DISSERTATION

INTERGROUP EXPOSURE IN WILDERNESS PROGRAMMING AND EFFECTS ON

PROSPECTIVE COLLEGE BELONGING AMONG LOW-INCOME ADOLESCENTS

Submitted by

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ABSTRACT

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Despite improved rates of college matriculation for low-income students, national

disparities in BA attainment remain pervasive in this country. While structural inequities

inarguably contribute to lower academic preparedness for this population of students, incoming

college freshman with identical academic qualifications will exhibit divergent outcomes based

solely on students' socioeconomic background. Students' "non-cognitive factors," or attitudes

and beliefs towards learning and school, represent an area of opportunity for youth-serving

organizations to intervene with students and influence their college readiness. While the majority

of these programs occur within a school setting, outdoor experiential education (OEE) is another

venue available to low-income youth to bolster these skills. Moreover, exposure to upper-

income, white youth in the context of these facilitative settings can begin to prepare them

socially for the challenges of being underrepresented in a college setting. The current study used

contact theory to frame whether intergroup exposure while on an OEE wilderness expedition

would contribute to students' beliefs regarding prospective college belonging through improved

empathy and perspective-taking. The sample consisted of 246 high-school students participating

in the Summer Search program who went on summer wilderness expeditions either with their

peers in the program or with upper-income, majority-white youth. Results revealed that

intergroup exposure did not uniquely predict improved college belonging; however, particular

peer- and adult-related group processes on the trip, social exclusion, negative peer dynamics, positive adult behaviors, and negative adult behaviors, all exhibited effects on college belonging indirectly through empathic perspective-taking. Social exclusion and positive adult behaviors also exhibited direct effects on college belonging. The effects of group processes did not differ based on intergroup exposure. Implications for practice and directions for future research are discussed.

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CHAPTER 1: Introduction

*"If you want to help low-income students succeed, it's not enough to deal with their academic and financial obstacles. You also need to address their doubts and misconceptions and fears. To solve the problem of college completion, **you first need to get inside the mind of a college student**."*
Paul Tough

*"Relationships remain at the core of most outdoor and adventure education programs. The deeper, longer, and more authentic personal connections created at summer camps, on expeditions, and during immersion semesters offer a certain safety and comfort. **These feelings of acceptance and belonging afford youth the support to experiment, to fail, to learn, and to grow**. I have often wondered if the transient nature of these communities is what makes them powerful. They are conducive to experimentation because the group has little history and an uncertain future. Such communities represent infrequent opportunities for reinvention or change"*
Jim Sibthorp

Earning a bachelor's degree (BA) is related to many desirable long-term outcomes, including higher earnings, better health, and increased civic engagement (Dee, 2004; Pew Research Center, 2014). Although equal access to education is fundamental to this country's democratic foundation, only 1 in 10 low-income youth (living within 200% of the federal poverty line) will earn a BA by the age of 24, a rate that is in stark contrast to rates among their higher-income counterparts, where 7 in 10 earn degrees (Institute for Higher Education Policy, 2014). Lack of academic preparedness is one explanation for discrepancies in college enrollment and completion. However, even students from different socioeconomic backgrounds but with comparable SAT scores reflect similarly disparate patterns in graduation (Bowen, Chingos, & McPherson, 2009). Some of the most academically qualified low-income students simply don't make it into or through college (Research Alliance for NYC Schools, 2014). These highly qualified students face many non-academic barriers that influence their ability to obtain a BA;

some financial, but others falling within the domain of "non-cognitive factors." Non-cognitive factors have many names (e.g. soft skills, twenty-first century skills, character traits) and comprise varying conceptual frameworks (e.g. see Child Trends, 2008; Forum for Youth Investment, 2015; Zins, Weissberg, Wang, & Walberg, 2004), yet they all represent predictors of academic success that, while interconnected with academic performance, are not necessarily due to cognitive ability but are crucial to student achievement (Dweck, Walton, & Cohen, 2011; Zins et al., 2004; Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012).

National disparities in BA attainment and the opportunity to intervene and address non-cognitive factors are what inspire the mission that defines Summer Search. Summer Search is a national youth-serving organization that provides individual mentors and various experiential opportunities to low-income youth to benefit their socioemotional development and subsequently improve their chances of completing college and becoming socially-responsible citizens. A core component of Summer Search programming is a summer wilderness expedition that students participate in during their first year with Summer Search. Outdoor Experiential Education (OEE), like the Summer Search summer wilderness expedition, is also known as adventure education or wilderness programming and can promote a multitude of positive outcomes for youth, including non-cognitive factors predictive of BA attainment (Bell, Gass, Nafziger, & Starbuck, 2014).

College belonging uncertainty, or a heightened sensitivity to negative social interactions in college, is a non-cognitive factor targeted by the Summer Search programming that contributes to motivation and academic performance in college for low-income, racial-ethnic minority students (Walton & Carr, 2012; Walton & Cohen, 2007). At Summer Search, all students embark on an intensive wilderness expedition their first summer, but these expeditions

vary in terms of student composition. Some trips involve intergroup exposure to majority youth that include upper-income, white youth who resemble the predominant socioeconomic bracket on today's college campuses, herein referred to as "open enrollment" trips. Other trips are undertaken entirely with Summer Search peers or "all-Summer Search" trips. While these wilderness expeditions are comparable in terms of location and rigor, the primary difference is whether or not the student is interacting with majority youth or not. Within an OEE context, constructive intergroup exposure to majority students may significantly promote program participants' prospective college belonging by fostering relatability between groups.

The goal of this dissertation is to examine how the first-year wilderness expedition can affect high-school students' prospective college belonging. There are two research aims. The first aim is to examine whether students' perceived college belonging following the wilderness expedition varies significantly by trip type (open enrollment versus all-Summer Search), and to examine potential mediators for this effect, specifically the roles of empathy and perspective-taking. The second aim is to explore how peer- and adult-related group processes while on these expeditions similarly predict students' college belonging both directly and through indirect effects on empathy and perspective-taking, though conditional on students' experience of intergroup exposure.

CHAPTER TWO: Literature Review

Higher Education and the Opportunity Gap

Students from the top income quintile are 8 times more likely to earn a BA by age 24 than those from the bottom quintile (77% versus 9%). This discrepancy has grown since the 1970's, when high-income students were 5 times more likely to earn a BA than their low-income counterparts (Pell Institute, 2015). Among high-school graduates, the imbalance remains. Of those low-income students who graduated high school in 2012, only half went on to enroll in postsecondary education. Though this enrollment rate is far higher than it has been historically, it is still lower than the enrollment rate for high-income students was over 40 years ago in 1975 (IHEP, 2014; Pell Institute, 2015). Furthermore, beyond matriculation, once low-income students enter a 4-year college, they are half as likely to complete their BA as high-income students (IHEP, 2014). Socioeconomic status predicts degree attainment even when controlling for students' standardized test scores, high-school GPA, gender and race/ethnicity (Bowen et al., 2009). Core to the American democratic notion of equal access to opportunity is equal access to higher education, although in 2008, the United States was second to last in the rank-ordering of countries by college completion (Organization for Economic Co-operation and Development, 2008 as cited in Bowen et al., 2009). Low-income students encounter considerable obstacles to degree attainment that perpetuate these national trends and that will require a multifaceted, creative approach on the part of youth-serving organizations to successfully overcome.

Non-Cognitive Factors

"Non-cognitive factors" represent those student characteristics that are not directly related to cognitive ability (e.g. IQ, standardized test scores) but are predictive of academic performance or are associated with college readiness (Barnett, 2016; Conley, 2013; Garcia, 2014; Sedlacek, 2011). They include students' academic mindsets in how they relate to learning and academic settings, students' ability to persevere in the face of learning obstacles and self-regulate to obtain academic goals, the various learning strategies students employ to succeed in school, and finally, students' academic behaviors such as studying and class participation; all of which contribute to academic performance (Farrington et al., 2012; Nagaoka, Farrington, Roderick, Allensworth, Keyes, Johnson, & Beechum, 2013). Growth mindset, for example, is an established non-cognitive factor that predicts academic performance. If students view their intelligence as a malleable quantity that can improve with effort, and not as fixed or innate, they demonstrate academic behaviors that lead to stronger academic performance, especially when experiencing an academic setback (see Dweck & Leggett, 1988; Dweck, Walton, & Cohen, 2011). Moreover, these beliefs about intelligence are malleable, and brief, targeted interventions have led to student improvements (Blackwell, Trzesniewski, & Dweck, 2007). Another example of a well-researched non-cognitive factor is self-efficacy in an academic setting, which has been associated with academic outcomes such as high-school dropout and college persistence (Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2010). If students feel efficacious in their ability to learn and perform well in school, they demonstrate increased effort, and are more likely to persevere when confronted with an academic challenge (Bandura, 1997; Dweck et al., 2011; Pajares, 1996). Evidence suggests that academic interventions often predict future academic performance through their impact on perceived self-efficacy (Breso, Schaufeli, &

Salanova, 2011; Pajares, 1996). Non-cognitive factors have become increasingly relevant in youth programming due to their sensitivity to intervention and potential in addressing the achievement gap (Dweck, et al., 2011; Farrington, et al., 2012; Heckman, 2006). Even in the most adverse learning conditions, such as in underperforming schools and under-resourced home environments, reinforcing these psychological factors prepares students to take advantage of those opportunities for learning that are present (Dweck, et al., 2011).

Non-cognitive factors can be conceptualized using multiple frameworks and most feature social elements (Zins, et al., 2004; Farrington, et al., 2012). Generally, social interactions play a large role in identity development and motivational beliefs and behaviors. These social interactions need not be extensive; even small social cues can have significant effects on our interests and goal formation (Walton, Cohen, Cwir, & Spencer, 2012). More specifically, however, because human beings, and especially adolescents (Steinberg, 2014) are so acutely sensitive to these social cues and processes, ill-times or ill-formed interactions can uniquely threaten the success of marginalized groups in higher education (Steele & Aronson, 1995). The anxiety that individuals incur from a perceived sense of not belonging in particular settings can have notable, detrimental effects on one's performance (Murphy, Steele & Gross, 2007). Therefore, social processes not only contribute to the development of these non-cognitive factors, but they also contribute to the presentation of these skills, with non-supportive social contexts eliciting reductions in non-cognitive factors (Duckworth & Yeager, 2015).

Social-Belonging and College Persistence. Students' social integration and post-secondary persistence has been researched extensively, most often framed by Tinto's student departure theory (Tinto & Cullen, 1973; chronological account of theory development can be found in Metz, 2002). Tinto draws from Durkheim's early publications on suicide (1953, orig.

