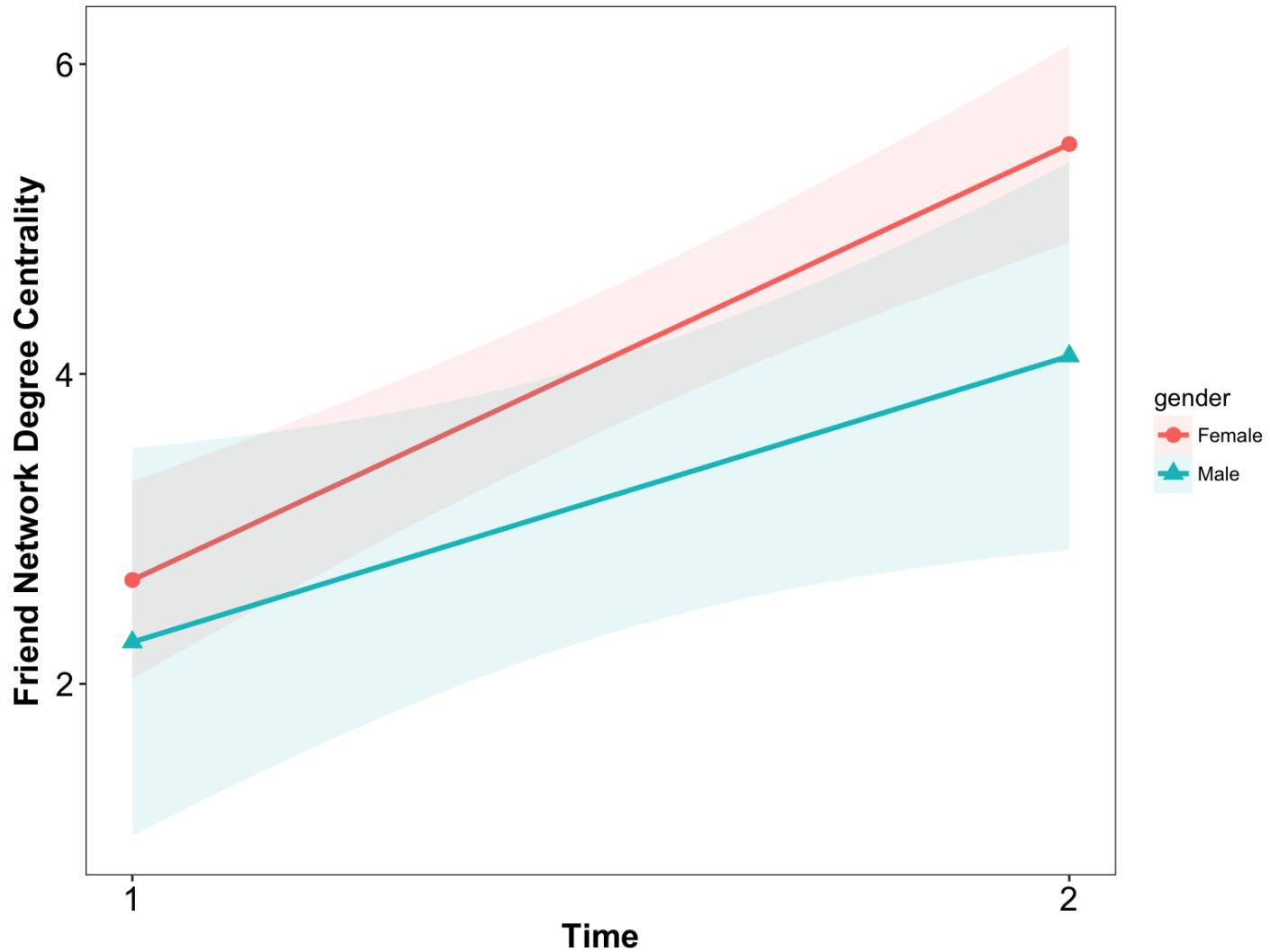
While the network visualizations provide some information, e.g. the size of the nodes indicating that women seem to be more central than men, simple ggplots that compare the means of different groups do a better job.

So let's look at them!

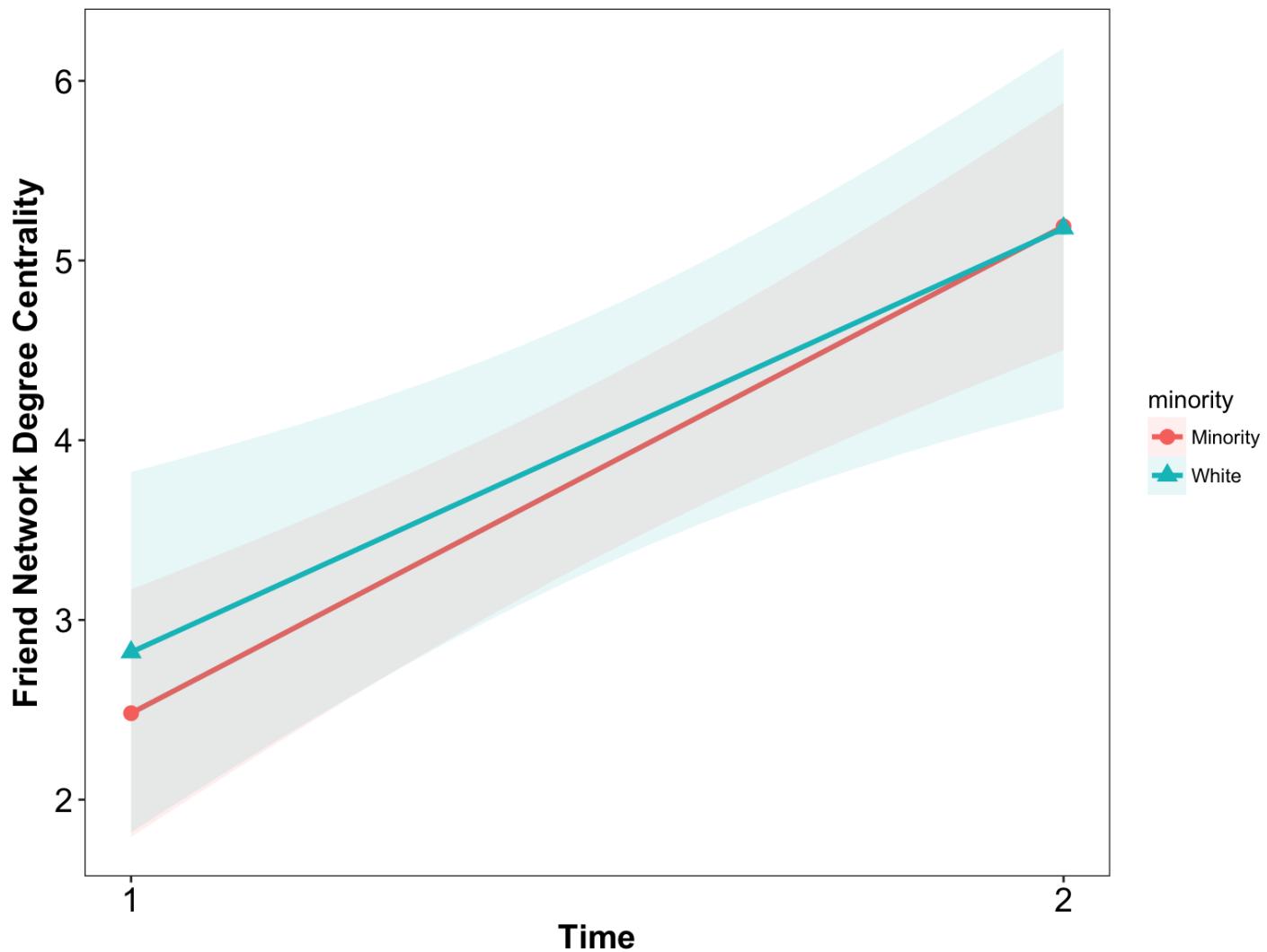
Let's first look at degree centrality - this is the total number of ties that each individual has, and is often considered as an index of direct influence.

