

Biracial Students' Collegiate Interactions and Perceptions of the Campus Environment

Allison BrckaLorenz, Indiana University

Jessica C. Harris, University of California, Los Angeles

Thomas F. Nelson Laird, Indiana University

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Introduction

The purpose of this research is to explore biracial¹ students' collegiate interactions and perceptions of the campus environment. This study builds on previous research (Harris, BrckaLorenz, & Nelson Laird, 2014) that used four years of data from the National Survey of Student Engagement (NSSE), to compare the engagement practices of 21 different biracial student pairings, for example Black/Asian and Native/White, to one another *and* to their monoracial counterparts. In their previous research, Harris and colleagues (2014) found that the majority (79%) of biracial students with White heritage in the sample were less engaged than their monoracial peers *and* less engaged than their biracial peers who did not identify with White heritage on measures such as student-faculty interactions, quality of interactions, and supportive environment. In short, while the majority of biracial students with White heritage reported negative aspects of engagement on campus, biracial students without White heritage rarely reported negative interactions within and perceptions of their campus environment.

Results from this previous research led us to explore further the complex campus experiences of biracial students with White heritage. Thus, the current study interrogates the amount of and relationships between the collegiate interactions of biracial students with White heritage and their perceptions of the college environment. Through this study, we explore three research questions:

1. How do the amount of engagement in important forms of collegiate interaction and

¹ The identifier "multiracial" represents individuals who identify with more than one racial heritage, often including those that are biracial, triracial, and/or mixed-race. We use "multiracial" in this manner to challenge the ideology that race exists in fixed, mutually exclusive categories that can be added and subtracted, e.g., monoracial + monoracial = biracial. However, "biracial" is used in this manuscript when referencing previous scholarship that employs the terminology and when referring to study participants who marked *only two* racial categories and, subsequently, are racially *categorized* as "biracial" by the NSSE (see Rockquemore, Brunson, & Delgado, 2009).

- students' perceptions of the campus environment differ by race among biracial students with White racial heritage?
2. How do important forms of collegiate interaction relate to perceptions of the campus environment for biracial students with White racial heritage?
 3. How do the relationships between important forms of collegiate interaction and perceptions of the campus environment vary among biracial students with White racial heritage?

This research is important because students' collegiate interactions and perceptions of the campus environment influence several college outcomes (Pascarella & Terenzini, 2005), including persistence (Berger & Milem, 1999), educational attainment (Anaya & Cole, 2001; Sax, Bryant & Harper, 2005), cognitive development (Gurin, Day, Hurtado & Gurin, 2002; Nelson Laird, 2005), and social self-confidence (Kezar & Moriarty, 2000). Although important to students' success, scholars (Harris et al., 2014; Renn, 2003; Rockquemore & Brunnsma, 2008) have also explored how some multiracial students with White heritage may have negative campus interactions within and perceptions of the collegiate environment, which may stifle the development of these students' integral college outcomes. Subsequently, "social justice is unlikely to ensue if some students come to enjoy the beneficial byproducts of engagement" (Quaye & Harper, 2015, p. 3) while other students, such as multiracial students, do not.

This current study aims to inform educational practices that address and enhance multiracial students' collegiate experiences and outcomes. Supporting multiracial college students' is increasingly important as the multiracial college student population continues to steadily increase each year (NCES, 2016), yet little scholarly research focuses on this population (see Museus, Lambe Sariñana, Yee, & Robinson, 2016; Osei-Kofi, 2012). Additionally, in

focusing on the nuances of experiences within the multiracial population, this research aims to disrupt the notion that race exists in uniform categories that can be essentialized, or reduced to a fixed essence.

Review of Literature

The below review of literature further contextualizes the need for this study and is divided into two sections. The first section focuses on undergraduate college students' interactions and perceptions of the campus environment and the ways in which these interactions and perceptions may differ between students with different racial identities. The second section explores what is known about multiracial students' collegiate interactions and perceptions, exposing how multiracial students' interactions and perceptions differ from their monoracial peers *and* differ within the multiracial population when researchers account for multiracial students' racial/ethnic makeup.

Collegiate Interactions and Perceptions of the Campus Environment

The impact of college is greatly influenced by the quantity and quality of students' interactions with faculty members and peers on campus (Pascarella & Terenzini, 2005). Additionally, college students' interactions on campus are intricately intertwined with and relate to their perceptions of the campus environment (Gurin, 1999; Hurtado, Milem, Clayton-Pederson, & Allen, 1999; Hurtado & Ponjuan, 2005; Nelson Laird & Niskodé-Dossett, 2010). For example, the amount of students' informal interactions with diversity, including their interactions with diverse peers, contributes to their positive perceptions of the campus environment (Gurin, 1999; Nelson Laird, 2005; Nelson Laird & Niskodé-Dossett, 2010) and "the perceived supportiveness of an institution has numerous effects on multiple facets of student success" (Nelson Laird & Niskodé-Dossett, 2010, p. 335).

While important to student success, the amount, quality, and nature of students' collegiate interactions (Chang, Astin, & Kim, 2004; Kuh & Huh, 2001; Saenz, 2010) and perceptions of the campus environment (Rankin & Reason, 2005; Saenz, Ngai, & Hurtado, 2006) differ by students' racial identities. For instance, African American students report more interactions with faculty than White, Latinx, Asian, and Native students (Ku & Huh, 2001) and students of color view the college environment less favorably than White students (Harper & Hurtado, 2007; Rankin & Reason, 2005).