1897) and compares the origins of students' self-removal from college to those of suicide, presenting social integration as a unique imperative for persistence. Yet, for historically marginalized groups of college students, to obtain social connectedness is joined by a distinct set of challenges. As racial-ethnic minority students consider post-secondary education or enter into higher education, they become increasingly vulnerable to negative social cues. Minority students are grossly underrepresented in college settings, and as members of socially stigmatized groups, negative social interactions often lead minority students to question their ability to succeed in college because they begin to question whether or not they belong. These doubts have been most commonly conceptualized in terms of stereotype threat. Stereotype threat is the pressure felt to serve as an exemplary member of one's social group so no one questions the legitimacy of one's qualifications (Steele & Aronson, 1995). Even more broadly, "belonging uncertainty" represents a global, heightened sensitivity to negative social interactions. As summarized by Walton & Cohen (2007) in their seminal work on perceived social belonging and achievement in college, belonging uncertainty is most basically, "a broad-based hypothesis that 'people like me do not belong here'" (p. 83). Presenting belonging uncertainty as a "hypothesis," by definition, underscores students' ongoing sensitivity to "evidence" that confirms this hypothesis in their daily lives. Because students expect to be perceived in a particular way socially, negative social events become supporting evidence for the hypothesis and neutral interactions are interpreted with skepticism. Perceived social belonging, therefore, becomes filtered through this uncertainty stemming from their racial identity and threatens their ability to succeed academically (Walton & Cohen, 2007; Walton, 2012). Recently this construct has received a great deal of attention in the scientific and popular literature due to its sensitivity to intervention and connection to college persistence (Tough, 2014; Walton & Cohen, 2011). *Prospective* college belonging is now also

being measured with high-school students to predict post-secondary matriculation (G. Walton, personal communication, 2015).

Outdoor Experiential Education

Experiential education involves activities and tasks that are intentionally designed to promote personal and social growth within a group of peers (Seaman et al., 2009), including non-cognitive factors that predict academic success (e.g. Bailey & King, 2015; Gass, Garvey & Sugarman, 2003). Outdoor Experiential Education (OEE) situates these learning opportunities in the outdoors (Wojcikiewicz & Mural, 2010; Shellman, 2014). The premise of experiential education is quite simply, "to understand the world, learners need to interact directly with it" (Dewey, 1938 as cited in Shellman, 2014). Outdoor Experiential Education embeds learning within an intentional, facilitative social environment where young people can acquire new attitudes and behaviors, such as personal agency and resilience, that can then be applied in future settings (Dewey, 1938; Wojcikiewicz & Mural, 2010; Shellman, 2014; Sibthorp, 2014). For instance, students who participated in brief outdoor orientation programs at the beginning of their freshman year demonstrated improved ability to work on projects with fellow students once school began (i.e. "groupwork" in post-secondary settings) (Cooley, Burns, & Cumming, 2015). Outdoor orientation programs also affect longer-term academic outcomes, including improved GPA and retention rates throughout students' undergraduate trajectories (Bailey & Kang, 2015; Gass, 1990). Research on wilderness programming underscores social processes as *foremost* in providing suitable programming for youth, undoubtedly because social processes shape the learning opportunities that mediate those positive youth outcomes associated with participation (Bell et al., 2014; Beightol, Jevertson, Carter, Gray, & Gass, 2014).

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Importantly, within OEE, this "purposeful social activity" (Dewey, 1916) is embedded in a larger wilderness context that may be uniquely threatening to low-income, racial-ethnic minority youth. Participation rates in outdoor activities are far lower for racial-ethnic minority youth than for white youth (Taylor, 2014). Research suggests these disparities stem from a largely ethnocentric view of wilderness in this country that represents a White, dominant interpretation of nature (Buijs, Elands, & Langers, 2009; DeLuca & Demo, 2001; Merchant, 2003). This perception leads to racial-ethnic minority and low-income individuals feeling unwelcome or discriminated against in outdoor settings (Warren, Roberts, Breunig, & Alvarez, 2014). Culturally-sensitive OEE programming is necessary to make the natural environment less threatening for minority youth and subsequently support growth in outcomes that are applicable to other contexts (Rose & Paisley, 2012; Warren, 2005; Warren et al., 2014). Moreover, OEE that incorporates exposure to majority youth can lead to improved tolerance and relatability in both groups (Seaman et al., 2009); an outcome that, in the spirit of experiential education, is transferrable to future experiences, such as during the transition to college (Gass et al., 2003).

Contact Theory

Purposeful exposure to dissimilar groups, in order to reduce stereotyping and positively affect other diversity-related outcomes, is rooted in "contact theory," which originated more than 50 years ago as an approach to eliminate prejudice (Allport, 1954). According to contact theory, programming that includes contact between groups with a history of conflict, and facilitates interactions toward shared goals, will improve participants' diversity-related outcomes. Through opportunities for communication and exposure to others' viewpoints, generalizations are reduced and misunderstandings are resolved, which leads to reductions in prejudice. This occurs partially due to a shift away from participants' identification with their particular social groups to an

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even-larger "in-group" that represents all of mankind (Allport, 1954; Seaman et al., 2014). Yet there are necessary preconditions outlined by Allport and supported through research that must be in place to benefit participants and promote positive outcomes (Neill & Dias, 2001; Beightol et al., 2012), The group processes required for contact theory to benefit individuals include the following: participants must perceive that they have equal status to others; the nature of the programming must stimulate interdependence and require participants to work together towards common goals; opportunities must exist for relationship-building and the development of friendships; and authorities must reinforce the previous three conditions (Seaman et al., 2009).

Contact Theory and OEE

For minority youth, OEE represents a unique opportunity to better understand the effects of intergroup contact, especially as minority youth are increasingly less likely to be exposed to upper-income or white youth naturally in their daily lives, such as at school or in church (Seaman et al., 2009; Green & Wong, 2009). The wilderness is an ideal place for a cognitive shift toward a larger "in-group" because it is often recognized as "the great equalizer"; an environment that breeds "communitas," or status-free group belonging (Bell et al., 2014). Contact theory has amassed a large body of empirical support around its potential to reduce prejudice and promote tolerance (Pettigrew & Tropp, 2006), though only recently has this theory been applied in an OEE setting. Within this research, positive effects of intergroup exposure through OEE were either weaker for minority youth (Seaman, 2009) or were analyzed exclusively for majority youth (Green & Wong, 2009). In examining effects other than diversity-related outcomes, it is possible that OEE programming may actually have distinctive benefits for minority youth; however, the requisite group processes outlined in contact theory may be especially relevant for underprivileged groups who may also have negative associations with the

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outdoors (Warren et al., 2014). For this group of youth in particular, upholding a constructive social environment is crucial to avoid inadvertently reinforcing prejudicial beliefs and furthering oppression (Warren et al., 2014; Paisley, Sibthorp, Furman, Schumann & Gookin, 2008 as cited in Beightol et al., 2012).

Facilitative Group Processes in Structured Youth Activity Settings

In addition to contact theory's conceptual and empirical work around preconditions for positive cognitive shifts, other broad areas of inquiry have described and tested aspects of interactive processes that should promote changes in youth cognitions and/or behaviors in structured, extracurricular settings (Fredricks & Eccles, 2006; Hansen, Larson & Dworkin, 2003; Larson, Hansen, & Moneta, 2006) One area of study that has received a fair amount of attention on this topic is "Positive Youth Development," which in part investigates how youth interventions can empower and lead to positive cognitive, emotional and behavioral changes for youth (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Lerner, Phelps, Forman, & Bowers, 2009; Mahoney, Larson, Eccles & Lord, 2005; Pittman, Irby, & Ferber, 2001). Larson and his colleagues have been leaders in this field, both in attempting to understand key aspects of positive youth development attributable to participation in extracurricular activities (Larson, 2000; Lawson & Lawson, 2013), and also the peer- and adult-related group processes within those interventions that facilitate change (Hansen et al., 2003; Larson et al., 2006). For instance, an inclusive environment for young people that is safe and nondiscriminatory is essential in promoting positive youth outcomes (Larson, 2000; Nicholson, Collins, & Holmer, 2004). When youth view their peers as welcoming and develop a strong sense of group belonging, they are more engaged in programming and experience greater outcomes as a result (Anderson-Butcher & Conroy, 2002; Anderson-Butcher & Fink, 2005; Pearce & Larson, 2006). Specifically in

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wilderness programming, group cohesion and mutual dependence promote youth outcomes (McKenzie, 2000), as does the development of close personal relationships (Conrad & Hedin, 1981). The presence of adult leaders who support this peer dynamic also benefits youth. In her review of the OEE literature, McKenzie (2000) reported multiple instructor characteristics that contributed to program effectiveness, including instructor acceptance of individual differences and nonjudgmental feedback, the communication of high expectations for participants, empathy, and one-on-one interactions with youth.

OEE and Interpersonal Mediating Mechanisms

The earliest residential camps for youth conducted group activities and promoted social development in the context of the outdoors, and OEE settings continue to prioritize social skill acquisition for youth (e.g. Jordan, 1994; Garst, Browne, & Bialeschki, 2011; Henderon, Bialeschki, Scanlin, Thurber, Whitaker & Marsh, 2007; Merryman, Mezei, Bush & Weinstein, 2012). A recent comprehensive review of youth outcomes from over eighty residential camp settings summarized diverse benefits for youth in four major areas, including social skills development. Within this domain, youth reported multiple positive effects, such as the ability to form friendships with diverse others (Thurber, Scanlin, Scheuler, & Henderson, 2007). Outside of a camp setting, OEE programs similarly affect various social skills, like cooperation and communication (Hattie, Marsh, Neill, & Richards, 1997; Sharilla, 2009). While the development of social skills in the context of OEE is in itself a desirable outcome for youth, these gains may also mediate the influence of OEE on other domains of youth development, including students' academic mindsets. For example, participation in outdoor orientation programs expanded students' perspective-taking skills, which lead to increased college persistence (Gass et al., 2003). Because social skills are central to positive interactions with peers and teachers, they

reinforce non-cognitive factors and subsequent academic performance (Farrington et al., 2012; Malecki & Elliott, 2002).

Empathy and Perspective Taking. Empathy and perspective-taking have long been viewed as critical to positive social functioning (Piaget, 1932; Davis, 1983). Perspective-taking represents the cognitive ability to view the world from another's perspective, while empathy incorporates the affective element of perspective-taking or the emotional response (Galinsky & Moskowitz, 2000; Stephen & Finlay, 1999). The presence of these behaviors reduces perceived barriers and stereotypes between individuals and can be strengthened through programming (Stephen & Finlay, 1999), which makes them ideal targets for facilitated intergroup contact (Galinsky & Moskowitz, 2000; Husnu & Crisp, 2015). In a recent meta-analysis of interventions applying intergroup contact, empathy and perspective-taking consistently mediated effects on reduced prejudice (Pettigrew & Tropp, 2008). Less established is the role of these social skills in mediating the benefits of wilderness programming. A recent study evaluated an OEE program for racial-ethnic minority students designed to promote various internal assets associated with resilience, including empathy. Following the course, youth reported gains in empathy attributed to role-plays and facilitated conversations about feelings (Beightol et al., 2012). Only recently have the benefits of intergroup contact in wilderness programming been investigated and much remains to be learned about what accounts for programmatic benefits and for whom.

Summer Search Program Model

The current study will investigate the effects of intergroup contact on non-cognitive skill development in adolescents through wilderness programming that occurs within the context of Summer Search. Summer Search is an organization with a primary mission to address inequalities in college access and completion. Summer Search provides a 6-year, comprehensive

program model that promotes BA attainment in low-income students who are first-generation college-goers. Summer Search has been in operation since 1990, and historically, over 75% of Summer Search participants have either graduated from college or are enrolled and on track to do so within six years after high-school graduation. Currently, Summer Search partners with over 150 high schools nationwide to identify sophomores to participate in the program. School staff nominate students who they believe would excel in college but for whom significant barriers exist for college matriculation, and whose chances they believe would improve through mentoring and challenging experiential programming. Once nominated, a student must complete an application form that includes a short essay and gather parent information, transcripts/report cards, and income verification. Summer Search staff reviews each student's application to determine his or her eligibility for an interview.

