

**GAINING PERSPECTIVE: THE IMPACT OF CLOSE CROSS-RACE FRIENDSHIPS  
ON DIVERSITY TRAINING AND EDUCATION**

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**Gaining perspective: The impact of close cross-race friendships on  
diversity training and education**

Abstract

Diversity education occurs in universities and workplaces, but research has progressed in disciplinary silos. Consequently, the field of diversity training has failed to utilize theoretical and practical advances from related fields. Our research addresses these limitations. Integrating educational and social psychology theories, we develop a relational model of training that offers perspective taking as an outcome of diversity training and cross-race friendships as a relational experience that spills over to the training environment. Our first two studies, conducted in organizational and academic settings, confirmed the model. Pre and post-course assessments revealed that while participants became more aware of the value of perspective taking and their need to improve this skill, only those with close cross-race friends improved their reported perspective taking abilities. Other forms of interracial contact and racial attitudes had no effect. Supporting theoretical predictions, belief in a just world mediated this friendship effect. Given the influence of cross-race friendships, we conclude with a third study that, using an experimental design, examined the effectiveness and underlying processes of a technique that increased participants' willingness to engage in cross-race friendships and other prosocial diversity and ally behaviors at work (e.g., diversity voice, confronting racism). Our findings illustrate the power of relationships and offer new theoretical directions and practical applications for diversity training and education.

*Keywords:* Diversity training, Friendships, Cross-Race Friendships, Relationships, Training, Perspective taking, Race/Ethnicity, Allyship

*“Education is the most powerful weapon which you can use to change the world”*

-- Nelson Mandela

Most organizations recognize the importance of diversity education. It is estimated that nearly all Fortune 500 firms and half of all midsize companies conduct diversity training (Dobbin & Kalev, 2016), and nearly 60% of educational institutions incorporate diversity into their curriculum (Hart Research Associates, 2016). These institutions recognize that our ability to live and work together depends on our ability to understand and appreciate each other’s perspectives and experiences. Diversity education<sup>1</sup>, whether it occurs in corporate boardrooms or college classrooms, has the shared goal of helping participants develop the core skills needed to work effectively in a diverse workplace (Kulik & Roberson, 2008).

One core skill is perspective taking, which is the ability to entertain the view of others and see the world from another’s perspective (Davis, 1980). Perspective taking helps people understand and appreciate diverse experiences and viewpoints, which can improve intergroup relations and create more inclusive workplaces and communities (Ku, Wang & Galinsky, 2015; Parker, Atkins & Axtell, 2008). Perspective taking has been studied as both a dispositional aptitude and as a response evoked from a perspective taking manipulation (see review by Ku et al., 2015). In both cases, those who engage in perspective taking are more likely to recognize and understand the dynamics of power, privilege and discrimination at work (Ku et al., 2015; Parker et al., 2008; Todd & Galinsky, 2014). Perspective taking increases the acknowledgement

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<sup>1</sup> Kulik and Roberson (2008) offer the unifying term “diversity education” to reflect educational processes that occur in organizations and universities. Diversity education includes diversity training in organizations and diversity courses in academic settings. While the context may vary, diversity education has the common goal of increasing people’s ability to interact effectively with diverse others by changing the attitudes, knowledge and skills related to diversity. Accordingly, we use “diversity education” as an umbrella term and use the terms “diversity training” and “diversity courses” when needed to clarify specific contexts.

of racial inequalities (Todd et al., 2012) and decreases stereotyping, discrimination, and the unconscious or implicit biases that underlie discriminatory behaviors (Ku et al., 2015; Todd et al., 2011; Todd & Galinsky, 2014). As Ku and colleagues observe (2015), perspective taking may be one of the most effective ways to increase inclusion and reduce discrimination at work.

Although perspective taking is sometimes seen as interchangeable with empathy, the constructs are conceptually (Ku et al., 2015) and empirically (Longmire & Harrison, 2018) distinct. As described by Longmire and Harrison (2018), perspective taking involves the attempt to consider another's viewpoint ("I see your point") while empathy is a visceral emotional response to others pain ("I feel your pain"). This distinction is important for diversity initiatives: working effectively with diverse others requires more than just the ability to empathize with their pain (Ku et al., 2015). Employees need to recognize, understand and appreciate the diverse experiences, values and perspectives of coworkers, customers, and others in their communities. Perspective taking is clearly a life skill that builds bridges across differences and facilitates positive intergroup relationships.

Even though perspective taking has significant utility for diversity initiatives and race relations, two key questions need to be answered. First, can diversity education improve people's ability to engage in perspective taking? Diversity trainers and educators assume this to be the case given that a goal of diversity education is to help participants understand and appreciate the diverse perspectives and experiences of others (Chrobot-Mason & Quiñones, 2002; Kulik & Roberson, 2008). Although it is reasonable to expect that diversity education will improve perspective taking, this relationship has not been tested. This omission is important since perspective taking can change deeply ingrained racial biases (Todd et al., 2011) that are often resistant to training. Perspective taking could therefore be a hidden benefit of diversity

training that helps organizations reduce discrimination and create more inclusive workplaces.

Second, what conditions increase the efficacy of diversity education for improving perspective taking? Diversity scholars observe that trainees' pre-training experiences with diversity may affect training efficacy (Chrobot-Mason & Quiñones, 2002; Roberson et al., 2001). Perhaps the most impactful experience with diversity is the experience of having friends of another race (Davies et al., 2011). Cross-race friendships can be an important source of knowledge and a powerful motivator for learning about diversity (Korgen, 2002; Plummer et al., 2016). Although these relationships can change people in profound ways (Berscheid, 1994), diversity and training scholars have not examined, or even acknowledged, the spillover of relational experiences to educational environments. Addressing this omission, we draw on theories from the educational and social psychology literatures (Gurin, 1999; Gurin et al., 2002; Pettigrew, 1997, 1998) to offer a relational perspective on diversity education. As described later, this perspective holds that cross-race friendships help people see the relevance of diversity classes, which can increase their motivation to engage in class activities that improve their perspective taking abilities. Our theoretical account of how and why cross-race friendships spill over to educational environments is important for both theoretical and practical reasons. Diversity and training researchers need a theoretical foundation for understanding the role of trainees' relational experiences in training effectiveness, and trainers/educators can use this knowledge in their needs assessments to design more effective programs.

Accordingly, our research examines the efficacy of diversity education for improving perspective taking and whether this change is amplified for those with close cross-race friendships (i.e., "the friendship effect"). We develop a relational theory of diversity education and test it in both organizational and academic settings. After finding support for our theory in

an organizational field study of trainees in a diversity training course, we then tested it in a study of business students enrolled in managing diversity courses. We replicate our core findings, extend our theory to outcomes related to perspective taking, and unpack the processes underlying the friendship effect. These two studies confirm the importance of close cross-race friendships for improving perspective taking through diversity education. Recognizing the importance and difficulty of developing close cross-race friendships (Dunsmuir, 2013; Korgen, 2002), we then conclude with a third study that, using an experimental design, examines whether a perspective taking manipulation can increase participants' willingness to develop cross-race friendships and engage in other prosocial diversity and ally behaviors at work (e.g., diversity voice and confronting racist comments).

We seek to offer a number of theoretical, empirical and practical contributions. To start, our work provides an important theoretical bridge between the diversity training and diversity curriculum literatures. Diversity education is vital for our future and current workforce (Bell et al., 2009), but research on diversity education has progressed in disciplinary silos (King et al., 2010), which limits our ability to understand its processes and potential. By integrating theory and research from the social psychology, educational psychology and management literatures, we open new avenues for understanding why diversity education is effective and for whom.

Our study contributes directly to the field of diversity training by answering the call for theoretically driven research on the impact of trainee experiences on diversity training effectiveness (Roberson et al., 2001, 2012). Our theoretical integration reveals that having close cross-race friendships can motivate trainees to be more engaged in diversity training. These friendships may offer trainees insights about racial inequality which may help them see the value of diversity training and increase their engagement in training experiences that improve their

perspective taking abilities.

Our research also brings a relational perspective to the general field of training. The field acknowledges that pre-training characteristics have an important impact on training motivation and effectiveness, and that such characteristics should be included in needs assessments that guide training design and delivery (Aguinis & Kraiger, 2009). However, researchers have focused on trainees' personality and individual differences (e.g., conscientiousness, cognitive ability) (Colquitt et al., 2000; Salas et al., 2012) and have failed to recognize trainees' relational experiences. There has been a call for more theory on pre-training states that enhance training effectiveness (Aguinis & Kraiger, 2009; Salas et al., 2012), but relational experiences are excluded from these discussions. This is unfortunate as people can be fundamentally changed by their relational experiences (Berscheid, 1994), and these experiences are brought with them into the training environment. We need to understand how pre-training relational experiences affect trainees' motivation and their ability to develop skills through training. Our relationally-based theory of training offers the field an important and more inclusive lens for understanding the role of pre-training experiences on training motivation and effectiveness.

We also seek to make a contribution to the field of relationship science. Although close cross-race friendships are a positive relationship, the field has not acknowledged or examined the impact of these friendships on diversity initiatives. Cross-race friendships can transform individuals (Davies et al., 2011; Korgen, 2002), and this transformation may be carried into the workplace in unacknowledged ways.

Understanding the spillover of cross-race friendships not only yields important theoretical insights for positive relationship and diversity scholars, it can also affirm the practical value of diverse workforces and student bodies. By illuminating the value of cross-race friendships, our

study can provide further support for affirmative action policies and relationship-building practices in workplaces and universities.

Another contribution of our research is that we examine a potential benefit of diversity education that has not been studied or even directly acknowledged by diversity scholars. Researchers have asked and answered questions about the effectiveness of diversity education for learning and attitudinal change (Bezrukova et al, 2016; Kalinoski et al., 2013), but whether diversity education can improve perspective taking remains an unanswered question. We need to answer this question, as perspective taking can reduce biases, improve intergroup relations and create more inclusive workplaces (Ku et al., 2015). Perspective taking may therefore be a benefit of diversity education that can be leveraged in classrooms and workplaces.

Our research also contributes to policy. Diversity scholars have made a cogent case for requiring business schools to offer courses on managing diversity (Bell et al., 2009), but research is needed that assesses outcomes and justifies the resources needed to provide these courses (Avery & Thomas, 2004). Perspective taking is an optimal metric for this justification as it is a fundamental skill for business students. Indeed, perspective taking has been shown to yield a wide range of positive interpersonal and work outcomes, including increased trust, empathy, support, compassion, interpersonal and emotional understanding, organizational citizenship and team effectiveness (Ku et al., 2015; Longmire & Harrison, 2018; Parker et al., 2008). As summarized by Parker and colleagues: “there is almost no aspect of organizational functioning that is not improved by better perspective taking” (Parker et al., 2008, p. 154). The results of our research can therefore inform accrediting agencies and business schools seeking to equip students with the skills needed to work in, as well as manage, an increasingly diverse workforce.

Finally, our third study contributes directly to practice by importing a social psychology

manipulation to the diversity training and education arena. The technique elicits perspective taking and has been found to impact prejudice, awareness of racism and prosocial motivation in laboratory settings (see Todd & Galinsky, 2014). Some researchers have used this technique in academic settings and have found it to be effective in changing students' attitudes towards non-English speakers (Madera et al., 2011) and sexual minorities (Lindsey et al., 2015). Building on this work, we examine whether this technique influences participants' willingness to develop cross-race friendships and other prosocial diversity outcomes, and examine the processes underlying its effectiveness. Our findings illustrate the utility of a practical technique that can be used in a variety of educational and organizational settings.

### **Theoretical Foundation and Hypotheses**

We develop and test a theoretical model of diversity education that can be used by researchers in academic and organizational settings. Leveraging theoretical perspectives from the social and educational psychology literatures, we integrate Pettigrew's (1997, 1998) intergroup contact theory with Gurin's disequilibrium theory (Gurin, 1999; Gurin et al., 2002) to offer a theoretical account of the role of cross-race friendships in diversity education. Although these theories emerge from different fields, they complement one another. As described below, Pettigrew's (1997, 1998) intergroup contact theory holds that close cross-race friendships elicit change but does not address perspective taking or the educational environment. Gurin's disequilibrium theory (Gurin, 1999; Gurin et al., 2002), in contrast, focuses on perspective taking in educational environments, but does not unpack the role of close friendships as a pre-training condition. Integrating these theories, we test the proposition that diversity education increases perspective taking and that this effect is amplified for those who have the pre-training experience of close cross-race friendships (i.e., the friendship effect). Deepening our theoretical

explanation, we also posit that belief in a just world is an underlying driver of the friendship effect. We now turn to our theoretical model, which is summarized in Figure 1.

\*\*\*\*\*Insert Figure 1 about here\*\*\*\*\*

### **The Friendship Effect: An Integration of Intergroup Contact and Disequilibrium Theories**

Building on Allport's (1954) contact hypothesis, Pettigrew's intergroup contact theory (1997, 1998) presents two core propositions that offer a foundation for our theorizing. First, Pettigrew's theory holds that friendships are the most powerful form of intergroup contact as they meet the key conditions of the contact hypothesis. To this end, meta-analyses confirm that friendships have a stronger impact on attitudes than other forms of social contact (Davies et al., 2011). Second, the theory makes the important distinction between casual and close cross-group friendships. Casual friendships are more superficial and lack closeness, trust, disclosure and intimacy (Hinde, 1997; Parks & Floyd, 1996; Reis & Shaver, 1988). In contrast, close cross-group friendships involve mutual self-disclosure (Shelton et al., 2010; Turner et al., 2007) and subjective experiences of closeness (Eller & Abrams, 2003), which are fundamental for developing the emotional bonds and trust needed for personal growth (Davies & Aaron, 2016). In support of Pettigrew's theory, the effects of close cross-group friendships have been found to be more powerful than casual friendships and acquaintances (see review by Davies et al., 2013).