Although extant research suggests a relationship between students' perceptions of the campus environment and their collegiate interactions, and that that these aspects vary by students' racial identities, this research remains limited in at least two manners. First, the majority of the literature concerning students' perceptions and interactions on campus often focuses on monoracial students, or students who identify with one racial category. A focus on monoracial students' experiences often eclipses the experiences of multiracial students. Second, although previous research suggests that the effects of interaction on other college outcomes vary for different (mono)racial groups of students (see Gurin, 1999), extant literature rarely explores whether the effect of students' interactions on their perceptions of campus vary by one's racial identity,

In preparing for this research, we found only one study (Nelson Laird & Niskodé-Dossett, 2010) that explored whether the effects of interacting across difference were consistent across racial/ethnic groups. Nelson Laird and Niskodé-Dossett's (2010) results suggest that students from different racial groups report differing quality of interactions, influencing their perceptions of the campus environment in different manners. Nelson Laird and Niskodé-Dossett's (2010) were also some of the only scholars to include multiracial students' in their

study on collegiate interactions and perceptions. The research found that compared to their monoracial peers, multiracial students held some of the least positive views of their collegiate relationships, influencing their perceptions of campus support. Nelson Laird and Niskodé-Dossett (2010) concluded, "Our findings plus the calls from other scholars suggest that we need to do more to understand and support students who fall outside the limited set of categories generally used to talk about race and ethnicity on campus" (p. 347). This current study takes up Nelson Laird and Niskodé-Dossett's call to explore further multiracial students' interactions and perceptions of the campus environment in an attempt to better understand and support these students.

Multiracial Students' Collegiate Interactions and Perceptions

Over the past ten years, only 1% of the scholarly content in the five top higher education journals focused on multiraciality (Museus et al., 2016). Of this 1% of scholarship, the majority of the literature focuses on multiracial students' racial identity processes (e.g., Chang, 2013; Literte, 2010; Renn, 2003, 2004; Rockquemore & Brunsma, 2008), which "indicates that individual interactions and experiences play an important role in the construction of multiracial identity" (Kellogg & Liddell, 2012, p. 526). Thus, while narrow in scope, identity development research exposes multiracial students' collegiate interactions and their influence on students' multiracial identity development.

For example, identity development scholarship has explored how multiracial students had difficulty with finding peers to relate to (Renn, 2004), felt their peers categorized them as confused, or "Tragic" (Bettez, 2010), and perceived that peers questioned their racial identity (Basu, 2010; Garrod et al., 2014). Multiracial students also perceived challenges from monoracial peers of color and racism from White peers (Renn, 2008), exposing how "oppression

chokes multiracial people from all sides” (Root, 1996, p. 5). Identity development literature also sheds light on multiracial students’ interactions with faculty on campus. Multiracial students may encounter racial ignorance, tokenization, and hostility from professors and teaching assistants (Basu, 2010; Kellogg & Liddell, 2012; Renn, 2004). Faculty members, as well as staff and peers, may challenge and deny multiracial students’ racial realities (Kellogg & Liddell, 2012). Within Kellogg and Liddell’s (2012) research, “Some participants...dropped their class after hearing a racist comment or being challenged by peers of color or a faculty member for not being ‘minority enough’” (p. 537). In this instance, multiracial students’ interactions with faculty may have negatively influenced their academic outcomes. Yet, Renn (2000, 2004) relayed that positive interactions with faculty may also entice multiracial students to persist at their institution.

More recently, scholars (Harris, 2017a, 2017b; Museus, Lambe Sariñana, & Ryan, 2015; Museus, Lambe Sariñana, Yee, & Robinson, 2016) have begun to explore multiraciality outside of a focus on identity development. Findings from this research shed additional light on students’ interactions, particularly as they relate to peers on campus. Museus and colleagues (2016) found that multiracial students often encountered prejudice and discrimination because “others” labeled, exoticized, excluded, and/or rejected them for their multiple racial heritages. Harris (2017a, 201b) explored how monoracial peers perpetrated multiracial microaggressions (Johnston & Nadal, 2010) against multiracial students and stereotyped multiracial students. Multiracial students’ encounters of prejudice and discrimination from peers may be one of the reasons that multiracial students’ report experiencing more bias on campus than monoracial White and Latina/o students (Hurtado, Ruiz Alvarado, Guillermo-Wann, 2015).

While it is evident from previous research that multiracial students often encounter

difficult, if not negative, interactions on campus, some multiracial students also hold a “unique vantage point” (Garrod, Kilkenny, & Gomez, 2014, p. 12) from which to navigate and understand the complexities of race (Chang, 2014; 2016). For example, in *Mixed: Multiracial College Students Tell Their Life Stories* (Garrod et al., 2014), several multiracial students explored how their multiple racial heritages afforded them the ability to traverse multiple peer cultures and understand differing perspectives, including those expressed in the classroom environment. This unique vantage point may be why some biracial students report interacting across difference at higher rates than their monoracial peers (Harris & BrckaLorenz, 2017; Harris et al., 2014). Yet, these increased interactions across difference may also occur because the majority of people biracial students interact with on campus diverge from their mixed-race backgrounds (Harris & BrckaLorenz, 2017).