Eligible students participate in a 45-minute interview with Summer Search staff where staff learn about each student's background and current circumstances. From the recounting of the student's story, as well as through supplementary questions, staff rate youth on ten socio-emotional competencies believed necessary for youth to persist through the mentoring and summer trips offered over the course of the six-year program (e.g. problem-solving and follow-through). Accepted students engage in a four-week enrollment period during which they speak with their assigned mentor weekly and are asked to make an informed decision to enroll or not. Once a student completes all enrollment action steps and submits a signed contract at the conclusion of the four week period, the student is officially enrolled in Summer Search.

As high-school sophomores, Summer Search students begin to meet with their mentors each week through high-school graduation. The program model is guided by a developmental ideal of "Begin, Believe, and Become." In other words, within the structure of this trusting

relationship, students begin their cyclical journey of relationship-building and self-knowledge (Begin), goal-setting and self-regulation (Believe), and eventually, accomplishment and confidence as a leader (Become). At its core, the mentoring provides students with the opportunity to self-reflect and develop insight regarding their college-going trajectories; bringing unconscious barriers to the surface in an effort to minimize their influence on goal achievement. Summer Search mentors prioritize modeling empathy for students, holding students accountable, providing positive affirmations, practicing active listening, and scaffolding student strengths.

Program participation is then anchored by two experiential opportunities for youth, one in each summer of high school following enrollment. All students participate in an extended wilderness trip their first summer, which requires significant physical stamina and time away from their families and home communities. For 3 months prior to this first trip, students meet weekly with their mentors to mentally, physically and emotionally prepare for their expedition and to overcome any barriers to leaving (e.g. to help family members prepare for the student's absence). Traditionally on each trip, 2-3 Summer Search students have been placed on an "open enrollment" trip with 9-10 youth whose families are paying the full cost of the trip and who are largely white from upper-income backgrounds. In the past 5 years, a number of summer program providers have begun to host trips that are comprised entirely of Summer Search students (i.e. "all-Summer Search" trips), which has appealed to the Summer Search organization because these trips tend to be less expensive and easier to coordinate, but they have reduced exposure to youth from dissimilar backgrounds as a result.

Regardless of student composition, all trips aim to provide a physically challenging experience where students have the opportunity to take healthy risks, expand their existing strengths, and master new skills (Hansen et al., 2003; Larson, 2000; Sibthorp, 2010). Moreover,

this individual development occurs within the context of a group, which requires interdependence among group members towards shared goals and opportunities for improved cooperation and adaptability (McKenzie, 2000; Nicholson et al., 2004). While all trips share these general goals for students, there's likely to be variability across summer program providers and particular trips in terms of several program aspects, such as locations and activities, yet it is uncertain to what degree. Following this summer experience, mentors resume weekly meetings with the student and scaffold students' self-reflection to integrate these summer experiences into students' daily lives and help them to draw connections to college preparedness and future experiences (Shellman, 2014). Within the context of this trusting mentoring relationship, students' develop deeper insight regarding their own behaviors. The wilderness trip undoubtedly stems this developmental process and was the focus of the current study.

While Summer Search currently provides financial aid counseling and opportunities to connect with a trained college access coordinator, the program does not exclusively focus on academics. Instead, the organization takes a developmental approach to programming that recognizes core tenets of adolescent development and their influence on students' college-going mindsets and academic performance. These core processes include students' identity development, such as self-concept and aspirations, as well as students' motivations, goal-setting behaviors and self-regulation skills (Savitz-Romer & Bouffard, 2014). All aspects of programming are embedded in various relational contexts, capitalizing on the significance of relationships during adolescence (Steinberg, 2014). Moreover, in targeting these various competencies, the Summer Search program model addresses those non-cognitive skills that are crucial for post-secondary success (Nagaoka et al., 2013).

The Current Study

The current study explored two overarching aims. The first aim was to compare whether differences in exposure to upper-income, white youth in the two distinct OEE settings (i.e. all-Summer Search trips or open enrollment trips) would lead to higher scores on prospective college belonging following the wilderness expedition for those students who had intergroup contact, and if that association was mediated through students' increased empathy and perspective-taking. The second aim explored the relation between students' reports of particular group processes during the trip, including relationships with peers and the quality of instructor facilitation, and an improved sense of prospective college belonging. I also investigated whether associations between the group processes and prospective college belonging were mediated by empathy and perspective-taking, and amplified for students on trips with intergroup exposure.

Aim 1. Racial-ethnic minority youth from underprivileged backgrounds have been underrepresented in outdoor recreation and wilderness settings (Taylor, 2014; Warren et al., 2014). Students from these backgrounds are similarly numerically underrepresented on college campuses where they contend with negative stereotypes (Walton & Carr, 2012). Through OEE, students can experience the wilderness within a supportive group dynamic that is intentionally structured to facilitate student growth in particular skills and mindsets that youth can then apply outside of that context (Dewey, 1938; Wojcikiewicz & Mural, 2010; Shellman, 2014). Summer Search students who participate on open enrollment trips and experience intergroup exposure in a wilderness setting may therefore anticipate being more comfortable in a college environment that is equally as intimidating. For the current study, I hypothesized that students who attended trips with upper-income, white majority youth would have greater gains in prospective college belonging than students on trips with only their Summer Search peers. Furthermore, benefits

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associated with intergroup contact are often preceded by improved interpersonal skills, specifically empathy and perspective-taking (Pettigrew & Tropp, 2006; Husnu & Crisp, 2015), therefore this distinct advantage was hypothesized to be mediated through gains in these interpersonal skills.

Aim 2. The second aim of the study examined how peer- and adult-related group processes during the wilderness expedition were associated with change in prospective college belonging. Contact theory proposes that the benefits of intergroup exposure are dependent on particular conditions existing within a facilitated experience, such as interdependence and opportunities for friendship (Beightol et al., 2012; Neill & Dias, 2001; Seaman et al., 2009), and studies of structured youth activity settings indicate similar conditions for positive youth development, like group cohesion, group belonging and inclusion (Anderson-Butcher & Fink, 2005; Pearce & Larson, 2006; McKenzie, 2000; Nicholson et al., 2004); therefore I hypothesized that changes in students' reports of prospective college belonging would be dependent on particular group processes (e.g., social exclusion, negative peer dynamics, positive adult behaviors and negative adult behaviors). A second hypothesis of this aim was that the associations between these group processes and college belonging would be contingent on the type of trip the students were on. Third, I hypothesized that the group processes predicted prospective college belonging indirectly through effects on students' empathy and perspective-taking skills; and fourth, I predicted that these effects would be stronger for students who participated on open enrollment trips than students who were on all Summer Search trips.

CHAPTER THREE: Method

Participants

Study participants consisted of 257 high-school sophomores who had been selected to travel on wilderness expeditions in 2015 from the two largest Summer Search sites, Boston and San Francisco. Ninety-seven students participated in all-Summer Search trips (38%) and the remainder participated in open enrollment trips. The sample was fairly evenly distributed between males and females, with 57% of students identifying as female. The sample was diverse in terms of race-ethnicity. Across sites, 64 students identified as African-American or Black (25%), 102 as Latino (40%), 10 as White (4%), 53 as Asian-American or Middle-Eastern (21%) and the remaining 28 students identified as either multi-racial or other (11%). Students largely qualified for free and reduced-cost lunch (91%) and would be the first in their family to attend college (92%).

Procedure

This study used a pre-post design to investigate change in prospective college belonging for youth experiencing a 3-week wilderness expedition that varied by student composition. Each student completed a baseline assessment of youth outcomes, which included measures of prospective college belonging, empathy, and perspective-taking. Within 3 weeks of returning home from their summer trips, participants completed a post-trip assessment, which again included measures of prospective college belonging, empathy, and perspective-taking. This assessment also asked students about the presence of developmental opportunities to practice new skills, such as leadership skills, and the presence of both negative and positive peer- and adult-related group processes on the trip. The length of time between the baseline and post-trip

assessment was approximately 4-6 months, depending on the timing of the participants' trips during the summer.

Although Summer Search does not currently contract with an Institutional Review Board, all research with Summer Search students is conducted in full regard to ethical principles and standards. Students accepted into Summer Search agree to complete questionnaires for organizational continuous improvement purposes. For all assessments included in the current research, students were informed that they could decline participation or opt out of specific questions with no implications on continued program involvement. Survey data was also confidential, which meant mentors and other Summer Search program staff did not have access to student responses. Identifiable data was securely stored on password-protected websites accessible only to Summer Search National research staff.

*Student Trip Assignment***.** As discussed earlier, students were placed on wilderness trips with two different types of student compositions. Either the student traveled with only Summer Search students or the student participated on "open enrollment" trips with students who were not Summer Search participants and who were from different racial and socioeconomic backgrounds. Group size while on the expedition was consistent across trip types, and trip activities and instructor training also did not vary by trip type. Following standard Summer Search policy, students were assigned to one trip or another by their individual mentors, rather than being randomly assigned. There were many factors that determined when and where a student would undertake their wilderness experience and while taken into consideration, student composition on the trip was not principal in this decision-making process. Student logistics played a larger role, such as some students were only available for certain expeditions due to scheduling of family trips and summer participation in sports. Mentors considered the emotional

preparedness of students to undertake the longer or more physically demanding expeditions (e.g. has this child ever traveled without his/her parent?). Also, only students who could swim participated on expeditions that included time spent on the water, and students with asthma were not sent to higher-altitude expeditions. Program staff then balanced these student factors with program logistics, such as trip availability and budget considerations.

Measures

Prospective College Belonging. Students completed a 4-item measure of anticipated belonging upon entering college (adapted from Walton & Cohen, 2007). Each item assessed students' feelings and beliefs around social belonging in college on a 5-point Likert scale with values ranging from "not at all true" to "completely true." Sample items include: "Sometimes I worry that I will not belong in college" and "When I face difficulties in high school, I wonder if I will really fit in when I get to college." College belonging scores were created by calculating the mean across all 4 items prior with a higher score indicating greater perceived belonging. Internal consistency reliability, coefficient alpha, was strong for measurements at pre-trip ($\alpha = .85$) and post-trip ($\alpha = .81$).

Empathy. Empathy was assessed using a 4-item measure developed by Child Trends for the Flourishing Children Project (Child Trends, 2013). On a 5-point Likert scale, students indicated how much each item described them, from "not at all like me" to "very much like me." Sample items include: "It is important to me to understand how other people feel" and "I am happy when other people succeed." The scale was originally validated using measures such as fighting and cognitive development, and the adolescent scale had excellent internal consistency ($\alpha = .84$) (Child Trends, 2013). Empathy scores were created by calculating the mean across all

items. For this sample, internal consistency reliability was adequate for pre-trip (α =.66) and post-trip (α =.63).

Perspective-Taking. Perspective-taking was measured using a 7-item subscale of the Interpersonal Reactivity Index, which is a multidimensional measure of empathy (Davis, 1983). On a 5-point Likert scale, students indicated how much each item described them, from "not at all like me" to "very much like me." Sample items include: "Before criticizing somebody, I try to imagine how I would feel if I were in his/her place" and "I sometimes find it difficult to see things from the other person's point of view." The measure has displayed adequate internal reliability for males (α = .75) and females (α = .78) and studies have provided evidence that this scale consistently measures individual's ability to adopt the psychological viewpoint of others (Franzoi, Davis, & Young, 1985). Perspective-taking scores were created by calculating the mean across all items. Internal consistency reliability was good pre-trip (α =.76) and post-trip (α =.70).