Gurin's disequilibrium theory (Gurin, 1999; Gurin et al., 2002) complements Pettigrew's (1997, 1998) theory by explaining how and why cross-race friendships facilitate perspective taking in educational environments. Drawing on Piaget's (1965) developmental theory of perspective taking, Gurin (1999, 2002) explains that experiences with diversity create a state of psychological disequilibrium that changes the way students think about the world, which motivates them to develop the aptitudes and abilities needed to live in a diverse, pluralistic

society. She offers perspective taking as an example, which she labels as a prosocial “democracy outcome.” Importantly, Gurin et al. (2002) recognize that disequilibrium can be created not only by diverse classroom experiences, but also by meaningful interactions with diverse peers. She explains that these experiences with diversity expose students to novel information and divergent views that stimulate active-thinking processes and create more complex styles of thinking that lead them to question their beliefs about the world. This questioning of beliefs opens their minds to inequality, moves them to effortful action, and increases their receptivity to diversity classes and the skills these classes offer.

Pettigrew’s theory (1997, 1998) enriches Gurin’s theory by highlighting the role of close friendships, and by holding that these experiences have a stronger effect than other forms of contact. The personal experiences shared in close intergroup friendships can be a powerful motivator of behavior (Davies et al., 2013, Davies & Aron, 2016) and, drawing on Gurin’s (1999) theory, can lead people to question their beliefs about a just world. This theoretical synthesis suggests that close cross-race friendships are a unique form of social contact that personalizes diversity, changes people’s world views, and helps them see the value of diversity and diversity-related skills.

Applying these theoretical perspectives to the context of diversity education, we propose that those with close cross-race friends should be more motivated to develop their perspective taking skills in diversity classes than those lacking such friendships. These friendships may help participants see the value of diversity training and make them more engaged in classroom experiences that facilitate the development of perspective taking aptitudes and abilities. Taken together, this theorizing leads to the predictions that 1) diversity courses will increase perspective taking, and 2) that this effect will be stronger for participants with close cross-race friendships.

Research in higher education supports the prediction that diversity courses can increase perspective taking. Diversity courses have been found to change students' beliefs about diversity and inequality (Bowman & Brandenberger, 2012), as well as increase their critical thinking (Laird, 2005) and propensity for civic and social action engagement (Bowman, 2011; Laird et al., 2005). Additionally, Gurin's own research found that college students were more likely to report improved perspective taking skills from their freshmen to their senior years when they had taken courses and programs that influenced their views of diversity (Gurin et al., 2002; Gurin et al., 2004). However, we know little about whether cross-race friendships spillover to influence the efficacy of diversity courses.

Turning to the diversity training literature, although practitioners assume that diversity training improves perspective taking (Johnson & Anderson, 2016), this has not been empirically tested. Training scholars acknowledge that pre-training experiences with diversity can influence training motivation and efficacy (see Roberson et al., 2001), but have not examined the spillover of cross-race friendships or other forms of positive social contact to the training environment. Accordingly, we hypothesize that diversity education will increase perspective taking and that this effect will be amplified for those with close cross-race friends (i.e., the friendship effect):

*Hypothesis 1:* Participants in diversity courses will experience an increase in perspective taking between the pre and post-course assessments.

*Hypothesis 2:* The effect of diversity education on participants' change in perspective taking will be greater for those with close cross-race friendships than those lacking close cross-race friendships.

We now tackle the question of what drives the friendship effect by further synthesizing Pettigrew's and Gurin's theories. Pettigrew (1997, 1998) theorized that close intergroup friendships elicit a reappraisal and questioning of group norms and beliefs, and that this reappraisal process mediates the relationship between intergroup contact and outcomes (i.e., the

deprovincialization thesis). Gurin's theory (1999) offers complementary insights about this reappraisal process within the educational context. She holds that exposure to diverse experiences creates a psychological disequilibrium that prompts students to think and learn in new, deeper and more complex ways. Exposure to diverse experiences moves students from routine or automatic thinking to complex thinking that involves effortful and conscious modes of thought. Automatic thinking restricts their ability to hear and process novel and challenging information. In contrast, complex thinking allows for the reappraisal of beliefs and reinforces an openness to new viewpoints and perspectives.

According to Gurin (1999), diverse experiences change students' fundamental beliefs about just worlds, racial equity and world order, which in turn increases their appreciation of the value of diversity and their ability to understand the life experiences and perspectives of others. We apply this theory to the experience of close cross-race friendships, which according to Pettigrew (1997, 1998), is the most potent form of diverse social contact. Our application holds that close cross-race friendships may challenge people's assumptions and beliefs about race and move them from automatic to complex thinking processes. This allows them to see, hear and process novel information from their friends that change their beliefs about just worlds and racial equality. This relational experience reflects, per Pettigrew (1997, 1998), a reappraisal process that gives them new perspectives on the role of race in society, as well as a new appreciation of the diversity of life experiences and the importance of perspective taking as a life skill.

This theoretical integration leads to the proposition that close cross-race friends challenge people's belief in a just world and create a cognitive shift that increases the relevance of diversity courses and the motivation to develop perspective taking in educational environments. We therefore predict that belief in a just world should mediate the relationship between close cross-

race friends and changes in perspective taking. Belief in a just a world is the belief that the world is a fair and just place and that people get what they deserve (Lerner & Miller, 1978). Although it has not been directly tested, related research supports this prediction (Bowman & Brandenberger, 2012). Close cross-race friendships affect people's perspectives and awareness of race-related advantages and disadvantages (Plummer et al., 2016) and change college students' beliefs about, and awareness of, racial inequality (Spanierman et al, 2008). Students with close cross-race friends may therefore enter a diversity class armed with a heightened awareness of inequality, which increases their motivation and their receptivity to classroom experiences and opportunities for improving their perspective taking skills. Based on the above, we offer the following hypothesis:

*Hypothesis 3:* Belief in a just world will mediate the relationship between close cross-race friendships and changes in perspective taking between the pre and post-course assessments.

### **Overview of Current Research**

We tested our theory using participants in diversity courses in organizational and academic settings. We designed our studies to build on one another. Our first study established a foundation by examining whether trainees in an organization's diversity course experienced an increase in perspective taking and whether this effect was amplified for those with close cross-race friends (i.e., Hypotheses 1 and 2). Our second study replicated Study 1 results and extended our model in two ways. First, we deepened our theoretical understanding by examining whether belief in a just world explained the friendship effect (Hypothesis 3). Second, we extended the outcomes of our model to include *perspective taking mindsets*, which are defined as individuals' attitudes and beliefs about the malleability and value of perspective taking.

Since theories are strengthened by the empirical refutation of alternative explanations (Bacharach, 1989), we also addressed alternative explanations for the friendship effect. We

examined and compared the impact of other forms of interracial contact, such as participants' reports of past positive interracial experiences and, using census data, their exposure to other races in their communities. We also examined whether our findings were explained by variables related to cross-race friendships and diversity education, such as racial attitudes and beliefs.

These analyses affirmed the robustness of our theory and the uniqueness of the friendship effect.

Taken together, the findings from our first two studies illustrate the singular importance of close cross-race friendships in diversity education. Accordingly, our third study took a practical approach in examining whether diversity education can influence participants' motivation to develop cross-race friendships and other prosocial diversity behaviors. As noted earlier, perspective taking has not only been approached as an aptitude but also as a response evoked from a perspective taking manipulation (Ku et al., 2015; Todd & Galinsky, 2014). In particular, perspective taking is elicited by asking subjects to write essays about "a day in the life" of another. This technique increases subjects' willingness to engage in intergroup contact in laboratory settings through different mediating variables (Wang et al., 2014). In our third study, we apply this technique to the field of diversity education. Specifically, we introduce a perspective taking exercise at the beginning of the course and, using an experimental design, examine whether it influences participants' willingness to develop cross-race friendships and other prosocial diversity outcomes through different mediational processes. We also contribute to theory by comparing mediators that have been used to explain the technique's effectiveness. In sum, while our first two studies examine perspective taking as an outcome of diversity education, our third study assesses whether an exercise designed to elicit perspective taking in laboratory settings increases the effectiveness of diversity education in the field. If so, this accessible and replicable exercise can be an effective tool for diversity trainers and educators.

## Study 1: Field Study in an Organizational Context

### Method

**Sampling Strategy and Sample.** As described above, our research tests the robustness of our model in two field settings. Although diversity education in organizational and academic settings shares the common goal of changing attitudes, knowledge and skills related to diversity, there are - and should be - curriculum differences within and across settings (Kulik & Roberson, 2008). Like other types of training, diversity training should be tailored to meet the needs of trainees and their organizations (Roberson et al., 2003). Similarly, diversity courses in academic settings should also meet the needs of students (Denson & Bowman, 2017). Accordingly, our intention was not to examine the effects of identical courses in different settings but rather to assess whether the hypothesized relationships were robust to differences across settings. Still, comparisons should take into account course length and objectives (Bezrukova et al., 2016; Kalinoski et al, 2013).

Accordingly, we sought an organization for Study 1 that offered a course comparable in length and objectives to diversity courses typically offered in academic settings (Avery & Thomas, 2004). Specifically, we collected data from a U.S. military organization that offers a 7-week diversity course for its Equal Opportunity (EO) professionals. The course is offered to military and civilian personnel from all military branches and geographic locations.

Although this sample offers insights into a different population and context than that found in academic settings, the course objectives, content and structure are similar to university diversity courses (Avery & Thomas, 2004; Kulik & Roberson, 2008). Like college courses and other diversity training programs, the objectives of the EO course were to improve the knowledge, skills and abilities needed to work effectively in diverse teams and workplaces. The

course objectives involved increasing trainees' knowledge of the experiences of diverse groups; raising their awareness of the dynamics and outcomes of stereotypes, prejudice and discrimination; and increasing their self-awareness and the interpersonal skills needed to create effective military units. In terms of general content, the course addressed the experiences of a range of different groups (race, ethnicity, gender, religion, disability) and topics (stereotyping, prejudice, discrimination, implicit bias, power, privilege, bystander interventions) that are typically covered in college diversity courses (see review by Avery & Thomas, 2004). The EO course used similar methods as college courses, such as lectures, experiential exercises, cases, films, small group discussions, and guest speakers. The trainees had assigned readings, took exams, and received grades for the course. They could also receive college credit for taking the course. Unlike most college courses, however, the EO course had full day sessions with multiple instructors. The course was required for those seeking EO certification and assignment. In line with the organization's mission, the overarching goal of the EO course was to improve combat readiness, which differs from the goals of academic institutions.

In total, 194 trainees completed the pre-course survey (80% of all course participants), and 98 also completed the post-course survey (51% retention rate).<sup>2</sup> Six did not provide usable data and were removed. The final sample thus consisted of 92 trainees: 68% were men, 42% were non-Hispanic White, 55% were between 31 and 40 years old, 27% were between 41 and 50, and 15% were between 22 and 30. About 62% had a college degree.

**Measures.** *Pre and post-course perspective taking* were measured with the seven-item perspective taking subscale of Davis's (1980) Interpersonal Reactivity Index. This established measure, widely used in perspective taking research (Ku et al., 2015), assesses one's ability or

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<sup>2</sup>No differences were found between those completing only the pre-course survey and those completing the pre and post-course surveys for perspective taking ( $t_{186} = 0.35$   $p = .73$ ), race ( $\chi^2_1 = 0.15$   $p = .70$ ), or gender ( $\chi^2_1 = 3.63$   $p = .06$ ).

proclivity to adopt the point of view of others (Example item: “Before criticizing somebody, I try to imagine how I would feel if I were in their place” (options: 1 = *does not describe me at all* to 5 = *describes me very well*).

Based on recommendations from Davies et al. (2011) and others (e.g., Eller & Abrams, 2003; Shelton et al., 2010), we measured *close cross-race friendships* with three items reflecting self-disclosure and closeness. As described earlier, mutual self-disclosure and subjective experiences of closeness are defining characteristics that separate close friends from more superficial, casual friendships. We first assessed if respondents had friends of a different race. Those who did were then asked, “How likely are you to share personal challenges or problems with these friends?” and “How likely are they to share a personal challenge or problem with you?” These two items, modified from Turner et al. (2007), reflect mutual self-disclosure. The options were 1 = *unlikely*, 2 = *somewhat unlikely*, 3 = *somewhat likely* and 4 = *likely*. Respondents were then directly asked to report on the closeness of their friendships: “Overall, how close do you feel to these friends that are of another race?” This third item was modified from Binder et al. (2009). The options were 1 = *not close at all*, 2 = *somewhat close*, 3 = *very close*, and 4 = *extremely close*. The three items in this composite measure had good reliability ( $\alpha = .81$ ).

We dichotomized our measure of cross-race friendships into two groups: those who have close cross-race friendships and those who lack such relationships. This was done for empirical and theoretical reasons. Empirically, our hypotheses call for a dichotomous comparison of those who have close cross-race friends with those who lack close-cross race friendships. As described earlier, these hypotheses are based on theory which explains why close cross-race friendships have different effects than casual friendships (Gurin, 1999; Pettigrew, 1997, 1998) and research

that supports this distinction (Davies et al., 2013; Plummer et al., 2016; Shelton et al., 2010). Casual acquaintances lack closeness and mutuality, the key characteristics of close friendships described earlier (Shelton et al., 2010; Turner et al., 2007). Unlike casual acquaintances, the experiences shared in close cross-race friendships can change people's perceptions and beliefs about the importance of diversity and diversity-related skills (Gurin et al., 2002). We extend this theory to diversity education by examining whether those with close cross-race friends receive more benefits from diversity education than those lacking such friendships. Those who lack close-cross race friendships include two groups: people who report not having friends of another race and those who report that they have such friends but characterize the relationship as lacking closeness and mutuality – the key characteristics of close friendships described above.

Accordingly, our research followed a stringent approach in distinguishing close cross-race friendships from acquaintances and superficial relationships (Davies & Aron, 2016; Shelton et al., 2010). Respondents needed to report having cross-race friends and also rate their friendships as close and characterized by mutual disclosure (i.e., each of the three items needed to have a rating of 3 or above) in order to be classified as having a close cross-race friend. As described later, our results were replicated using a continuous approach (i.e., summing the Likert scores for the three items). However, this approach does not offer a precise test of our comparative theoretically based hypothesis, as described above. In addition, it does not distinguish close friendships from acquaintances, and it excludes respondents who lack cross-race friends and are therefore unable to answer questions about the closeness of their relationships.

We also collected a separate validation sample in order to assess the measurement properties of the friendship measure, as well as other measures developed for Studies 2 and 3. The results of this validation study are described in Appendix A. In addition, all new and

modified variables are listed in Appendix B.