Friend Network

Is there any difference in degree centrality by gender?

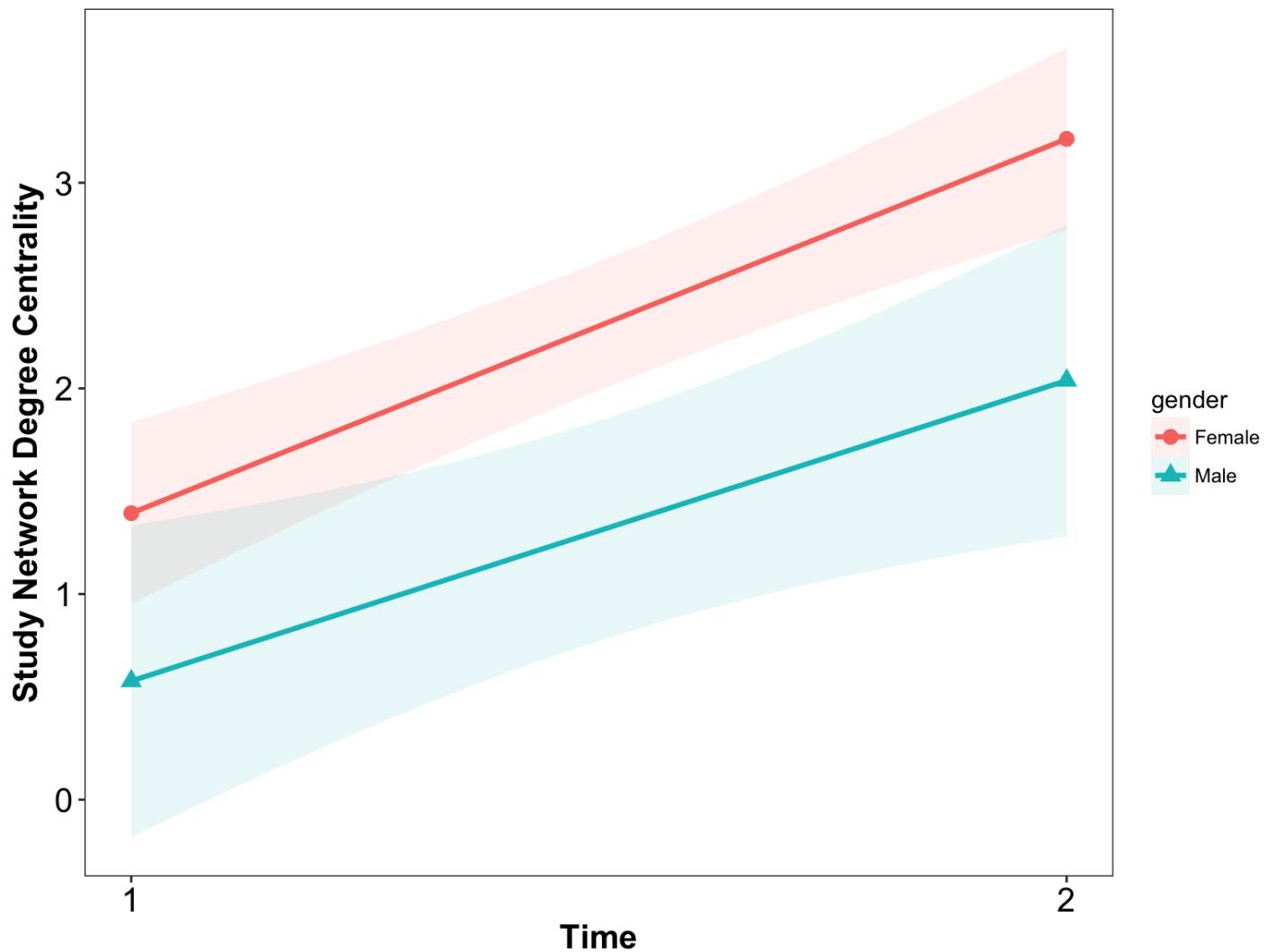


Is there any difference in degree centrality by minority status?