Group Processes. On an adapted version of the Youth Experience Survey (YES) (Hansen & Larson, 2005), students reported the extent to which four group processes, social exclusion, negative peer dynamics, negative adult behaviors, and positive adult behaviors, occurred during their summer wilderness expeditions using a 4-point Likert scale with response options ranging from, "not at all," to "a lot." The YES was designed to obtain adolescent youth self-reports of their developmental experiences within a program context. The full instrument includes 3 domains of personal development, 3 domains of interpersonal development, and 5 scales to assess negative experiences. Authors of the measure conducted a Confirmatory Factor Analysis with a representative sample of 11th graders to evaluate the presence of distinct scales within the larger domains of Positive and Negative Experiences. Each scale uniquely contributed to its

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respective domain, while maintaining statistical independence from related scales. Adult instructors also scored students on similar domains to establish convergent validity. Adult scores were significantly related to the majority of domains, with the exception of student's self-reported emotional regulation and evaluation of adult instructors (Hansen & Larson, 2005).

Social Exclusion. Three items assessed students' experiences of social exclusion while on the wilderness expedition. Items included: "I felt left out," "I felt like I didn't belong with other youth," and "I was excluded from preferred activities by other youth." Each item was recoded 0 ("not at all") or 1 ("a little," "somewhat," or "a lot") to assess whether it occurred at all on the trip and then summed to create a final scale score ranging from 0 to 3.

Negative Peer Dynamics. Four items assessed students' experiences of negative peer dynamics. Three items were taken from the YES representing students' experiences of discrimination due to race/ethnicity, sexual orientation, or feeling like they were given disproportionate responsibilities. One additional item was created for this study to assess students' witnessing discrimination against others, and not just towards themselves: "I saw another youth harassed or picked on because of his/her gender, race, ethnicity, physical ability, appearance, or sexual identity." Each item was recoded 0 ("not at all") or 1 ("a little," "somewhat," or "a lot") to assess whether it occurred at all on the trip and then summed to create a final scale score ranging from 0 to 4.

Negative Adult Behaviors. Four items assessed the presence of negative adult behaviors on students' trips. One item was retained from the YES assessment, "An adult was controlling or manipulative." Three additional items evaluated whether the student felt negatively targeted by the instructor. These items included: "An adult was hostile or mean to me," "An adult discriminated against me because of my gender, race, ethnicity, physical disability, or sexual

identity," and "An adult deliberately excluded me (i.e. an adult leader left me out)." As with the measures of negative peer experiences, these items were recoded 0 ("not at all") or 1 ("a little," "somewhat," or "a lot") to capture the presence of these negative adult behaviors at any point, and then summed to create a score between 0 and 4.

Positive Adult Behaviors. Three items were constructed for this study to assess the presence of positive adult behaviors during the students' wilderness experiences. Items represented particular interactions with adults that create a favorable context for positive youth development and included: "An adult created a safe environment for students to learn," "During my summer experience I could share my feelings about group experiences honestly with an adult leader," and "During my summer experience I felt close to an adult leader." Mean scores were created across the 3 items (α=.59).

Statistical Analyses

All data analyses were performed using SPSS. Six respondents were missing baseline surveys and 5 were missing follow-up surveys. Missing surveys were due to students not completing the baseline and follow-up assessments when they were offered. Of note, follow-up surveys were not missing due to student attrition. These students made up less than 5% of the overall sample and they were excluded from data analyses, yielding a final sample of 246. Descriptive statistics for gender, race-ethnicity, and predictor variables were first used to describe students within each trip type, open enrollment and all-Summer Search. Bivariate correlations were then conducted between the covariates, predictors and outcomes using Pearson correlation analysis.

Further analysis followed in a series of six steps that addressed each hypothesis, the details of which are presented in the results section. Covariates for all models included gender and site, and the criterion for statistical significance was p<.05 unless otherwise noted. First, hierarchical regression analyses were conducted to assess whether trip type was associated with post-trip prospective college belonging. Furthermore, simple mediation analysis was conducted to test for indirect effects of trip type on post-trip prospective college belonging through improved empathy and perspective-taking using ordinary least squares path analysis (Hayes, 2013).

The direct effects of group processes on post-trip prospective college belonging were similarly assessed with individual hierarchical regression analyses. An interaction term between each group process and trip type was then added to the model to assess whether this direct effect was moderated by students' trip type. Next, a simple mediation analysis was conducted to test for indirect effects of each group process on prospective college belonging through empathy and perspective-taking. Finally, again using an ordinary least squares path analysis (Hayes, 2013), I conducted a moderated mediation analysis to test whether the direct and indirect effects of group processes significantly varied by trip type. Specifically, whether the association between each group process and student changes in empathy and perspective-taking would depend on trip type, as well as a potential moderated direct effect of each group process on prospective college belonging, independent of the indirect effect through empathy and perspective-taking.

CHAPTER FOUR: Results

Preliminary Analyses

The means and standard deviations are reported for each predictor variable and outcome in Table 1 grouped by trip type. Analyses were conducted to examine whether there were significant differences in student characteristics by trip type. Results of chi-square tests indicated that the distributions of males and females for the two trip types were not significantly different, however, a greater proportion of students on open enrollment trips came from Boston compared to San Francisco, X^2 (1, N=246) = 18.484, p<.001. Students did not differ on baseline scores of empathy or perspective-taking, but students on open enrollment trips had slightly higher baseline college belonging scores (M = 3.705, SD = .950) than students on all-Summer Search trips (M = 3.451, SD = .935, t(245) = -2.058, p<.05). Preliminary analysis also revealed the need for a log transformation of one variable, negative adult behavior, due to excessive positive skew.

Bivariate correlations between all study variables are presented in Table 2. Covariates, gender and site, showed generally weak and non-statistically significant associations with predictor and outcome variables, although gender was significantly associated with post-trip scores of college belonging such that girls reported lower scores. As expected, prospective college belonging demonstrated a high level of stability from pre- to post-trip, which underscored the need to control for pre-trip scores throughout analyses. Among the group processes, students who reported more negative experiences among peers also reported more negative experiences with adults. Positive adult behaviors did not significantly correlate with negative peer dynamics, but the experience of social exclusion did have a significantly negative association with positive adult behaviors.

Students' perspective-taking and empathy scores were highly correlated at baseline and follow-up. As noted, these two scores are conceptually related. Empathy is typically conceptualized as a broad construct that comprises both cognitive and affective components (Stephen & Finlay, 1999). The measure of empathy used in this study taps into the affective aspect, while the measure of perspective-taking emphasizes the more cognitive aspect of the larger construct. Due to the strong association between perspective-taking and empathy and their theoretical link, I assessed the feasibility of combining them into one measure. Exploratory factor analysis was used to determine whether the empathy and perspective-taking scales would be represented best by one or two factors. This analysis revealed two factors with eigenvalues greater than one, though the scree plot suggested one or two factors. Both one and two factor solutions were examined using a varimax rotation of the factor loading matrix. The two factor solution had two items with high cross loadings (>.5) and two items with weak loadings (<.2). The single factor solution appeared to parsimoniously represent these items, yet, the two items with weak loadings were dropped and a 9-item scale was created to represent a combined construct, empathic perspective-taking or EPT. Internal consistency reliability for this measure was good at pre-test (α = .78) and post-test (α = .80).

Manipulation Check. To determine whether students on open enrollment trips were actually exposed to intergroup contact with majority youth, students responded to a single item reflecting whether they got to know someone from a different social class (4-point Likert scale , "not at all," to "a lot.") Students on open enrollment trips were significantly more likely to report getting to know someone from a different social class (M=3.67, SD = .644) than students on all-Summer Search trips (M=3.11, SD = .944, t(245) = -5.632, p<.001). In addition, students responded to similar questions that asked whether they got to know someone from a different

background or from a different racial-ethnic group. Scores for these questions were high across both conditions and student responses did not significantly differ across trip types.

Aim 1: Student Trip Type Predicting Prospective College Belonging

Hierarchical regression analyses were conducted to test the hypothesis that students in the open enrollment trips would demonstrate greater change in prospective college belonging than students on all-Summer Search trips. Table 3 presents results from each step of the model. In the first step, three variables were included: gender, Summer Search site (i.e. Boston or San Francisco), and students' pre-trip college belonging. I controlled for gender and Summer Search site because of females' significantly lower scores on post-trip prospective college belonging than males, and to negate organizational concerns that outcomes were driven by one site versus another. In this analysis, neither site nor gender was significantly related to post-trip scores of college belonging. Pre-trip scores of college belonging significantly predicted post-trip scores of college belonging, $B = .620$, t(245) = 12.41, p<.001, in that higher pre-trip scores predicted higher post-trip scores. In the second step, students' trip type was added to evaluate the significance of student composition on post-trip college belonging. Trip type did not significantly predict post-trip college belonging above and beyond included covariates, $B = -.077$, t(245) = -.769, p=.443, R^2 change = .001, F (1,241) =.591, p=.443.

Despite the absence of a direct effect, it is still appropriate to test whether a given predictor has a significant indirect association with a particular outcome (Hayes, 2013). I utilized the path-analytic approach described by Preacher and Hayes (2004, 2008) to test the hypothesized mediated effect of trip type on prospective college belonging through empathic perspective-taking. The PROCESS procedure for SPSS utilizes ordinary least-squares to estimate indirect effects and includes bias-corrected bootstrap-confidence intervals (CI) with 10,000

bootstrap samples (Hayes, 2013). For this mediation analysis, I included gender, site and pre-trip scores as covariates.

The mediation model tested is depicted in Figure 1. As indicated in Table 4, results did not support the hypothesis that trip type would affect change in prospective college belonging indirectly through perspective-taking, $B = -.004$, 95% percentile CI = $-.034$; $.025$. Trip type maintained its non-significant direct effect on prospective college belonging (path c'), $B = -.080$, $t(239) = -.825$, p=.410, and did not show a significant association with empathic perspective-taking (path a), $B = -.013$, $t(240) = -.219$, p=.827. Results did indicate that empathic perspective-taking had a significant association with post-trip college belonging after controlling for background variables (i.e. gender and site) and baseline levels of college belonging and empathic perspective-taking, $B = .285$, $t(240) = 2.583$, p=<.05 (path b).

Aim 2: Group Processes Predicting Prospective College Belonging

In order to test the first set of hypotheses of aim 2, whether the four peer- and adult-related group processes during the wilderness expeditions were associated with change in students' prospective college belonging and whether these effects were larger for students on open enrollment trips, hierarchical regression analyses were conducted with social exclusion, negative peer dynamics, negative adult behaviors and positive adult behaviors. Initially, each indicator was added in the second step of four separate hierarchical regression models to assess its direct effect on college belonging after controlling for gender, Summer Search site, and students' pre-trip college belonging scores in the first step of the model. The third step of these models included an interaction term to test the hypothesis that trip type moderated the association between each indicator of group processes and students' post-trip college belonging, such that the effects of group processes on change in college belonging would be larger for

students who participated on open enrollment trips. To avoid potentially problematic high multicollinearity with the interaction term (Aiken & West, 1991), variables were standardized and an interaction term between trip type and each indicator was then created. Tables 5-8 present results from analyses testing the effects of the four peer- and adult-related group processes on change in prospective college belonging and whether the effects were moderated by trip type.