While the above research sheds some light on multiracial students' collegiate interactions, little to no research has explored multiracial students' perceptions of their campus environment. Instead, when accounting for campus environment, researchers (King, 2011; Renn, 2003, 2004) often explore how the campus ecology influences multiracial students' identity development. For example, scholars (King, 2011; Literte, 2010; Renn, 2003, 2004) have explored how the campus environment, including peer culture, campus organizations, policies and procedures, and curriculum have an influence on multiracial students' identity development. Scholars (Harris, 2017a; King, 2011; Literte, 2010; Renn, 2003) have also explored how these environmental factors often influence students' sense of belonging, or lack thereof, on campus. Furthermore, only one study (Nelson Laird & Niskodé-Dossett, 2010) has explored the relationship *between* multiracial students' (alongside monoracial students') campus interactions and perceptions of the environment. Thus, more research is needed that not only explores

multiracial students' perceptions of their campus environment, but also, explores the relationships between students' interactions and perceptions on campus. Finally, it is important that future research focus on the nuances of interactions and perceptions within the multiracial student population because this group includes a "collection of people with a wide range of histories, backgrounds, and lived experiences, suggesting great difficulty in identifying or describing multiracial students as belonging to a distinct racial identity group" (Osei-Kofi, 2012, p. 251; see also Brubaker, 2004; Gallagher, 2006). Below, we explore further the necessity to focus on the nuances within the multiracial population, specifically for multiracial students with White heritage.

Multiracial students with White racial heritage. While research (Nelson Laird & Niskodé-Dossett, 2010; Hurtado et al., 2015), suggests that biracial students' campus interactions and perceptions diverge from their monoracial peers, biracial students' experiences may also vary within the biracial community (Harris et al., 2014; 2014; Osei-Kofi, 2012; Renn, 2004). For example, Harris (2016b) found that multiracial women students' racial heritages influenced their interactions with peers on campus. Participants with Latinx heritage perceived to be excluded from Latinx peer groups because they could not speak Spanish, while participants with Black heritage felt they were excluded from Black peer groups because they did perform stereotypical conceptions of Blackness.

Of particular interest to this research are biracial students with White heritage, who may experience more negative and/or difficult collegiate interactions and perceptions of the campus environment than their biracial counterparts with no White heritage (Harris, 2016; Harris et al., 2014; Renn, 2003, 2004). Scholars (Renn, 2004) have explored how biracial students with White heritage are more apt than their multiracial peers with no White heritage to have their identity

and authenticity called into question by peers on campus. Biracial students with White heritage may also have more difficulty navigating monoracial communities because entrée into these spaces is not “as easily available to mixed students with White heritage...” (Renn, 2004, p. 139). While biracial students with White heritage may hold some forms of privilege, one’s White heritage may also carry a degree of stigma (see Khanna & Johnson, 2010; Storrs, 1999) influencing students’ interpersonal interactions. Furthermore, as mentioned in the introduction to this paper, Harris, BrckaLorenz, and Nelson Laird (2014) found that, of the 21 racial pairings of biracial students, biracial students with White heritage were more likely to report negative interactions within and perceptions of the campus environment than their monoracial counterparts *and* their biracial peers with no White heritage.

In sum, extant scholarship (Basu, 2010; Kellogg & Liddell, 2012; Renn, 2004) suggests that multiracial students’ interactions and perceptions are different, if not, more negative than many of their monoracial peers. Furthermore, multiracial students report differing perceptions and interactions than their multiracial counterparts when researchers disaggregate the multiracial populations by racial makeup (Harris et al., 2014; 2014; Osei-Kofi, 2012; Renn, 2004). Yet, while students’ collegiate interactions and perceptions of the campus environment lead to important student outcomes, research that explores multiracial students’ interactions and perceptions are lacking. This study addresses a gap in the literature by exploring the amount of and relationships between the collegiate interactions of biracial students with White heritage and their perceptions of the college environment.

Theoretical Framework

Critical multiracial theory (MultiCrit; Harris, 2016), a theoretical addition of critical race theory (CRT), is the theoretical framework that guides this research. While CRT is a useful

framework to disturb White supremacy within the academy, some scholars acknowledge how “CRT was originally developed to address the Civil Rights issues of African American people. As such, it is oriented toward an articulation of race issues along a ‘black-White’ binary” (Brayboy, 2005, p. 429). Building on this scholarly critique, Harris (2016) theorized MultiCrit with the understanding that CRT may not fully capture multiracial individuals’ racialized experiences because they fall outside of a Black-White paradigm of race *and* outside of a monoracial-only paradigm of race (Harris, 2016). Within this research, two MultiCrit tenets encourage a focus on the nuances within the biracial student population.

The first MultiCrit tenet expands the concept of intersectionality (Crenshaw, 1989, 1991). Intersectionality provides scholars with “a critical analytic lens to interrogate racial, ethnic, class, ability, age, sexuality and gender disparities and to contest existing ways of looking at these structures of inequality” (Thornton-Dill & Zambrana, 2009, p.1). MultiCrit builds on intersectionality by focusing on how multiracial peoples’ everyday experiences differ from one another when researchers account for multiracial peoples’ intersecting and multiple racial heritages. Multiracial peoples’ experiences differ because of the intersecting and differing social processes that shape their identity-specific experiences. In short, because of social, historical, and cultural factors, “the ‘mix’ matters” (Garrod et al., 2014, p.3) when focusing on the multiracial population (Gallagher, 2006; Osei-Kofi, 2012).