**Control variables.** We selected control variables that were theoretically or empirically justified as potential confounds. Specifically, in order to assess the unique effects of friends from other forms of contact, we controlled for *past positive interracial contact* using two items from Plant and Devine's (2003) Past Positive Experience with Black People scale. As displayed in Appendix B, the referent was modified from "Black people" to "people of a different race." We also controlled for respondent *race* as researchers have found race differences in the impact of contact on prejudice (Tropp & Pettigrew, 2005) and the effectiveness of diversity courses (Denson & Bowman, 2017). The statistical significance of our findings did not change with or without these control variables. Nonetheless, we retained them because they offer diversity scholars useful insights on the relationships between race, past positive interracial contact and other variables in our study.

## Results

Descriptive statistics, correlations and reliability estimates are displayed in Table 1.

\*\*\*\*\*Insert Table 1 about here\*\*\*\*\*

**Hypotheses.** We used repeated measures analysis of variance (ANOVA) to test the study hypotheses. Supporting Hypothesis 1, results first demonstrated an overall increase between pre and post-course perspective taking scores ( $F_{1,91} = 8.01, p < .01, \eta^2_p = .08$ ). We next examined Hypothesis 2, which held that this increase would be greater for those with close cross-race friendships. For this test, time (pre and post-course) was entered as a within-subjects factor, and close cross-race friendships (1 = yes, 0 = no) was entered as a between-subjects factor. Past positive interracial contact and race were also entered as between-subjects covariates.

Supporting Hypothesis 2, the time x close cross-race friendships interaction indicated that

participants with close cross-race friends experienced a greater increase in perspective taking over the course than those lacking such friendships ( $F_{1,88} = 4.20, p = .04, \eta^2_p = .05$ ).<sup>3</sup> Follow-up tests further revealed that the increase in perspective taking proposed in Hypothesis 1 occurred only for the group that had close cross-race friends ( $t_{65} = 3.44, p < .01, d = 0.42$ ). Those without close cross-race friends did not experience a change in their perspective taking ( $t_{25} = -0.20, p = .85, d = 0.04$ ) and the two groups did not differ in their pre-course perspective taking ( $t_{90} = -0.19, p = .85, d = 0.04$ ). These findings are summarized in Figure 2. In terms of our control variables, both the time x past positive interracial contact interaction ( $F_{1,88} = 0.32, p = .57, \eta^2_p = .00$ ) and time x race interaction ( $F_{1,88} = 0.00, p = .98, \eta^2_p = .00$ ) were not significant.

\*\*\*\*\*Insert Figure 2 about here\*\*\*\*\*

**Tests for alternate explanations.** Supporting our theoretical model, close cross-race friendships spilled over to the training environment and other forms of racial contact had no effect. However, two key questions emerge when viewing these results.

First, was the change in perspective taking driven by trainees' friendships or underlying attributes that facilitate their friendships and engagement in the course? We explored this question using two pre-course attributes: trainees' *intergroup anxiety* and their *lay theories of racial bias*. Intergroup anxiety, which reflects people's comfort interacting with diverse others, is a predictor and outcome of cross-race friendships and openness to diversity education (Davies et al., 2013; Denson & Bowman, 2017). Lay theories of racial bias, which reflects people's beliefs that racial bias can change, predict interracial interactions and the motivation to engage in diversity tutorials (Carr et al., 2012; Halperin, et al., 2012; Neel & Shapiro, 2012). Intergroup anxiety was measured using Turner et al.'s (2008) six-item measure, with the referent of

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<sup>3</sup>Results were replicated using a continuous measure of close cross-race friendships ( $F_{1,88} = 6.56, p = .01, \eta^2_p = .07$ ).

“Asians” replaced with “people of a different race.” This measure asks participants to “Please think of how you would feel mixing socially with complete strangers who are of a different race than you.” They were then asked to rate their reaction (1 = *not at all* to 5 = *very*) to six adjectives (e.g., “awkward, relaxed, self-conscious). Lay theory of racial bias was measured with Neel and Shapiro’s (2012) four-item measure (“People have a certain amount of racial bias and they really can’t do much to change it.” Options were 1 = *strongly disagree* to 5 = *strongly agree*.)

Analyses revealed that these attributes did not influence trainees’ change in perspective taking and that the friendship effect held even after we controlled for them. Specifically, neither the time x intergroup anxiety interaction ( $F_{1,86} = 0.34, p = .56, \eta^2_p = .00$ ) nor the time x lay theory of racial bias interaction ( $F_{1,86} = 0.01, p = .91, \eta^2_p = .00$ ) were significant. In contrast, the time x close cross-race friends interaction remained significant ( $F_{1,86} = 4.16, p = .04, \eta^2_p = .05$ ) with these variables added to the model. In short, the friendship effect prevailed not only over general positive contact, but also over two individual differences that predict people’s cross-race friendships and their willingness to engage in diversity-related educational experiences. We also explored the role of other demographic variables beyond race and found no support for a time x gender or time x age interaction. The time x close-cross race friends interaction, however, again remained significant even with gender and age (along with all other attributes) in the model. Finally, aligned with research on the symmetrical effects of interracial friendships on attitudes among racial groups (Levin et al., 2003; Shelton et al., 2014; Spanierman et al., 2008), the time x close cross-race friendships interaction did not vary by race, nor did it vary by gender or age.

The second question is whether the military personnel who enrolled in the diversity course were more likely to report having cross-race friendships and stronger perspective taking skills at the start of the training than other groups. Military personnel live/work in diverse environments,

so they may be more likely to have close cross-race friends and perspective taking skills than other groups. Moreover, since the trainees were EO professionals who needed the class for certification, they could have felt the need to inflate reports of these attributes. Their change in perspective taking could also be due to their natural improvement of perspective taking over time (i.e., maturation effects). The pre-test could also have sensitized them to the topic, making them more attentive to their perspective taking aptitudes.

Although we were unable to randomly assign the military personnel to a control group, we were able to collect additional data after the training that allowed us to explore these possibilities using a non-equivalent control group design. Specifically, we assessed whether the training group was unique in terms of their cross-race friendships and pre-course level of perspective taking. We also examined whether the control group experienced a change in their perspective taking over time, which could signal maturation and pre-test sensitization effects in the training group (Goldstein & Ford, 2002).

The control group consisted of a geographically diverse sample of employees who were alumni from three public, diverse universities in the Midwestern, Western, and Southern U.S. We collected data on the control group's cross-race friendships, and also assessed change in their perspective taking aptitudes at two time intervals spaced 7 weeks apart (thus mirroring the length of the diversity course in the training sample). The control group did not receive training. In total, 101 individuals participated in the Time 1 survey (51% response rate). Of those, 84 also participated in the Time 2 survey (83% retention rate). Four individuals did not provide usable data and were removed. The control group thus consisted of 80 employees: 40% were men, 73% were non-Hispanic White, and most (89%) were between 22 and 40 years old.

Analyses revealed that the EO military professionals who enrolled in the diversity training

did not report more close cross-race friendships ( $\chi^2_1 = 2.64, p = .10$ ; training group: 66 had friends, 26 did not; control group: 48 had friends, 32 did not) or stronger perspective taking at the start of the course ( $t_{170} = 1.04, p = .30, d = 0.16$ ) compared to a general sample of employees. As described in Appendix A, our measure of close cross-race friendships was also not correlated with social desirability in our validation study. While it seems intuitive that social desirability and demand effects could affect EO professionals' reports of their cross race-friends and perspective taking, we found no evidence for these effects. We also tested for group differences in reports of past positive interracial contact and found that the training group was actually less likely than the control group to report having past positive interracial experiences ( $t_{169} = 2.58, p = .01, d = 0.40$ ). Although lack of random assignment prevents us from establishing causal relationships, these findings suggest that demand effects are not a likely explanation for our results.

With respect to maturation effects, there was no change in the control group's perspective taking from Time 1 to Time 2 ( $F_{1,79} = 0.10, p = .76, \eta^2_p = .00$ ). In addition, there was a significant time x group (training/control) interaction ( $F_{1,170} = 5.23, p = .02, \eta^2_p = .03$ ) such that the change in perspective taking was greater in the training group than in the control group. Although people can naturally develop their perspective taking abilities over time, these results suggest that maturation is not a likely explanation for our findings.

In sum, our first study of EO professionals supports our theoretical model. Our next study tests and extends our model using an academic sample of future managers and HR professionals.

### **Study 2: Field Study in a University Context**

This study replicates core study tests for Hypothesis 1, which holds that diversity education increases participants' reports of their perspective taking abilities, and Hypothesis 2, which holds

that this increase is greater for those with close cross-race friends. We also test Hypothesis 3, which holds that belief in a just world mediates the relationship between close cross-race friends and changes in perspective taking. These effects are summarized in Figure 1.

In addition to testing the full theoretical model using an academic sample, Study 2 also strengthens and extends Study 1 by answering two questions raised by the first study. The first involves the role of other types of interracial contact. In order to assess the unique effect of close cross-race friends, we controlled for respondents' reports of past positive interracial contact in Study 1. Our analyses revealed that past positive contact had no effect – only the experience of having close cross-race friendships spilled over to the training environment. One question that arises is whether this holds for other types of contact, such as residential diversity. Residential diversity, particularly in one's formative years, can have a powerful effect on racial attitudes and future relationships (Charles, 2003). Accordingly, in Study 2 we use an objective measure based on census data and residential zip codes to control for and explore the impact of residential exposure to other races on course outcomes.

A second question is whether the reach of diversity education extends to other aspects of perspective taking, such as beliefs about its malleability. This is important as managers and HR professionals need to recognize that perspective taking, like other types of interpersonal skills, is not a fixed attribute. Rather, it is an important skill that can be developed in oneself and in others (Parker et al., 2008). Accordingly, in addition to replicating findings for perspective taking abilities, we extend our analyses to examine whether diversity education can change participants' mindsets about perspective taking. Mindset is a term used to describe people's knowledge structures and beliefs about the plasticity or fixedness of personal attributes (Dweck, 2000).

Accordingly, we define perspective taking mindsets as people's attitudes and beliefs about the malleability and value of perspective taking.

We expect that diversity education can increase participants' awareness of the importance of perspective taking and their need to improve this skill. Although this proposition has not been examined or even discussed, its underlying premise is in line with Gurin's (1999) disequilibrium theory, which holds that diverse classroom experiences change students' mental processes and create more complex styles of thinking. This proposition is also supported by related research, which has found that multicultural courses can increase students' awareness and self-assessments of multicultural skills (Denson & Bowman, 2017; Smith et al., 2006). Using a sample of HR and management students in a managing diversity course, we therefore examine not only whether the course changes students' perspective taking abilities, but also whether it changes their perspective taking mindsets:

*Hypothesis 4:* Participants in diversity courses will experience an increase in perspective taking mindsets between the pre and post-course assessments.

## **Method**

**Sample.** Survey data were collected from students enrolled in two sections of a Managing Diversity course at a large, urban public university in the Midwest. This elective course is offered primarily to undergraduate and graduate HR and business students. In line with other college diversity courses (Avery & Thomas, 2004), the overall objective of the course was to improve students' ability to work effectively in diverse teams and workplaces by increasing their knowledge about diverse groups and their understanding of the dynamics and impact of stereotypes, prejudice and discrimination. The course addressed the experiences of diverse groups and diversity-related topics (e.g., implicit bias, power, privilege, allyship) using lectures, experiential exercises, cases, films, group discussions and guest speakers. The two sections of

the 15-week course had the same instructor and syllabus but were offered at different semesters.

Pre and post-course surveys were distributed the first and last day of class. Surveys were completed outside of class and participants received extra credit for completing both surveys. In total, 82 students completed the pre-course survey (95% of all course participants), of which 80 also completed the post-course survey (98% retention rate). Two individuals did not provide usable data and were removed. The final sample thus consisted of 78 students: 23% were men, 73% were non-Hispanic White, 73% were between 22-30 years old, 21% were 18-21, and 6% were 31 or older. Most of the students (90%) were employed.

**Measures.** We used the same measures of *close cross-race friendships* and *perspective taking* as in Study 1. Pre-course *belief in a just world* was measured using Lipkus's (1991) seven-item scale. (Sample item: "I basically feel that the world is a fair place." Response options: 1 = *strongly disagree* to 5 = *strongly agree*.) We also collected pre and post-course assessments of the two *perspective taking mindsets* described earlier: participants' *value* of perspective taking and their *self-assessment* that they can and should improve this skill. The two six-item mindset measures were developed for this study. The measures were included in the validation study (see Appendix A) and are listed, along with all new and modified measures, in Appendix B.

**Control variables.** Zip codes and U.S. Census data were used to compute student's racial or ethnic dissimilarity to their communities (e.g., Avery et al, 2008). Since many students live on or close to campus, we used the zip code of the neighborhood they lived in during high school to calculate our objective measure of *residential interracial contact*. We also controlled for respondents' *race*. As in Study 1, the statistical significance of our findings did not change with or without these controls, but we retained them because of the insights they may offer for future

research on race and residential diversity.

## Results

Descriptive statistics, correlations and reliability estimates are displayed in Table 1.

**Hypotheses.** We began by replicating Study 1 findings. Supporting Hypothesis 1, results again showed a significant increase between pre and post-course perspective taking ( $F_{1,77} = 14.42, p < .01, \eta^2_p = .16$ ). Supporting Hypothesis 2, results again revealed a significant time x close cross-race friendships interaction ( $F_{1,74} = 5.04, p = .03, \eta^2_p = .06$ ) such that students with friends experienced a greater increase in perspective taking than those lacking such friends. Replicating Study 1, follow-up tests showed that only those with friends experienced an increase in perspective taking ( $t_{43} = 4.35, p < .01, d = 0.66$ ). Those without friends, while showing a slight uptick, did not experience a significant increase ( $t_{33} = 0.94, p = .35, d = 0.16$ ). In addition, those with and without friends did not differ in perspective taking at the start of the course ( $t_{76} = -0.25, p = .80, d = 0.06$ ). These findings are displayed in Figure 3. In terms of the control variables, both the time x residential interracial contact interaction ( $F_{1,74} = 0.01, p = .92, \eta^2_p = .00$ ) and time x race interaction ( $F_{1,74} = 1.05, p = .31, \eta^2_p = .01$ ) were not significant.