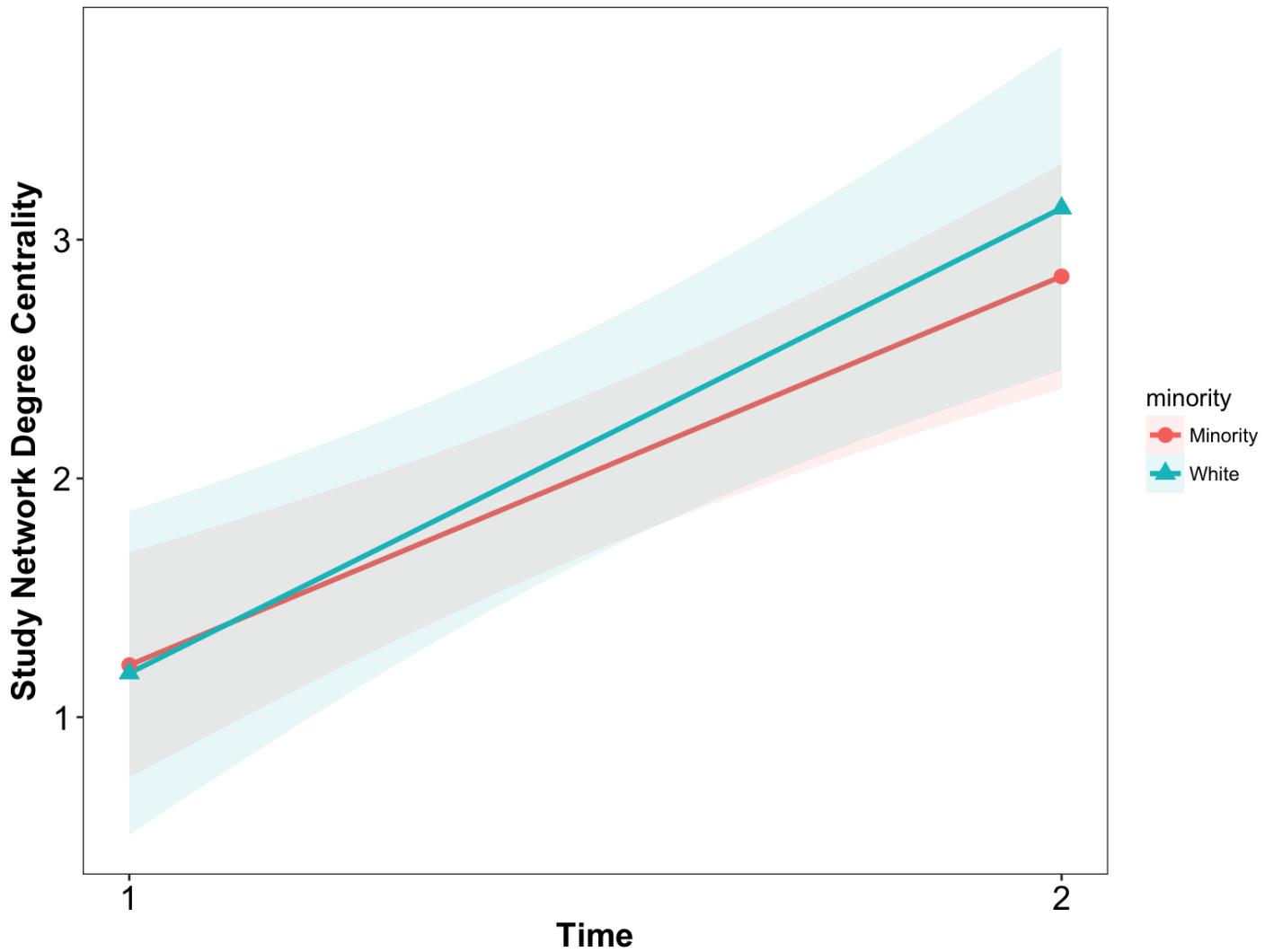


Study Network

Is there any difference in degree centrality by gender?



Is there any difference in degree centrality by minority status?



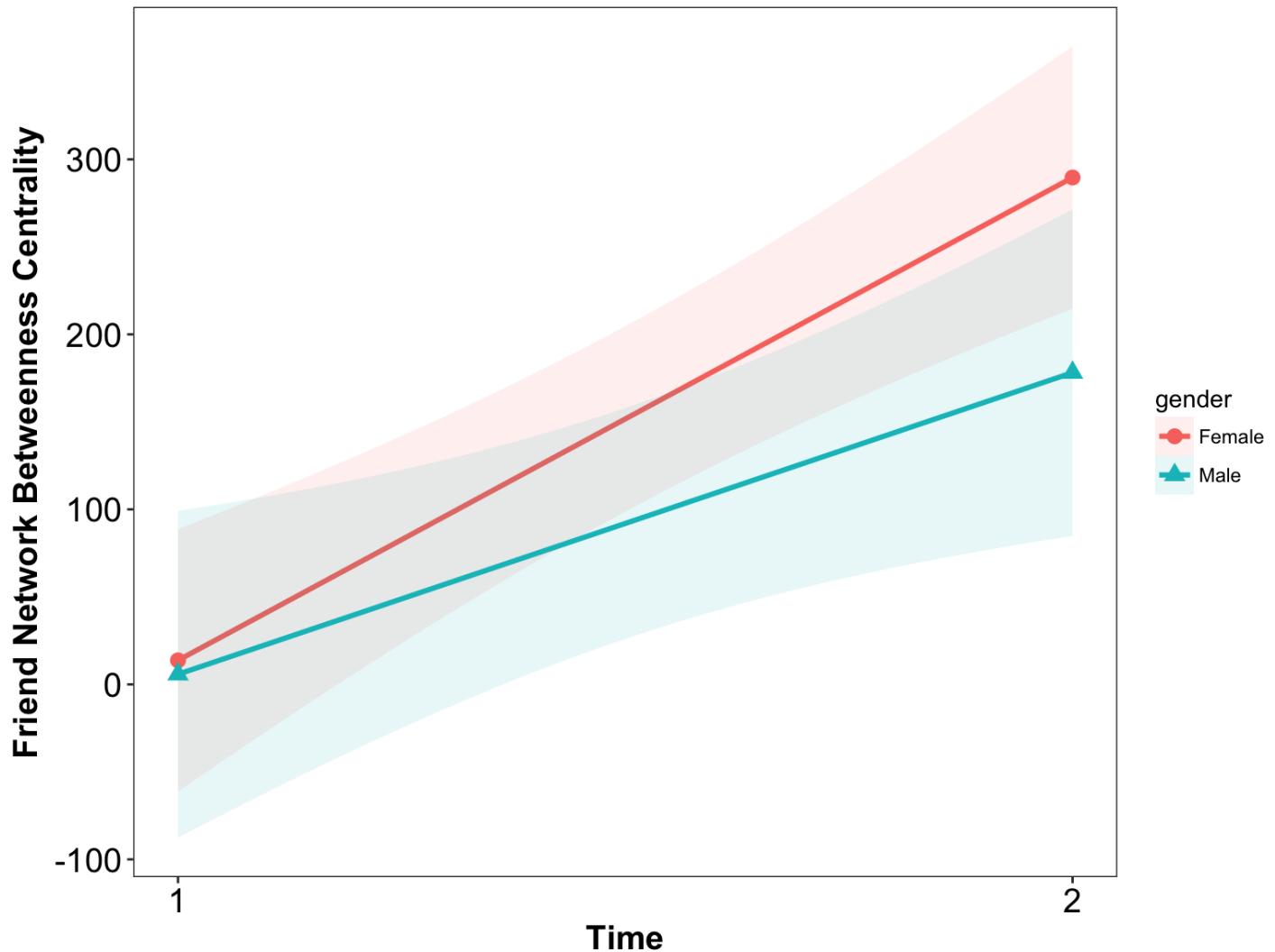
Okay, women tend to be more central in terms of degree centrality.

What if we use a different measure of network centrality? Do results change?