The second MultiCrit tenet explores how race is socially constructed in strict monoracial categories resulting in a monoracial-only paradigm through which US society views race. Leong (2010) explained that US society “relies heavily on a familiar set of racial categories...Asian, Latino/a, White, Black, and Native American...the categories [that] constitute the paradigm through which we view race” (p. 470). This strict social construction often results in a dearth of

vocabulary and knowledge that denies many people the ability to talk about and understand race outside of a monoracial-only paradigm. A monoracial-only paradigm contributes to the dearth of research concerning multiracial students, but also influences multiracial students' collegiate interactions and perceptions on campus because monoracial-only understandings inform institutional policies, procedures, and programs that often exclude or constrain multiracial students (Harris, 2016; Literte, 2012). Taken together, the two MultiCrit tenets encourage a focus on how multiracial students hold different experiences than their monoracial peers, but also, due to their racial heritages and intersecting social identities, they are not a monolithic group.

Methods

Data Source

The data for this study come from the 2013-2016 administrations of the National Survey of Student Engagement (NSSE). NSSE measures the time and effort that undergraduate first-years and seniors at four-year colleges and universities invest in activities that relate to student learning and development. More specifically, NSSE asks students how often they engage in various effective educational practices, their perceptions of their college environment, how they spend their time in and out of the classroom, and the quality of interactions they have at their institution. NSSE was administered at 613 institutions in 2013, 713 institutions in 2014, 585 institutions in 2015, and 557 institutions in 2016. For this study, in instances when institutions participated more than once in these four years, only the most recent year of data was used, resulting in a total of 1,229 institutions. To be included in this study, students had to respond to the demographic item asking about students' racial or ethnic identification and had to have identified as White and one other racial or ethnic identification resulting in over 33,300 first-year

and senior students. The largest portion (41%) of students are from the 2016 administration with 15% from 2015, 23% from 2014, and 21% from 2013.

Respondents

The respondents for this study consist of over 15,600 first-year students and 17,700 seniors who responded to the NSSE demographic item asking about students' racial or ethnic identification and identified as White and one other racial or ethnic identification. The largest proportion, about two in five, of students identified as Hispanic or Latino and White (41%). Smaller proportions identified as Asian and White (19%), American Indian or Alaska Native and White (17%), Black or African American and White (12%), Other and White (7%), and Native Hawaiian or other Pacific Islander and White (3%). Around a third of respondents identified as men (35%) and two-thirds as women (65%). Around one in ten respondents are athletes (8%) or in a fraternity or sorority (10%). Around two in five students (44%) are first-generation students. Most students (89%) are enrolled full time, about a quarter (24%) of students are enrolled in a STEM major, and around a third (30%) started college at a different institution (i.e. transferred). Around two-thirds of first-year students (68%) and one in five seniors (18%) lived on campus (residence hall, dormitory or other campus housing, or fraternity or sorority house). Over half of students (59%) attended institutions that did not add the sexual orientation question to their NSSE administration. Of the students who were able to respond to this question, most (87%) identified as heterosexual with smaller proportions identifying as bisexual (4%), gay (2%), lesbian (1%), another sexual orientation (1%), questioning or unsure (1%), or preferred to not respond to the question (4%). More details about respondents by class standing can be found in Table 1.

Measures

Demographics. A variety of demographic items were used as part of this study, the most critical being students' racial or ethnic identification. The biracial students in this study were identified by a survey item asking students to select all categories that apply to them from the following options: American Indian or Alaska Native (*Native*), Asian (*Asian*), Black or African American (*Black*), Hispanic or Latino (*Latinx*), Native Hawaiian or other Pacific Islander (*Pacific*), White (*White*), Other (*Other*), and I prefer not to respond. We categorized students who chose two of these options, one being White and not including "I prefer not to respond," as biracial students with White heritage. Other demographics used included students' class standing, gender identity, being an athlete or part of a fraternity or sorority, first-generation status, major field, enrollment and transfer status, living situation, and sexual orientation.

Engagement. To explore engagement in important forms of collegiate interaction and students' perceptions of the campus environment, we examined the students' scores on five aggregate measures, called NSSE Engagement Indicators, created from multiple survey items: Collaborative Learning (CL), Discussions with Diverse Others (DD), Student-Faculty Interaction (SF), Quality of Interactions (QI), and Supportive Environment (SE).