We next examined Hypothesis 3, which held that belief in a just world mediates the effect of close cross-race friendships on changes in perspective taking, using bias-corrected bootstrapping procedures with a confidence interval (CI) for the indirect effect constructed from 1,000 bootstrapped samples. Supporting Hypothesis 3, results offered evidence for the indirect effect (Indirect effect = .09, 95% CI = [.015, .235]). Figure 4 summarizes the coefficients. As shown, we assessed change in perspective taking in the mediation model by entering post-course perspective taking as the dependent variable while controlling for pre-course perspective taking.<sup>4</sup>

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<sup>4</sup>Results were also replicated using a difference score to measure change in perspective taking (Indirect effect = .08, 95% CI = [.004, .259]).

\*\*\*\*\*Insert Figures 3 & 4 about here\*\*\*\*\*

Supporting Hypothesis 4, results revealed a significant increase between participants' pre and post-course perspective taking mindsets: both their perceived value of perspective taking ( $F_{1,77} = 4.32, p = .04, \eta^2_p = .05$ ) and their self-assessed need to improve their perspective taking abilities ( $F_{1,77} = 6.37, p = .01, \eta^2_p = .08$ ). Moreover, participants' perspective taking mindsets increased irrespective of whether they had close cross-race friendships (self-assessment:  $F_{1,74} = 0.08, p = .78, \eta^2_p = .00$ ; values:  $F_{1,74} = 0.95, p = .33, \eta^2_p = .01$ ). While change in participants' self-reports of their perspective taking abilities was contingent on friendships, their self-reports of their perspective taking mindsets were not affected by these relationships.

Extending our analysis, we examined whether those with close cross-race friends were more likely to recognize the utility of diversity courses and diversity-related skills, as this may reflect pre-training motivation. We explored this using a three-item pre-course measure of *course utility* (e.g., "I think this course on organizational diversity will help prepare me for future positions" and "Workplace diversity courses can help students develop the skills needed to work in and manage a diverse workforce"). Response options were 1= *strongly disagree* to 7= *strongly agree* ( $\alpha = .80$ ). Results indicated that those with close cross-race friends saw diversity courses as more important and the utility of diversity skills as more critical than those lacking such friendships ( $t_{76} = 2.51, p = .01, d = 0.57$ ). This finding is in line with our theorizing that those with close cross-race friends may be more motivated to develop skills in diversity classes than those lacking such friends.

**Tests for alternate explanations.** As in Study 1, we controlled for and examined the independent effects of a range of variables that can facilitate cross-race friendships and course engagement. For racial attitudes and beliefs, we replicated Study 1 by using the same pre-course

measures of *intergroup anxiety* and *lay theory of racial bias* and added two additional measures. First, we measured participants' explicit prejudice with Brigham's (1993) five-item *social distance* scale, which predicts the development of interracial friendships (Shelton et al., 2009). (sample item: "I would rather not have people of a different race live in the same apartment building I live in."). Second, we measured their *internal motivation to respond without prejudice (IMP)*, a predictor and outcome of interracial friendships (Butz & Plant, 2009) that could also affect the efficacy of diversity education (Lindsey et al., 2015). IMP was measured with Plant and Devine's (1998) five-item scale (sample item: "I attempt to act in non-prejudiced ways toward people of a different race because it is personally important to me."). IMP could also tap social desirability, so controlling for it helped address the possibility that students reported having close cross-race friends to appear non-prejudiced. For both scales, the referent "Blacks" was replaced with "people of a different race," and response options were: 1 = *strongly disagree* to 5 = *strongly agree*.

As in Study 1, none of these attributes influenced participants' change in perspective taking, and the friendship effect held even after we controlled for them. Specifically, the time x intergroup anxiety ( $F_{1,70} = 0.90, p = .35, \eta^2_p = .01$ ), time x lay theory of racial bias ( $F_{1,70} = 0.82, p = .37, \eta^2_p = .01$ ), time x social distance ( $F_{1,70} = 0.15, p = .70, \eta^2_p = .00$ ), and time x IMP ( $F_{1,70} = 1.79, p = .18, \eta^2_p = .02$ ) interactions were not significant. In contrast, the time x close cross-race friends interaction remained significant ( $F_{1,70} = 4.46, p = .04, \eta^2_p = .06$ ) even after controlling for these attributes. Our mediation hypothesis also maintained significance when controlling for these attributes (Indirect effect = .09, 95% CI = [.018, .242]). As in Study 1, we also explored the role of other demographic variables beyond race and found no support for a time x gender or time x age interaction. The time x close-cross race friends interaction, however, again remained

significant even with gender and age (along with all other attributes) in the model, as did the mediation hypothesis. The time x close cross-race friendships interaction also did not vary by race, gender or age. Taken together, these findings reaffirm support for our theoretical model and the unique effect of close cross-race friends in diversity education.

As in Study 1, we also used a control group to assess whether students in the diversity course were more likely than other students to report close cross-race friendships and pre-course perspective taking, and to test for maturation and pre-test sensitization effects. Since we were unable to randomly assign college students to diversity courses, we again used a non-equivalent control group design. Here, the control group was comprised of business students enrolled in three accounting classes at a Western university. We selected this control group for three reasons. First, because students in the diversity class could share their class experiences with other business majors, a control group at a different university allowed us to use business majors without this contamination effect. Second, the length of the courses was identical, with students in both the control (accounting) and training (diversity) groups surveyed at the beginning and end of a 15-week class. This allowed us to assess if the control group also increased their perspective taking over a comparable time period, which is important since students mature and can develop perspective taking as part of their college experiences (Reason, 2011). Third, the two universities offered comparable opportunities for racially diverse interactions: both are large, urban, public institutions where over a third of students are students of color. Racially diverse interactions can influence students' perspective taking abilities and mindsets (Gurin, 1999) and could conceivably affect the change in perspective taking found in the diversity class. A control group with comparable opportunities for diverse interactions helps address this possibility.

As in the training group, surveys were distributed the first and last day of class, each of the

sections had the same instructor, and surveys were completed outside of class for extra credit. Both the training and control groups used multiple course sections, and the control group data were collected after the training group. In total, 74 students completed the pre-class survey (73% of all course participants) and 58 also completed the post-class survey (78% retention rate). Seven did not provide usable data and were removed. The control group thus consisted of 51 students: 61% were men, 57% were non-Hispanic White, 41% were between 22-30 years old, 51% were between 18-21, and 8% were 31 or older. Most of the students were employed (73%).

As in Study 1, we found no support for the idea that diversity course participants inflated their reports of close cross-race friendships or their pre-course perspective taking. Students in the diversity class were as likely to report having close-cross race friends as students in the control group ( $\chi^2_1 = 0.88, p = .35$ ; training group: 44 had friends, 34 did not; control group: 33 had friends, 18 did not). In line with this finding, the groups also did not differ in their residential diversity ( $t_{125} = -0.96, p = .34, d = 0.18$ ), which reflects access to interracial friendships. Students who enrolled in the diversity class did not report stronger pre-course perspective skills ( $t_{127} = 0.03, p = .98, d = 0.01$ ), or mindset beliefs about the value of perspective taking ( $t_{127} = 0.65, p = .52, d = 0.12$ ) or their need to improve this skill ( $t_{127} = 1.03, p = .30, d = 0.19$ ) than those in the control group. These equivalent reports suggest that demand effects are not a likely alternative explanation for our findings.

Turning to maturation and pretest sensitization effects, the control group did not experience a pre-post course (Time 1-Time 2) change in their perspective taking ( $F_{1,50} = 0.02, p = .88, \eta^2_p = .00$ ) or either mindset (self-assessment:  $F_{1,50} = 0.96, p = .33, \eta^2_p = .02$ ; values:  $F_{1,50} = 2.79, p = .10, \eta^2_p = .05$ ). Group comparisons further revealed a significant time x group (training/control) interaction for perspective taking ( $F_{1,127} = 5.30, p = .02, \eta^2_p = .04$ ) and students' self-assessed

need to improve their perspective taking ( $F_{1,127} = 5.49, p = .02, \eta^2_p = .04$ ) such that the pre-post course change was greater for the training than the control group. However, a similar result did not emerge for students' beliefs about the value of perspective taking ( $F_{1,127} = 0.02, p = .90, \eta^2_p = .00$ ). Although a significant change in pre-post course values was found for the training but not the control group, the difference between pre-post changes for the groups was not significant, suggesting that this mindset could have been affected by more than just the diversity class.

### **Discussion of Studies 1 and 2 and Need for Study 3**

Supporting our theoretical model, close cross-race friendships affected the efficacy of diversity education in organizational and academic settings. In both studies, those with and without close cross-race friends started the course with equivalent perspective taking, but only those with close cross-race friends increased their perspective taking by the end of the course.

Our tests of alternative explanations revealed that this friendship effect is both powerful and unique. Specifically, we controlled for and examined the independent effects of a range of attitudes and beliefs that underlie cross-race friendships and the motivation to engage in diversity education, as well as demographic variables and other types of interracial contact. None of these variables influenced a change in perspective taking and the friendship effect remained significant even after we controlled for them. Only those with close cross-race friendships experienced a change in their perspective taking. There was also no indication that participants inflated reports of their close cross-race friendships. In both studies, those who enrolled in diversity classes did not report more close cross-race friendships than other groups of employees or students.

Further supporting our theoretical model, belief in a just world mediated the relationship between close cross-race friends and change in perspective taking. Those with close cross-race friends were also less likely to start the course believing in a just world compared to those

lacking such friends ( $t_{76} = 2.63, p = .01, d = 0.60$ ), a finding aligned with longitudinal research on the impact of cross-race friends on racial equality beliefs (Spanierman et al., 2008). Those with close cross-race friends were also more likely to enter the class with a firm belief in the importance of diversity courses along with the recognition that diversity skills are needed for their future positions. These pre-course beliefs and values may have increased their motivation to engage in class experiences that facilitated their perspective taking.

It is important to acknowledge that although those lacking close cross-race friends were less likely to see the value of diversity courses at the start of the course, they still profited from the experience. Perspective taking mindsets increased for all participants irrespective of their friendships. Although diversity trainers may assume that training increases perspective taking, these findings offer more realistic expectations. Diversity education may help participants recognize the value of perspective taking and their need to improve this skill, but their actual ability to develop perspective taking skills may be contingent on having close cross-race friends.

Taken together, these studies illustrate the singular importance of close cross-race friendships for diversity education. Other diversity-related experiences, attitudes and types of interracial contact had no effect on participants' change in their reported perspective taking abilities. These findings are aligned with our theoretical integration of disequilibrium and contact theory; close cross-race friendships create complex styles of thinking that challenge beliefs in ways that make participants more receptive to diversity classes and the skills these classes offer.

One conclusion from this research is that we need to encourage the development of cross-race friendships. Indeed, cross-race friends can be beneficial not only for diversity education but also for fostering personal growth and positive intergroup relations within and outside the workplace (Korgen, 2002). However, there are significant challenges to developing these

friendships. In addition to residential segregation, interracial interactions can make people feel self-conscious, uncomfortable and anxious (Trawalter et al., 2009). Consequently, about 40% of Whites and 25% of people of color in the U.S. are surrounded exclusively by friends of their own race (Dunsmuir, 2013). Another poll of 20,000 people in 27 countries revealed that 56% reported that the majority of their friends were of the same ethnicity (Perasso, 2019).

Accordingly, instead of concluding our research with a recommendation for developing cross-race friends, we took the next step in addressing a question that has significant implications for the current and future workforce: Can diversity education help participants overcome the challenges of developing cross-race friendships? Promising experimental research suggests this could be the case. Social psychologists have found that a simple perspective taking exercise reduces subjects' prejudice and increases their willingness to engage in intergroup contact (Todd et al., 2011; Wang et al., 2014). The exercise elicits perspective taking and has been widely used to study the social psychology of prejudice in short-term laboratory settings. However, we believe the exercise also has potential for diversity education. Accordingly, our third study explores whether this exercise facilitates participants' willingness to develop cross-race friendships and other prosocial diversity outcomes. If so, this easily replicated exercise could be a powerful tool for improving course efficacy in academic and organizational settings.

### **Study 3: Field Study Using an Experimental Design**

This study builds a practical bridge between social psychology research and the field of diversity education. Using an experimental research design, we examine whether a “day in the life” perspective taking essay exercise given at the beginning of a course influences participants' willingness to develop cross-race friendships and other prosocial diversity outcomes by the end of the course. We also contribute to theory by comparing mediators that have been used to

explain the exercise's effectiveness.

The exercise typically involves presenting subjects with a photo of someone who is demographically different from them and asking them to write a short narrative essay about a day in the life of the target (Galinsky & Moskowitz, 2000; Todd & Galinsky, 2014). The treatment (i.e., perspective taking) group is instructed to adopt the perspective of the target when writing their essay while the control group does not consider the target's perspective. The groups are then compared on outcome measures typically captured immediately after the manipulation.

Laboratory research has found that this exercise facilitates social bonds with diverse others and increases approach-oriented behaviors and willingness to engage in intergroup contact through mediated processes that involve reactions to the exercise (Galinsky & Moskowitz, 2000; Todd et al., 2011; Wang et al., 2014). The exercise also has other important indirect effects: it stimulates prosocial motivation and behaviors by heightening recognition of intergroup inequality (Todd et al., 2012), increases helping intentions and behaviors (Batson et al., 2002; Shih et al., 2009), and promotes a willingness to take collective action on behalf of out-groups (Faulkner, 2018).

While the perspective taking exercise has been used nearly exclusively in laboratory settings, we believe this technique can be used in educational contexts to affect what we call prosocial diversity behaviors. We define prosocial diversity behaviors as behaviors that achieve positive and beneficial outcomes with respect to diversity. Their overarching goal is to increase experiences of inclusion and decrease discrimination and marginalization in the workplace. Like other types of prosocial organizational behaviors (Brief & Motowidlo, 1986), prosocial diversity behaviors include behavioral intentions and operate at the individual, dyadic, group and organizational levels. Examples include challenging discriminatory policies, practices and

behaviors; promoting inclusive organizational cultures; supporting disadvantaged and marginalized groups; as well as developing diverse friendships and mentoring relationships. Prosocial diversity behaviors therefore incorporate ally behaviors, but also include relational practices that extends beyond traditional conceptions of allyship.