Social Exclusion. As shown in Table 5, pre-trip scores of college belonging significantly predicted post-trip scores as found in earlier models. A significant trend was also observed for the covariate, gender, with females reporting lower post-trip college belonging than males, $B = -.160$, $t(242) = -1.683$, $p<.10$. As hypothesized, results show that when added in step 2, social exclusion added to the prediction of post-trip college belonging, $B = -.183$, $t(241) = -3.796$, $p<.001$; R^2 change $= .033$, $F (1, 241) =14.411$, $p < .001$. The negative effect of social exclusion during the wilderness expeditions, however, did not vary by trip type, as tested in step 3 through the social exclusion x trip type interaction term, $B = .129$, $t(240) = 1.369$, $p=.172$, R^2 change $= .004$, $F (1, 240) =1.874$, $p =.172$. The hypothesis of a direct effect was supported, but not the hypothesis that the effect would be stronger for students in the open enrollment trips.

Negative Adult Behaviors. Table 6 presents results indicating that negative adult behaviors during the wilderness expeditions, shown in step 2, did not have a direct effect on post-trip college belonging, $B = .008$, $t(241) = .083$, $p=.934$, R^2 change $= .000$, $F (1, 241) =.007$, $p =.934$. Furthermore, as indicated in step three, trip type did not significantly moderate this association, $B = -.027$, $t(240) = .083$, $p=.934$, R^2 change $= .000$, $F (1, 240) =.007$, $p =.934$. Negative adult behaviors did not predict change in college belonging as hypothesized and this direct effect was not moderated by trip type.

Negative Peer Dynamics. As shown in step 2 of Table 7, negative peer dynamics did not predict college belonging above and beyond included co-variates, $B = -.071$, $t(241) = -1.516$, p=.131, R^2 change = .006, F (1, 241) =2.298, p =.131. Step 3 in Table 7 shows that trip type did not moderate this association, $B = -.062$, $t(240) = -.614$, p=.540, R^2 change = .001, F (1, 240) =.377, p =.540. These results do not support the hypothesized direct effect of negative peer dynamics on college belonging or moderation of this effect by trip type.

Positive Adult Behaviors. Positive adult behaviors predicted significantly higher scores in post-trip college belonging (Table 8), $B = .262$, $t(241) = 3.023$, p<.01, R^2 change = .022, F (1,241) =9.139, p < .01. The interaction term with trip type was not significant (Table 8), $B = .066$, $t(240) = .656$, p=.512, R^2 change = .001, F (1, 240) =.431, p =.512, indicating comparable effects across trip types. This supports the hypothesized direct effect of positive adult behaviors on change in prospective college belonging, but not moderation by trip type.

The second set of analyses for aim 2 tested the hypotheses that the effects of group processes on college belonging operated indirectly through students' empathic perspective-taking and that indirect effects would be stronger for students on open enrollment trips, as well as the remaining direct effects. Mediation analysis was used to derive the indirect effect of each group process on post-trip college belonging through empathic perspective-taking across trip types. This was followed by an analysis of moderated mediation to assess whether any indirect effects of group processes through empathic perspective-taking were amplified for students on open enrollment trips, as diagramed in Figure 2, or whether the direct effects varied by trip type. Tables 9-12 present results from the set of mediation analyses for social exclusion, negative adult behaviors, negative peer dynamics and positive adult behaviors, respectively. Tables 13 -16 present results from the set of moderated mediation analyses for the same predictors.

Social Exclusion. Results presented in Table 9 indicate that the direct effect of social exclusion on post-test college belonging was partially mediated by students' empathic perspective-taking, as hypothesized. As presented, social exclusion had a significant effect on empathic perspective-taking (path *x* in Figure 2), *B* = -.086, t(239) = -3.078, p<.01. The association between post-trip empathic perspective-taking and post-trip college belonging showed a trend (path y), *B* = .217, t(238) = 1.961, p<.10. The indirect effect of social exclusion on college belonging through empathic perspective-taking was significant (*B* = -.019, 95% percentile CI = -.048 to -.001), but results also indicted that the direct effect of social exclusion on college belonging remained statistically significant (path z'), *B* = -.154, t(238) = -3.176, p<.01.

Table 13 presents results of moderated mediation analyses testing the hypothesis that the mediated effect of social exclusion on college belonging through empathic perspective-taking found in the previous analyses would be stronger for students in the open enrollment trips, as would the direct effect on prospective college belonging. Results showed that the interaction term (social exclusion x trip type) did not significantly predict post-trip empathic perspective-taking, *B* = .056, t(238) = .995, p=.321, therefore not supporting the hypothesis of a moderated indirect effect. Furthermore, the interaction term did not significantly predict post-trip college belonging, *B* = .092, t(237) = .957, p=.340, similar to earlier analysis without the indirect effect.

Negative Adult Behaviors. As summarized in Table 10, negative adult behaviors did not demonstrate a significant direct effect on post-trip college belonging (path *z'*), *B* = .047, t(238) = .521, p=.603. Negative adult behaviors significantly predicted empathic perspective-taking (path *x* in Figure 2), *B* = -.116, t(239) = -2.252, p=<.05, and empathic perspective-taking significantly predicted post-trip college belonging (path *y*), *B* = .294, t(238) = -2.628, p=<.01. Regardless of

not having a significant direct effect, negative adult behaviors significantly predicted college belonging indirectly, $B = -.034$, 95% percentile CI $= -.111$ to $-.001$ through improved empathic perspective-taking.

Table 14 summarizes the results from a moderated mediation analysis that tested whether the indirect effect of negative adult behaviors on post-trip college belonging is moderated by trip type, as well as the direct effect outside of the mediated effect. The interaction term that represented negative adult behaviors X trip type did not significantly predict empathic perspective-taking, $B = .087$, t(238) $= .833$, p=.406, or post-trip college belonging, $B = -.063$, t(237) $= -.349$, p=.727. These results did not support the hypothesis that the mediated effect would be larger for students on open enrollment trips.

Negative Peer Dynamics. As presented in Table 11, negative peer dynamics did not have a significant direct effect on post-trip college belonging in the mediation analysis (path *z'*), $B = -.037$, t(238) $= -.791$, p=.430. Negative peer dynamics significantly predicted empathic perspective-taking (path *x*), $B = -.060$, t(239) $= -2.223$, p<.05, and empathic perspective-taking significantly predicted post-trip college belonging (path *y*), $B = .273$, t(238) $= 2.443$, p<.05. Despite the absence of a significant direct effect, negative peer dynamics significantly predicted college belonging indirectly through empathic perspective-taking, $B = -.016$, 95% percentile CI $= -.050; -.001$.

As summarized in Table 15, this mediated effect did not vary based on students' trip type. The interaction term (negative group dynamics X trip type) did not significantly predict empathic perspective-taking, $B = .041$, t(238) $= .720$, p $= .472$ or post-trip college belonging, $B = -.103$, t(237) $= -1.040$, p $= .299$. Consequently, there was no evidence that students on open

enrollment trips reported larger mediated or direct effects of negative group dynamics on post-trip college belonging.

Positive Adult Behaviors. As shown in Table 12, positive adult behaviors had a significant direct effect on post-trip college belonging (path *z'*), $B = .188$, $t(238) = 2.135$, $p = <.05$. Furthermore, positive adult behaviors significantly predicted empathic perspective-taking (path *x*), $B = .160$, $t(239) = 3.217$, $p = <.01$, and empathic perspective-taking significantly predicted post-trip college belonging (path *y*), $B = .237$, $t(238) = 2.113$, $p<.05$. As hypothesized, positive adult behaviors had a mediated effect on post-trip college belonging through a positive association with empathic perspective-taking ($B = .038$, 95% percentile CI = .004; .108).

In Table 16, the interaction term that represents positive adult behaviors X trip type did not significantly predict empathic perspective-taking, $B = -.021$, $t(238) = -.193$, $p = .847$, or post-trip college belonging, $B = .145$, $t(237) = .786$, $p = .433$. The indirect effect of positive adult behaviors on post-trip college belonging through increased empathic perspective-taking did not significantly vary by trip type, as hypothesized, nor did the direct effect on college belonging.

CHAPTER FIVE: Discussion

The overall goal of this study was to examine whether youth in two summer wilderness experiences showed differential change on a non-cognitive predictor of post-secondary success, prospective college belonging, and if those changes were mediated by changes in empathy and perspective-taking. The study was guided in part by contact theory, which proposes that exposure to dissimilar groups in a facilitated setting can promote intergroup relatability and reduce prejudice (Pettigrew & Tropp, 2008). From this foundation, the study was guided by two aims. For the first aim, I hypothesized that students who participated on wilderness expeditions with students from economically diverse backgrounds would report greater improvements in prospective college belonging than youth on trips with only other Summer Search students. The second aim drew from both contact theory and PYD, which highlight the role of group processes in successfully promoting positive outcomes in these facilitated settings (Larson, 2000; Seaman et al., 2009). Given this, I tested whether youth reporting more frequent positive and less frequent negative peer- and adult-related group processes would show larger improvements in prospective college belonging. Because the benefits of intergroup exposure are most often mediated by empathy and perspective-taking (Pettigrew & Tropp, 2008) and OEE generally targets improved social skills (Henderson et al., 2007; Jordan, 1994), I also tested whether the association between trip type (a proxy measure of intergroup exposure) and prospective college belonging, as well as the associations between group processes and prospective college belonging, were mediated by empathy and perspective-taking. Finally, group processes are central to PYD in an OEE setting (Sibthorp, Paisley, & Gookin, 2007) and may be of particular importance to racial-ethnic minority youth in these settings (Warren, 2014). I hypothesized that students who experienced intergroup contact on open enrollment trips would be especially

responsive to group processes because of the fundamental dependency of intergroup contact on a constructive social environment (Seaman et al., 2009); therefore I tested whether these direct and indirect effects were conditional on students' trip type.

Analyses revealed three primary findings. First, trip type alone did not significantly predict change in college belonging directly or indirectly through an association with empathic perspective-taking. Second, social exclusion and positive adult behaviors demonstrated both direct and indirect effects on post-trip college belonging, while negative peer dynamics and negative adult behaviors only demonstrated indirect effects through reduced empathic perspective-taking. Third, the direct and mediated effects of each group process were not conditional on trip type.

The Effects of Trip Type on College Belonging

Traditionally, youth participants on wilderness expeditions have been from white, upper-income households, largely due to the trips' prohibitive costs (price tags range from $4,500 to $6,000). The exclusivity of these trips has limited our understanding of whether and how this context can promote positive outcomes for lower-income, racial-ethnic minority youth. With recent efforts to expand the diversity and inclusion within these trips, however, research has begun to explore how variations of student composition within OEE can differentially affect diversity-related outcomes for youth, such as improved tolerance (e.g. Green & Wong, 2009; Seaman et al., 2009). The current study was unique in that it considered the influence of intergroup exposure on youth outcomes beyond diversity-related outcomes. The lack of significant differences based on trips' student composition implies that intergroup exposure alone did not uniquely benefit students, at least not in terms of their perceptions around college belonging.