The four items in CL ask students how often they ask another student to help them understand course material, explain course material to one or more students, prepare for exams by discussing or working through course material with other students, and work with other students on course projects or assignments. The four items in DD ask students how often they have had discussions with people from a race or ethnicity or economic background other than their own or with people with religious beliefs or political views other than their own. The four items in SF ask students how often they talk about career plans with a faculty member; work with a faculty member on activities other than coursework (committees, student groups, etc.);

discuss course topics, ideas, or concepts with a faculty member outside of class; and discuss their academic performance with a faculty member. The five items in QI ask students to indicate the quality of their interactions with students, academic advisors, faculty, student services staff (career services, student activities, housing, etc.), and other administrative staff and offices (registrar, financial aid, etc.) at their institution. The eight items in SE ask students how much their institution emphasizes providing support to help them succeed academically, using learning support services (tutoring services, writing center, etc.), encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.), providing opportunities to be involved socially, providing support for their overall well-being (recreation, health care, counseling, etc.), helping you manage your non-academic responsibilities (work, family, etc.), attending campus activities and events (performing arts, athletic events, etc.), and attending events that address important social, economic, or political issues. Scale information and descriptives by biracial students' racial or ethnic identification can be found in Table 2.

Analyses

To answer the first research question about how the amount of engagement in important forms of collegiate interaction and students' perceptions of the campus environment differ by race among biracial students with White heritage a series of Ordinary Least Squares (OLS) regression models were examined. In all models, the dependent measure was one of the NSSE Engagement Indicators, CL, DD, SF, QI, or SE. All dependent measures were standardized before entry into models so that unstandardized coefficients could be interpreted like effect sizes. The independent measure of interest was biracial students' racial or ethnic identification. Additional independent controls included class level, gender identity, athlete status, fraternity or sorority membership, first-generation status, major field, enrollment status, transfer status, living

situation, and sexual orientation. Effect coding was used to code non-dichotomous multi-categorical demographics so that comparisons could be made to the average student as opposed to a reference group (Mayhew & Simonoff, 2015). For example, in regression models with traditional dummy coding, a reference group would be left out of the model, say *Native/White*, resulting in the coefficients of all other racial/ethnic groups being interpreted as being compared to the *Native/White* reference group. With effect coding, all groups receive coefficients, and these coefficients are interpreted as being compared to the average student in the model, in this case, the average biracial student with White heritage. More information about the coding of individual variables can be found in Table 3.

To answer the second research question about how important forms of collegiate interaction relate to perceptions of the campus environment for biracial students with White heritage two OLS regression models were examined. The dependent measures in these models were the NSSE Engagement Indicators QI and SE. All continuous independent and dependent measures were standardized before entry into models. The independent measures of interest were the NSSE Engagement Indicators DD, CL, and SF. Additional independent controls included biracial students' racial or ethnic identification and the control variables listed in the first research question's models.

To answer the third research question about how the relationships between important forms of collegiate interaction and perceptions of the campus environment vary among biracial students with White racial heritage, six OLS regression models were examined, three each with QI and SE as the dependent variables. In one of each of the three models per dependent variable, the independent variables of interest included DD and interaction terms that were products of the standardized Engagement Indicator and the effect coded race/ethnicity variables. Additional

controls included the other Engagement Indicators representing collegiate interaction, CL and SF, and the controls used in previous models. The second and third models of the three models per dependent variable featured CL and SF similarly to the described model featuring DD.

Results

How do the amount of engagement in important forms of collegiate interaction and students' perceptions of the campus environment differ by race among biracial students with White racial heritage? Several differences were found in the amount of engagement in important forms of interaction and the perceptions of the campus environment by separate groups of biracial students with White heritage. *Native/White* students interacted more often with faculty ($B = .052, p < .001$) and had more positive QI with others on campus ($B = .046, p < .01$) than the average biracial student with White heritage. *Asian/White* students had fewer DD ($B = -.070, p < .001$) and interacted less often with faculty ($B = -.080, p < .001$) than the average biracial student with White heritage. Although *Black/White* students did less CL with their peers ($B = -.067, p < .001$), they were having more frequent DD ($B = .071, p < .001$) and felt their institution was more supportive ($B = .037, p < .05$) than the average biracial student with White heritage. *Latinx/White* students felt more supported by their institution ($B = .054, p < .001$) than the average biracial student with White heritage despite having less frequent DD ($B = -.050, p < .001$). *Pacific/White* students were the only student group that had no statistical difference from the average biracial student with White heritage on the measures examined. *Other/White* students, however, had the largest number of differences from the average biracial student with White heritage. These students were doing more collaborating with peers ($B = .043, p < .05$), having more frequent DD ($B = .062, p < .01$), and having more interactions with their faculty ($B = .104, p < .001$). Despite these positive aspects of engagement, they still had less positive

interactions with people on campus ($B = -.046, p < .05$) and felt less supported by their institution ($B = -.046, p < .05$). More details about these findings can be found in Table 4.

How do important forms of collegiate interaction relate to perceptions of the campus environment for biracial students with White racial heritage? Important forms of collegiate interaction, DD, CL, and SF are significantly related to both QI and SE for biracial students with White heritage. The largest coefficient for both measures of perceptions of the campus environment was SF (QI: $B = .230, p < .001$, SE: $B = .221, p < .001$), followed by DD (QI: $B = .117, p < .001$, SE: $B = .153, p < .001$). The smallest coefficient in both models was CL (QI: $B = .037, p < .001$, SE: $B = .096, p < .001$). Interestingly, the zero-order correlations between CL and the two outcomes (QI and SE) were similar in size to those for DD (see Table 6) indicating that CL likely shares variance with DD (and probably with SE as well), which is one indicator that these forms of engagement may work simultaneously to influence QI and SE and that their combined relationship may be stronger than their unique effects. See Tables 5 and 6 for more details about these regression models and correlations.