We examine three prosocial diversity outcomes in this study: willingness to develop cross-race friendships, willingness to confront racist comments at work and diversity voice. Following Van Dyne and LePine (1998), we define diversity voice as promotive behaviors that involve the expression of constructive suggestions for improving diversity in the workplace. Despite their importance and relevance for diversity education and ally training, researchers have not examined these variables as course outcomes or whether a perspective taking exercise can affect them. However, in support of these ideas, researchers have found that the exercise influences students' attitudes towards non-English speakers (Madera et al., 2011) and their self-reports of supportive behaviors towards sexual minorities (Lindsey et al., 2015). Building on this work, our study examines whether a perspective taking exercise can influence participants' willingness to develop cross-race friendships and other prosocial diversity outcomes.

In addition to its practical application, Study 3 also contributes to our theoretical understanding of why perspective taking exercises are effective. While researchers agree that the exercise's effectiveness rests in its ability to elicit immediate reactions from participants, they disagree on the type of reaction that mediates the exercise's effectiveness. Two theories reflect this ongoing debate. Batson's three-step model (Batson et al., 1997a) holds that the exercise influences outcomes by eliciting empathic concern for the target depicted in the exercise, while Galinsky and colleagues (Galinsky, Ku & Wang, 2005) contend that the exercise elicits a cognitive "self-other overlap" whereby the target becomes included in the perceiver's self-

representation. Fueling this empathy/cognitive debate, laboratory research supports both affective and cognitive models; some studies have found that the exercise operates through compassion and empathic concern for the target (Batson et al., 1997a, 1997b, 2002; Faulkner, 2018; Shih et al., 2009; Madera et al., 2011), while others support the cognitive self-other overlap theory (Davis et al., 1996; Galinsky & Moskowitz, 2000; Todd et al., 2012). Heeding recommendations to test both models in future research (Parker et al., 2008), we examine both mediators in our study.

*Hypothesis 5:* Through its influence on self-other overlap, participants in the perspective taking condition will experience greater (a) willingness to develop cross-race friendships, b) comfort confronting racist comments, and c) diversity voice than participants in the control condition.

*Hypothesis 6:* Through its influence on empathic concern, participants in the perspective taking condition will experience greater (a) willingness to develop cross-race friendships, b) comfort confronting racist comments, and c) diversity voice than participants in the control condition.

It is important to reiterate that the exercise has primarily been used to study prejudice in laboratory settings and outcomes are usually collected immediately after the manipulation. In contrast, our aim is to examine whether the technique can increase the efficacy of diversity education. Accordingly, we randomly assigned participants to either the perspective taking or control condition at the beginning of the course and compared groups on outcomes at the end of the course after adjusting for pre-course baseline values.

## **Method**

**Sample.** Data were collected from students enrolled in three additional sections of the Managing Diversity course described in Study 2. In total, 128 individuals participated in the pre-course survey (96% of all course participants). Of those, 95 completed the post-course survey and perspective taking exercise, which was distributed the second day of class (74% retention rate). Six did not provide usable data and were removed. The final sample consisted of 89

students: 28% were men, 82% were non-Hispanic White, 61% were 22-30 years old, 33% were 18-21, and 7% were 31 or older. Most of the students (94%) were employed. The three surveys (the pre-course survey, the post-course survey and the survey with the exercise and mediators) were completed outside of class and extra credit was given for participation.

**Perspective taking exercise.** The exercise, which is reproduced in the online supplement, followed commonly used protocols (Galinsky & Moskowitz, 2000; Todd & Galinsky, 2014). Participants were presented with three photos and asked to select the photo of the person who was least like them in terms of race. The photos, which were created by a graphic designer, were similar on all aspects except for race. They depicted the head and upper torso of three smiling young men (Black, White and Asian) in their late 20's wearing identical business suits.

Participants were randomly assigned to either the perspective taking or control group/objective condition. Following Batson et al. (1997a, 1997b), those in the perspective taking condition ( $n = 46$ ) were given the following instructions: *“Please write a one-page description about a typical day in the life of the person you have selected. Please **adopt the perspective of the person in the photo** when writing your description: • Imagine a day in his life: what are his thoughts, feelings and experiences? • Try to look at the world through his eyes and walk the world in his shoes. • Try to imagine how he feels and what he experiences over the course of a typical day.”* Participants assigned to the objective condition ( $n = 43$ ) were instructed to: *“Please write a one-page description about a typical day in the life of the person you have selected. Please **take an objective perspective** when writing your description: • Try to be as objective as possible when imagining what is happening to this person and what his day is like. • Try not to let yourself get caught up in imagining what this person has been through or how this person feels. • Just describe his day as objectively as possible.”*

Participants were told that the exercise should take 15 minutes to complete. The exercise was distributed the second day of class and was due the third day of class. The exercise was followed by a three-item manipulation check ( $\alpha = .85$ ), adapted from Davis et al., (1996),

(sample item: “To what extent did you try to imagine how the person in the picture was feeling”; options: 1 = *not at all* to 5 = *very much*). The manipulation was effective as those in the perspective taking condition reported higher values ( $M = 3.82$ ,  $SD = 0.83$ ) than those in the objective condition ( $M = 3.02$ ,  $SD = 0.90$ ;  $t_{86} = 4.37$ ,  $p < .01$ ,  $d = 0.93$ ).

**Measures.** As in our other studies, all new and modified variables are listed in Appendix B. *Diversity voice* was measured with a modification of Van Dyne and LePine’s (1998) six-item prosocial voice scale. *Comfort confronting racist comments* was measured with three items adapted from Chrobot-Mason, Ragins and Linnehan’s (2013) offensive racial comments scale. *Willingness to develop cross-race friendships* was assessed with a new nine-item measure that captures friendships within (6 items) and outside (3 items) the workplace. Because willingness to develop cross-race friendships was a new measure, we also examined its measurement properties in the validation study described in Appendix A.

We used measures employed in past research for our mediators (Ku et al., 2015). *Empathic concern* was measured using four items adapted from Cameron and Payne (2011). *Self-other overlap* was captured using Aron, Aron, and Smollan’s (1992) inclusion of other in self scale, with “oneself” and “the person in the picture” used in sets of increasingly overlapping circles. While the dependent variables were collected in the pre and post-course surveys, the mediators were measured immediately following the perspective taking exercise, which as described above, was distributed the second day of class.

**Control variables.** Per our earlier discussion, we controlled for participants’ *internal motivation to respond without prejudice* and their *race*. We also controlled for *gender* given that all the photos were men, and whether participants had *close cross-race friendships*. Close cross-race friendships was assessed with the measure used in Studies 1 and 2. There were no changes

in the statistical significance of our results with or without these controls. As in our other studies, we retained them because of their potential value for future research.

## Results

Descriptive statistics, correlations and reliability estimates are displayed in Table 2.

\*\*\*\*\*Insert Table 2 about here\*\*\*\*\*

**Hypotheses.** We tested our competing mediation hypotheses (Hypotheses 5 and 6) using the same bias-corrected bootstrapping procedures described in Study 2. As displayed in Figure 5, the exercise operated through empathic concern rather than self-other overlap. Hypothesis 5 was not supported as those in the perspective taking condition did not report greater (a) willingness to develop cross-race friendships (95% CI = [-.026, .048]), (b) comfort confronting racist comments (95% CI = [-.052, .132]), or (c) diversity voice (95% CI = [-.133, .039]) than those in the objective condition, through the exercise's influence on self-other overlap.

\*\*\*\*\*Insert Figure 5 about here\*\*\*\*\*

Supporting Hypothesis 6(a) and 6(c), those in the perspective taking condition had greater willingness to develop cross-race friendships (95% CI = [.023, .201]),<sup>5</sup> and diversity voice (95% CI = [.047, .568]) than those in the objective condition, through the exercise's influence on empathic concern. Hypothesis 6(b) was not supported; those in the perspective taking condition did not report greater comfort confronting racist comments (95% CI = [-.143, .315]) than those in the objective condition through the exercise's influence on empathic concern.<sup>6</sup>

We also conducted several exploratory analyses. First, we tested whether the effectiveness

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<sup>5</sup>Although the 9 items for our Willingness to Develop Cross-Race Friendship measure loaded on one factor, the items represent both work (6 items) and non-work (3 items) friendships (see Appendix B). We reran our analyses using the two scales (work/non-work friends) and our results were replicated for both types of friendships.

<sup>6</sup>We also reran all analyses adding age as a control. There were no changes in the significance of our findings with and without this variable.

of the exercise varied by participant race, gender, or whether they had close cross-race friends. Moderated tests revealed no significant differences for the exercise's influence on self-other overlap or empathic concern for any of these variables, indicating that the exercise had consistent effects across participants and was equally effective for those with and without close cross-race friends. We also examined whether the diversity course itself increased prosocial diversity outcomes. Participants at the end of the course were more willing to develop cross-race friends ( $F_{1,88} = 9.41, p < .01, \eta^2_p = .10$ ) and engage in diversity voice ( $F_{1,88} = 17.17, p < .01, \eta^2_p = .16$ ) than they were at the beginning of the course. While there was some increase in their comfort confronting racist comments, this change was not significant.

### **Summary of Study 3**

This study illuminated the utility of applying a social psychology technique to diversity education and contributed to our theoretical understanding of the processes underlying the exercise's effectiveness in field settings. Supporting Batson's three-step model (Batson et al., 1997a), participants who were randomly assigned to the perspective taking condition experienced greater empathic concern, which in turn promoted a greater willingness to develop cross-race friendships and engage in diversity voice at the end of the course, compared to those in the control condition. The exercise was effective irrespective of participants' race, age, gender, or experiences with close cross-race friends. Study 3 therefore provides a useful tool that can be used by diversity trainers and educators in organizations and academic settings.

### **General Discussion**

This set of field studies affirms the importance of diversity education and illustrates the power of close cross-race friendships. Supporting our relational theory of diversity education, course participants became more aware of the value of perspective taking and their need to

improve this skill, but only those with close cross-race friends improved their reported perspective taking abilities by the end of the course. Supporting theoretical predictions, belief in a just world mediated this friendship effect. We found that those with close cross-race friends entered the course armed with a different set of beliefs than those lacking such friendships: those with close cross-race friends were less likely to believe that the world was just and were more likely to believe that diversity courses are important and could provide the skills they need for future positions. These pre-course beliefs may have increased their motivation and engagement in classroom experiences that facilitate perspective taking skills.

Our tests for alternative explanations further affirmed the robustness of the friendship effect and provided additional support for our theory. We controlled for and examined the independent effects of a range of diversity-related attitudes and beliefs that underlie cross-race friendships and the motivation to engage in diversity education, such as participants' racial prejudice and need for social distance, their anxiety interacting with other races, their belief that racial bias can be changed, their motivation to respond without prejudice, as well as their demographic group (race, age, gender) and other forms of interracial contact (past positive interracial contact and residential diversity). None of these pre-training characteristics predicted a change in perspective taking, and the friendship effect held even when we controlled for them. These findings support our relational theory and suggest that close cross-race friendships are a unique form of social contact that can transform people's cognitive processes, beliefs and world views in ways that increase their motivation to engage in diversity classes and harvest the skills these classes offer.

### **Implications for Theory, Research and Practice**

By bridging disciplinary silos, our relational perspective offers diversity and training

scholars a new theoretical foundation for understanding the spillover of relational experiences to educational environments. Our findings help explain why diversity education is important and for whom. This is important not only because of the increasing need for diversity education, but also because training theories fail to address the unique challenges faced by diversity educators. Diversity educators are charged with changing resistant attitudes and biases, and in so doing may spark defensive emotional reactions, conscious and subconscious resistance, and backlash (Bell et al., 2009; DiAngelo, 2018). These emotional reactions, which are not found in other types of training or coursework (e.g., safety or leadership training, finance classes), can affect training motivation (Chrobot-Mason et al., 2008). Our findings suggest that pre-training relational experiences can offset these challenges. Existing theories of training motivation, while acknowledging the importance of pre-training characteristics, focus on individual differences (e.g., goal orientation, locus of control, self-efficacy) (Colquitt et al., 2000; Salas et al., 2012) and fail to recognize the role of relational experiences or address the unique challenges of diversity education.

We address these shortcomings by bringing a relational perspective to the field of training. This perspective offers insights for building a relational theory of training. For example, our theoretical model and research indicates that it is not just the relational experience (e.g., contact), but the depth of experience (e.g., close cross-race friendships) and the psychological changes the experience creates (i.e., disequilibrium/change in world views), that may affect trainees' motivation and their ability to develop new skills. Future research can examine the range and depth of relational experiences that create disequilibrium. Researchers could also examine if relational experiences are more impactful for some types of training (e.g., conflict management, leadership) than others (safety, technical), and whether relational experiences have more impact

on “deep level” attitudinal change than knowledge acquisition.

Our relational approach also has theoretical utility for related fields. Close cross-race friendships can transform employees in ways that have not been recognized or understood in the management, work relationships and diversity literatures. Contact scholars have found that close cross-race friendships can change racial attitudes, offer new perspectives on race and racial injustice, and facilitate social justice activism in college settings (Carter et al., 2019; Davies et al., 2011; Pettigrew, 1998). However, organizational scholars know little about the impact of these relationships on employees’ work behaviors and outcomes. Close cross-race friendships are positive relationships that have the capacity to change beliefs, attitudes and perspectives that drive workplace behaviors. Our theoretical integration offers an explanation for how this occurs: close cross-race friendships can move employees from routine to complex thinking, allowing them to process novel information that challenges their assumptions and changes their views about the role of race and the prevalence of racial injustice. Supporting this theorizing, we found that people with close cross-race friends were less likely to believe in a just world than those lacking such friendships. Future research could extend and apply this theoretical model to the workplace. For example, it would be interesting to assess if close-cross race friendships affect employees’ views of racism in their workplace and their ally behaviors. Diversity scholars often focus on individual differences as predictors of diversity-related attitudes and workplace behaviors. However, people are embedded in relationships, and a complete understanding of the individual requires an understanding of their relational experiences.