Alternatively, the absence of significant differences could imply an overly restrictive conceptualization of what actually comprises intergroup exposure. Open enrollment trips may have had greater student heterogeneity in terms of socioeconomic status, but students on both trip types reported being exposed to youth of different racial-ethnic groups and youth of different backgrounds. Summer Search is a national organization that serves youth from widely varying circumstances and students' perceptions of what constitutes their "in group" may be more multifaceted than simply shared program participation or receipt of scholarships. For instance, students in this study are uniformly classified as "racial-ethnic minority youth," which makes them unique from other students traditionally on these trips; however, adolescents' racial-ethnic identities are not necessarily aligned with a uniform conceptualization of "color," and students perceive diversity within these Summer Search populations as well (e.g. French, Seidman, Allen, & Aber, 2007). Another example is Summer Search students have variable citizenship status and families with unique immigration experiences that could lead to subgroup affiliations (Suarez-Orozco, Yoshikawa, Teranishi, & Suarez-Orozco, 2011). The benefits of intergroup exposure could have stemmed from these and other types of diversity, beyond socioeconomic diversity, across both trip types. Therefore, all-Summer Search trips may have similarly influenced students' interpersonal competencies and perceptions about future college settings. A more accurate measurement of what constitutes intergroup exposure, rather than using trip type as a proxy variable, could help inform this area of research.

The Effects of Positive and Negative Group Processes on College Belonging

Results also revealed that changes in college belonging and empathic perspective-taking were significantly associated with the kinds of peer- and instructor-related group processes that youth were exposed to on these wilderness expeditions. Social exclusion, negative peer

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dynamics, positive adult behaviors and negative adult behaviors all demonstrated direct effects, indirect effects, or both, on students' post-trip college belonging. Contact theory proposes that intergroup exposure will reduce prejudice and facilitate improved understanding and relatability between group members (Seaman et al., 2009). Yet to be successful, contact theory also stipulates particular conditions, such as the enforcement of equal status, without which contact could actually lead to an intensification of intergroup misunderstanding and prejudice (Pettigrew & Tropp, 2000). Moreover, increased empathy and perspective-taking is widely recognized as the mediating mechanism largely responsible for the benefits of intergroup exposure (Pettigrew & Tropp, 2008). In this study, group processes varied in their direct versus indirect effects on college belonging. The group processes more conceptually related to the underlying conditions outlined in contact theory demonstrated their detrimental effects entirely through their negative influence on empathic perspective-taking, as originally hypothesized. The others demonstrated this indirect effect as well, but also upheld evidence for a significant direct effect, outside of this mediated path.

For instance, students were asked about the presence of discrimination while on these trips. Discriminatory behaviors would clearly diminish perceived equal status, a necessary condition outlined in contact theory, and negative peer dynamics did significantly predict lower college belonging through an indirect negative association with empathic perspective-taking. Student reports of social exclusion were also indirectly associated with college belonging, but this group process additionally maintained a negative direct effect. Student reports of social exclusion were less about discriminatory behaviors present within the group (like with negative peer dynamics) and instead focused more on an individual student's experience of rejection

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while on the trip. This could have led to more extensive effects on students' individual outcomes outside of the hypothesized mediated pathway.

Student reports of adult behaviors followed a similar pattern. Measures of negative adult behaviors were focused on instructors' discriminatory actions against the student, which suggests the adult leader was not modeling or enforcing those conditions necessary for contact theory to be effective. These negative adult behaviors demonstrated their effect on college belonging indirectly through reduced empathic perspective-taking, as hypothesized. Student reports of positive adult behaviors, however, exhibited a direct effect on college belonging above and beyond an indirect effect. Caring relationships with adults are associated with a plethora of positive outcomes for youth (Benson, Scales, Hamilton, & Sesma, 2006; Lerner, Bowers, Minor, Boyd et al., 2013; Lerner, Napolitano, Boyd, Mueller et al., 2014) and student reports of closeness and trust in the instructor could have benefited students' perceived college belonging through other unique pathways as well. As a whole, these results provide further evidence for the role of empathy and perspective-taking in generating positive outcomes associated with intergroup exposure (Husnu & Crisp, 2014; Pettigrew & Tropp, 2008). Furthermore, these results maintain how critical the quality of these social interactions are for young people participating in OEE.

The Effects of Group Processes on College Belonging conditioned on Trip Type

Lastly, as part of this study, I hypothesized that the effects of these group processes on change in prospective college belonging would be larger for students on open enrollment trips, but this hypothesis was not supported. As described above, central to contact theory is the necessary establishment of equal status among group members. Intergroup exposure through wilderness expeditions provides a unique opportunity to "enforce" equal status (Green & Wong,

2009). Theoretically, the intense physical and emotional demands of these trips are intended to heighten youth's sense of community and selflessness. OEE has been described as, "a time free of status, roles, reputation, and so on, where a high value is placed on personal sharing, honesty, and openness" (Sharpe, 2005 as cited in Bell et al., 2003, p. 256). In fact, interconnectedness among group members and a sense of belonging has been reported as the most crucial aspects of wilderness programming (Bell & Holmes, 2011; Bell et al., 2014). "What this theory proposes is that reported benefits are based on strong and immediate feelings of belonging and an ability to be authentic within a new status system where a group shares power among participants in a just and equitable manner." (Bell et al, 2014, p. 41). In their daily lives, students are well aware of existing status hierarchies. Despite the underlying theory behind wilderness programming, these hierarchies appeared to penetrate these settings as well, regardless of trips' student compositions. Threats to the communal experience across both trip types led to significantly lower outcomes as a result.

Students also reported comparable benefits associated with positive adult behaviors. Instructors play a critical role in supporting youth's sense of belonging and facilitating inclusive practices within programming, regardless of students' backgrounds (Warren et al., 2014; Paisley et al., 2008). These results underscore instructors' role in promoting positive youth outcomes.

The Unique Context of Outdoor Experiential Education for Diverse Youth

The large majority of students who participate in Summer Search are racial-ethnic minority youth, which is important when interpreting this study's results. Students don't enter these wilderness experiences as blank slates. They may be more or less susceptible to negative experiences that occur within the context of these trips. Parks and outdoor programming can hold unique meaning to traditionally oppressed groups, and racial-ethnic minorities have often not felt

welcome in these natural spaces. While nature can hold deep meaning for these groups

culturally, interacting with the outdoors in an organized or programmatic setting may feel like

something reserved for white individuals, and even more specifically, white males (Warren et al.,

2014). As a result, the field of OEE has been limited in its understanding of how to best serve

young people of color and similarly, how young people of color may be at elevated risk for

iatrogenic effects of programming. For instance, in this study negative and positive experiences

with adult instructors were significantly associated with youth outcomes. Those leadership

characteristics that are needed to lead diverse groups of youth effectively may require a level of

cultural competence not traditionally sought out by OEE providers, and particular experiences

with instructors may exacerbate or allay minority students' discomfort in wilderness

programming and affect subsequent outcomes.

In addition to racial-ethnic differences, youth from highly under-resourced environments

may experience heightened vulnerability to the quality of these social interactions. Students at

Summer Search face a complex array of risk factors, yet these trips represent a shift away from

overcoming adversity and instead, offer an opportunity for students to deepen existing strengths

and learn new competencies that will place them on trajectories of thriving (e.g. increased self-

esteem and confidence; Hattie et al., 1997; Wojcikiewicz & Mural, 2010). In order to do that,

these wilderness expeditions must offer a safe space for risk-taking and self-exploration. At the

core of both positive youth development and OEE is an emphasis on supportive relationships to

promote group belonging and positive social norms (Lerner, 2006; Sibthorp, 2010) and

adolescents are developmentally primed to respond to social cues (Steinberg, 2014). If these

social environments become threatening, students' trust in the experience erodes and they can be

forced to draw on learned behaviors that have been protective in other threatening environments,

such as withdrawal or overconfidence, which can then lessen opportunities for positive reflection and growth (Beightol et al., 2012). Furthermore, the establishment of equal status may be particularly important for low-income, racial-ethnic minority students. Each young person is coming into these groups with his own history of discrimination, and negative experiences on these trips may trigger or reinforce harmful beliefs about himself (Seaman et al., 2009; Wilson, 2006).

Finally, OEE is an environment that can be remarkably empowering for young people of color. For low-income, racial-ethnic minority students, the belief that they can shape their own futures and exert power in social interactions is a key outcome for youth programming. A sense of empowerment is dynamic and responds to social cues. "One cannot simply bestow or give empowerment to another, but rather, one can provide a facilitative environment that includes empowering processes." (Shellman, 2014, p. 23). For those students in this study who experienced constructive group processes, outcomes related to their future as well as their interpersonal strengths improved. While OEE programs must remain sensitive to the unique needs of particular student populations, the field should also recognize the exciting opportunity to promote uniquely meaningful outcomes for them as well.

Limitations

This study provided a unique opportunity to deepen our understanding of how racial-ethnic minority youth from under-resourced backgrounds experience OEE, however there are several limitations to the study design that merit description. First, this is a non-random sample of participants in a wilderness program. All participants were enrolled in the Summer Search program which requires students to exhibit minimum levels of socioemotional competence and academic performance prior to being accepted, so generalization to other groups of low-income,

racial-ethnic minority youth participating in experiential education should be made with caution. Furthermore, students were not randomized to trip type and trip assignment may introduce additional selection effects that interfere with the interpretation of outcomes. For instance, students on open enrollment trips reported higher levels of pre-trip college belonging. Mentors may have intentionally assigned more resilient or socially competent Summer Search students to these open enrollment trips with upper-income youth.

The measurement approach used in this study may have further reduced the ability to detect the effects of intergroup exposure. First, the measures of group processes used in this study did not specifically assess those conditions outlined in contact theory as necessary for beneficial intergroup contact. Certain peer dynamics, such as interdependence and equal status, weren't evaluated. Instead, negative aspects of group functioning, including social exclusion and discriminatory behaviors, were assessed. Measures that more directly reflected the theoretical requirements of beneficial intergroup contact may have revealed hypothesized differences in student outcomes based on trip assignment, whereas measures of negative and positive peer and adult-related group processes held significance despite trips' student composition. Second, surveys were administered immediately after students returned home and students had not yet processed their experiences with their mentors. Mentors scaffold student self-reflection and ensure students connect the wilderness experiences to college. If a later follow-up had been conducted, because of the similarities between the student composition on open enrollment trips and that found on a college campus, students on these trips may have reported higher scores on prospective college belonging than students on all-Summer Search trips, as hypothesized. Finally, this study only assessed the impact of OEE participation and intergroup exposure on one outcome: prospective college belonging. With the wide variability in socioemotional skills that

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are related to post-secondary success, these associations could function differently with other outcomes. Also, this measure is future-facing and does not ask students about their current situations. It is possible that effects would have differed had the outcome been focused on a more proximal assessment of students' attitudes and behaviors.

Practical Implications

As Summer Search continues to scale and serve more students, organizational leadership must continuously re-evaluate the current program model and opportunities for cost savings. The relatively new approach of sending students on all-Summer Search trips requires fewer resources than open enrollment trips. While this study had limitations related to trip assignment and measurement, it suggests that the organization can expect similarly beneficial experiences across trip types in promoting perceived college belonging. In addition, this study highlights the important role group processes have in generating positive outcomes for youth. When students reported positive interactions with peers and adults, they felt more confident about their futures in college, yet the experience of rejection appeared to similarly generalize to future settings. This finding calls attention to the risk associated with sending students as a group into deeply challenging and novel experiences, led by instructors who may not be adequately trained in managing negative group dynamics (especially those stemming from diversity issues). Mentors can work with students leading up to the trip to prepare them for how to best mange these negative experiences, as well as actively collaborate with summer program partners to ensure high-quality programming. Finally, this study explored how particular group processes can shape students' outcomes through changes in empathic perspective-taking. Increased knowledge around this process enables mentors at Summer Search to develop a responsive programmatic

approach that incorporates intentionality around repairing students' willingness and ability to take on the perspective of others following a negative trip experience.