How do the relationships between important forms of collegiate interaction and perceptions of the campus environment vary among biracial students with White racial heritage? The addition of interaction terms only resulted in a significant change in R^2 for one of the models ($p = .001$). In this model, several interactions between biracial student heritage and participation in CL activities had a significant impact on students' ratings on QI. The effect of CL was lower than average for students with *Native* and *White* heritage ($B = -.049, p < .01$). The effect of CL was higher than average for students with *Black* and *White* heritage ($B = .045, p < .01$) and students with *Other* and *White* heritage ($B = .049, p < .01$).

Discussion

The results in Tables 2 and 4 indicate that patterns of interactions with students and faculty, and their perceptions of the campus environment differ by racial identification among biracial students with White racial heritage. These findings extend our general understanding of how student engagement and perceptions of collegiate environments are not always consistent by racial/ethnic groups (e.g., Gurin et al., 2002), add nuance to previous findings that suggest multiracial students' engagement practices and perceptions of campus differ from their monoracial peers (Harris et al., 2014; Nelson Laird & Niskodé-Dossett, 2010), and provide further evidence that treating multiracial students as one group likely masks important differences among sub-groups within the multiracial student population (Harris et al., 2014).

Results from this research further illustrate how the intersections of biracial students' racial heritages may influence differences in biracial students' collegiate experiences (Harris 2016). Drawing from the MultiCrit tenet of intersectionality of multiple racial heritages, we posit that the differences detected within the multiracial student population are structured through socio-historical systems of White racial domination (Crenshaw, 1989, 1991) that work to socially construct racial categories and their meanings (Harris, 2016). While there exist several challenges to interpreting quantitative data through an intersectional, socio-historical lens, "the absence of personal experiences (i.e., individual biography) does not obviate the structural inequality" (Bowleg, 2008, p. 321) that exists on campus and in the collegiate interactions and perceptions of multiracial students. Yet, we encourage future research to explore biracial students' personal experiences as they are not obviated through quantitative data, but they are certainly obscured.

The results for *Other/White* students were unexpected. Students in that group averaged

the highest SF and relatively high CL and DD, but rated their QI and SE the lowest, on average, of any group. The findings for this group must guide further investigation into how these students internally identify—assuming that identifying, in part, as “Other” is not their preferred method of identification. As a point of reference, for the 2,089 *Other/White* students in our sample, their institutions reported to NSSE race/ethnicity for 1,867 students. Of that number, 80% were identified by their institutions as White, 7% unknown, 6% two or more races/ethnicities, 3% foreign or nonresident alien, 3% Hispanic or Latino, and less than 1% each for American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, or other. Furthermore, Johnston and colleagues (2014) suggested that the “Other” option “may be particularly attractive, since their concepts of race may not fit the U.S.-based and potentially outdated options on the two previous forms” (p. 66).

Results also illustrate the complexity of race and align with the MultiCrit tenet of a monoracial-only paradigm. Even when multiracial students are given a “check all that apply” option, these options may not fully capture the complexities of race on campus and in society. Practitioners and researchers must provide space for multiracial students to qualitatively explore, as well as quantitatively identify, their racial heritages on campus surveys and forms (Harper, 2016). Furthermore, these quantitative options must be expansive, because, as these findings suggest, the current options for racial/ethnic identification conform to a paradigm of race in which many students are left unaccounted for and under-explored.

Across the groups examined in this study, the relationships between interactions and perceptions of the environment were positive (see Table 5) suggesting that the positive benefits of engagement on perceptions of campus environments found by Nelson Laird and Niskodé-Dossett (2010) extend to the six groups of biracial students with White racial heritage examined

in this study. This, in some manners, addresses the social justice concern raised by Quaye and Harper (2015) and extends the work of Nelson Laird and Niskodé-Dossett (2010) by examining specific groups of multiracial students, though more work on other multiracial students is still needed. Further, we found the positive relationships between the interaction measures and the campus environment measures were similar for the six groups. The one exception to this general finding was for the relationship between CL on QI, where the effect for *Native/White* students was near zero (actually slightly negative) and the relationship for *Black/White* and *Other/White* was slightly higher than average. While the variation was fairly small, confirming and unpacking these findings is worth further study. If confirmed, it further suggests that the intersections of racial heritages matter for multiracial students and that differential micro-racialization must be further explored for this student population (Harris, 2016).

Implications for Research and Practice

Findings from this research expose the differences within and across biracial students' engagement, further supporting that it may not be best to categorize multiracial students as one monolithic group in research or practice (Brubaker, 2004; Osei-Kofi, 2012). In an attempt to destabilize a monolithic understanding of race and to better inform practice, future research must continue to interrogate the differences within the multiracial population. Findings from this study guide further exploration into the relationship between CL on QI for biracial students with *Native/White*, *Black/White* and *Other/White* heritage. Further, this paper focused on a sub-population of the larger multiracial population. This same study should be conducted to explore other populations within the biracial populations, such as individuals with Black heritage or "Other" heritages.