Our research also offers new insights and directions for research on diversity education. In addition to perspective taking, we introduced and examined new training outcomes, such as perspective taking mindsets and prosocial diversity behaviors. Our findings illustrate that the

reach of diversity education extends well beyond cognitive learning. For example, pre and post-course assessments revealed a significant increase in participants' perspective taking mindsets, diversity voice and their willingness to befriend cross-race coworkers and neighbors. These outcomes, which have not been previously examined, are important for workplace inclusion and offer footholds for future research on the effects of diversity education on prosocial diversity behaviors and allyship at work.

Our set of studies affirms the value of diversity training and offers practical contributions to the field. Diversity training is often criticized for being ineffective in changing racial attitudes (Dobbin & Kalev, 2016), but by increasing participants' willingness to develop cross-race friendships and their awareness of the importance and need to develop their perspective taking skills, diversity education can offer an important first step towards changing resilient racial attitudes. Towards that end, the perspective taking exercise presented in Study 3 may have significant practical utility for educators in academic and organizational settings.

This study also has policy implications for higher education and the workplace. Our research not only affirms the value of diversity courses in business schools (Bell et al., 2009), it also illustrates an important but unacknowledged opportunity for organizations and academic institutions. Given residential segregation (Charles, 2003), people may be more likely to develop interracial friendships in their universities and workplaces than in their communities. Organizations and universities need to recognize the importance of interracial relationships and foster their development. This involves more than just increasing racial diversity; these institutions need to provide opportunities for positive social interactions that can lead to friendships. For example, universities can help facilitate diverse friendships through integrated campus housing and social/event programming, and organizations can encourage the

development of cross-race relationships through diverse work teams and social events.

### **Limitations**

Our set of field studies have limitations that need to be acknowledged. To start, we were unable to randomly assign participants to training and control groups in Studies 1 and 2, which prevents us from ruling out selection effects or establishing causal relationships in these studies. In addition, although Study 3 used an experimental design with random assignment, we acknowledge the limitation in asserting strong causal claims about empathic concern as a mediating mechanism in this study.

Another limitation was that our pre/post course design was limited by the use of two measurement points. As such, we were unable to assess the shape and rate of change or whether changes were maintained over time. Also, the treatment and control groups in Study 2 involved multiple sections and did not complete the pre and post-tests at the same time, opening the possibility of history effects. And, even though the courses in Studies 1 and 2 had similar objectives and length, they varied in content and instructors. As noted earlier, diversity courses need to be tailored to participant needs, but instructor role is a consideration. Although the instructors in Study 1 were unaware of the goals of the study, the instructor in Study 2 was part of the research team. Still, if this role influenced outcomes then perspective taking should have improved for all students. In contrast, in both studies perspective taking only improved for those with close cross-race friends. Even so, the instructor's role could be a limitation for Study 2.

Each of the studies were also limited by the use of self-report data. While self-report data are appropriate for outcomes reflecting participants' self-assessments, attitudes and beliefs (Roberson et al., 2012) (e.g., perspective taking mindsets, comfort confronting racism, belief in just world), future research could attempt to use third-party reports to assess behavioral changes

in perspective taking and other outcomes. However, third parties may lack accurate insights about the targets' perspective taking competencies, behaviors and friendships. It's also difficult to avoid contamination bias when using third party reports on pre and post-training changes.

Finally, there are questions about whether our findings will generalize to required classes and other settings and populations. The military personnel in Study 1 needed the course for EO certification, while the students in Study 2 took the course as a business elective. The robustness of the friendship effect across these different courses, trainees and instructors suggest that the effect may be generalizable to other groups and settings, but this remains a question for future research. In addition, while we focused on race given its relevance in the U.S., researchers could examine other types of cross-group friendships (e.g., Israeli/Palestinian; Serbian/Croatian). Future research could also assess the generalizability of the perspective taking exercise to other contexts and populations.

In conclusion, our future depends on our ability to understand each other's perspectives and develop positive relationships across differences. Diversity education can help achieve these goals and must be supported in both academic and organizational settings.

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Table 1  
*Descriptive Statistics, Correlations, and Reliability Estimates of Study Variables for Studies 1 and 2*

**Study 1:**

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Perspective taking: Pre-course	3.47	0.59	<b>.67</b>								
2. Perspective taking: Post-course	3.65	0.65	.51	<b>.74</b>							
3. Close cross-race friendships <sup>a</sup>	0.72	0.45	.02	.22	-						
4. Past positive interracial contact	4.13	0.63	.26	.22	.20	<b>.65</b>					
5. Intergroup anxiety	2.06	0.72	-.25	-.18	-.09	-.32	<b>.79</b>				
6. Lay theory of racial bias	2.16	0.70	-.26	-.24	-.04	-.12	.13	<b>.68</b>			
7. Race <sup>b</sup>	0.58	0.50	.09	.05	-.15	.00	.05	-.03	-		
8. Gender <sup>c</sup>	0.68	0.47	-.24	-.14	.04	-.01	-.17	.09	-.11	-	
9. Age group <sup>d</sup>	3.19	0.72	.07	.03	-.07	.14	-.08	-.12	.03	-.05	-

**Study 2:**

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Perspective taking: Pre-course	3.52	0.60	<b>.73</b>															
2. Perspective taking: Post-course	3.77	0.63	.59	<b>.74</b>														
3. Mindsets <sup>e</sup> - Self-assessment: Pre-course	3.56	0.84	.00	-.01	<b>.95</b>													
4. Mindsets <sup>e</sup> - Self-assessment: Post-course	3.80	0.83	-.01	.05	.52	<b>.98</b>												
5. Mindsets <sup>e</sup> - Values: Pre-course	4.41	0.55	.57	.45	.17	.17	<b>.96</b>											
6. Mindsets <sup>e</sup> - Values: Post-course	4.55	0.52	.23	.40	.31	.27	.41	<b>.98</b>										
7. Belief in a just world	2.69	0.68	-.07	-.31	-.14	.05	-.36	-.21	<b>.84</b>									
8. Close cross-race friendships <sup>a</sup>	0.56	0.50	.03	.24	-.15	-.15	.20	.07	-.29	-								
9. Residential interracial contact	0.26	0.16	.19	.13	-.40	-.23	.00	-.07	-.07	.15	-							
10. Intergroup anxiety	2.41	0.70	.05	-.07	.22	.02	.00	-.13	-.06	-.16	-.14	<b>.80</b>						
11. Lay theory of racial bias	2.48	0.72	-.11	-.07	-.13	-.18	-.24	-.23	.24	-.10	-.01	.17	<b>.76</b>					
12. Social distance	1.74	0.56	-.07	-.11	.03	.01	-.26	-.30	.22	-.13	-.12	.33	.30	<b>.65</b>				
13. IMP <sup>f</sup>	4.07	0.59	.20	.32	.14	.20	.40	.47	-.18	.07	.08	-.19	-.27	-.46	<b>.79</b>			
14. Race <sup>b</sup>	0.27	0.45	.21	.09	-.22	-.24	.00	-.05	-.15	.07	.56	-.06	-.02	-.03	.05	-		
15. Gender <sup>c</sup>	0.23	0.42	-.04	-.19	.07	.15	-.27	-.19	.16	-.13	-.11	.16	.09	.14	-.20	-.13	-	
16. Age group <sup>d</sup>	1.88	0.60	-.18	-.17	-.08	.06	-.18	-.13	.10	-.17	.12	.22	.05	.15	-.10	-.12	.16	-

*Note.* For Study 1, *N* = 92 for all variables except age group, where *N* = 88. Correlations greater than .20 in absolute value are significant at the *p* < .05 level. For Study 2, *N* = 78 for all variables and correlations greater than .22 in absolute value are significant at the *p* < .05 level. For both studies, boldface entries on the diagonal are scale reliabilities.

<sup>a</sup> 1 = Presence of close cross-race friendships. 0 = No close cross-race friendships. <sup>b</sup> 1 = Person of color. 0 = non-Hispanic White. <sup>c</sup> 1 = Male. 0 = Female.

<sup>d</sup> 1 = 18-21, 2 = 22-30, 3 = 31-40, 4 = 41-50, 5 = 51 and over. <sup>e</sup> Perspective taking mindsets. <sup>f</sup> Internal motivation to respond without prejudice.

Table 2  
*Descriptive Statistics, Correlations, and Reliability Estimates of Study Variables for Study 3*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Willingness to develop cross-race friendships: Pre-course	4.48	0.62	<b>.93</b>													
2. Willingness to develop cross-race friendships: Post-course	4.67	0.52	.49	<b>.95</b>												
3. Diversity voice: Pre-course	4.24	1.21	.41	.15	<b>.93</b>											
4. Diversity voice: Post-course	4.87	1.16	.13	.31	.27	<b>.94</b>										
5. Comfort confronting racist comments: Pre-course	3.27	1.34	.08	.12	.06	.12	<b>.93</b>									
6. Comfort confronting racist comments: Post-course	3.39	1.49	.10	.09	.04	.07	.48	<b>.98</b>								
7. Self-other overlap	3.27	0.96	.24	.17	.15	.05	.05	.04	-							
8. Empathic concern	2.91	0.97	.38	.43	.21	.34	-.05	.01	.35	<b>.87</b>						
9. Perspective taking exercise <sup>a</sup>	0.52	0.50	.08	.08	.03	.04	.04	-.17	.04	.27	-					
10. Close cross-race friendships <sup>b</sup>	0.54	0.50	.22	.25	.24	.11	-.18	-.16	.12	.22	.01	-				
11. IMP <sup>c</sup>	3.97	0.66	.45	.13	.32	.11	.05	.07	.30	.25	-.09	.08	<b>.78</b>			
12. Race <sup>d</sup>	0.18	0.39	-.01	.08	.27	.22	-.11	-.03	-.13	.06	-.07	.14	.03	-		
13. Gender <sup>e</sup>	0.28	0.45	-.07	-.15	-.01	-.07	-.15	-.24	.22	-.02	.05	.08	.09	-.10	-	
14. Age group <sup>f</sup>	1.75	0.61	-.10	-.23	-.03	.06	-.06	-.12	.15	-.04	-.06	.26	-.04	-.10	.30	-

*Note.* *N* = 89 for all variables except comfort confronting racist comments: post course, where *N* = 88. Correlations greater than .21 in absolute value are significant at the *p* < .05 level. Boldface entries on the diagonal are scale reliabilities.

<sup>a</sup> 1 = Perspective taking condition. 0 = Objective condition. <sup>b</sup> 1 = Presence of close cross-race friendships. 0 = No close cross-race friendships. <sup>c</sup> Internal motivation to respond without prejudice.

<sup>d</sup> 1 = Person of color. 0 = non-Hispanic White. <sup>e</sup> 1 = Male. 0 = Female. <sup>f</sup> 1 = 18-21, 2 = 22-30, 3 = 31-40, 4 = 41-50, 5 = 51 and over.

Table 3  
*Descriptive Statistics, Correlations, and Reliability Estimates of Study Variables for the Validation Study*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Close cross-race friendships <sup>a</sup>	-																		
2. Mindsets <sup>b</sup> - Values	.25*	<b>.93</b>																	
3. Mindsets <sup>b</sup> - Self-assessment	.06	.26*	<b>.95</b>																
4. Willingness to develop cross-race friendships	.40*	.64*	.08	<b>.93</b>															
5. Reciprocal caring	.43*	.45*	-.01	.53*	<b>.82</b>														
6. Reciprocal trust	.43*	.43*	.00	.55*	.78*	<b>.85</b>													
7. Perceived responsiveness	.40*	.34*	.01	.50*	.69*	.67*	<b>.87</b>												
8. Perspective taking	.22*	.56*	.00	.42*	.39*	.32*	.35*	<b>.79</b>											
9. Kindness	.03	.18*	.12*	.06	.03	.01	.05	.16*	-										
10. Learning goal orientation	.30*	.41*	.12*	.47*	.45*	.45*	.38*	.47*	.07	<b>.89</b>									
11. Interracial avoidance	-.25*	-.52*	.01	-.62*	-.50*	-.46*	-.43*	-.42*	-.07	-.29*	<b>.81</b>								
12. Interracial anxiety	-.25*	-.43*	.10	-.56*	-.45*	-.44*	-.41*	-.39*	-.06	-.29*	.77*	<b>.83</b>							
13. Behavioral social distance	-.05	-.32*	.07	-.40*	-.34*	-.31*	-.24*	-.26*	.03	-.12*	.54*	.52*	<b>.96</b>						
14. Cross-race friendship opportunity	.40*	.43*	.22*	.53*	.47*	.48*	.47*	.25*	.04	.41*	-.43*	-.42*	-.09	<b>.87</b>					
15. Cross-race friendship behaviors	.35*	.13	.14*	.18*	.15*	.19*	.30*	.23*	.11	.35*	-.05	-.02	.23*	.46*	<b>.90</b>				
16. Social desirability	-.10	-.01	.02	-.04	.03	.01	-.08	-.23*	-.16*	-.23*	.05	.12*	-.06	-.02	-.28*	-			
17. Race <sup>c</sup>	.07	-.08	.12*	-.11	-.11	-.10	-.10	-.10	-.03	-.08	.13*	.15*	.06	-.02	.11	-.04	-		
18. Gender <sup>d</sup>	.06	-.05	-.02	-.03	-.02	-.04	-.09	-.10	-.12*	.00	.12*	.03	.04	.01	-.07	.12*	-.05	-	
19. Age	-.10	.14*	-.17*	.18*	.06	.12*	.02	.06	-.02	.10	-.21*	-.23*	-.14*	.06	-.14*	-.10	-.30*	-.18*	-
<b>M</b>	0.50	4.19	3.43	4.35	4.36	4.35	4.27	3.70	2.01	4.02	2.03	2.06	1.71	4.07	3.19	5.02	0.30	0.62	34.36
<b>SD</b>	0.50	0.77	1.01	0.73	0.67	0.66	0.72	0.75	1.35	0.67	0.87	0.95	1.12	0.68	0.90	2.54	0.46	0.49	9.95

Note. *N* = 210 to 314. Varying sample sizes reflects skip patterns in the survey. Those who did not have cross-race friends did not complete measures describing the friendship (e.g., caring, trust, and perceived responsiveness) and those who did not have coworkers and/or neighbors of a different race did not complete measures describing friendship behaviors and opportunity. Sample sizes for these variables therefore ranged from *N* = 210 to 277. For all other variables, *N* ≥ 302. Boldface entries on the diagonal are scale reliabilities.