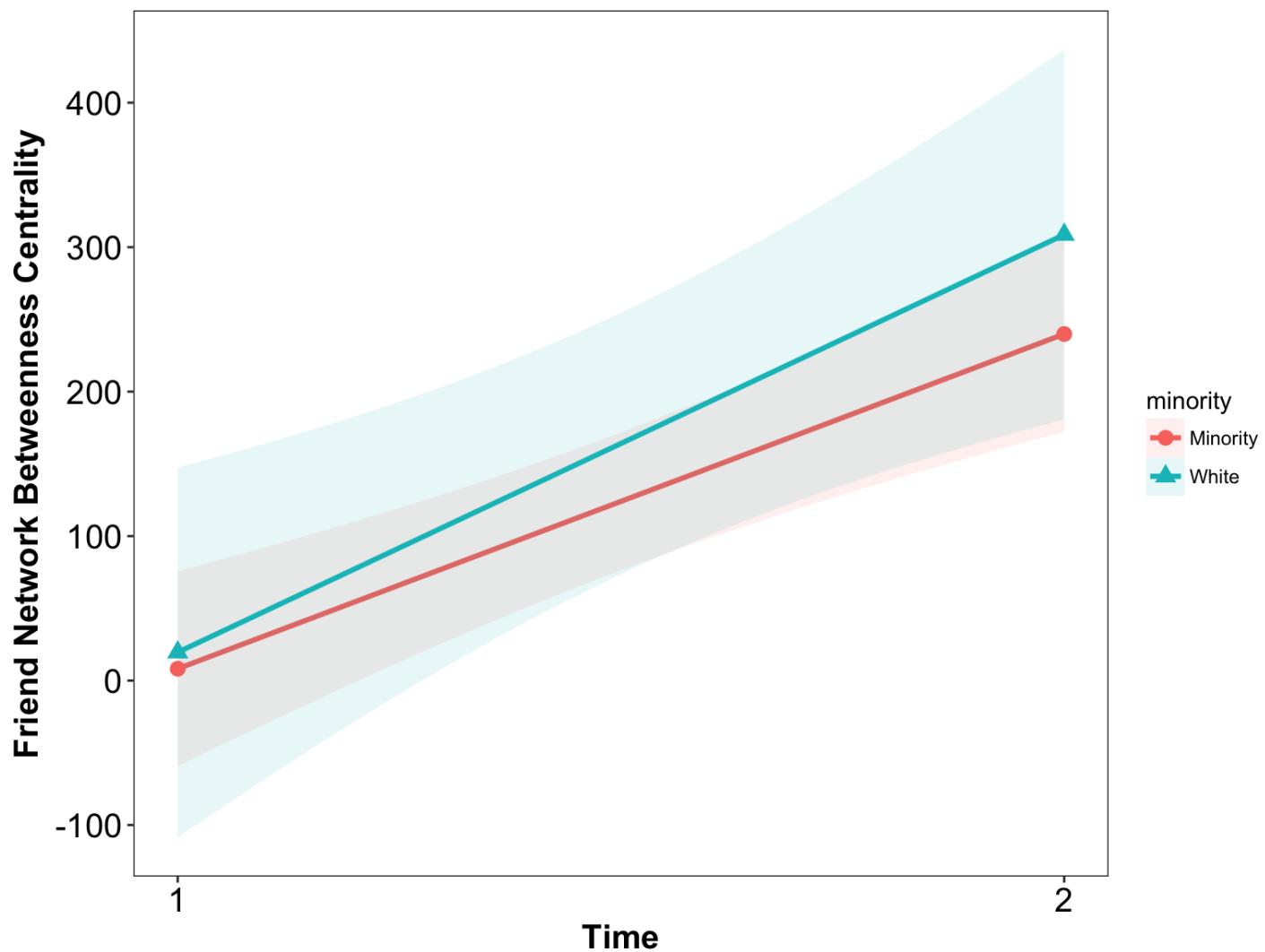
Betweenness centrality quantifies how often each participant sits on the shortest path between two other individuals in the network, and is often thought of as a measure of the ability to control information flow through the network.

Friend Network

Is there any difference in betweenness centrality by gender?

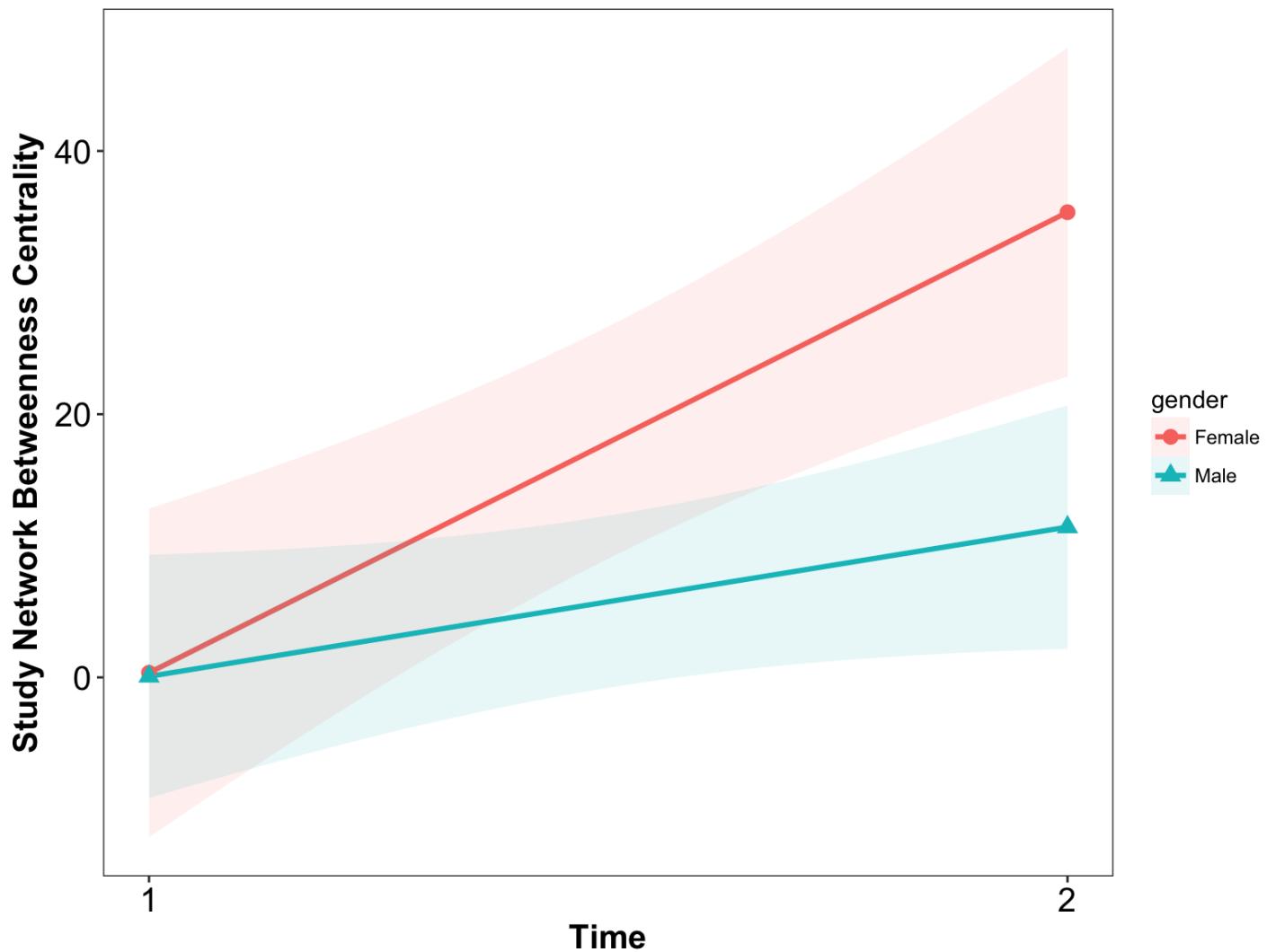


Is there any difference in betweenness centrality by minority status?