In future studies, researchers must account for the intersections of students' social

identities and/or institutional context. First, previous research suggests that multiracial students' intersecting identities, such as gender identity and sexuality, may influence their identity development and campus experiences (Basu, 2010; Bettez, 2010; Harris, 2017; King, 2011). Provided with an emerging foundation that focuses on multiracial students engagement practices, researchers must begin to interrogate the intersections of multiracial students' racial heritages *and* social identities. Second, researchers must interrogate the differences in multiracial students' interactions and perceptions at different institutional types. For instance, what is the difference in engagement, if any, for biracial students with various racial heritages at small liberal arts colleges, two-year colleges, and Minority-Serving Institutions? Scholars must also interrogate how aspects of the institutional context (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012), such as structural diversity and a historical legacy of inclusion and exclusion, may influence biracial students' engagement practices.

Although findings from this study and from previous research (Harris et al., 2014; Nelson Laird & Niskodé-Dossett, 2010) suggest that biracial students' engagement practices differ by racial heritage, the field is still relatively uninformed as to why and how multiracial students from different racial/ethnic backgrounds engage differently. Qualitative inquiry will provide depth and exploration into findings from quantitative studies. Qualitative inquiry should focus on explorations of *who* the "Other" racial heritage groups are, why they identify with "Other" when given the option, and their experiences within their institutions. Qualitative research will also allow for more depth and interrogation into the ways socio-historical systems influence multiracial students individual collegiate perceptions and interactions. While we attempted to account for these systems in this research, there was only so much meaning we could make from the quantitative nature of the data and results. Qualitative researchers must also ask questions

that assess the aspects of campus that are not always included in pre-determined survey research categories. For instance, questions such as, "How does peer-mentoring or the surrounding college community factor into biracial students' collegiate interactions and perceptions?" must be posed by researchers.

Regarding practice, educators must account for within group variation when creating and analyzing campus-based surveys and climate assessments, planning programs, and exploring institution-level data from survey research, such as the NSSE. Data should not only be collected in a manner that allows multiracial students to express the intricacies of their racial identity and heritages, but educators must honor these intricacies when reporting back and using data to inform practice. In short, educators must not only identify, but also attempt to understand and address the unique needs of multiracial students.

While the relationships between interactions and perceptions of the environment were positive for all student groups examined in this study, leaders of campus units, such as race oriented student services (ROSS) and Student Activities, must continue to "conduct their own, self-reflective 'autopsies' as a basis for engaging more progressive programming" (Literate, 2010, p. 131) that disrupts dominant understandings of (mono)race that may influence multiracial students' collegiate interactions and perceptions. Student affairs units can enhance multiracial students' quality of interactions by collaborating with different units and/or intentionally reaching out to and programming for multiracial students. Furthermore, student affairs should collaborate among their units, such as with ROSS and Fraternity and Sorority Life, as well as with academic units. This is important as the institutional context, and students' collegiate experiences, involve both curricular and co-curricular contexts (Hurtado et al., 2012). Collaboration must work to break down permeable racialized social boundaries that exist on

campus that may negatively influence multiracial students' collegiate experiences (see Literte, 2010; Renn, 2003).

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Table 1
Select Respondent Characteristics

		First-Year (%)	Senior (%)	Total (%)
Racial/Ethnic identification	American Indian or Alaska Native & White	15.5	18.3	17.0
	Asian & White	18.8	19.3	19.1
	Black or African American & White	14.6	10.4	12.3
	Hispanic or Latino & White	41.1	40.5	40.8
	Native Hawaiian or other Pacific Islander & White	3.2	3.6	3.4
	Other & White	6.7	8.0	7.4
Gender identity	Man (Male in 2013)	33.8	35.5	34.7
	Woman (Female in 2013)	65.4	63.8	64.5
	Another gender identity (Not available in 2013)	< 1	< 1	< 1
	Prefer not to respond (Not available in 2013)	< 1	< 1	< 1
Athlete	10.3	5.9	7.7	
Fraternity/ Sorority	9.4	11.0	10.3	
First-generation	41.2	46.1	44.1	
STEM major	26.5	22.7	24.3	
Enrolled full time	96.0	83.6	88.8	
Started elsewhere (transfer)	8.9	44.4	29.5	
Living on campus	67.8	17.8	38.8	

Sexual orientation	Question was not asked at the institution	59.0	59.5	59.3
	Heterosexual	35.5	35.5	35.5
	Gay	< 1	< 1	< 1
	Lesbian	< 1	< 1	< 1
	Bisexual	1.5	1.4	1.4
	Another sexual orientation	< 1	< 1	< 1
	Questioning or unsure	< 1	< 1	< 1
	I prefer not to respond	1.8	1.7	1.8

Table 2
Descriptives for Select NSSE Engagement Indicators

	Collaborative Learning		Discussions with Diverse Others		Student-Faculty Interaction		Quality of Interactions		Supportive Environment	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Native/White</i>	32.76	14.48	44.27	14.90	23.65	15.72	42.86	11.59	34.86	14.22
<i>Asian/White</i>	33.71	13.95	43.38	14.88	22.01	14.99	42.33	11.06	35.20	13.30
<i>Black/White</i>	32.31	14.09	45.41	14.81	22.68	15.58	42.24	11.65	36.41	13.81
<i>Latinx/White</i>	33.16	14.09	43.50	15.16	22.49	15.42	42.47	11.60	36.02	13.92
<i>Pacific/White</i>	34.12	14.22	44.05	15.04	22.30	15.60	42.12	12.37	34.98	14.18
<i>Other/White</i>	33.74	14.11	45.23	14.69	24.51	15.73	41.63	12.22	34.17	14.57
Total	33.17	14.14	43.99	15.00	22.76	15.45	42.41	11.58	35.54	13.91
Cronbach's α	.806		.842		.883		.819		.887	
ICC	.061		.035		.044		.031		.043	

Note: Engagement Indicator scores range from 0 to 60.