<sup>a</sup> 1 = Presence of close cross-race friendships. 0 = No close cross-race friendships. <sup>b</sup> Perspective taking mindsets.

<sup>c</sup> 1 = Person of color. 0 = non-Hispanic White. <sup>d</sup> 1 = Male. 0 = Female.

\* *p* < .05.

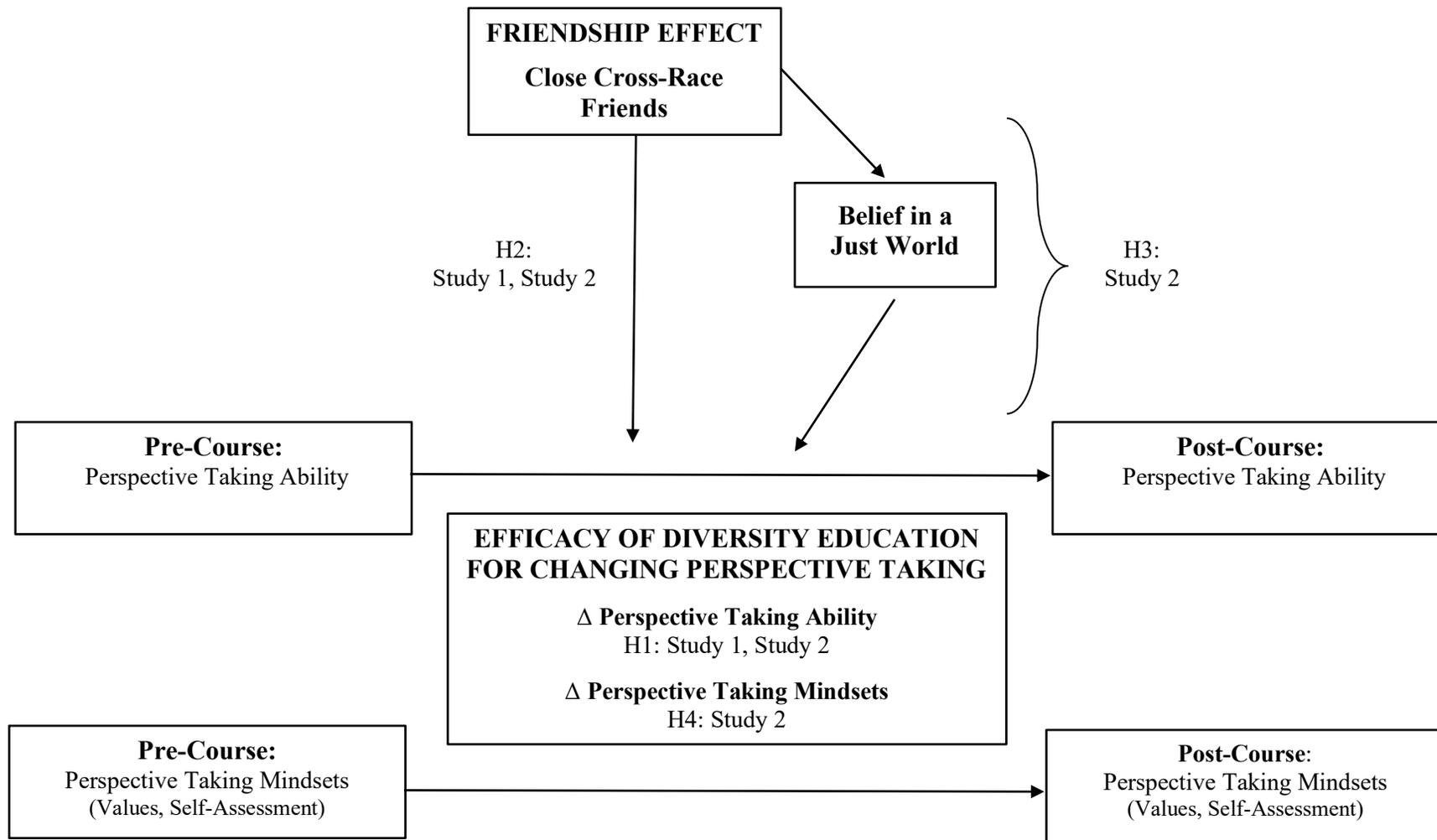


Figure 1. Theoretical Model and Hypothesized Relationships (Studies 1 and 2)

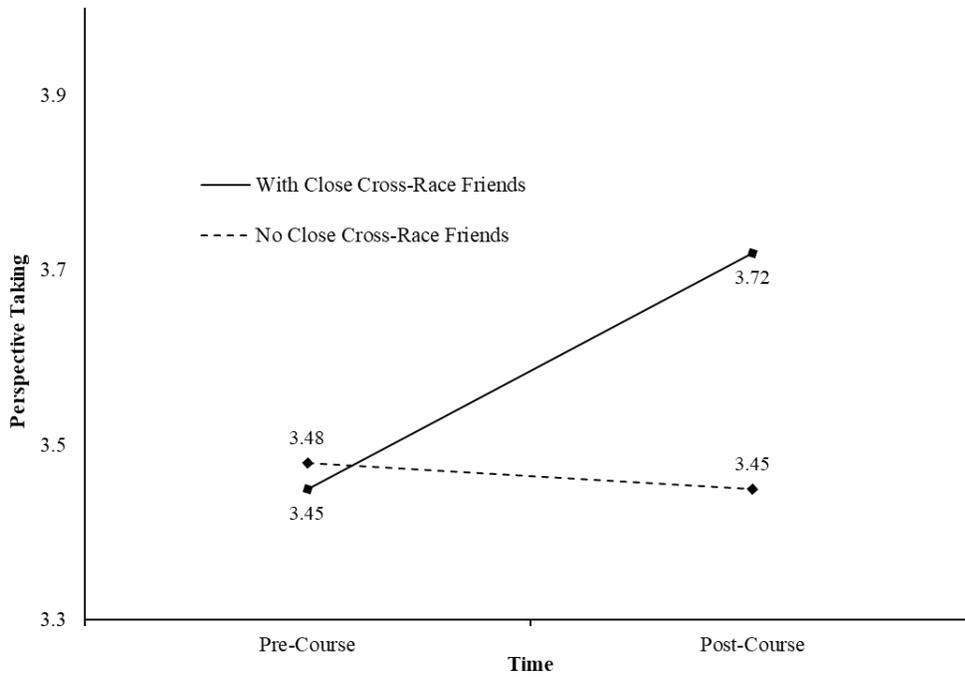


Figure 2. Results for the Time x Close Cross-Race Friendships Interaction on Perspective Taking in Study 1. Values reported are estimated marginal means (i.e., lsmeans) for each group.

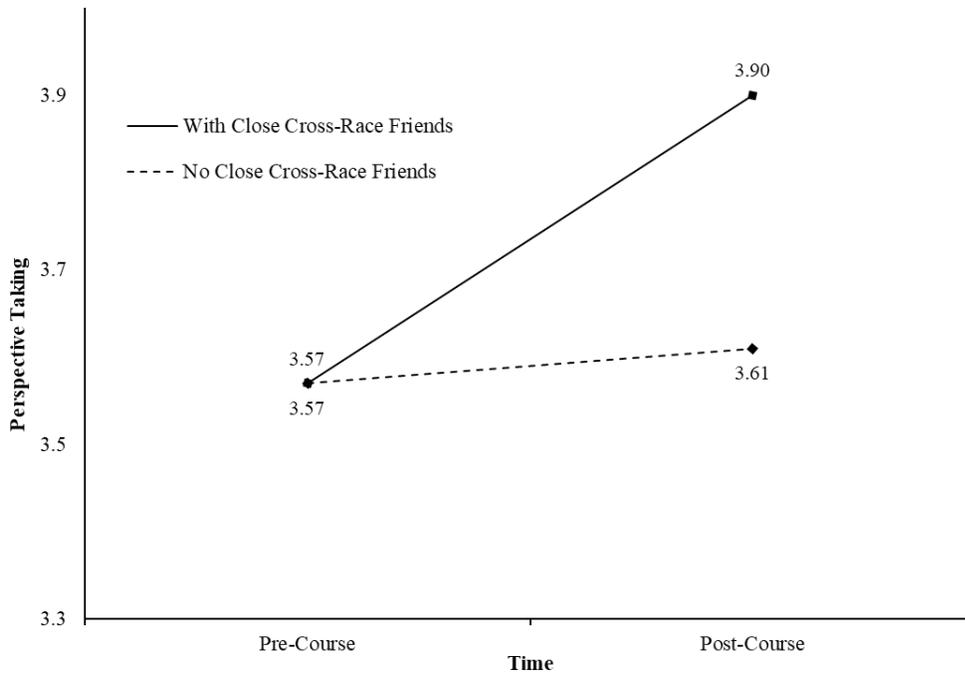


Figure 3. Results for the Time x Close Cross-Race Friendships Interaction on Perspective Taking in Study 2. Values reported are estimated marginal means (i.e., lsmeans) for each group.

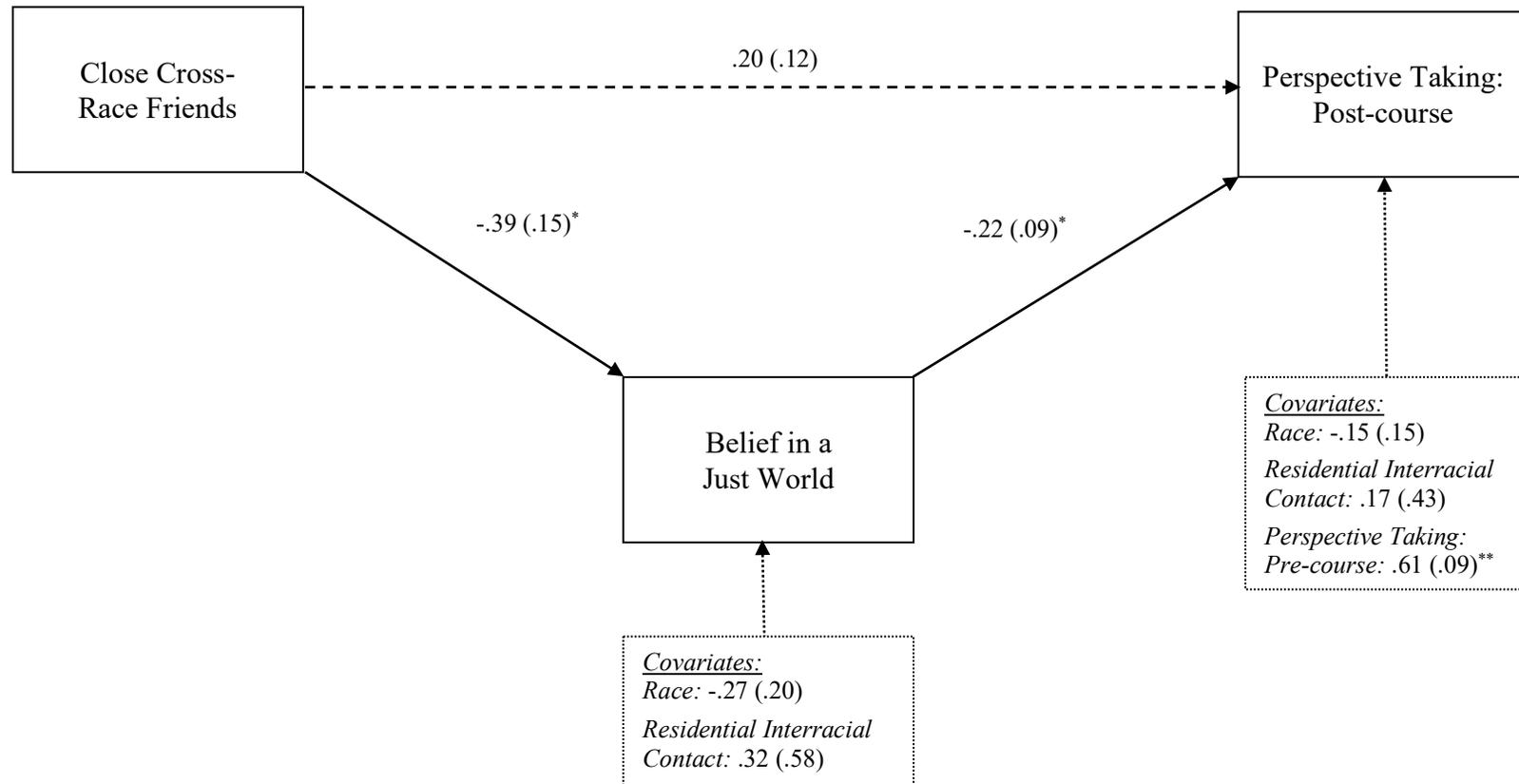


Figure 4. Mediating Effect for Belief in a Just World in Study 2.

Note. Unstandardized coefficients are reported with standard errors in parentheses. Indirect effect = .09, 95% CI = [.015, .235]. There were no changes in the statistical significance of results with or without covariates included in the model.

\* $p < .05$ , \*\* $p < .01$ .