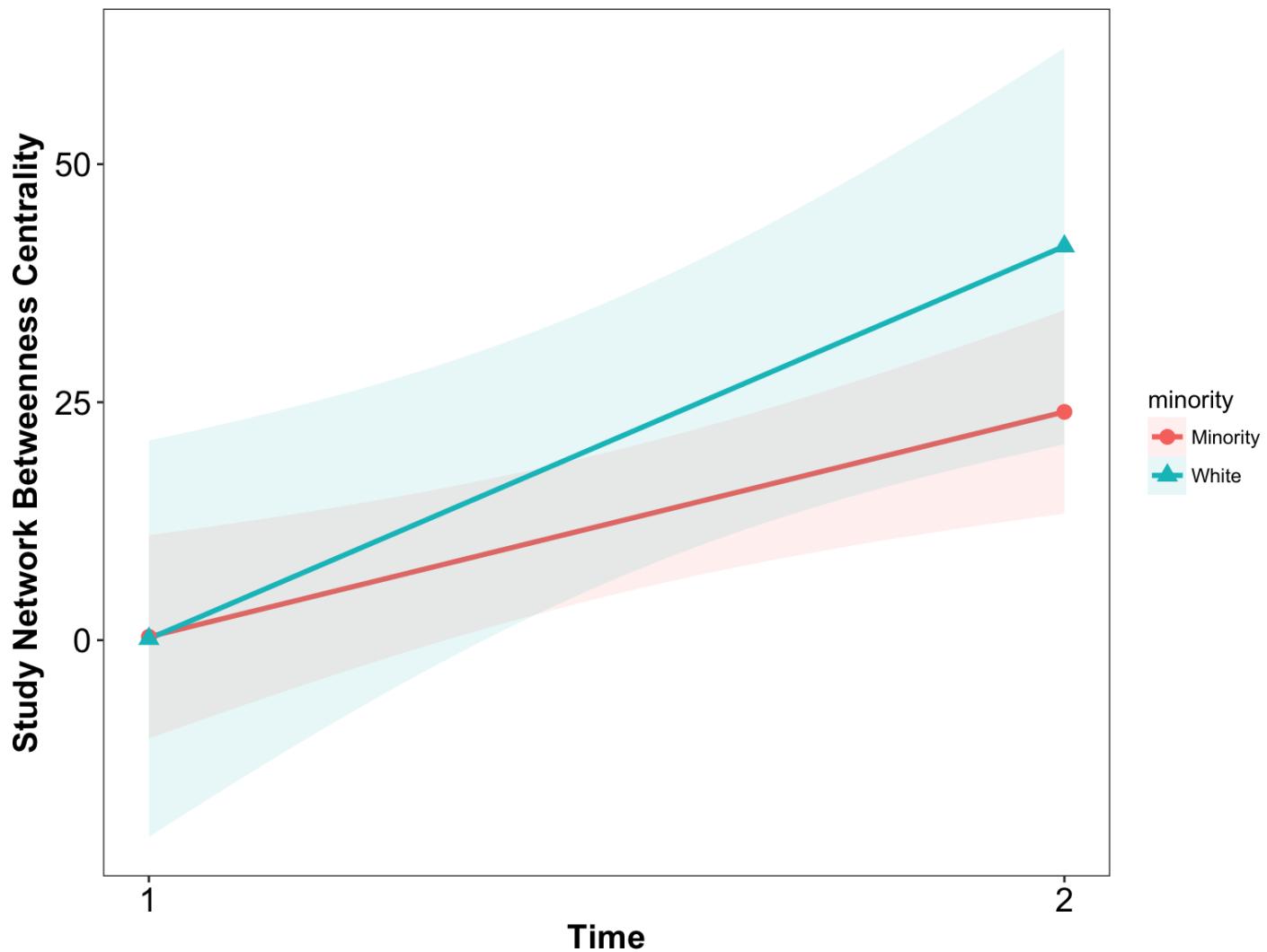


Study Network

Is there any difference in betweenness centrality by gender?

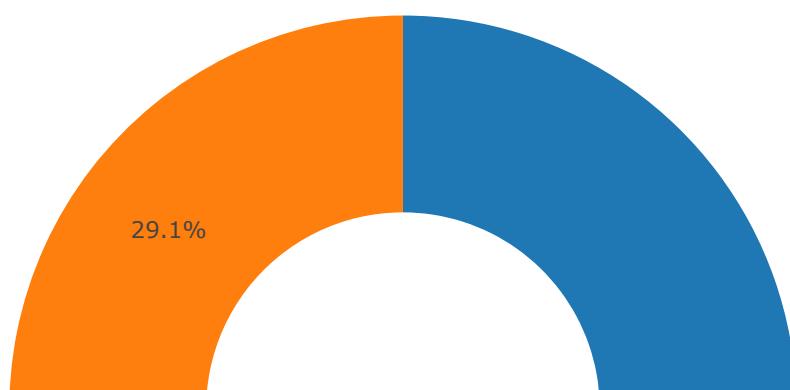


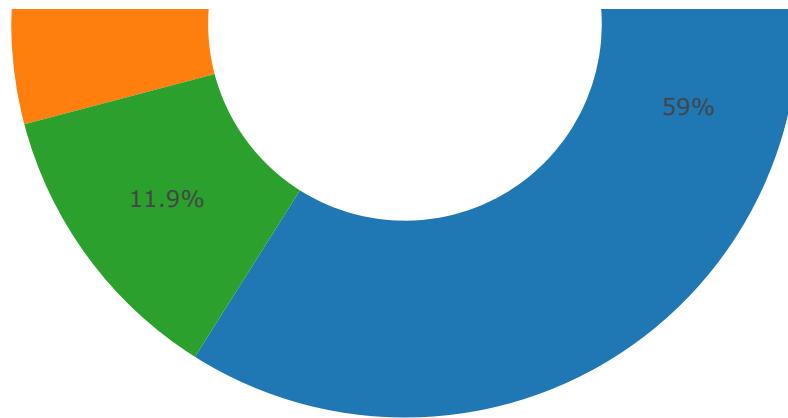
Is there any difference in betweenness centrality by minority status?



Does this have to do with demographic composition of the class?

Minority Status Breakdown



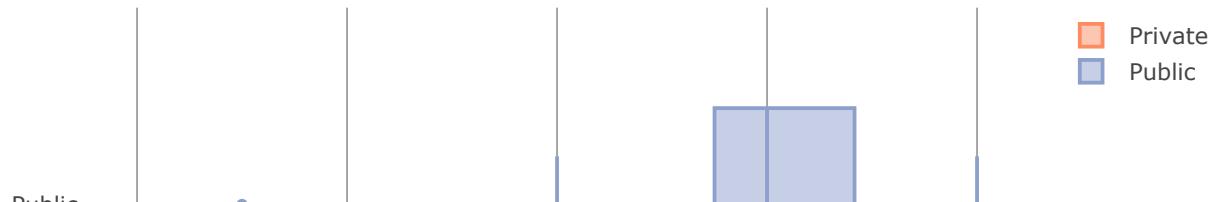


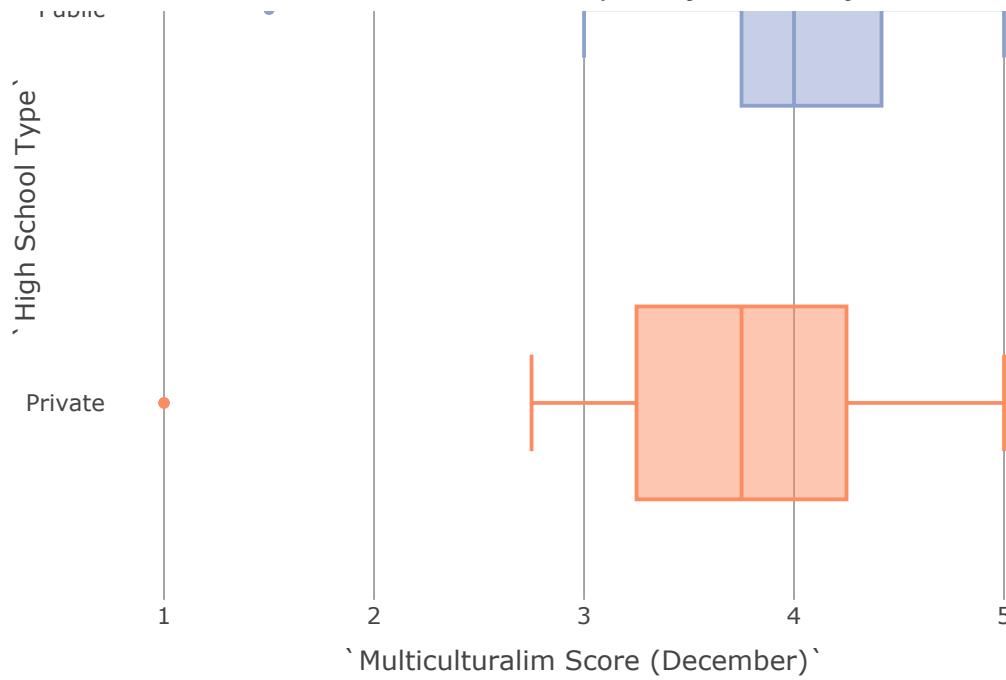
Now we know who are more central in the network!