Table 3.
Student-Level Demographics and Variable Coding for Independent Variables

Student-Level Demographic		Variable Coding
Class level (senior)		Seniors=1, First-years=0
Racial/Ethnic identification	American Indian or Alaska Native & White	<i>Native/White=1, ELSE=0</i>
	Asian & White	<i>Asian/White=1, ELSE=0</i>
	Black or African American & White	<i>Black/White=1, ELSE=0</i>
	Hispanic or Latino & White	<i>Latinx/White=1, ELSE=0</i>
	Native HI or other Pacific Islander & White	<i>Pacific/White=1, ELSE=0</i>
	Other & White	<i>Other/White=1, ELSE=0</i>
Gender identity	Man	Man=1, ELSE=0
	Woman	Woman=1, ELSE=0
	Another gender identity	Another gender identity=1, ELSE=0
	I prefer not to respond	I prefer not to respond (gender) =1, ELSE=0
Athlete		Yes=1, No=0
Fraternity/ Sorority		Yes=1, No=0
First-generation		Yes (at least one parent/guardian has completed a four-year degree)=1, No=0
STEM major		STEM=1, Non-STEM=0
Enrolled full time		Full-time=1, Part-time=0
Started elsewhere (transfer)		Started elsewhere=1, Started at institution=0
Living on campus		On campus=1, ELSE = 0
Sexual orientation	Heterosexual	Straight=1, ELSE=0
	Bisexual	Bisexual=1, ELSE=0
	Gay	Gay or Lesbian=1, ELSE=0
	Lesbian	Gay or Lesbian=1, ELSE=0
	Questioning or unsure	Questioning or unsure=1, ELSE=0
	Another sexual orientation, please specify	Another sexual orientation=1, ELSE=0
	I prefer not to respond	I prefer not to respond (orientation) =1, ELSE=0
	Students at institutions that did not ask	Opt out=1, ELSE=0

Note: Effect coding was used so that all multi-categorical variable groups receive a coefficient.

Table 4
Regression Coefficients by Racial or Ethnic Identification

	Collaborative Learning		Discussions with Diverse Others		Student-Faculty Interaction		Quality of Interactions		Supportive Environment	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
<i>Native/White</i>	-.009		.000		.052	***	.046	**	-.009	
<i>Asian/White</i>	-.021		-.070	***	-.080	***	.008		-.021	
<i>Black/White</i>	-.067	***	.071	***	-.015		-.007		.037	*
<i>Latinx/White</i>	.001		-.050	***	-.020		.014		.054	***
<i>Pacific/White</i>	.053		-.012		-.041		-.016		-.014	
<i>Other/White</i>	.043	*	.062	**	.104	***	-.046	*	-.046	*
	F = 71.9*** R ² = .056		F = 9.7*** R ² = .008		F = 66.7*** R ² = .052		F = 6.4*** R ² = .005		F = 53.8*** R ² = .042	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Effect coding was used to code non-dichotomous multi-categorical demographics, such as racial or ethnic identification, so that comparisons could be made to the average student as opposed to a reference group. Models included the following controls: class level, gender identity, athletic status, fraternity or sorority membership, first-generation status, major field, enrollment status, transfer status, living situation, sexual orientation. Continuous dependent variables were standardized before entry into models.

Table 5
Relationships Between Collegiate Interaction and Perceptions of Campus Environment

	Quality of Interaction		Supportive Environment	
	B	Sig.	B	Sig.
Discussions with Diverse Others	.117	***	.153	***
Collaborative Learning	.037	***	.096	***
Student-Faculty Interaction	.230	***	.221	***
<i>Native/White</i>	.032	*	-.023	
<i>Asian/White</i>	.035	*	.010	
<i>Black/White</i>	-.012		.037	*
<i>Latinx/White</i>	.024	*	.066	***
<i>Pacific/White</i>	.000		-.004	
<i>Other/White</i>	-.079	***	-.087	***
	F = 97.512*** R ² = .089		F = 190.603*** R ² = .155	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Effect coding was used to code non-dichotomous multi-categorical demographics, such as racial or ethnic identification, so that comparisons could be made to the average student as opposed to a reference group. Models included the following controls: class level, gender identity, athletic status, fraternity or sorority membership, first-generation status, major field, enrollment status, transfer status, living situation, sexual orientation. Continuous independent and dependent variables were standardized before entry into models.

Table 6
Correlations Between Select Engagement Indicators

	Collaborative Learning	Discussions with Diverse Others	Student-Faculty Interaction	Quality of Interactions	Supportive Environment
Collaborative Learning		.243	.390	.144	.223
Discussions with Diverse Others	.243		.217	.171	.220
Student-Faculty Interaction	.390	.217		.256	.271
Quality of Interactions	.144	.171	.256		.425
Supportive Environment	.223	.220	.271	.425	

Note: All Pearson's r correlations are significant at the $p < .01$ level.