Future Research

In order to isolate the effects of intergroup exposure on youth outcomes, future research could randomize students into each trip type to more completely account for pre-existing group differences. In the future, data could also be collected from youth on open enrollment trips who are not on scholarship. This would allow researchers to assess whether or not low-income, racial-ethnic minority students are potentially more vulnerable to the effects of positive and negative group processes, and whether they benefit more or less from these experiences in terms of post-secondary preparation. Students could also be clustered within their individual trips, and incidence rates of negative group processes could be compared to assess whether low-income, racial-ethnic minority students are particularly sensitive to negative social cues in these wilderness settings. Furthermore, future research could estimate associations among these and similar constructs using a structural equation model. Unlike with the use of ordinary least squares regression for this study, structural equation models estimate latent variables that account for the lack of precision in measurement. This can lead to more reliable and robust findings. Finally, wilderness expeditions often include two instructors. Future research could assess how the unique relationships students have with each instructor influences their outcomes, as well as their combined effect.

Conclusions

National trends demonstrate clear disparities in post-secondary degree attainment related to family socioeconomic status (IHEP, 2014). Young people in under-resourced communities

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face considerable structural inequities in our education system, yet academic preparedness is but one predictor of post-secondary education (Bowen et al., 2009). These students must also overcome the significant hurdle of financing their college aspirations, and even with adequate financial means, low-income students begin and complete college at divergent rates from their upper-income peers (Bowen et al., 2009). Recently, a number of social and emotional competencies have gained attention because of the growing evidence connecting these skills and personal qualities to students' academic success (Duckworth & Yeager, 2015; Farrington et al., 2012). Due to the emphasis on academic outcomes, the majority of research on promoting these "non-cognitive factors" has focused on interventions occurring within schools (Dweck et al., 2011); yet these qualities can certainly be developed and strengthened outside of school walls as well.

The underlying theory central to experiential education emphasizes that through youth's interactions with a programmatic context (i.e. the facilitated "experience"), they develop competencies that can be continually applied and strengthened in the future (Dewey, 1938). Non-cognitive factors encompass broad individual attributes that facilitate healthy social relationships, goal-directed effort, and sound judgement and decision-making (Duckworth & Yeager, 2015). Experiential education, and specifically OEE, represents an ideal programmatic setting for the development of these pertinent skills and mindsets, yet it remains largely unexplored as a venue for promoting post-secondary achievement within high-school students. This study concluded that OEE can benefit students' sense of prospective college belonging for low-income, racial-ethnic minority youth, though variations in their experiences can strengthen or reduce the potential for positive outcomes. Interactions with peers and instructors while on these trips influence not only students' attitudes and behaviors in the moment, but remain

influential when they return home and affect perceptions about the future. Moreover, these effects are significant regardless of whether students are participating in experiences with their peers or with upper-income, majority youth. Much remains to be learned about whether increased cultural responsiveness is required to better facilitate group processes for these students, or whether these group processes are similarly meaningful across all young people who undertake these expeditions.

Table 1

Scores on College Belonging and Predictor Variables by Trip Type

	Open Enrollment		All-Summer Search	
	n or *M*	% or *SD*	*n* or *M*	% or *SD*
Gender				
Male	63	41.7	41	43.2
Female	88	58.3	54	56.8
Site				
Boston	101	66.9	58	61.1
San Francisco	50	33.1	37	38.9
College Belonging				
Pre-trip	3.705	.950	3.451	.935
Post-trip	3.723	.986	3.643	.878
Empathic Perspective-Taking				
Pre-trip	7.918	.977	7.838	.903
Post-trip	8.024	.899	8.000	.897
Group Processes				
Social Exclusion	.828	.971	.737	.959
Negative Peer Dynamics	1.291	1.037	1.000	.923
Inappropriate Adult Behaviors	.255	.498	.355	.556
Positive Adult Behaviors	3.481	.559	3.544	.486

Table 2

Correlations between All Covariates, Predictor and Outcome Variables (N=246)

		2	3	4	5	6	7	8	9	10
1.	Gender[a]	.055	-.123	.105	-.161*	.075	.064	-.094	-.059	-.007
2.	Site		.113	.081	.056	.050	-.063	.019	-.169**	-.032
3.	Pre College Belonging			.131*	.633***	.024	-.213**	-.055	-.042	.055
4.	Pre EPT				.216**	.528***	-.082	-.110	-.054	.145*
5.	Post College Belonging					.190**	-.316***	-.101	-.016	.182**
6.	Post EPT						-.195**	-.177**	-.149*	.245***
7.	Social Exclusion							.313***	.213**	-.246***
8.	Negative Peer Dynamics								.199**	-.109
9.	Negative Adult Behaviors									-.206**
10.	Positive Adult Behaviors									

Note. [a]0=males, 1=females; *p<.05; **p<.01; ***p<.001; EPT – Empathic Perspective-Taking.

Table 3

Summary of Hierarchical Regression Analysis for Trip Type Predicting Post-trip College Belonging (N=246)

Variable	*B*	*SE B*	β	ΔR^2
Step 1				.407***
Gender	-.160	.095	-.084[¥]	
Site	-.009	.047	-.009	
Pre College Belonging	.620	.050	.623***	
Step 2				.001
Gender	-.160	.095	-.084[¥]	
Site	.001	.049	.001	
Pre College Belonging	.624	.050	.628***	
Trip Type	-.077	.100	-.040	

Note. [¥] p<.10; *** p < .001.

Table 4

Mediation Analysis of Trip Type on Post-Trip College Belonging via Empathic Perspective-Taking.

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.013	.055	.231	-.197	.094	-2.108*
Site	.007	.028	.262	-.008	.050	-.176
Pre College Belonging	-.023	.029	-.789	.610	.049	12.358***
Pre EPT	.498	.052	9.542***	.131	.105	1.251
Trip Type	-.013	.057	-.219	-.080	.098	-.825
Post EPT	-	-	-	.285	.110	2.583*
Indirect Effect	-	-	-	-.004	.018	[-.034;.025[t]]
	R^2 = .281 F(5,240) = 18.778, p<.001			R^2 = .446 F(6,239) = 32.082, p<.001		

Note. * p < .05. **p<.01*** p < .001; Number of bootstrap resamples: 10000; [t], bias corrected confidence interval 95%; EPT – Empathic Perspective-Taking.

Table 5

Summary of Hierarchical Regression Analysis for Social Exclusion Predicting Post-Trip College Belonging (N=246)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.407***
Gender	-.160	.095	-.084[¥]	
Site	-.009	.047	-.009	
Pre College Belonging	.620	.050	.623***	
Step 2				.033***
Gender	-.146	.093	-.076	
Site	-.016	.046	-.017	
Pre College Belonging	.582	.050	.585***	
Social Exclusion	-.183	.048	-.187***	
Step 3				
Gender	-.153	.093	-.080	.004
Site	-.019	.046	-.020	
Pre College Belonging	.584	.050	.588***	
Social Exclusion	-.266	.077	-.271**	
Social Exclusion X Trip Type[a]	.129	.094	.107	

Note. [¥] $p<.10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

[a] Social exclusion was standardized prior to creating the interaction term.

Table 6

Summary of Hierarchical Regression Analysis for Negative Adult Behavior Predicting Post-Trip College Belonging (N=246)

Variable	B	SE B	β	ΔR^2
Step 1				.407***
Gender	-.160	.095	-.084[¥]	
Site	-.009	.047	-.009	
Pre College Belonging	.620	.050	.623***	
Step 2				.000
Gender	-.160	.096	-.084[¥]	
Site	-.008	.048	-.009	
Pre College Belonging	.620	.050	.624***	
Neg. Adult Behavior	.008	.091	.004	
Step 3				.000
Gender	-.163	.097	-.086[¥]	
Site	-.007	.048	-.008	
Pre College Belonging	.618	.051	.622***	
Neg. Adult Behavior	.037	.138	.020	
Neg. Adult Behavior X Trip Type [a]	-.027	.096	-.022	

Note. [¥] $p<.10$. * $p < .05$. ** $p < .01$. *** $p < .001$.
[a] Negative adult behavior was standardized prior to creating the interaction term.

Table 7

Summary of Hierarchical Regression Analysis for Negative Peer Dynamics Predicting Post-Test College Belonging (N=246)

Variable	B	SE B	β	ΔR²
Step 1				.407***
Gender	-.160	.095	-.084$^{¥}$	
Site	-.009	.047	-.009	
Pre College Belonging	.620	.050	.623***	
Step 2				.006
Gender	-.175	.096	-.092$^{¥}$	
Site	-.006	.047	-.007	
Pre College Belonging	.614	.050	.618***	
Neg. Peer Dynamics	-.071	.047	-.075	
Step 3				.001
Gender	-.170	.096	-.089$^{¥}$	
Site	-.006	.047	-.006	
Pre College Belonging	.612	.050	.616***	
Neg. Peer Dynamics	-.030	.082	-.032	
Neg. Peer Dynamics X Trip Type [a]	-.062	.101	-.053	

Note. $^{¥}$ p<.10. * p < .05. ** p < .01. *** p < .001.

[a] Negative peer dynamics was standardized prior to creating the interaction term.

Table 8

Summary of Hierarchical Regression Analysis for Positive Adult Behaviors Predicting Post-Test College Belonging (N=246)

Variable	B	SE B	β	ΔR^2
Step 1				.407***
Gender	-.160	.095	-.084[¥]	
Site	-.009	.047	-.009	
Pre College Belonging	.620	.050	.623***	
Step 2				.022**
Gender	-.161	.094	-.084[¥]	
Site	-.003	.047	-.004	
Pre College Belonging	.611	.049	.615***	
Pos. Adult Behavior	.262	.087	.147**	
Step 3				.001
Gender	-.159	.094	-.083[¥]	
Site	.001	.047	.001	
Pre College Belonging	.612	.049	.616***	
Pos. Adult Behavior	.179	.154	.101	
Pos. Adult Behavior X Trip Type [a]	.066	.100	.057	

Note. [¥] p<.10. * p < .05. ** p < .01. *** p < .001.

[a] Positive adult behavior was standardized prior to creating the interaction term.

Table 9

Mediation Analysis of Social Exclusion on Post-Trip College Belonging via Empathic Perspective-Taking.

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.021	.054	.381	-.182	.092	-1.981[¥]
Site	.002	.028	.076	-.017	.047	-.368
Pre College Belonging	-.041	.029	-1.402	.576	.050	11.625***
Pre EPT	.489	.051	9.503***	.148	.103	1.435
Trip Type	.003	.056	.059	-.053	.096	-.551
Social Exclusion	-.086	.028	-3.078**	-.154	.049	-3.176**
Post EPT	-	-	-	.217	.111	1.961[¥]
Indirect Effect	-	-	-	-.019	.012	[-.048;-.001[t]]
	$R^2 = .309$ $F(6,239) = 17.780, p<.001$			$R^2 = .469$ $F(7,238) = 29.985, p<.001$		

Note. [¥] p<.10. * $p < .05$. ** $p < .01$. *** $p < .001$; Number of bootstrap resamples: 10000; [t], bias corrected confidence interval 95%; EPT – Empathic Perspective-Taking.