But we want to delve deeper into the network composition. Who are people friends with?

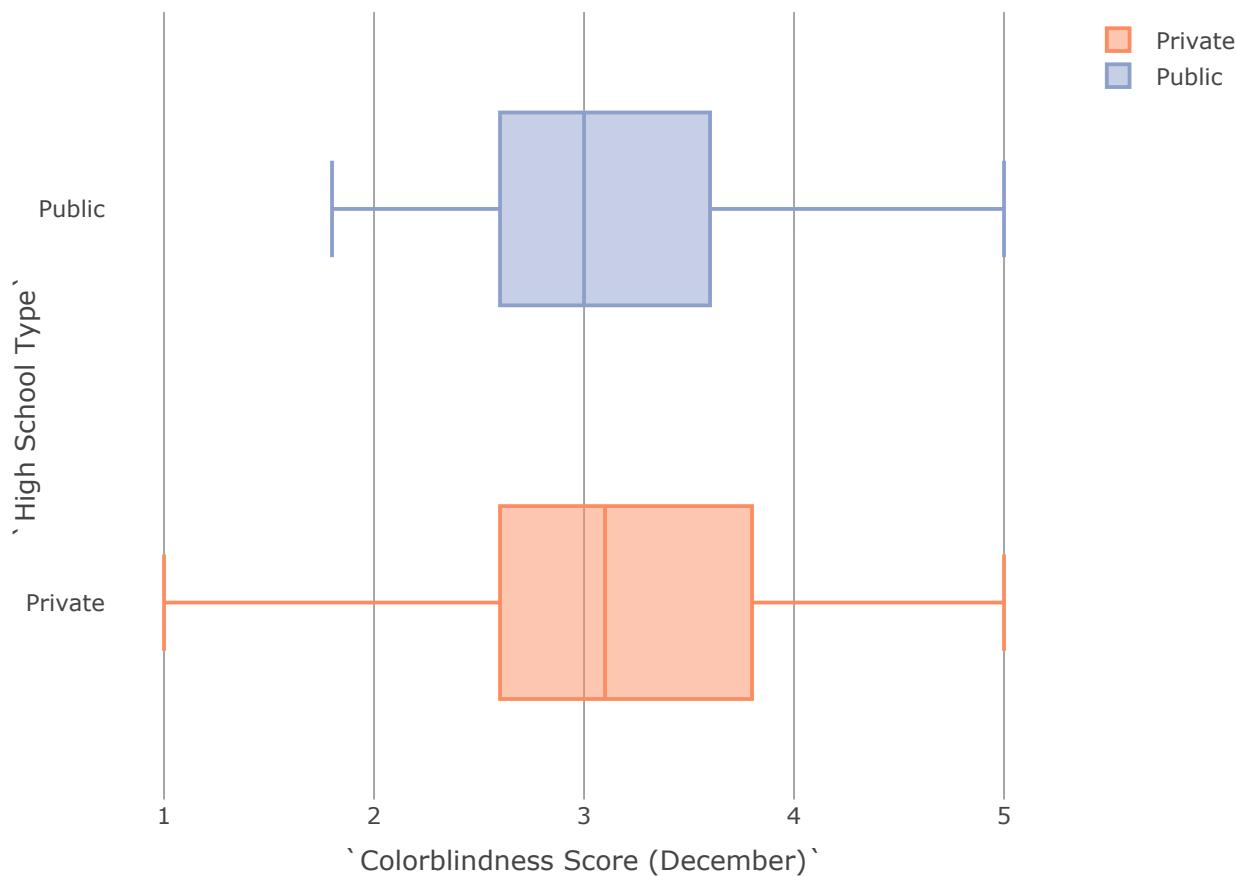
**Let's gear back to diversity ideologies:
colorblindness & multiculturalism**

Who is multicultural?



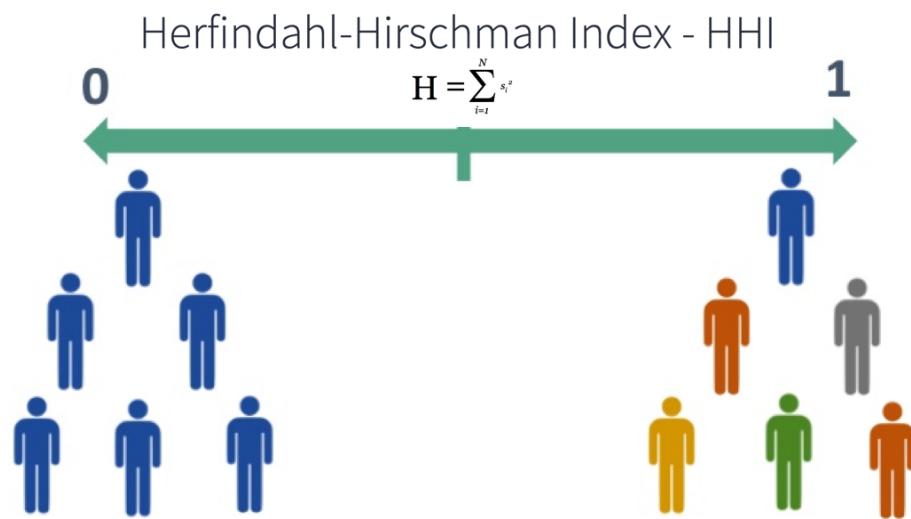


Who is colorblind?



How'd we operationalize network diversity / socio-ecological diversity from the adolescent environment?