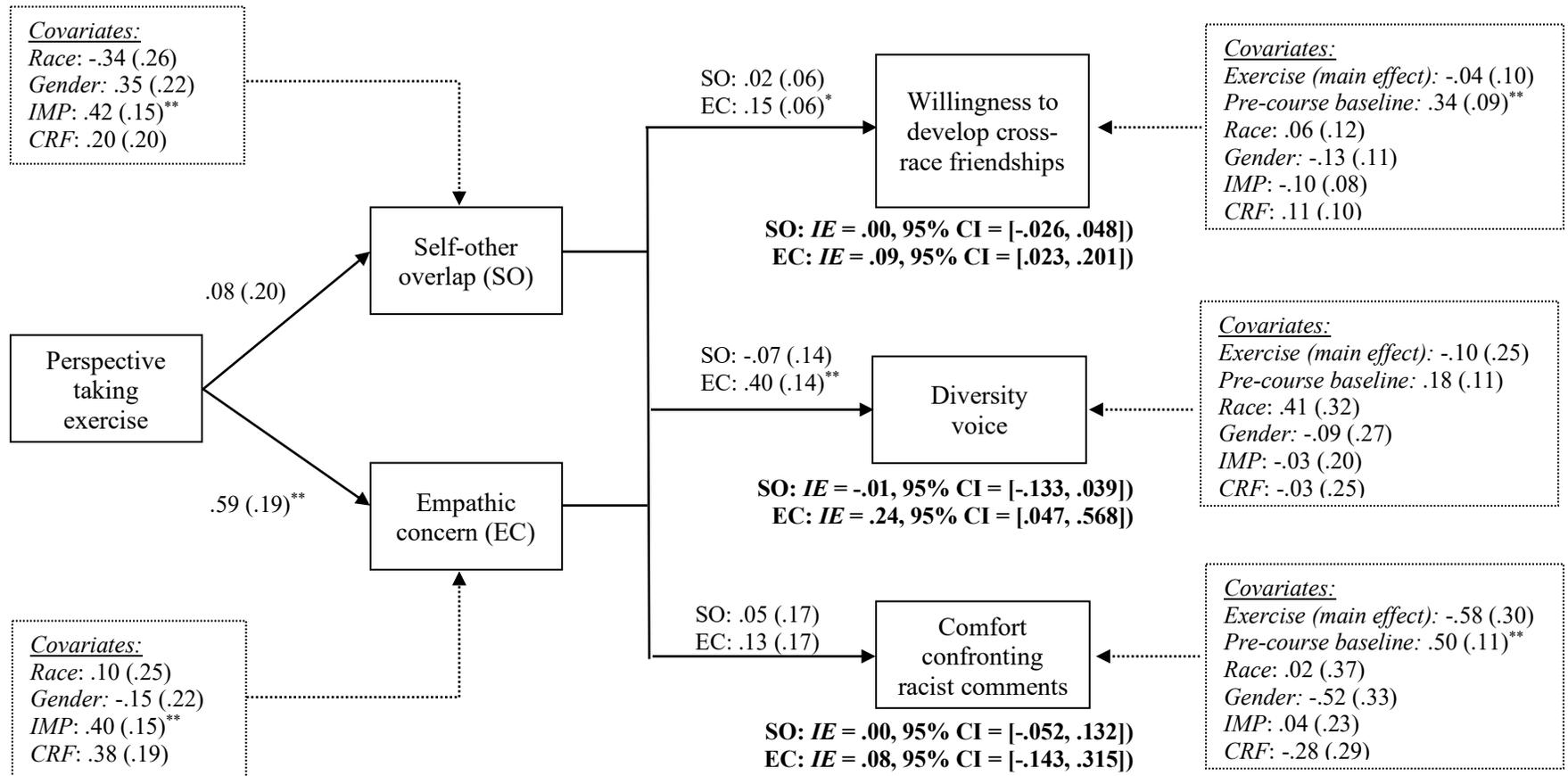


Figure 5. Model and results for Study 3.

Note. Unstandardized coefficients are reported with standard errors in parentheses. Hypothesized indirect effect tests are presented in bold. Indirect effect tests for self-other overlap (SO) correspond to Hypothesis 5. Indirect effect tests for empathic concern (EC) correspond to Hypothesis 6. Covariate boxes on the left side of the figure show covariate coefficients for tests in which the mediators (self-other overlap and empathic concern) are the dependent variables. Covariate boxes on the right side of the figure show covariate coefficients for tests in which the prosocial diversity outcomes are the dependent variables. There were no changes in the statistical significance of results with or without covariates in the model. *IE* = Indirect effect, *IMP* = Internal motivation to respond without prejudice, *CRF* = Close cross-race friendships, and *Pre-course baseline* reflects the corresponding outcome variable measured pre-course.

\**p* < .05, \*\**p* < .01.

## Appendix A: Description of Validation Study

The validation study assessed the measurement properties of the new measures developed for our studies. The new measures include *close cross-race friendships* (introduced in Study 1), *perspective taking mindsets* (introduced in Study 2), and *willingness to develop cross-race friendships* (introduced in Study 3).

We recruited 368 participants from Amazon's Mechanical Turk platform for our validation study. Our recruitment criteria included being employed full or part-time in the U.S. We removed respondents who did not meet these criteria, provided largely incomplete responses, or failed two item checks for careless responses (e.g., "Please answer *strongly agree* for this item"). Our final sample consisted of 314 employed adults. Their average age was 34 ( $SD = 9.95$ ), 62% were men and 70% were non-Hispanic White. Approximately 74% had a college degree and 92% attended high school in the U.S. In terms of employment, 89% were employed full-time and 56% reported management responsibilities (primarily entry or mid-level managers).

The validation results are described below. Descriptive statistics, correlations and reliability estimates for all validation study variables are displayed in Table 3. New and modified measures are listed in Appendix B.

### Close Cross-race Friendships

The three items used to construct our measure of close cross-race friendships demonstrated strong reliability ( $\alpha = .94$ ). A principal axis factor analysis also showed that the items loaded on a single factor with all loadings exceeding .83. Supporting convergent validity, the measure was correlated with three established measures of relational processes: reciprocal caring ( $r = .43, p < .01$ ) (Davies & Aron, 2016), reciprocal trust ( $r = .43, p < .01$ ) (Davies & Aron, 2016) and perceived responsiveness ( $r = .40, p < .01$ ) (Shelton et al., 2010). The close cross-race friendship measure was not significantly correlated with Strahan and Gerbasi's (1972) measure of social desirability ( $r = -.10, p = .07$ ).

### Perspective Taking Mindsets

Both mindset measures showed strong reliability (perspective taking self-assessment:  $\alpha = .95$ , perspective taking values:  $\alpha = .93$ ) and the results of a principal axis factor analysis (promax rotation) revealed that the two mindset measures loaded separately. All loadings exceeded .84 for the perspective taking self-assessment items, all loadings exceeded .79 for the perspective taking values items, and no cross-loadings exceeded .06. We also conducted a confirmatory factor

analysis to ensure that the two mindset measures were distinguishable from the perspective taking aptitude measure used as a dependent variable in Studies 1 and 2 (i.e., the perspective taking aptitude subscale of Davis's Interpersonal Reactivity Index). Fit statistics were  $\chi^2_{149} = 438.56, p < .01$ ; CFI = .93, RMSEA = .08, SRMR = .07 and tests showed that this model fit better than two alternative models in which the factor correlation between perspective taking aptitude and perspective taking self-assessment was constrained to unity ( $\Delta\chi^2_1 = 709.71, p < .01$ ) and the factor correlation between perspective taking aptitude and perspective taking values was constrained to unity ( $\Delta\chi^2_1 = 364.89, p < .01$ ).

Supporting convergent validity, perspective taking values was correlated with Scott's (1965) kindness scale ( $r = .18, p < .01$ ), which assesses the degree to which a person admires and is kind and helpful to those who may be different from them or those who they do not like. Perspective taking self-assessment was correlated with Roedel et al.'s (1994) learning goal orientation scale ( $r = .12, p < .05$ ), which assesses the degree to which a person desires to develop themselves by acquiring new skills and improving their competence (VandeWalle, 1997). Both mindset measures were not correlated with social desirability (self-assessment:  $r = .02, p = .74$ ; values:  $r = -.01, p = .84$ ).

### **Willingness to Develop Cross-Race Friendships**

The nine-item measure of willingness to develop cross-race friendships showed strong reliability ( $\alpha = .93$ ). The results of a principal axis factor analysis revealed that all of the items loaded on a single factor with all loadings exceeding .73.

Supporting convergent validity, willingness to develop cross-race friendships was negatively correlated with Plant and Devine's (2003) interracial avoidance ( $r = -.62, p < .01$ ) and interracial anxiety ( $r = -.56, p < .01$ ) scales, along with Binder et al.'s (2009) behavioral social distance scale ( $r = -.40, p < .01$ ).

The willingness to develop cross-race friendships measure was also positively correlated with respondents' reports of having close cross-race friends ( $r = .40, p < .01$ ) and their reported opportunity to develop these friendships ( $r = .53, p < .01$ ). Opportunity to develop cross-race friendships was measured with a modification of Nielsen et al.'s (2000) workplace friendship opportunity scale. As displayed in Appendix B, we modified items to refer to individuals of a different race at work and in one's neighborhood. Willingness to develop cross-race friendships was also correlated with respondents' reports of their actual friendship behaviors over the past

year ( $r = .18, p < .01$ ). For this measure of friendship behaviors, we used the same nine actions that were included in the willingness to develop cross-race friendships measure (e.g., ask a coworker of a different race over to your house for dinner; sit with a coworker of a different race during lunch at work; ask a neighbor of a different race to a concert or sports event), but changed the item stem from “In general how willing are you...” to “In the past year, how often have you...” Finally, willingness to develop cross-race friendships was not correlated with social desirability ( $r = -.04, p = .51$ ).

\*\*\*\*\*Insert Table 3 about here\*\*\*\*\*

## Appendix B: New and Modified Measures

### New Measures

#### Close Cross-Race Friendships (Studies 1-3)

*The following questions ask about your friendships with those of a different race than you.*

1. How likely are you to share personal challenges or problems with these friends?  
(1 = unlikely, 2 = somewhat unlikely, 3 = somewhat likely, 4 = likely.)
2. How likely are they to share a personal challenge or problem with you?  
(1 = unlikely, 2 = somewhat unlikely, 3 = somewhat likely, 4 = likely.)
3. Overall, how close do you feel to these friends that are of another race?  
(1 = not close at all, 2 = somewhat close, 3 = very close, 4 = extremely close.)

#### Perspective Taking Mindsets (Study 2)

**Perspective Taking Values** (1=strongly disagree to 5=strongly agree)

1. It is important for people to consider the world from other people's perspective.
2. People need to put themselves in the "shoes of others."
3. It is important that people try to imagine how other people feel.
4. It is important that people think about how others experience the world.
5. People need to think about how things look from someone else's viewpoint.
6. People need to imagine or think about other people's experiences, thoughts and feelings.

**Perspective Taking Self-Assessment** (1=strongly disagree to 5=strongly agree)

1. I need to improve my ability to consider the world from other peoples' perspectives.
2. I need to be better able to put myself in "the shoes" of other people.
3. I need to do a better job imagining how other people feel.
4. I need to spend more time thinking about how other people experience the world.
5. I need to increase my capacity to think about how things look from other people's viewpoint.
6. I need to do a better job in imagining or thinking about other people's experiences, thoughts and feelings.

#### Willingness to Develop Cross-Race Friendships (Study 3)

*The following questions ask about your willingness or openness to developing friendships with people of a different race than you within and outside the workplace. In general, how willing are you..... (1=not at all willing to 5=willing)*

1. ...to socialize with coworkers of a different race outside the workplace?
2. ...to ask a coworker of a different race over to your house for dinner?
3. ...to invite a coworker of a different race to a concert or sports event?
4. ...to sit with a coworker of a different race during lunch at work?
5. ...to take a break with a coworker of a different race?
6. ...to socialize with coworkers of a different race at work
7. ...to socialize with neighbors of a different race?
8. ...to ask a neighbor of a different race over to your house for dinner?

9. ...to invite a neighbor of a different race to a concert or sports event?  
*(Items 1-6 reflect work friendships; Items 7-9 reflect non-work friendships)*

### **Cross-Race Friendship Behaviors (Validation Study)**

*In the past year, how often have you.....(1=never to 5=very often)*

1. ...socialized with coworkers of a different race outside the workplace?
  2. ...asked a coworker of a different race over to your house for dinner?
  3. ...invited a coworker of a different race to a concert or sports event?
  4. ...sat with a coworker of a different race during lunch at work?
  5. ...took take a break with a coworker of a different race?
  6. ...socialized with coworkers of a different race at work
  7. ...socialized with neighbors of a different race?
  8. ...asked a neighbor of a different race over to your house for dinner?
  9. ...invited a neighbor of a different race to a concert or sports event?
- (Items 1-6 reflect work friendships; Items 7-9 reflect non-work friendships)*

### **Course Utility (Study 2 Post Hoc Analysis) (1=strongly disagree to 7=strongly agree)**

1. I think this course on organizational diversity will help prepare me for future positions.
2. I expect that I will need diversity skills in my future positions.
3. Workplace diversity courses can help students develop the skills needed to work in and manage a diverse workforce.

## **Modified Measures**

### **Diversity Voice (Study 3)**

*(Modified from Van Dyne & LePine, 1998) (1=strongly disagree to 7=strongly agree)*

1. I speak up and encourage others to get involved in diversity issues at our workplace.
2. I communicate my opinion about diversity issues to others, even if they disagree with me.
3. I develop and make recommendations about diversity initiatives that could improve my workplace.
4. I keep well informed about diversity issues at work, particularly where my opinion might be useful for improving our workplace.
5. I get involved in issues that affect the quality of work life for diverse employees in my organization.
6. I speak up with ideas for new projects or changes that can improve the climate for diversity in our workplace.

### **Comfort Confronting Racist Comments (Study 3)**

*(Modified from Chrobot-Mason et al., 2013) (1=uncomfortable to 5=comfortable)*

*Sometimes we witness racial harassment or discrimination aimed at others. How comfortable would you be confronting someone who engaged in the following behaviors? Please use the following scale to indicate your level of comfort in confronting someone who:*

1. Told racist jokes or stories.
2. Made crude or offensive racial remarks either publicly or in private.
3. Made derogatory comments about someone's race or ethnicity.

**Empathic Concern (Study 3)**

(Modified from Cameron & Payne, 2011) (1=*not at all* to 5=*extremely*)

1. How sympathetic do you feel toward the person in the picture?
2. How warm do you feel toward the person in the picture?
3. How compassionate do you feel toward the person in the picture?
4. How touched were you by the person in the picture?

**Past Positive Interracial Contact (Study 1)**

(Modified from Plant & Devine, 2003) (1=*strongly disagree* to 5=*strongly agree*)

1. In the past, my experiences with people of other races have been pleasant.
2. I have had many positive experiences with people of other races and ethnicities.

**Opportunity to Develop Cross-Race Friendships (Validation study)**

(Modified from Nielsen et al., 2000) (1=*strongly disagree* to 5=*strongly agree*)

1. I have the opportunity to get to know coworkers of a different race at work.
2. In my organization, I have the chance to talk informally and visit with coworkers of a different race.
3. I have the opportunity to develop close cross-race friendships at my workplace.
4. I have the opportunity to get to know people of a different race in my neighborhood.
5. I have the chance to talk informally and visit with people of a different race in my neighborhood.
6. I have the opportunity to develop close cross-race friendships in my neighborhood.