Table 10

Mediation Analysis of Negative Adult Behaviors on Post-Trip College Belonging via Empathic Perspective-Taking.

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.007	.054	.122	-.195	.094	-2.078*
Site	-.002	.028	-.060	-.005	.048	-.100
Pre College Belonging	-.024	.029	-.842	.611	.050	12.349***
Pre EPT	.495	.052	9.548***	.129	.105	1.222
Trip Type	-.018	.057	-.324	-.078	.098	-.797
Neg. Adult Behavior	-.116	.051	-2.252*	.047	.090	.521
Post EPT	-	-	-	.294	.118	2.628**
Indirect Effect	-	-	-	-.034	.026	[-.111;-.001^t]
	$R^2 = .261$ F(6,239) = 16.758, p<.001			$R^2 = .447$ F(7,238) = 27.454, p<.001		

Note. $^¥$ p<.10. * p < .05. ** p < .01. *** p < .001; Number of bootstrap resamples: 10000; ^{t}, bias corrected confidence interval 95%;EPT – Empathic Perspective-Taking.

Table 11

Mediation Analysis of Negative Peer Dynamics on Post-Trip College Belonging via Empathic Perspective-Taking.

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	-.001	.055	.021	-.204	.094	-2.171*
Site	.007	.028	.257	-.008	.048	-.176
Pre College Belonging	-.027	.029	-.956	.607	.050	12.243***
Pre EPT	.487	.052	9.351***	.130	.105	1.241
Trip Type	.007	.057	.125	-.068	.099	-.693
Neg. Peer Dynamics	-.060	.027	-2.223*	-.037	.047	-.791
Post EPT	-	-	-	.273	.112	2.443*
Indirect Effect	-	-	-	-.016	.012	[-.050;-.001[t]]
	$R^2 = .296$ F(6,239) = 16.782, p<.001			$R^2 = .448$ F(7,238) = 27.546, p<.001		

Note. [¥] p<.10. * p < .05. ** p < .01. *** p < .001; Number of bootstrap resamples: 10000;
[t], bias corrected confidence interval 95%; EPT – Empathic Perspective-Taking.

Table 12

Mediation Analysis of Positive Adult Behaviors on Post-Trip College Belonging via Empathic Perspective-Taking.

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.015	.054	.280	-.194	.093	-2.087*
Site	.010	.028	.364	-.005	.048	-.104
Pre College Belonging	-.027	.028	-.948	.604	.049	12.309***
Pre EPT	.474	.052	9.160***	.127	.104	1.222
Trip Type	-.001	.056	-.026	-.068	.097	-.702
Positive Adult Behavior	.160	.050	3.217**	.188	.088	2.135*
Post EPT	-	-	-	.237	.112	2.113*
Indirect Effect	-	-	-	.038	.025	[.004;.108^t]
	$R^2 = .311$ F(6,239) = 17.982, p<.001			$R^2 = .457$ F(7,238) = 28.560, p<.001		

Note. $^¥$ p<.10. * p < .05. ** p < .01. *** p < .001. Number of bootstrap resamples: 10000; ^{t}, bias corrected confidence interval 95%; EPT – Empathic Perspective-Taking.

Table 13

Direct and Indirect Effects of Social Exclusion on Post-Trip College Belonging through Empathic Perspective-Taking, Moderated by Trip Type

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.018	.054	.337	-.186	.092	-2.020*
Site	.001	.028	.029	-.019	.047	-.412
Pre College Belonging	-.039	.029	-1.362	.578	.050	11.648***
Pre EPT	.483	.052	9.346***	.142	.103	1.379
Social Exclusion	-.121	.045	-2.697**	-.212	.078	-2.734**
Post EPT	-	-	-	.210	.111	1.895*
Trip Type	-.039	.071	-.544	-.121	.121	-1.005
Social Exclusion X Trip Type	.056	.056	.995	.095	.097	.980

$R^2 = .312$
$F(7,238) = 15.381, p<.001$

$R^2 = .471$
$F(8,237) = 26.342, p<.001$

Note. [¥] p<.10. * p < .05. ** p < .01. *** p < .001; EPT – Empathic Perspective-Taking

Table 14

Direct and Indirect Effects of Negative Adult Behaviors on Post-Trip College Belonging through Empathic Perspective-Taking, Moderated by Trip Type

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.012	.055	.219	-.199	.095	-2.101*
Site	-.003	.028	-.110	-.004	.049	-.078
Pre College Belonging	-.021	.029	-.730	.609	.050	12.188***
Pre EPT	.496	.052	9.556***	.127	.106	1.203
Neg. Adult Behavior	-.164	.078	-2.115*	.082	.136	.607
Post EPT	-	-	-	.296	.112	2.638**
Trip Type	-.045	.065	-.695	-.058	.113	-.516
Neg. Adult Behavior X Trip Type	.087	.104	.833	-.063	.180	-.349

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$R^2 = .298$ $R^2 = .447$
F(7,238) = 14.445, p<.001   F(8,237) = 23.949, p<.001

</div>

Note. ¥ p<.10. * p < .05. ** p < .01. *** p < .001; EPT – Empathic Perspective-Taking

Table 15

Direct and Indirect Effects of Negative Peer Dynamics on Post-Trip College Belonging through Empathic Perspective-Taking, Moderated by Trip Type

	Post EPT			Post College Belonging		
Variable	B	$SE\ B$	t	B	$SE\ B$	t
Gender	-.002	.055	-.043	-.195	.094	-2.070*
Site	.006	.028	.231	-.007	.050	-.140
Pre College Belonging	-.026	.029	-.904	.603	.050	12.152***
Pre EPT	.484	.052	9.250***	.135	.105	1.289
Neg. Peer Dynamics	-.089	.047	-1.862$^{¥}$	.032	.082	.397
Post EPT	-	-	-	.278	.112	2.489*
Trip Type	-.038	.085	-.445	.043	.146	.296
Neg. Peer Dynamics X Trip Type	.041	.057	.720	-.103	.099	-1.040

$$R^2 = .297 \qquad\qquad R^2 = .450$$
$$F(7,238) = 14.384, p<.001 \qquad F(8,237) = 24.246, p<.001$$

Note. $^{¥}$ p<.10. * p < .05. ** p < .01. *** p < .001; EPT – Empathic Perspective-Taking.

Table 16

Direct and Indirect Effects of Positive Adult Behaviors on Post-Trip College Belonging through Empathic Perspective-Taking, Moderated by Trip Type

Variable	Post EPT			Post College Belonging		
	B	*SE B*	t	*B*	*SE B*	t
Gender	.015	.054	.273	-.191	.093	-2.060*
Site	.009	.028	.327	.001	.048	.025
Pre College Belonging	-.027	.028	-.952	.605	.049	12.319***
Pre EPT	.474	.052	9.138***	.128	.104	1.225
Pos. Adult Behavior	.174	.088	1.977*	.089	.154	.580
Post EPT	-	-	-	.238	.112	2.121*
Trip Type	.072	.384	.187	-.584	.664	-.880
Pos. Adult Behavior X Trip Type	-.021	.107	-.193	.145	.185	.786

$$R^2 = .311$$
$$F(7,238) = 15.357, p<.001$$

$$R^2 = .458$$
$$F(8,237) = 25.027, p<.001$$

Note. ¥ p<.10. * p < .05. ** p < .01. *** p < .001; EPT – Empathic Perspective-Taking
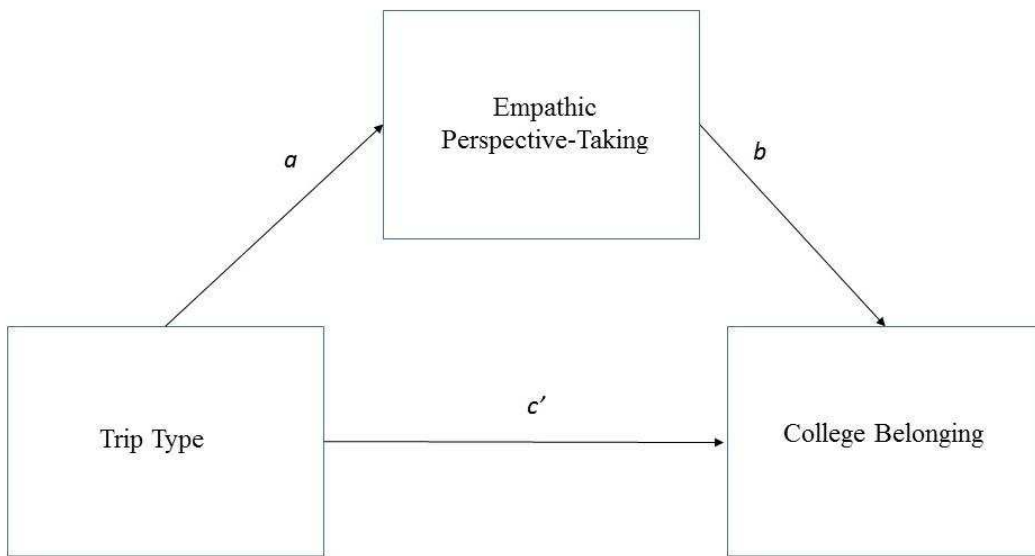
Figure 1. Mediation model for the indirect effect of trip type on college belonging through empathic perspective-taking.
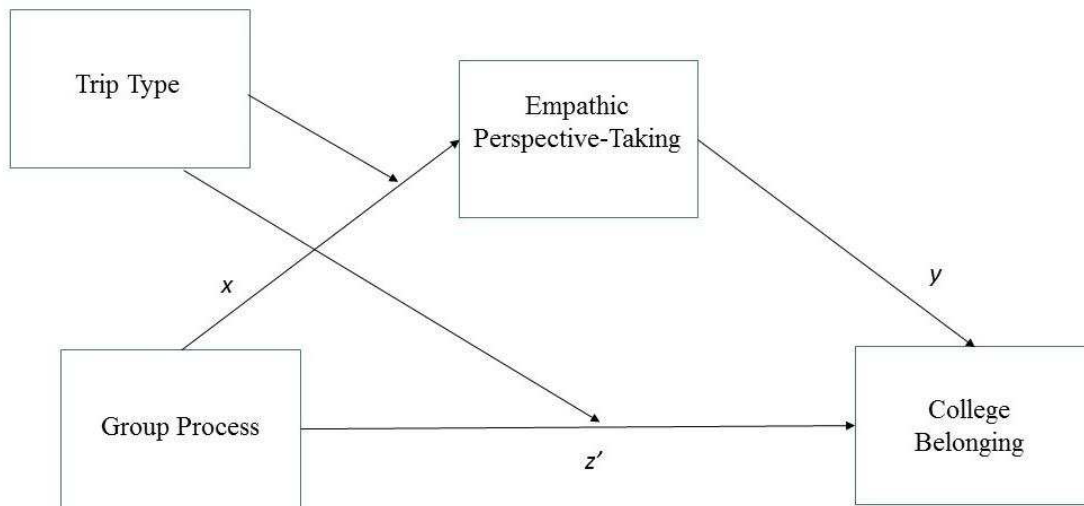
Figure 2. Moderated mediation model for the indirect effect of group processes on college belonging through empathic perspective-taking, moderated by trip type.

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