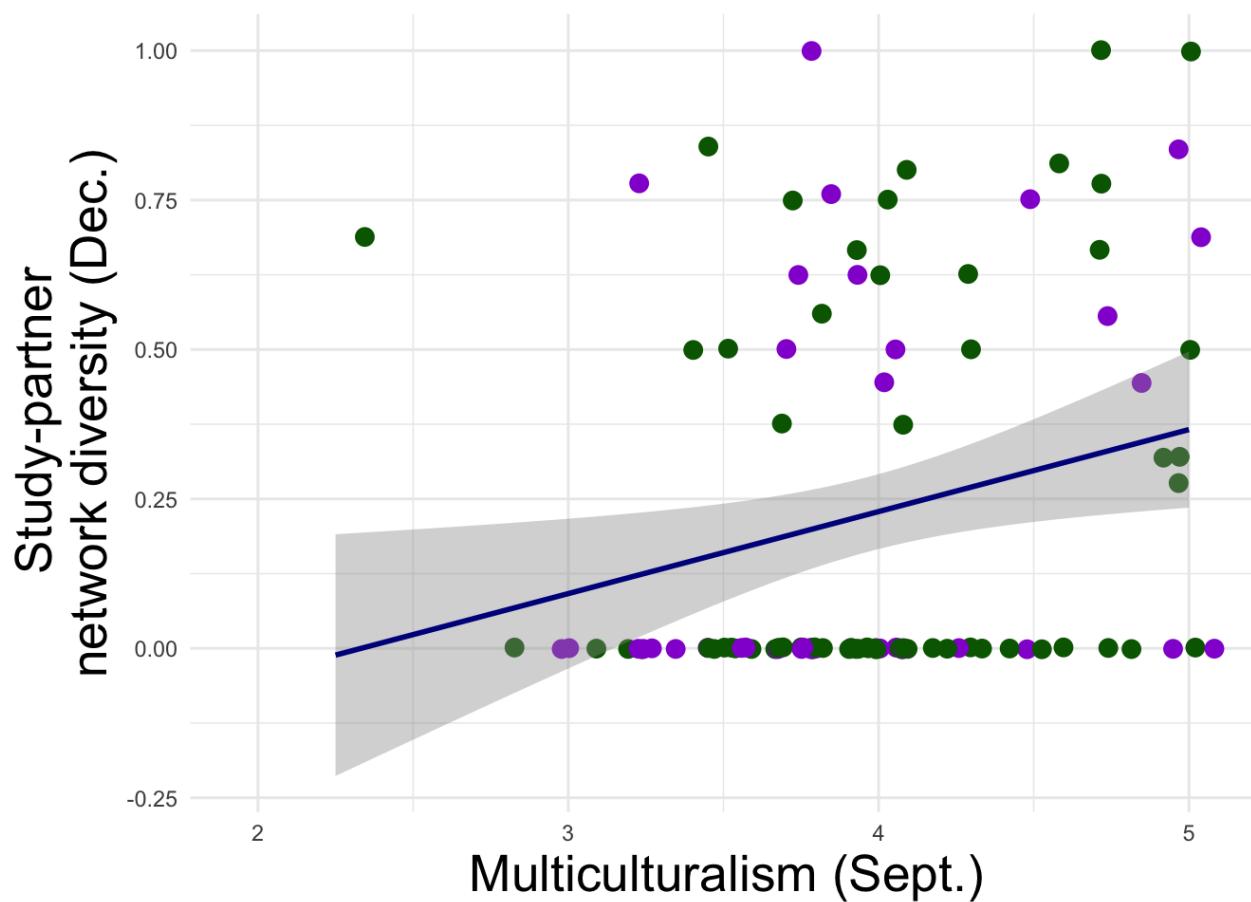
Social network diversity



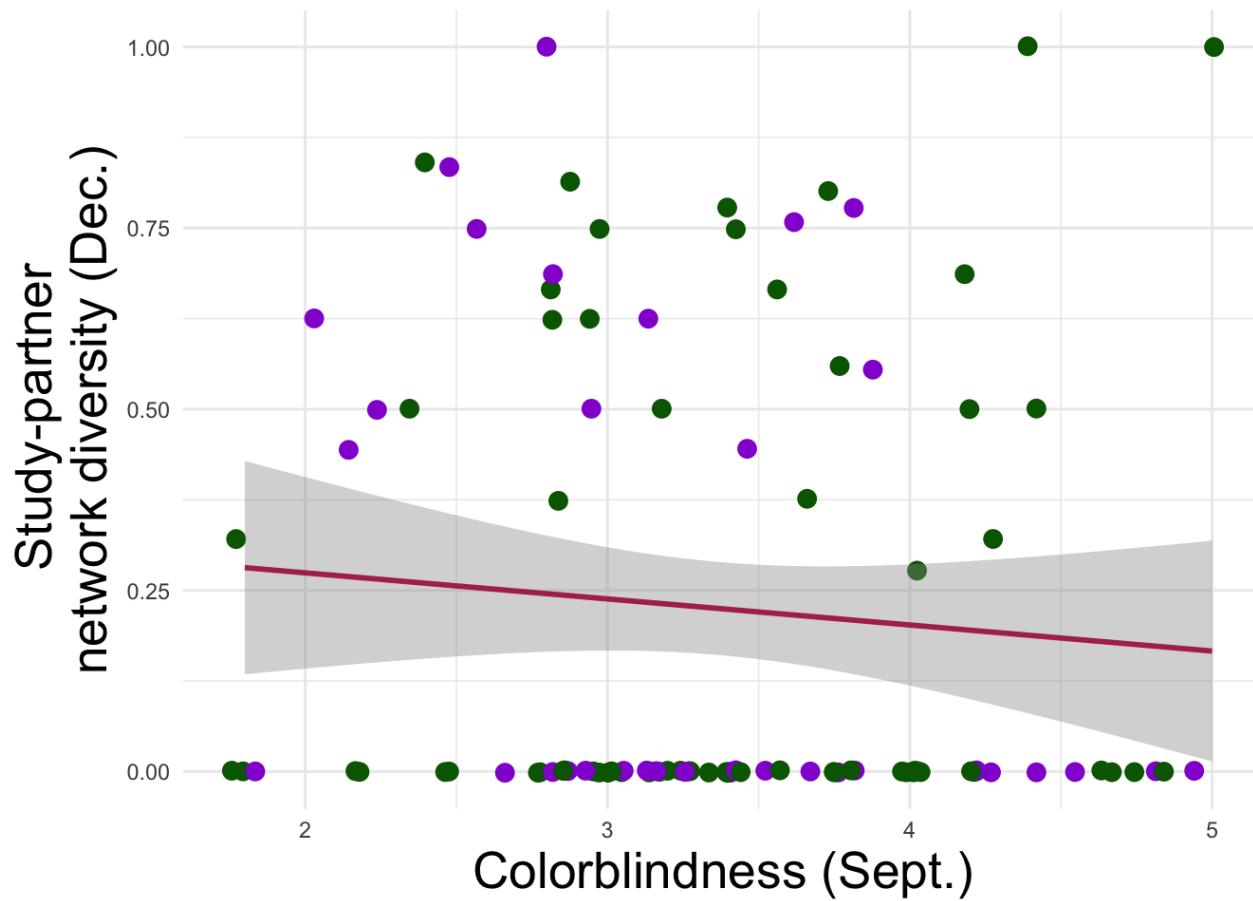
At a school that promotes diversity, what does diversity mean to students?

How do attitudes toward diversity affect students' real-world relationships?

Does multiculturalism predict more diverse self-select study networks over time?

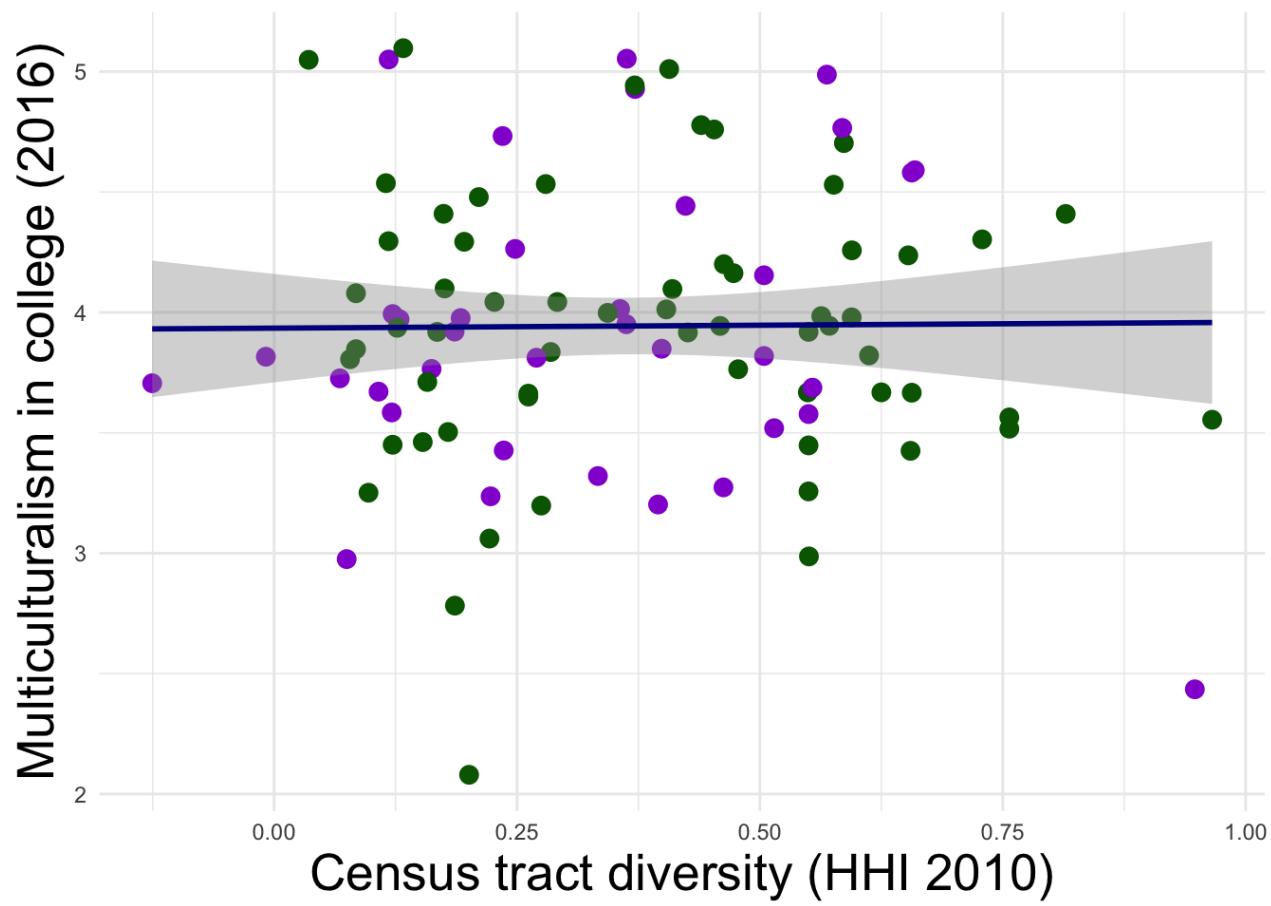


Does colorblindness predict more diverse self-select study networks over time?



But what are the developmental antecedents to these attitudes?

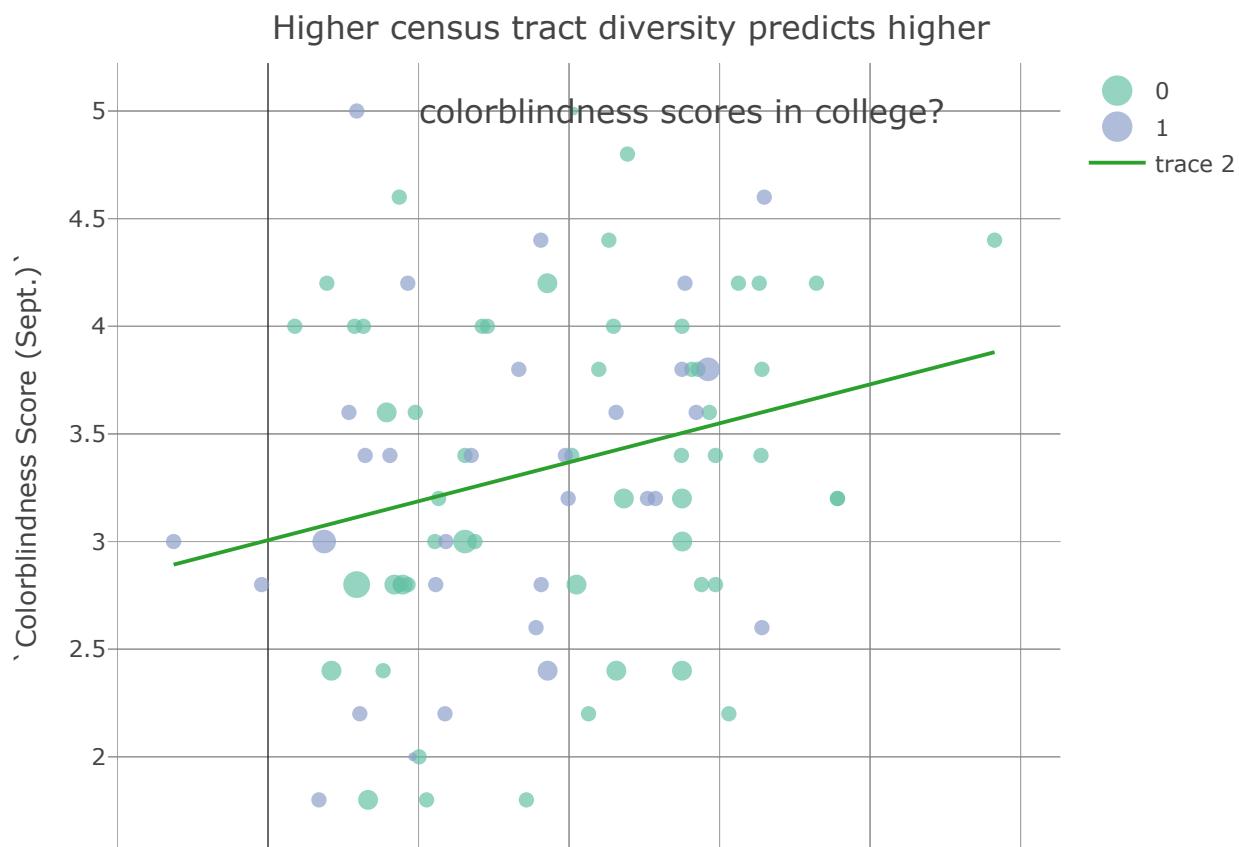
Do we know what stimulates multicultural attitudes?



Do we know what stimulates colorblind attitudes?



Here, you can have a look at this plot in a more nuanced (and interactive) way!



-0.2 0 0.2 0.4 0.6 0.8 1

`Census Tract Diversity (2010 HHI)`

Thank you and happy summer!!!